Result of Monthly Energy Calculation
(The Dong Nai river system case-3 Da Mi - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	36.47	32.87	36.31	35.05	36.14	35.86	36.11	53.18	93.61	117.11	44.49	36.48	593.68
2	1979	36.45	32.86	36.30	35.05	36.16	35.03	41.96	82.59	80.12	100.29	48.09	36.50	601.42
3	1980	36.47	34.06	36.33	35.08	36.19	35.08	38.24	38.30	62.54	86.41	69.54	36.37	544.61
4	1981	36.36	32.80	36.24	34.99	36.09	34.98	36.32	42.12	55.37	86.31	48.09	36.51	516.18
5	1982	36.48	32.89	36.34	35.10	38.22	35.24	53.31	75.29	93.52	79.19	40.74	35.13	591.44
6	1983	36.40	32.81	36.25	34.99	36.08	34.87	37.92	38.11	40.73	79.07	62.50	36.50	506.23
7	1984	36.48	34.08	36.36	35.11	36.23	35.10	38.23	89.64	96.92	107.11	37.14	36.44	618.83
8	1985	36.42	32.84	36.28	35.04	36.19	35.09	36.41	42.07	37.04	68.24	44.38	36.42	476.41
9	1986	36.42	32.84	36.29	35.04	36.16	35.02	36.34	86.22	106.44	116.33	65.84	36.46	659.40
10	1987	36.47	32.90	36.35	35.11	37.50	34.92	36.32	42.17	83.54	89.86	44.42	36.45	546.00
11	1988	36.44	34.04	36.32	35.07	36.18	35.01	36.27	36.42	37.17	42.17	37.13	36.49	438.70
12	1989	36.46	32.88	36.33	35.10	36.25	36.90	38.22	42.10	83.47	92.17	33.93	15.42	519.24
	TOTAL	437.3	397.9	435.7	420.7	437.4	423.1	465.7	668.2	870.5	1064.3	576.3	415.2	6612.1
	AVE	36.44	33.16	36.31	35.06	36.45	35.26	38.80	55.68	72.54	88.69	48.02	34.60	551.01
	MAX	36.48	34.08	36.36	35.11	38.22	36.90	53.31	89.64	106.44	117.11	69.54	36.51	659.40
	MIN	36.36	32.80	36.24	34.99	36.08	34.87	36.11	36.42	37.04	42.17	33.93	15.42	438.70

Result of Monthly Capacity
(The Dong Nai river system case-3 Da Mi - project)

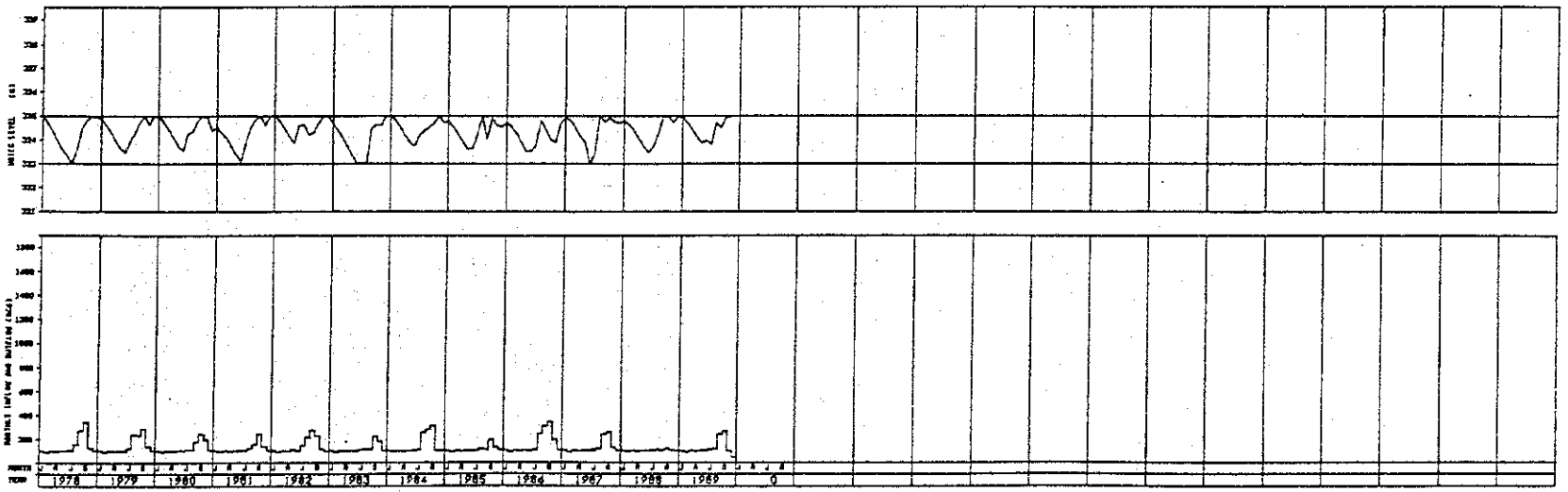
* MONTHLY PEAK POWER (MW) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	49.02	48.92	48.80	48.68	48.58	49.80	48.53	71.47	130.01	157.41	61.80	49.03	812.05
2	1979	48.99	48.90	48.79	48.69	48.61	48.66	56.40	111.01	111.28	134.80	66.80	49.06	821.97
3	1980	49.02	48.93	48.83	48.72	48.64	48.72	51.39	51.48	86.86	116.15	96.58	48.89	744.22
4	1981	48.88	48.81	48.71	48.60	48.50	48.58	48.81	56.62	76.91	116.01	66.79	49.07	706.28
5	1982	49.03	48.94	48.84	48.75	51.37	48.95	71.66	101.20	129.89	106.44	56.58	47.22	808.85
6	1983	48.92	48.83	48.72	48.60	48.49	48.43	50.97	51.22	56.57	106.28	86.80	49.06	692.89
7	1984	49.04	48.96	48.86	48.76	48.69	48.74	51.39	120.48	134.61	143.97	51.58	48.98	844.07
8	1985	48.95	48.87	48.77	48.67	48.64	48.74	48.94	56.54	51.44	91.71	61.64	48.95	651.86
9	1986	48.95	48.87	48.77	48.66	48.60	48.64	48.84	115.88	147.84	156.36	91.45	49.01	901.87
10	1987	49.02	48.95	48.86	48.76	50.40	48.50	48.82	56.68	116.03	120.78	61.70	48.99	747.48
11	1988	48.97	48.91	48.81	48.71	48.62	48.62	48.75	48.95	51.62	56.68	51.57	49.05	599.27
12	1989	49.01	48.93	48.84	48.75	48.73	51.26	51.37	56.58	115.94	123.88	47.12	20.72	711.13
	TOTAL	587.79	586.82	585.62	584.35	587.86	587.64	625.88	898.12	1209.01	1430.45	800.39	558.04	9041.95
	AVE	48.98	48.90	48.80	48.70	48.99	48.97	52.16	74.84	100.75	119.20	66.70	46.50	753.50
	MAX	49.04	48.96	48.86	48.76	51.37	51.26	71.66	120.48	147.84	157.41	96.58	49.07	901.87
	MIN	48.88	48.81	48.71	48.60	48.49	48.43	48.53	48.95	51.44	56.68	47.12	20.72	599.27

Result of Capacity Duration
(The Dong Nai river system case-3 Da Mi - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7810	157.4	61	8401	49.0	121	7904	48.7	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	8610	156.4	62	7812	49.0	122	7804	48.7	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	8609	147.8	63	8201	49.0	123	8504	48.7	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	8410	144.0	64	8001	49.0	124	8604	48.7	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	7910	134.8	65	8701	49.0	125	7906	48.7	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8409	134.6	66	7801	49.0	126	8005	48.6	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	7809	130.0	67	8901	49.0	127	8606	48.6	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8209	129.9	68	8612	49.0	128	8505	48.6	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8910	123.9	69	8712	49.0	129	8806	48.6	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8710	120.8	70	7901	49.0	130	8805	48.6	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8408	120.5	71	8412	49.0	131	7905	48.6	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8010	116.1	72	8801	49.0	132	8304	48.6	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8709	116.0	73	8402	49.0	133	8104	48.6	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	8110	116.0	74	8808	49.0	134	8605	48.6	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	8909	115.9	75	8702	49.0	135	7805	48.6	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	8608	115.9	76	8501	49.0	136	8106	48.6	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	7909	111.3	77	8512	48.9	137	7807	48.5	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	7908	111.0	78	8206	48.9	138	8105	48.5	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	8210	106.4	79	8601	48.9	139	8706	48.5	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8310	106.3	80	8202	48.9	140	8305	48.5	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8208	101.2	81	8507	48.9	141	8306	48.4	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	8011	96.6	82	8002	48.9	142	8212	47.2	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8510	91.7	83	8902	48.9	143	8911	47.1	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8611	91.4	84	8301	48.9	144	8912	20.7	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8009	86.9	85	7802	48.9	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8311	86.8	86	8802	48.9	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8109	76.9	87	7902	48.9	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8207	71.7	88	8012	48.9	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	7808	71.5	89	8101	48.9	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	7911	66.8	90	8602	48.9	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	8111	66.8	91	8502	48.9	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	7811	61.8	92	8403	48.9	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8711	61.7	93	8703	48.9	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	8511	61.6	94	8203	48.8	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	8708	56.7	95	8607	48.8	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	8810	56.7	96	8903	48.8	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8108	56.6	97	8003	48.8	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8908	56.6	98	8302	48.8	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8211	56.6	99	8707	48.8	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8309	56.6	100	8107	48.8	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8508	56.5	101	8803	48.8	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	7907	56.4	102	8102	48.8	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	8809	51.6	103	7803	48.8	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	8411	51.6	104	7903	48.8	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8811	51.6	105	8603	48.8	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	8008	51.5	106	8503	48.8	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8509	51.4	107	8404	48.8	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	8007	51.4	108	8704	48.8	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	8407	51.4	109	8807	48.8	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	8907	51.4	110	8904	48.7	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	8205	51.4	111	8204	48.7	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	8906	51.3	112	8406	48.7	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	8308	51.2	113	8506	48.7	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8307	51.0	114	8905	48.7	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8705	50.4	115	8004	48.7	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	7806	49.8	116	8303	48.7	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8112	49.1	117	8006	48.7	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	7912	49.1	118	8103	48.7	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	8312	49.1	119	8804	48.7	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8812	49.0	120	8405	48.7	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-3 Da Mi - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-3 Tri Anh - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	170.77	92.96	99.08	92.07	90.20	82.50	133.23	269.23	284.10	293.57	180.28	105.84	1893.83
2	1979	103.98	91.33	97.50	90.81	87.80	118.72	255.81	290.52	284.10	293.57	208.64	105.83	2028.62
3	1980	104.08	94.72	97.68	90.95	87.84	143.26	156.27	250.39	266.09	293.57	284.10	132.91	2001.86
4	1981	104.10	91.83	98.34	91.59	88.11	150.85	146.63	272.76	284.10	293.57	208.98	141.10	1971.97
5	1982	103.19	102.43	120.84	85.24	226.51	82.71	228.49	252.04	278.74	293.57	125.61	107.89	2007.26
6	1983	106.23	93.53	100.05	93.09	91.44	83.26	158.49	259.31	260.96	293.01	266.63	130.26	1936.26
7	1984	107.25	93.96	96.96	90.44	87.67	111.70	190.48	276.80	284.10	293.57	158.45	140.95	1932.33
8	1985	102.96	90.32	118.74	87.71	86.28	128.23	92.25	188.70	279.01	288.36	188.91	151.74	1803.18
9	1986	117.26	95.57	96.47	89.52	86.97	86.26	204.86	273.61	284.10	293.57	275.97	148.94	2053.12
10	1987	104.07	91.86	98.22	91.72	88.33	110.84	246.30	264.17	284.10	293.57	198.75	131.28	2003.22
11	1988	103.68	94.70	97.83	91.30	88.08	86.43	91.70	96.97	169.53	288.80	238.43	130.45	1577.89
12	1989	103.18	102.46	118.37	87.86	96.33	127.09	246.84	268.00	284.10	293.57	105.46	65.32	1898.60
	TOTAL	1330.8	1135.7	1240.1	1082.3	1205.6	1311.8	2151.4	2962.5	3243.1	3512.3	2440.2	1492.5	23108.1
	AVE	110.90	94.64	103.34	90.19	100.46	109.32	179.28	246.87	270.25	292.69	203.35	124.38	1925.68
	MAX	170.77	102.46	120.84	93.09	226.51	150.85	255.81	290.52	284.10	293.57	284.10	151.74	2053.12
	MIN	102.96	90.32	96.47	85.24	86.28	82.50	91.70	96.97	169.53	288.36	105.46	65.32	1577.89

Result of Monthly Capacity
(The Dong Nai river system case-3 Tri Anh - project)

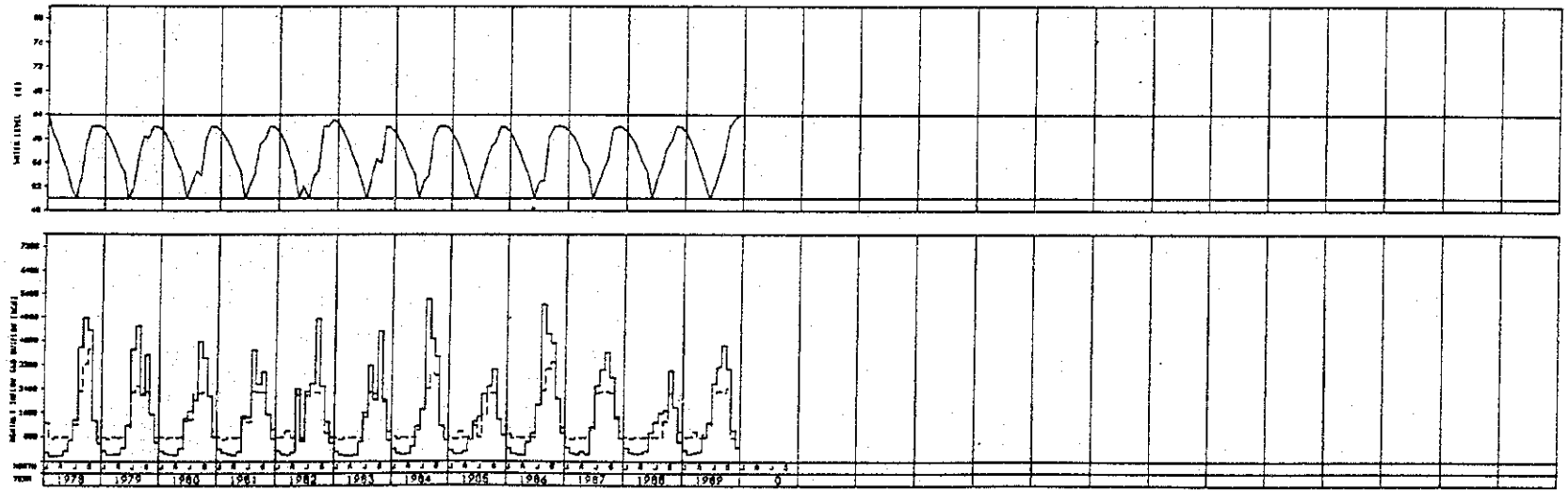
* MONTHLY PEAK POWER (MW) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	229.53	138.34	133.18	127.88	121.23	114.58	179.07	361.86	394.59	394.59	250.39	142.26	2587.49
2	1979	139.76	135.91	131.05	126.13	118.01	164.89	343.83	390.48	394.59	394.59	289.78	142.24	2771.26
3	1980	139.89	136.09	131.29	126.31	118.06	198.98	210.04	336.54	369.57	394.59	394.59	178.64	2734.60
4	1981	139.92	136.65	132.17	127.21	118.43	209.52	197.08	366.61	394.59	394.59	290.25	189.65	2696.67
5	1982	138.69	152.43	162.42	118.40	304.45	114.87	307.11	338.76	387.15	394.59	174.46	145.02	2738.33
6	1983	142.78	139.19	134.47	129.29	122.91	115.64	213.02	348.54	362.44	393.83	370.31	175.08	2647.51
7	1984	144.16	135.01	130.32	125.61	117.84	155.14	256.03	372.04	394.59	394.59	220.06	189.44	2634.82
8	1985	138.39	134.40	159.59	121.81	115.96	178.09	123.99	253.63	387.52	387.57	262.37	203.95	2467.28
9	1986	157.61	142.21	129.66	124.34	116.90	119.80	275.35	367.76	394.59	394.59	383.29	200.19	2806.30
10	1987	139.88	136.70	132.02	127.38	118.73	153.95	331.05	355.07	394.59	394.59	276.04	176.45	2736.44
11	1988	139.36	136.06	131.50	126.81	118.38	120.04	123.25	130.34	235.45	388.17	331.15	175.34	2155.85
12	1989	138.68	152.47	159.10	122.03	129.47	176.52	331.77	360.22	394.59	394.59	146.48	87.79	2593.72
	TOTAL	1788.65	1675.44	1666.77	1503.20	1620.38	1822.01	2891.60	3981.85	4504.25	4720.89	3389.17	2006.05	31570.25
	AVE	149.05	139.62	138.90	125.27	135.03	151.83	240.97	331.82	375.35	393.41	282.43	167.17	2630.85
	MAX	229.53	152.47	162.42	129.29	304.45	209.52	343.83	390.48	394.59	394.59	394.59	203.95	2806.30
	MIN	138.39	134.40	129.66	118.40	115.96	114.58	123.25	130.34	235.45	387.57	146.48	87.79	2155.85

Result of Capacity Duration
(The Dong Nai river system case-3 Tri Anh - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7810	394.6	61	8112	189.6	121	7904	126.1	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	7909	394.6	62	8412	189.4	122	8404	125.6	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	7910	394.6	63	7807	179.1	123	8604	124.3	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	8010	394.6	64	8012	178.6	124	8507	124.0	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	8011	394.6	65	8506	178.1	125	8807	123.3	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8109	394.6	66	8906	176.5	126	8305	122.9	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	8110	394.6	67	8712	176.4	127	8904	122.0	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8210	394.6	68	8812	175.3	128	8504	121.8	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8409	394.6	69	8312	175.1	129	7805	121.2	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8410	394.6	70	8211	174.5	130	8806	120.0	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8609	394.6	71	7906	164.9	131	8606	119.8	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8610	394.6	72	8203	162.4	132	8705	118.7	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8910	394.6	73	8503	159.6	133	8105	118.4	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	7809	394.6	74	8903	159.1	134	8204	118.4	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	8709	394.6	75	8601	157.6	135	8805	118.4	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	8710	394.6	76	8406	155.1	136	8005	118.1	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	8909	394.6	77	8706	153.9	137	7905	118.0	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	8310	393.8	78	8902	152.5	138	8405	117.8	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	7908	390.5	79	8202	152.4	139	8605	116.9	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8810	388.2	80	8911	146.5	140	8505	116.0	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8510	387.6	81	8212	145.0	141	8306	115.6	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	8509	387.5	82	8401	144.2	142	8206	114.9	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8209	387.1	83	8301	142.8	143	7806	114.6	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8611	383.3	84	7812	142.3	144	8912	87.8	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8408	372.0	85	7912	142.2	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8311	370.3	86	8602	142.2	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8009	369.6	87	8101	139.9	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8608	367.8	88	8001	139.9	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	8108	366.6	89	8701	139.9	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	8309	362.4	90	7901	139.8	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	7808	361.9	91	8801	139.4	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	8908	360.2	92	8302	139.2	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8708	355.1	93	8201	138.7	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	8308	348.5	94	8901	138.7	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	7907	343.8	95	8501	138.4	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	8208	338.8	96	7802	138.3	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8008	336.5	97	8702	136.7	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8907	331.8	98	8102	136.7	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8811	331.1	99	8002	136.1	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8707	331.1	100	8802	136.1	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8207	307.1	101	7902	135.9	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	8205	304.4	102	8402	135.0	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	8111	290.3	103	8303	134.5	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	7911	289.8	104	8502	134.4	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8711	276.0	105	7803	133.2	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	8607	275.4	106	8103	132.2	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8511	262.4	107	8703	132.0	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	8407	256.0	108	8803	131.5	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	8508	253.6	109	8003	131.3	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	7811	250.4	110	7903	131.1	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	8809	235.5	111	8808	130.3	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	7801	229.5	112	8403	130.3	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	8411	220.1	113	8603	129.7	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8307	213.0	114	8905	129.5	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8007	210.0	115	8304	129.3	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	8106	209.5	116	7804	127.9	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8512	203.9	117	8704	127.4	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	8612	200.2	118	8104	127.2	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	8006	199.0	119	8804	126.8	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8107	197.1	120	8004	126.3	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-3 Tri Anh - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-4 Dai Ninh - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	24.69	82.31	100.35	96.39	98.82	95.13	165.42	220.08	215.27	222.44	173.94	66.31	1561.14
2	1979	74.62	90.91	100.02	96.06	98.52	143.93	219.99	222.44	215.27	222.44	208.41	71.32	1763.93
3	1980	72.24	94.18	100.06	96.09	98.53	173.02	199.55	216.32	214.38	222.44	215.27	95.47	1797.54
4	1981	76.31	90.99	100.17	96.23	98.61	168.51	189.99	220.24	215.27	222.44	214.46	101.11	1794.33
5	1982	100.82	97.87	107.54	99.97	182.37	191.15	217.04	220.18	215.27	222.44	168.32	69.99	1892.96
6	1983	31.50	71.71	100.50	96.57	98.95	95.16	192.86	219.06	215.27	222.44	215.27	80.30	1639.60
7	1984	98.99	94.07	99.93	95.97	98.48	139.61	206.63	220.88	215.27	222.44	144.38	101.13	1737.76
8	1985	100.83	90.60	99.64	95.68	101.66	158.12	178.23	216.91	212.73	222.44	180.79	109.35	1766.99
9	1986	100.96	90.78	99.87	95.85	100.87	108.53	215.86	221.06	215.27	222.44	215.27	112.40	1799.15
10	1987	80.69	91.00	100.16	96.28	98.67	135.54	217.62	222.31	215.27	222.44	188.16	88.90	1757.03
11	1988	88.11	94.18	100.08	96.18	98.60	111.54	144.78	167.40	169.70	198.56	200.94	101.11	1571.18
12	1989	100.78	90.55	99.62	95.71	115.24	153.62	217.81	222.44	215.27	222.44	127.65	58.94	1720.07
	TOTAL	950.5	1079.1	1207.9	1157.0	1289.3	1673.9	2365.8	2589.3	2534.2	2645.4	2252.8	1056.3	20801.7
	AVE	79.21	89.93	100.66	96.41	107.44	139.49	197.15	215.78	211.18	220.45	187.74	88.03	1733.47
	MAX	100.96	97.87	107.54	99.97	182.37	191.15	219.99	222.44	215.27	222.44	215.27	112.40	1892.96
	MIN	24.69	71.71	99.62	95.68	98.48	95.13	144.78	167.40	169.70	198.56	127.65	58.94	1561.14

Result of Monthly Capacity
(The Dong Nai river system case-4 Dai Ninh - project)

* MONTHLY PEAK POWER (MW) *

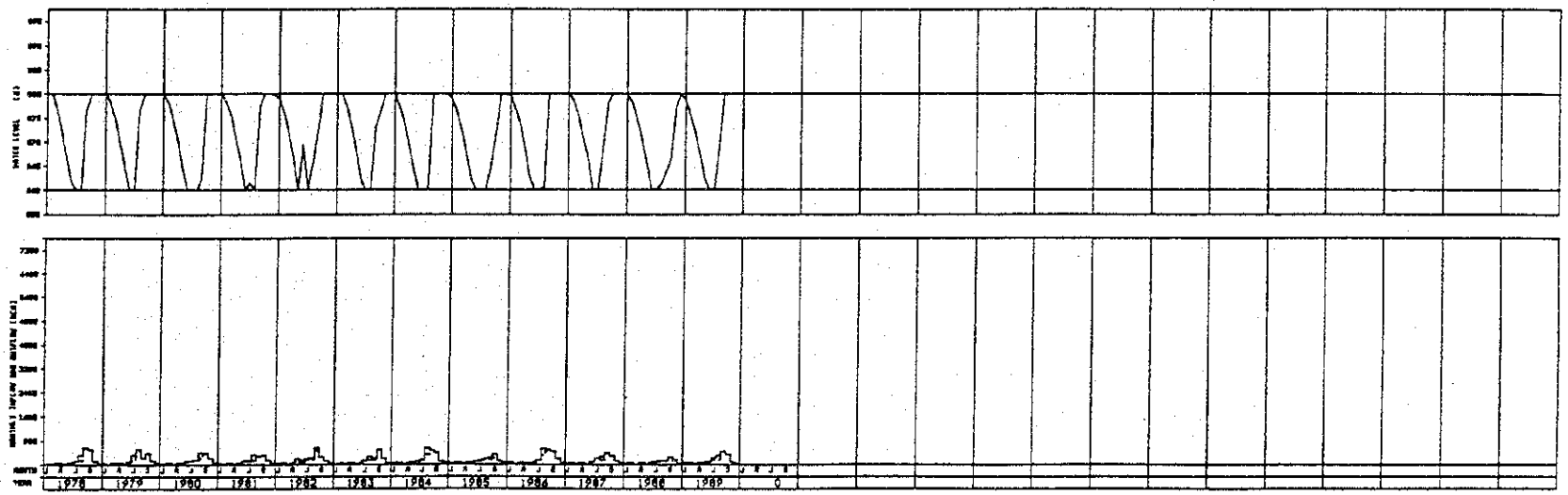
NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	33.18	122.48	134.89	133.87	132.82	132.13	222.34	295.80	298.98	298.98	241.58	89.13	2136.18
2	1979	100.29	135.29	134.44	133.41	132.42	199.91	295.69	298.98	298.98	298.98	289.45	95.86	2413.70
3	1980	97.10	135.32	134.48	133.46	132.43	240.31	268.21	290.75	297.75	298.98	298.98	128.32	2456.09
4	1981	102.56	135.40	134.64	133.65	132.54	234.05	255.36	296.02	298.98	298.98	297.86	135.91	2455.96
5	1982	135.52	145.65	144.54	138.85	245.13	265.48	291.73	295.93	298.98	298.98	233.77	94.07	2588.63
6	1983	42.34	106.71	135.08	134.13	133.00	132.17	259.22	294.44	298.98	298.98	298.98	107.93	2241.97
7	1984	133.05	135.15	134.31	133.30	132.36	193.90	277.73	296.88	298.98	298.98	200.52	135.93	2371.09
8	1985	135.52	134.82	133.93	132.89	136.64	219.62	239.55	291.55	295.45	298.98	251.10	146.98	2417.03
9	1986	135.70	135.09	134.23	133.12	135.57	150.74	290.13	297.12	298.98	298.98	298.98	151.08	2459.73
10	1987	108.45	135.42	134.62	133.72	132.62	188.25	292.50	298.80	298.98	298.98	261.34	119.49	2403.16
11	1988	118.43	135.31	134.52	133.58	132.52	154.92	194.59	225.00	235.69	266.88	279.08	135.90	2146.44
12	1989	135.45	134.75	133.90	132.93	154.90	213.36	292.75	298.98	298.98	298.98	177.29	79.22	2351.50
	TOTAL	1277.60	1591.38	1623.58	1606.91	1732.94	2324.83	3179.80	3480.27	3519.74	3555.69	3128.95	1419.82	28441.48
	AVE	106.47	132.62	135.30	133.91	144.41	193.74	264.98	290.02	293.31	296.31	260.75	118.32	2370.12
	MAX	135.70	145.65	144.54	138.85	245.13	265.48	295.69	298.98	298.98	298.98	298.98	151.08	2588.63
	MIN	33.18	106.71	133.90	132.89	132.36	132.13	194.59	225.00	235.69	266.88	177.29	79.22	2136.18

Result of Capacity Duration

(The Dong Nai river system case-4 Dai Ninh - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7809	299.0	61	7807	222.3	121	8705	132.6	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0			
2	7810	299.0	62	8506	219.6	122	8105	132.5	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0			
3	7908	299.0	63	8906	213.4	123	8805	132.5	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0			
4	7909	299.0	64	8411	200.5	124	8005	132.4	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0			
5	7910	299.0	65	7906	199.9	125	7905	132.4	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0			
6	8010	299.0	66	8807	194.6	126	8405	132.4	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0			
7	8011	299.0	67	8406	193.9	127	8306	132.2	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0			
8	8109	299.0	68	8706	188.2	128	7806	132.1	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0			
9	8110	299.0	69	8911	177.3	129	8012	128.3	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0			
10	8210	299.0	70	8806	154.9	130	7802	122.5	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0			
11	8309	299.0	71	8905	154.9	131	8712	119.5	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0			
12	8310	299.0	72	8612	151.1	132	8801	118.4	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0			
13	8311	299.0	73	8606	150.7	133	8701	108.5	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0			
14	8409	299.0	74	8512	147.0	134	8312	107.9	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0			
15	8410	299.0	75	8202	145.6	135	8302	106.7	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0			
16	8510	299.0	76	8203	144.5	136	8101	102.6	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0			
17	8609	299.0	77	8204	138.9	137	7901	100.3	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0			
18	8610	299.0	78	8505	136.6	138	8001	97.1	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0			
19	8611	299.0	79	8412	135.9	139	7912	95.9	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0			
20	8709	299.0	80	8112	135.9	140	8212	94.1	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0			
21	8710	299.0	81	8812	135.9	141	7812	89.1	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0			
22	8908	299.0	82	8601	135.7	142	8912	79.2	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0			
23	8909	299.0	83	8605	135.6	143	8301	42.3	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0			
24	8910	299.0	84	8501	135.5	144	7801	33.2	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0			
25	8209	299.0	85	8201	135.5	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0			
26	8708	298.8	86	8901	135.5	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0			
27	8111	297.9	87	8702	135.4	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0			
28	8009	297.7	88	8102	135.4	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0			
29	8608	297.1	89	8002	135.3	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0			
30	8408	296.9	90	8802	135.3	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0			
31	8108	296.0	91	7902	135.3	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0			
32	8208	295.9	92	8402	135.2	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0			
33	7808	295.8	93	8602	135.1	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0			
34	7907	295.7	94	8303	135.1	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0			
35	8509	295.5	95	7803	134.9	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0			
36	8308	294.4	96	8502	134.8	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0			
37	8907	292.7	97	8902	134.7	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0			
38	8707	292.5	98	8103	134.6	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0			
39	8207	291.7	99	8703	134.6	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0			
40	8508	291.5	100	8803	134.5	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0			
41	8008	290.8	101	8003	134.5	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0			
42	8607	290.1	102	7903	134.4	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0			
43	7911	289.5	103	8403	134.3	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0			
44	8811	279.1	104	8603	134.2	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0			
45	8407	277.7	105	8304	134.1	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0			
46	8007	268.2	106	8503	133.9	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0			
47	8810	266.9	107	8903	133.9	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0			
48	8206	265.5	108	7804	133.9	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0			
49	8711	261.3	109	8704	133.7	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0			
50	8307	259.2	110	8104	133.7	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0			
51	8107	255.4	111	8804	133.6	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0			
52	8511	251.1	112	8004	133.5	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0			
53	8205	245.1	113	7904	133.4	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0			
54	7811	241.6	114	8404	133.3	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0			
55	8006	240.3	115	8604	133.1	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0			
56	8507	239.6	116	8401	133.0	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0			
57	8809	235.7	117	8305	133.0	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0			
58	8106	234.0	118	8904	132.9	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0			
59	8211	233.8	119	8504	132.9	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0			
60	8808	225.0	120	7805	132.8	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0			

Result of Reservoir Operation
(The Dong Nai river system case-4 Dai Ninh - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-4 Tri Anh - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	190.36	76.46	81.60	76.00	73.36	67.22	134.11	275.17	284.10	293.57	178.96	119.73	1850.66
2	1979	95.51	75.28	80.58	75.36	73.13	119.14	256.95	290.52	284.10	293.57	208.89	119.64	1972.68
3	1980	94.45	78.10	80.75	75.48	73.16	144.52	174.56	250.40	269.46	293.57	284.10	151.64	1970.20
4	1981	96.07	76.16	81.41	76.04	73.41	152.52	165.24	274.06	284.10	293.57	208.92	140.85	1922.35
5	1982	85.94	93.25	115.59	71.02	218.69	67.37	233.61	254.50	279.17	293.57	173.81	88.54	1975.07
6	1983	87.38	77.00	82.42	76.86	74.43	67.93	159.65	266.01	268.82	293.57	266.71	130.18	1850.97
7	1984	96.03	96.62	84.11	75.04	73.01	111.70	197.74	274.78	284.10	293.57	158.46	130.46	1875.62
8	1985	96.10	84.17	108.92	80.79	75.98	128.26	77.48	234.56	281.44	293.57	188.78	151.49	1801.54
9	1986	106.51	84.09	97.30	72.94	71.07	85.90	210.96	271.91	284.10	293.57	276.07	162.04	2016.48
10	1987	102.86	75.88	81.33	76.18	73.62	111.01	248.18	271.23	284.10	293.57	189.07	141.15	1948.20
11	1988	106.64	84.51	80.90	75.80	73.38	86.43	76.90	82.12	236.15	293.57	238.15	119.84	1554.38
12	1989	106.54	75.25	118.67	80.98	87.14	127.65	249.75	275.19	284.10	293.57	87.68	65.32	1851.85
	TOTAL	1264.4	976.8	1093.6	912.5	1040.4	1269.7	2185.1	3020.5	3323.8	3522.9	2459.6	1520.9	22590.0
	AVE	105.37	81.40	91.13	76.04	86.70	105.80	182.10	251.70	276.98	293.57	204.97	126.74	1882.50
	MAX	190.36	96.62	118.67	80.98	218.69	152.52	256.95	290.52	284.10	293.57	284.10	162.04	2016.48
	MIN	85.94	75.25	80.58	71.02	71.07	67.22	76.90	82.12	236.15	293.57	87.68	65.32	1554.38

Result of Monthly Capacity
(The Dong Nai river system case-4 Tri Anh - project).

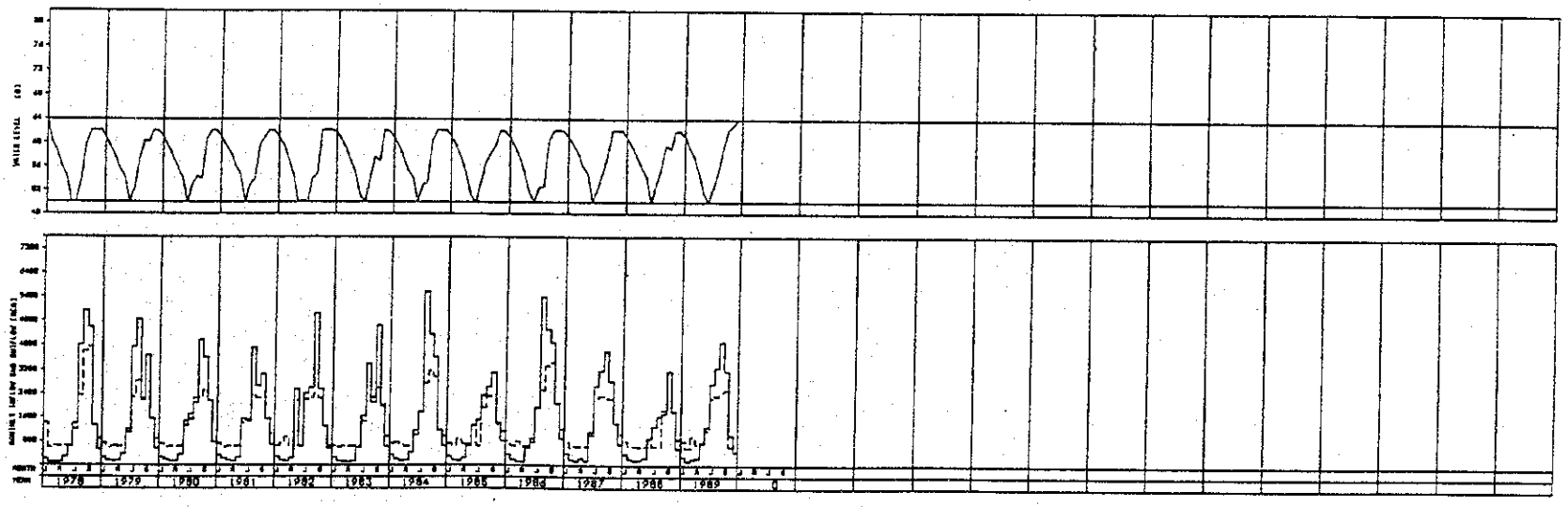
* MONTHLY PEAK POWER (MW) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	255.87	113.79	109.68	105.55	98.60	93.36	180.26	369.86	394.59	394.59	248.55	160.93	2525.63
2	1979	128.38	112.03	108.30	104.67	98.29	165.47	345.37	390.48	394.59	394.59	290.12	160.81	2693.10
3	1980	126.95	112.21	108.54	104.83	98.34	200.72	234.63	336.56	374.26	394.59	394.59	203.81	2690.02
4	1981	129.12	113.33	109.42	105.61	98.67	211.83	222.10	368.35	394.59	394.59	290.16	189.32	2627.10
5	1982	115.51	138.77	155.36	98.65	293.94	93.57	314.00	342.08	387.74	394.59	241.41	119.00	2694.60
6	1983	117.45	114.58	110.77	106.75	100.05	94.35	214.59	357.55	373.36	394.59	370.43	174.98	2529.44
7	1984	129.07	138.82	113.05	104.22	98.13	155.14	265.78	369.33	394.59	394.59	220.08	175.36	2558.14
8	1985	129.17	125.25	146.40	112.20	102.13	178.14	104.14	315.27	390.89	394.59	262.19	203.61	2463.98
9	1986	143.15	125.13	130.79	101.30	95.53	119.31	283.56	365.47	394.59	394.59	383.43	217.80	2754.65
10	1987	138.26	112.92	109.31	105.81	98.95	154.18	333.57	364.56	394.59	394.59	262.60	189.72	2659.07
11	1988	143.34	121.42	108.74	105.27	98.62	120.04	103.35	110.37	327.99	394.59	330.76	161.07	2125.57
12	1989	143.20	111.98	159.50	112.47	117.13	177.29	335.68	369.89	394.59	394.59	121.77	87.79	2525.89
	TOTAL	1699.46	1440.21	1469.86	1267.33	1398.38	1763.41	2937.02	4059.76	4616.37	4735.08	3416.10	2044.19	30847.16
	AVE	141.62	120.02	122.49	105.61	116.53	146.95	244.75	338.31	384.70	394.59	284.68	170.35	2570.60
	MAX	255.87	138.82	159.50	112.47	293.94	211.83	345.37	390.48	394.59	394.59	394.59	217.80	2754.65
	MIN	115.51	111.98	108.30	98.65	95.53	93.36	103.35	110.37	327.99	394.59	121.77	87.79	2125.57

Result of Capacity Duration
(The Dong Nai river system case-4 Tri Anh - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7810	394.6	61	8512	203.6	121	8104	105.6	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	7909	394.6	62	8006	200.7	122	7804	105.6	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	8010	394.6	63	8712	189.7	123	8804	105.3	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	8011	394.6	64	8112	189.3	124	8004	104.8	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	8109	394.6	65	7807	180.3	125	7904	104.7	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8110	394.6	66	8506	178.1	126	8404	104.2	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	8210	394.6	67	8906	177.3	127	8507	104.1	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8409	394.6	68	8412	175.4	128	8807	103.4	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8410	394.6	69	8312	175.0	129	8505	102.1	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8510	394.6	70	7906	165.5	130	8604	101.3	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8609	394.6	71	8812	161.1	131	8305	100.0	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8610	394.6	72	7812	160.9	132	8705	99.0	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8710	394.6	73	7912	160.8	133	8105	98.7	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	8909	394.6	74	8903	159.5	134	8204	98.6	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	8910	394.6	75	8203	155.4	135	8805	98.6	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	7910	394.6	76	8406	155.1	136	7805	98.6	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	8310	394.6	77	8706	154.2	137	8005	98.3	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	7809	394.6	78	8503	146.4	138	7905	98.3	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	8709	394.6	79	8801	143.3	139	8405	98.1	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8810	394.6	80	8901	143.2	140	8605	95.5	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8509	390.9	81	8601	143.2	141	8306	94.3	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	7908	390.5	82	8402	138.8	142	8206	93.6	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8209	387.7	83	8202	138.8	143	7806	93.4	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8611	383.4	84	8701	138.3	144	8912	87.8	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8009	374.3	85	8603	130.8	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8309	373.4	86	8501	129.2	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8311	370.4	87	8101	129.1	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8908	369.9	88	8401	129.1	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	7808	369.9	89	7901	128.4	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	8408	369.3	90	8001	126.9	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	8108	368.4	91	8502	125.2	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	8608	365.5	92	8602	125.1	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8708	364.6	93	8911	121.8	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	8308	357.5	94	8802	121.4	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	7907	345.4	95	8806	120.0	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	8208	342.1	96	8606	119.3	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8008	336.6	97	8212	119.0	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8907	335.7	98	8301	117.4	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8707	333.6	99	8905	117.1	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8811	330.8	100	8201	115.5	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8809	328.0	101	8302	114.6	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	8508	315.3	102	7802	113.8	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	8207	314.0	103	8102	113.3	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	8205	293.9	104	8403	113.1	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8111	290.2	105	8702	112.9	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	7911	290.1	106	8904	112.5	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8607	283.6	107	8002	112.2	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	8407	265.8	108	8504	112.2	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	8711	262.6	109	7902	112.0	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	8511	262.2	110	8902	112.0	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	7801	255.9	111	8303	110.8	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	7811	248.6	112	8808	110.4	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	8211	241.4	113	7803	109.7	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8007	234.6	114	8103	109.4	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8107	222.1	115	8703	109.3	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	8411	220.1	116	8803	108.7	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8612	217.8	117	8003	108.5	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	8307	214.6	118	7903	108.3	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	8106	211.8	119	8304	106.7	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8012	203.8	120	8704	105.8	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-4 Tri Anh - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-5 Dong Nai4 - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	36.80	31.99	33.41	29.84	28.47	27.47	91.81	130.92	136.66	141.22	106.82	44.02	839.42
2	1979	36.81	32.21	33.99	30.94	30.46	87.65	130.92	141.22	136.66	141.22	120.04	48.93	971.03
3	1980	36.81	33.41	34.13	31.06	30.46	49.56	140.52	137.12	136.66	141.22	136.66	63.44	971.04
4	1981	37.03	32.75	34.94	32.02	31.17	72.06	127.03	140.36	136.66	141.22	120.04	58.59	963.87
5	1982	36.85	32.31	34.17	31.50	110.24	130.03	124.06	141.22	136.66	141.22	102.53	44.80	1065.59
6	1983	36.98	32.34	34.09	30.83	29.04	27.30	99.52	133.72	136.66	141.22	136.66	53.80	892.15
7	1984	37.05	33.87	34.74	31.93	31.97	78.84	121.22	140.59	136.66	141.22	93.49	53.71	935.28
8	1985	36.86	32.34	34.24	31.60	32.56	64.89	140.32	137.53	136.66	141.22	111.05	63.34	962.60
9	1986	37.17	32.84	34.87	31.84	32.19	78.07	117.36	140.75	136.66	141.22	136.66	73.08	992.69
10	1987	37.25	33.01	35.14	32.54	31.91	83.94	123.20	141.22	136.66	141.22	111.35	58.65	966.08
11	1988	37.15	34.06	35.10	32.42	31.99	31.77	85.07	139.28	124.69	141.22	136.66	48.96	878.36
12	1989	36.95	32.43	34.53	32.14	33.42	122.89	130.89	141.22	136.66	141.22	81.91	37.48	961.72
TOTAL		443.7	393.5	413.3	378.6	453.9	854.5	1431.9	1665.1	1628.0	1694.6	1393.9	648.8	11399.8
AVE		36.97	32.80	34.44	31.55	37.82	71.21	119.33	138.76	135.66	141.22	116.15	54.07	949.99
MAX		37.25	34.06	35.14	32.54	110.24	130.03	140.52	141.22	136.66	141.22	136.66	73.08	1065.59
MIN		36.80	31.99	33.41	29.84	28.47	27.30	85.07	130.92	124.69	141.22	81.91	37.48	839.42

Result of Monthly Capacity
(The Dong Nai river system case-5 Dong Nai4 - project)

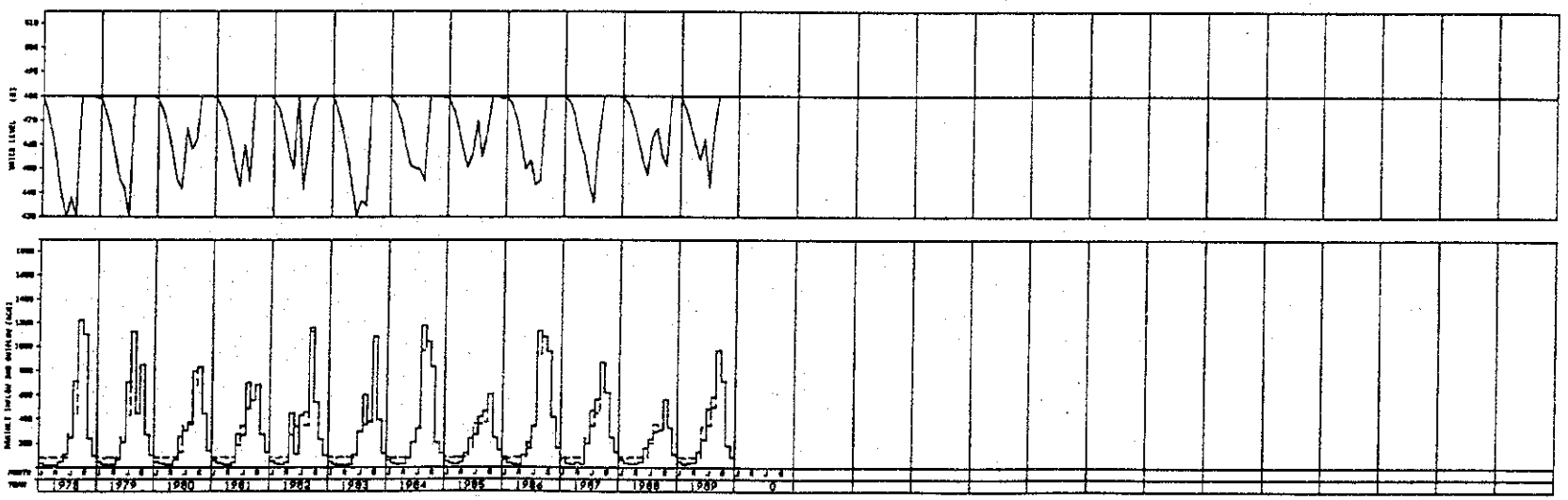
= MONTHLY PEAK POWER (MW) =

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	49.46	47.60	44.91	41.45	38.26	38.15	123.41	175.97	189.81	189.81	148.36	59.16	1146.33
2	1979	49.48	47.94	45.69	42.97	40.94	121.74	175.97	189.81	189.81	189.81	166.72	65.76	1326.61
3	1980	49.48	48.01	45.87	43.14	40.94	68.83	188.87	184.30	189.81	189.81	189.81	85.27	1324.12
4	1981	49.77	48.73	46.96	44.47	41.90	100.09	170.74	188.66	189.81	189.81	166.72	78.75	1316.40
5	1982	49.53	48.08	45.93	43.75	148.18	180.59	166.75	189.81	189.81	189.81	142.40	60.21	1454.85
6	1983	49.70	48.12	45.82	42.82	39.03	37.92	133.76	179.73	189.81	189.81	189.81	72.31	1218.63
7	1984	49.80	48.66	46.69	44.34	42.97	109.51	162.93	188.97	189.81	189.81	129.85	72.19	1275.51
8	1985	49.54	48.12	46.02	43.89	43.77	90.12	188.60	184.85	189.81	189.81	154.23	85.13	1313.89
9	1986	49.96	48.87	46.86	44.22	43.27	108.43	157.74	189.18	189.81	189.81	189.81	98.22	1356.17
10	1987	50.07	49.12	47.23	45.19	42.89	116.59	165.59	189.81	189.81	189.81	154.65	78.84	1319.58
11	1988	49.93	48.94	47.17	45.02	43.00	44.12	114.34	187.20	173.18	189.81	189.81	65.81	1198.33
12	1989	49.66	48.25	46.41	44.64	44.92	170.68	175.92	189.81	189.81	189.81	113.77	50.38	1314.05
TOTAL		596.37	580.44	555.56	525.90	610.06	1186.77	1924.61	2238.09	2261.05	2277.67	1935.91	872.04	15564.46
AVE		49.70	48.37	46.30	43.83	50.84	98.90	160.38	186.51	188.42	189.81	161.33	72.67	1297.04
MAX		50.07	49.12	47.23	45.19	148.18	180.59	188.87	189.81	189.81	189.81	189.81	98.22	1454.85
MIN		49.46	47.60	44.91	41.45	38.26	37.92	114.34	175.97	173.18	189.81	113.77	50.38	1146.33

Result of Capacity Duration
(The Dong Nai river system case-5 Dong Nai4 - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7809	189.8	61	7807	123.4	121	7803	44.9	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	7810	189.8	62	7906	121.7	122	8904	44.6	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	7908	189.8	63	8706	116.6	123	8104	44.5	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	7909	189.8	64	8807	114.3	124	8404	44.3	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	7910	189.8	65	8911	113.8	125	8604	44.2	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8009	189.8	66	8406	109.5	126	8806	44.1	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	8010	189.8	67	8606	108.4	127	8504	43.9	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8011	189.8	68	8106	100.1	128	8505	43.8	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8109	189.8	69	8612	98.2	129	8204	43.7	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8110	189.8	70	8506	90.1	130	8605	43.3	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8210	189.8	71	8012	85.3	131	8004	43.1	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8309	189.8	72	8512	85.1	132	8805	43.0	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8310	189.8	73	8712	78.8	133	8405	43.0	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	8311	189.8	74	8112	78.8	134	7904	43.0	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	8409	189.8	75	8312	72.3	135	8705	42.9	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	8410	189.8	76	8412	72.2	136	8304	42.8	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	8509	189.8	77	8006	68.8	137	8105	41.9	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	8510	189.8	78	8812	65.8	138	7804	41.4	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	8609	189.8	79	7912	65.8	139	8005	40.9	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8610	189.8	80	8212	60.2	140	7905	40.9	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8611	189.8	81	7812	59.2	141	8305	39.0	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	8708	189.8	82	8912	50.4	142	7805	38.3	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8709	189.8	83	8701	50.1	143	7806	38.2	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8710	189.8	84	8601	50.0	144	8306	37.9	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8810	189.8	85	8801	49.9	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8811	189.8	86	8401	49.8	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8908	189.8	87	8101	49.8	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8909	189.8	88	8301	49.7	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	8910	189.8	89	8901	49.7	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	8208	189.8	90	8501	49.5	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	8209	189.8	91	8201	49.5	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	8608	189.2	92	8001	49.5	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8408	189.0	93	7901	49.5	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	8007	188.9	94	7801	49.5	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	8108	188.7	95	8702	49.1	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	8507	188.6	96	8802	48.9	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8808	187.2	97	8602	48.9	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8508	184.9	98	8102	48.7	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8008	184.3	99	8402	48.7	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8206	180.6	100	8902	48.3	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8308	179.7	101	8502	48.1	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	7808	176.0	102	8302	48.1	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	7907	176.0	103	8202	48.1	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	8907	175.9	104	8002	48.0	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8809	173.2	105	7902	47.9	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	8107	170.7	106	7802	47.6	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8906	170.7	107	8703	47.2	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	8207	166.8	108	8803	47.2	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	7911	166.7	109	8103	47.0	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	8111	166.7	110	8603	46.9	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	8707	165.6	111	8403	46.7	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	8407	162.9	112	8903	46.4	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	8607	157.7	113	8503	46.0	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8711	154.6	114	8203	45.9	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8511	154.2	115	8003	45.9	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	7811	148.4	116	8303	45.8	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8205	148.2	117	7903	45.7	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	8211	142.4	118	8704	45.2	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	8307	133.8	119	8804	45.0	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8411	129.8	120	8905	44.9	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-5 Dong Nai4 - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-6 Dong Nai8 - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	25.71	38.40	41.01	38.02	37.60	35.48	79.62	135.04	148.42	153.37	88.33	36.01	857.02
2	1979	42.91	37.72	40.32	37.38	37.13	71.57	134.41	153.37	148.42	153.37	99.90	39.20	995.70
3	1980	42.21	39.12	40.40	37.45	37.15	36.70	101.90	133.80	141.27	153.37	139.67	52.32	955.35
4	1981	43.00	37.93	40.69	37.79	37.33	51.53	109.53	139.63	148.42	153.37	99.89	50.42	949.53
5	1982	42.80	37.60	40.20	37.39	52.39	106.06	137.58	142.64	147.70	153.37	85.93	37.45	1021.10
6	1983	24.39	38.63	41.38	38.48	37.92	35.54	62.91	136.20	141.59	153.30	127.24	44.95	882.54
7	1984	42.97	39.21	40.53	37.67	37.60	59.94	108.94	144.48	148.42	153.37	80.01	43.34	936.48
8	1985	42.85	37.66	40.28	37.50	37.86	37.72	82.73	129.92	146.60	153.37	90.11	55.96	892.56
9	1986	42.97	37.88	40.55	37.58	37.64	59.66	106.64	144.48	148.42	153.37	135.37	59.44	1004.01
10	1987	42.99	37.95	40.65	37.89	37.48	59.19	120.81	134.97	148.42	153.37	94.91	44.92	953.55
11	1988	43.06	39.36	40.75	37.97	37.67	36.01	38.96	64.30	125.42	153.37	118.15	43.24	778.26
12	1989	42.64	37.46	40.13	37.44	37.96	82.67	127.26	141.16	148.42	153.37	68.50	31.45	948.45
	TOTAL	478.5	458.9	486.9	452.6	465.7	672.1	1211.3	1600.0	1741.5	1840.4	1228.0	538.7	11174.5
	AVE	39.87	38.24	40.57	37.71	38.81	56.01	100.94	133.33	145.13	153.36	102.33	44.89	931.21
	MAX	43.06	39.36	41.38	38.48	52.39	106.06	137.58	153.37	148.42	153.37	139.67	59.44	1021.10
	MIN	24.39	37.46	40.13	37.38	37.13	35.48	38.96	64.30	125.42	153.30	68.50	31.45	778.26

Result of Monthly Capacity
(The Dong Nai river system case-6 Dong Nai8 - project)

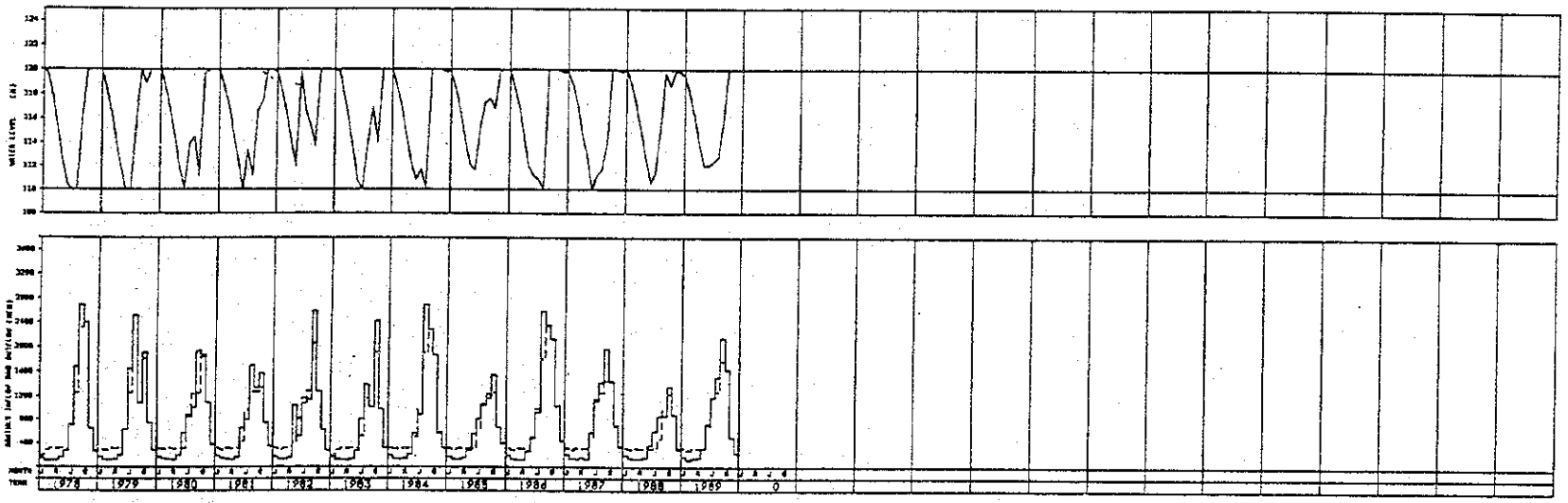
* MONTHLY PEAK POWER (MW) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	34.56	57.14	55.11	52.81	50.54	49.28	107.02	181.51	206.14	206.14	122.68	48.40	1171.34
2	1979	57.67	56.13	54.19	51.92	49.91	99.40	180.66	206.14	206.14	206.14	138.75	52.69	1359.74
3	1980	56.73	56.21	54.30	52.01	49.94	50.98	136.96	179.84	196.20	206.14	193.99	70.32	1303.61
4	1981	57.79	56.44	54.69	52.48	50.18	71.57	147.22	187.68	206.14	206.14	138.74	67.77	1296.84
5	1982	57.52	55.95	54.03	51.93	70.42	147.30	184.92	191.72	205.14	206.14	119.35	50.33	1394.75
6	1983	32.79	57.49	55.62	53.44	50.96	49.37	84.56	183.07	196.65	206.05	176.73	60.42	1207.14
7	1984	57.76	56.34	54.48	52.32	50.53	83.25	146.42	194.20	206.14	206.14	111.13	58.26	1276.96
8	1985	57.59	56.05	54.14	52.09	50.89	52.39	111.19	174.62	203.61	206.14	125.15	75.21	1219.07
9	1986	57.76	56.38	54.50	52.19	50.59	82.86	143.34	194.20	206.14	206.14	188.01	79.89	1372.00
10	1987	57.78	56.47	54.64	52.63	50.37	82.22	162.38	181.41	206.14	206.14	131.81	60.38	1302.37
11	1988	57.88	56.55	54.78	52.74	50.63	50.01	52.37	86.42	174.20	206.14	164.10	58.12	1063.93
12	1989	57.31	55.75	53.93	52.00	51.02	114.82	171.05	189.73	206.14	206.14	95.13	42.28	1295.29
	TOTAL	643.14	676.89	654.40	628.55	625.98	933.44	1628.08	2150.53	2418.79	2473.60	1705.57	724.06	15263.03
	AVE	53.59	56.41	54.53	52.38	52.16	77.79	135.67	179.21	201.57	206.13	142.13	60.34	1271.92
	MAX	57.88	57.49	55.62	53.44	70.42	147.30	184.92	206.14	206.14	206.14	193.99	79.89	1394.75
	MIN	32.79	55.75	53.93	51.92	49.91	49.28	52.37	86.42	174.20	206.05	95.13	42.28	1063.93

Result of Capacity Duration
(The Dong Nai river system case-6 Dong Nai8 - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7810	206.1	61	8808	86.4	121	8004	52.0	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	7909	206.1	62	8307	84.6	122	8904	52.0	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	7910	206.1	63	8406	83.2	123	8204	51.9	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	8010	206.1	64	8606	82.9	124	7904	51.9	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	8109	206.1	65	8706	82.2	125	8905	51.0	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8110	206.1	66	8612	79.9	126	8006	51.0	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	8210	206.1	67	8512	75.2	127	8305	51.0	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8409	206.1	68	8106	71.6	128	8505	50.9	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8410	206.1	69	8205	70.4	129	8805	50.6	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8510	206.1	70	8012	70.3	130	8605	50.6	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8609	206.1	71	8112	67.8	131	7805	50.5	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8610	206.1	72	8312	60.4	132	8405	50.5	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8710	206.1	73	8712	60.4	133	8705	50.4	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	8810	206.1	74	8412	58.3	134	8212	50.3	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	8910	206.1	75	8812	58.1	135	8105	50.2	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	7809	206.1	76	8801	57.9	136	8806	50.0	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	7908	206.1	77	8101	57.8	137	8005	49.9	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	8909	206.1	78	8701	57.8	138	7905	49.9	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	8709	206.1	79	8401	57.8	139	8306	49.4	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8310	206.0	80	8601	57.8	140	7806	49.3	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8209	205.1	81	7901	57.7	141	7812	48.4	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	8509	203.6	82	8501	57.6	142	8912	42.3	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8309	196.7	83	8201	57.5	143	7801	34.6	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8009	196.2	84	8302	57.5	144	8301	32.8	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8408	194.2	85	8901	57.3	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8608	194.2	86	7802	57.1	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8011	194.0	87	8001	56.7	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8208	191.7	88	8802	56.5	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	8908	189.7	89	8702	56.5	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	8611	188.0	90	8102	56.4	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	8108	187.7	91	8602	56.4	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	8207	184.9	92	8402	56.3	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8308	183.1	93	8002	56.2	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	7808	181.5	94	7902	56.1	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	8708	181.4	95	8502	56.0	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	7907	180.7	96	8202	56.0	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8008	179.8	97	8902	55.7	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8311	176.7	98	8303	55.6	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8508	174.6	99	7803	55.1	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8809	174.2	100	8803	54.8	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8907	171.0	101	8103	54.7	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	8811	164.1	102	8703	54.6	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	8707	162.4	103	8603	54.5	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	8206	147.3	104	8403	54.5	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8107	147.2	105	8003	54.3	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	8407	146.4	106	7903	54.2	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8607	143.3	107	8503	54.1	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	7911	138.8	108	8203	54.0	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	8111	138.7	109	8903	53.9	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	8007	137.0	110	8304	53.4	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	8711	131.8	111	7804	52.8	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	8511	125.2	112	8804	52.7	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	7811	122.7	113	7912	52.7	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8211	119.4	114	8704	52.6	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8906	114.8	115	8104	52.5	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	8507	111.2	116	8506	52.4	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8411	111.1	117	8807	52.4	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	7807	107.0	118	8404	52.3	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	7906	99.4	119	8604	52.2	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8911	95.1	120	8504	52.1	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-6 Dong Nai8 - project)



Result of Monthly Energy Calculation
(The Dong Nai river system case-6 Tri Anh - project)

* MONTHLY TOTAL ENERGY (GWH) *

NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	203.10	108.43	116.37	108.94	109.33	99.58	124.68	253.99	281.06	293.57	168.68	123.67	1991.42
2	1979	120.89	112.52	113.68	106.59	103.22	111.41	250.34	282.16	284.10	293.57	189.04	123.90	2091.43
3	1980	121.24	120.58	113.76	106.65	103.24	94.87	104.39	201.14	272.09	286.63	266.92	141.12	1932.63
4	1981	127.70	115.90	114.08	106.92	103.36	102.90	107.78	191.25	269.17	291.87	188.70	140.84	1860.49
5	1982	121.01	120.67	137.76	108.70	159.81	111.15	167.68	266.09	283.53	286.21	122.73	126.62	2011.97
6	1983	123.72	108.70	116.82	109.42	109.59	99.62	102.92	156.86	271.69	291.85	238.37	130.57	1860.14
7	1984	127.77	125.25	115.42	106.43	103.16	97.64	187.97	271.91	284.10	293.57	148.17	130.48	1991.88
8	1985	127.56	120.64	118.99	106.10	104.01	95.53	103.12	112.82	181.01	283.08	178.62	140.93	1672.40
9	1986	127.72	120.98	119.57	106.18	103.02	95.13	176.32	271.63	284.10	293.57	257.46	151.76	2107.45
10	1987	137.99	109.50	114.01	106.96	103.45	97.33	132.93	246.08	284.10	293.57	176.35	124.26	1926.54
11	1988	122.12	111.59	115.76	108.53	109.10	101.03	99.40	102.77	106.93	119.13	218.72	123.88	1438.96
12	1989	127.63	120.73	131.00	105.65	102.85	120.01	143.42	270.71	284.10	293.57	124.58	60.07	1884.32
	TOTAL	1588.4	1395.5	1427.2	1287.1	1314.1	1226.2	1700.9	2627.4	3086.0	3320.2	2278.3	1518.1	22769.6
	AVE	132.37	116.29	118.94	107.26	109.51	102.19	141.75	218.95	257.17	276.69	189.86	126.51	1897.47
	MAX	203.10	125.25	137.76	109.42	159.81	120.01	250.34	282.16	284.10	293.57	266.92	151.76	2107.45
	MIN	120.89	108.43	113.68	105.65	102.85	94.87	99.40	102.77	106.93	119.13	122.73	60.07	1438.96

Result of Monthly Capacity
(The Dong Nai river system case-6 Tri Anh - project)

* MONTHLY PEAK POWER (MW) *

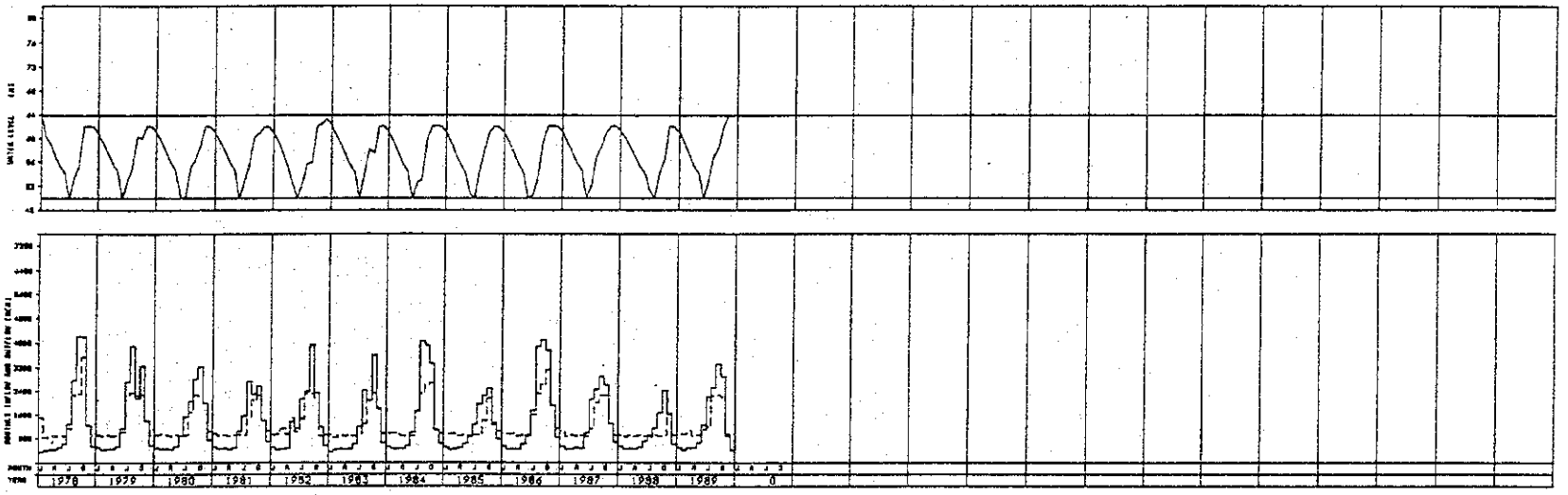
NO.	YEAR	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< OCT >	< NOV >	< DEC >	<TOTAL>
1	1978	272.99	161.35	156.42	151.31	146.95	138.31	167.58	341.39	390.37	394.59	234.28	166.23	2721.74
2	1979	162.48	167.45	152.79	148.04	138.74	154.74	336.48	379.25	394.59	394.59	262.55	166.53	2858.24
3	1980	162.95	173.25	152.91	148.12	138.76	131.77	140.31	270.35	377.90	385.26	370.72	189.67	2641.98
4	1981	171.64	172.47	153.34	148.50	138.93	142.92	144.86	257.06	373.85	392.30	262.09	189.31	2547.27
5	1982	162.65	179.57	185.16	150.97	214.80	154.38	225.38	357.65	393.79	384.69	170.46	170.19	2749.69
6	1983	166.29	161.76	157.02	151.97	147.30	138.37	138.33	210.84	377.35	392.27	331.08	175.49	2548.06
7	1984	171.73	179.96	155.13	147.82	138.66	135.61	252.65	365.46	394.59	394.59	205.79	175.37	2717.38
8	1985	171.45	179.53	159.93	147.36	139.80	132.68	138.60	151.64	251.40	380.48	248.09	189.42	2290.37
9	1986	171.67	180.02	160.72	147.47	138.46	132.13	236.98	365.10	394.59	394.59	357.58	203.98	2883.30
10	1987	185.47	162.95	153.24	148.56	139.05	135.18	178.67	330.75	394.59	394.59	244.92	167.02	2634.99
11	1988	164.13	160.32	155.59	150.74	146.64	140.33	133.60	138.13	148.51	160.12	303.77	166.50	1968.41
12	1989	171.54	179.65	176.08	146.74	138.23	166.68	192.77	363.86	394.59	394.59	173.03	80.74	2578.50
	TOTAL	2135.00	2058.29	1918.32	1787.61	1766.33	1703.09	2286.22	3531.47	4286.13	4462.66	3164.36	2040.44	31139.90
	AVE	177.92	171.52	159.86	148.97	147.19	141.92	190.52	294.29	357.18	371.89	263.70	170.04	2594.99
	MAX	272.99	180.02	185.16	151.97	214.80	166.68	336.48	379.25	394.59	394.59	370.72	203.98	2883.30
	MIN	162.48	160.32	152.79	146.74	138.23	131.77	133.60	138.13	148.51	160.12	170.46	80.74	1968.41

Result of Capacity Duration

(The Dong Nai river system case-6 Tri Anh - project)

NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P	NO.	DATE	P
1	7810	394.6	61	8707	178.7	121	8107	144.9	181	0	0.0	241	0	0.0	301	0	0.0	361	0	0.0
2	7909	394.6	62	8903	176.1	122	8106	142.9	182	0	0.0	242	0	0.0	302	0	0.0	362	0	0.0
3	7910	394.6	63	8312	175.5	123	8806	140.3	183	0	0.0	243	0	0.0	303	0	0.0	363	0	0.0
4	8409	394.6	64	8412	175.4	124	8007	140.3	184	0	0.0	244	0	0.0	304	0	0.0	364	0	0.0
5	8410	394.6	65	8002	173.2	125	8505	139.8	185	0	0.0	245	0	0.0	305	0	0.0	365	0	0.0
6	8610	394.6	66	8911	173.0	126	8705	139.0	186	0	0.0	246	0	0.0	306	0	0.0	366	0	0.0
7	8910	394.6	67	8102	172.5	127	8105	138.9	187	0	0.0	247	0	0.0	307	0	0.0	367	0	0.0
8	8609	394.6	68	8401	171.7	128	8005	138.8	188	0	0.0	248	0	0.0	308	0	0.0	368	0	0.0
9	8709	394.6	69	8601	171.7	129	7905	138.7	189	0	0.0	249	0	0.0	309	0	0.0	369	0	0.0
10	8710	394.6	70	8101	171.6	130	8405	138.7	190	0	0.0	250	0	0.0	310	0	0.0	370	0	0.0
11	8909	394.6	71	8901	171.5	131	8507	138.6	191	0	0.0	251	0	0.0	311	0	0.0	371	0	0.0
12	8209	393.8	72	8501	171.4	132	8605	138.5	192	0	0.0	252	0	0.0	312	0	0.0	372	0	0.0
13	8110	392.3	73	8211	170.5	133	8306	138.4	193	0	0.0	253	0	0.0	313	0	0.0	373	0	0.0
14	8310	392.3	74	8212	170.2	134	8307	138.3	194	0	0.0	254	0	0.0	314	0	0.0	374	0	0.0
15	7809	390.4	75	7807	167.6	135	7806	138.3	195	0	0.0	255	0	0.0	315	0	0.0	375	0	0.0
16	8010	385.3	76	7902	167.4	136	8905	138.2	196	0	0.0	256	0	0.0	316	0	0.0	376	0	0.0
17	8210	384.7	77	8712	167.0	137	8808	138.1	197	0	0.0	257	0	0.0	317	0	0.0	377	0	0.0
18	8510	380.5	78	8906	166.7	138	8406	135.6	198	0	0.0	258	0	0.0	318	0	0.0	378	0	0.0
19	7908	379.2	79	7912	166.5	139	8706	135.2	199	0	0.0	259	0	0.0	319	0	0.0	379	0	0.0
20	8009	377.9	80	8812	166.5	140	8807	133.6	200	0	0.0	260	0	0.0	320	0	0.0	380	0	0.0
21	8309	377.4	81	8301	166.3	141	8506	132.7	201	0	0.0	261	0	0.0	321	0	0.0	381	0	0.0
22	8109	373.9	82	7812	166.2	142	8606	132.1	202	0	0.0	262	0	0.0	322	0	0.0	382	0	0.0
23	8011	370.7	83	8801	164.1	143	8006	131.8	203	0	0.0	263	0	0.0	323	0	0.0	383	0	0.0
24	8408	365.5	84	8001	163.0	144	8912	80.7	204	0	0.0	264	0	0.0	324	0	0.0	384	0	0.0
25	8608	365.1	85	8702	162.9	145	0	0.0	205	0	0.0	265	0	0.0	325	0	0.0	385	0	0.0
26	8908	363.9	86	8201	162.7	146	0	0.0	206	0	0.0	266	0	0.0	326	0	0.0	386	0	0.0
27	8208	357.6	87	7901	162.5	147	0	0.0	207	0	0.0	267	0	0.0	327	0	0.0	387	0	0.0
28	8611	357.6	88	8302	161.8	148	0	0.0	208	0	0.0	268	0	0.0	328	0	0.0	388	0	0.0
29	7808	341.4	89	7802	161.4	149	0	0.0	209	0	0.0	269	0	0.0	329	0	0.0	389	0	0.0
30	7907	336.5	90	8603	160.7	150	0	0.0	210	0	0.0	270	0	0.0	330	0	0.0	390	0	0.0
31	8311	331.1	91	8802	160.3	151	0	0.0	211	0	0.0	271	0	0.0	331	0	0.0	391	0	0.0
32	8708	330.8	92	8810	160.1	152	0	0.0	212	0	0.0	272	0	0.0	332	0	0.0	392	0	0.0
33	8811	303.8	93	8503	159.9	153	0	0.0	213	0	0.0	273	0	0.0	333	0	0.0	393	0	0.0
34	7801	273.0	94	8303	157.0	154	0	0.0	214	0	0.0	274	0	0.0	334	0	0.0	394	0	0.0
35	8008	270.4	95	7803	156.4	155	0	0.0	215	0	0.0	275	0	0.0	335	0	0.0	395	0	0.0
36	7911	262.6	96	8803	155.6	156	0	0.0	216	0	0.0	276	0	0.0	336	0	0.0	396	0	0.0
37	8111	262.1	97	8403	155.1	157	0	0.0	217	0	0.0	277	0	0.0	337	0	0.0	397	0	0.0
38	8108	257.1	98	7906	154.7	158	0	0.0	218	0	0.0	278	0	0.0	338	0	0.0	398	0	0.0
39	8407	252.7	99	8206	154.4	159	0	0.0	219	0	0.0	279	0	0.0	339	0	0.0	399	0	0.0
40	8509	251.4	100	8103	153.3	160	0	0.0	220	0	0.0	280	0	0.0	340	0	0.0	400	0	0.0
41	8511	248.1	101	8703	153.2	161	0	0.0	221	0	0.0	281	0	0.0	341	0	0.0	401	0	0.0
42	8711	244.9	102	8003	152.9	162	0	0.0	222	0	0.0	282	0	0.0	342	0	0.0	402	0	0.0
43	8607	237.0	103	7903	152.8	163	0	0.0	223	0	0.0	283	0	0.0	343	0	0.0	403	0	0.0
44	7811	234.3	104	8304	152.0	164	0	0.0	224	0	0.0	284	0	0.0	344	0	0.0	404	0	0.0
45	8207	225.4	105	8508	151.6	165	0	0.0	225	0	0.0	285	0	0.0	345	0	0.0	405	0	0.0
46	8205	214.8	106	7804	151.3	166	0	0.0	226	0	0.0	286	0	0.0	346	0	0.0	406	0	0.0
47	8308	210.8	107	8204	151.0	167	0	0.0	227	0	0.0	287	0	0.0	347	0	0.0	407	0	0.0
48	8411	205.8	108	8804	150.7	168	0	0.0	228	0	0.0	288	0	0.0	348	0	0.0	408	0	0.0
49	8612	204.0	109	8704	148.6	169	0	0.0	229	0	0.0	289	0	0.0	349	0	0.0	409	0	0.0
50	8907	192.8	110	8809	148.5	170	0	0.0	230	0	0.0	290	0	0.0	350	0	0.0	410	0	0.0
51	8012	189.7	111	8104	148.5	171	0	0.0	231	0	0.0	291	0	0.0	351	0	0.0	411	0	0.0
52	8512	189.4	112	8004	148.1	172	0	0.0	232	0	0.0	292	0	0.0	352	0	0.0	412	0	0.0
53	8112	189.3	113	7904	148.0	173	0	0.0	233	0	0.0	293	0	0.0	353	0	0.0	413	0	0.0
54	8701	185.5	114	8404	147.8	174	0	0.0	234	0	0.0	294	0	0.0	354	0	0.0	414	0	0.0
55	8203	185.2	115	8604	147.5	175	0	0.0	235	0	0.0	295	0	0.0	355	0	0.0	415	0	0.0
56	8602	180.0	116	8504	147.4	176	0	0.0	236	0	0.0	296	0	0.0	356	0	0.0	416	0	0.0
57	8402	180.0	117	8305	147.3	177	0	0.0	237	0	0.0	297	0	0.0	357	0	0.0	417	0	0.0
58	8902	179.7	118	7805	146.9	178	0	0.0	238	0	0.0	298	0	0.0	358	0	0.0	418	0	0.0
59	8202	179.6	119	8904	146.7	179	0	0.0	239	0	0.0	299	0	0.0	359	0	0.0	419	0	0.0
60	8502	179.5	120	8805	146.6	180	0	0.0	240	0	0.0	300	0	0.0	360	0	0.0	420	0	0.0

Result of Reservoir Operation
(The Dong Nai river system case-6 Tri Anh - project)



6.2.3　土木工事費見直しに係る前提条件

主要工種とは、Son La水力計画の数量見直し結果より判断するとダム、水路、発電所関係の工種であり、その内容は、土砂、岩の明り掘削、トンネル掘削、特にダム関係になるが、コア材、ロック材、フィルター材（細粒の岩）の盛立、明りおよびトンネル部のコンクリート、鉄筋、およびアクセス道路からなる。土木工事費全体を算出するにあたっては、この他に、ダム建設に伴う仮排水路関係、現場に乗り込むにあたって必要となる仮設備といったものが必要になるがこれらについては、PIDC1より提示されたSon La水力計画プレF/Sレポートに工事費算出根拠および海外他地点実績を基に主要工種による工事費から率計上で算出した。なお、アクセス道路のkm当り単価については、Son La水力計画プレF/Sレポートをベースとした。

Appendix 6.2-4 Result of the Review of Civil Work Cost 1

Unit: 1,000US$

	Unit	Unit Price	Son La (S)		Son La (L)		Huoi Quan		Dai Thi		Ban Mai		Son Con 2	
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Investment Cost				2,050,309		3,486,228		735,128		301,485		413,322		100,143
A.Civil Work														
1.Excavation		(US$)												
Earth	1000m3	3.00	4,612	13,836	7,380	22,140	624	1,871	2,973	8,919	857	2,571	564	1,692
Rock	1000m3	7.00	25,322	177,254	42,860	300,020	2,392	16,743	2,065	14,455	4,371	30,597	807	5,649
Underground	1000m3	108.00	490	52,920	870	93,960	608	65,686	118	12,744	309	33,372	190	20,520
2.Embankment														
Earth	1000m3	3.00	2,110	6,330	5,160	15,480	0	0	575	1,725	690	2,070	150	450
Rock	1000m3	6.00	24,038	144,228	57,380	344,280	0	0	4,302	25,812	5,779	34,674	100	600
Sand and gravel	1000m3	15.00	1,517	22,755	3,860	57,900	0	0	250	3,750	332	4,980	980	14,700
3.Concrete														
Open	1000m3	130.00	1,970	256,100	2,841	369,330	1,661	215,956	235	30,498	233	30,297	47	6,123
Underground	1000m3	200.00	179	35,800	303	60,600	218	43,660	52	10,380	112	22,480	66	13,120
Re-Bars	t	756.00	64,442	48,718	96,300	72,803	32,482	24,556	9,209	6,962	111,370	84,196	4,825	3,648
4.Access Road	km	1253.00	40	50,120	40	50,120	15	18,795	0	0	10	12,530	20	25,060
Sub Total				808,061		1,386,633		387,267		115,245		257,767		91,562
General Site Installation	10%			80,806		138,663		38,727		11,525		25,777		9,156
Diversion	15%			121,209		207,995		58,090		17,287		38,665		13,734
Others	10%			80,806		138,663		38,727		11,525		25,777		9,156
Total				1,090,882		1,871,954		522,811		155,582		347,986		123,608
Cost by PIDC-1				1,133,957		2,043,412		423,047		132,779		208,924		59,137
Difference/Investment cost				-2.00%		-5.00%		14.00%		8.00%		34.00%		64.00%
B.Hydro-Mecanical equipment														
Metal Structure	ton	7,000	19,070	133,490	20,810	145,670	11,420	79,940	1,844	12,908	3,589	25,123	1,466	10,262
Lifting Machine	ton	8,000	2,910	23,280	3,160	25,280	1,160	9,280	610	4,880	1,001	8,008	375	3,000
Total				156,770		170,950		89,220		17,788		33,131		13,262
Cost by PIDC-1				82,353		89,734		22,152		13,095		50,960		6,583
Difference/Investment cost				4.00%		2.00%		9.00%		2.00%		-4.00%		7.00%
C.Electro-mechanical Equipment														
Installed Capacity	MW		2400	-	3600	-	800	-	250	-	375	-	60	-
Number of Unit	-		10	-	12	-	4	-	3	-	3	-	2	-
Unit Capacity	MW/Unit		240	-	300	-	200	-	83	-	125	-	30	-
Unit Cost	1,000US$		34,400	-	51,443	-	31,000	-	19,000	-	23,000	-	11,000	-
Cost	1,000US$		-	344,000	-	617,320	-	124,000	-	57,000	-	69,000	-	22,000
Cost by PIDC-1	1,000US$		-	424,320	-	636,480	-	149,760	-	50,185	-	32,172	-	9,947
Difference/Investment cost	%			-4.00%		-1.00%		-4.00%		2.00%		9.00%		12.00%
D.Transmission Lines														
Cost by PIDC-1	1,000US$		-	0	-	0	-	22,080	-	12,075	-	33,120	-	4,140
E.Contigency														
Cost by PIDC-1	1,000US$		-	76,413	-	128,356	-	27,652	-	9,092	-	12,854	-	3,490
F.Land														
Cost by PIDC-1	1,000US$		-	0	-	0	-	0	-	0	-	0	-	0
G.Administration and Engineering Fee														
Cost by PIDC-1	1,000US$		-	171,704	-	289,798	-	62,261	-	20,516	-	30,491	-	7,916
H.Compensation											*Reviewed			
Cost by PIDC-1	1,000US$		-	161,562	-	298,448	-	28,176	-	63,743	100,000	44,800	-	8,930
TOTAL														
Cost by JICA Team	1,000US$			2,001,331		3,376,826		876,200		335,796		626,582		183,346
Cost by PIDC-1	1,000US$			2,050,309		3,486,228		735,128		301,485		413,321		100,143
Difference of the review	1,000US$			-48,978		-109,402		141,072		34,311		213,261		83,203
Total Difference Ratio	%			-2.00%		-4.00%		19.00%		12.00%		52.00%		83.00%

Appendix 6.2-4 Result of the Review of Civil Work Cost 2

Unit: 1,000US$

Project Name			Cua Dat		An Khe		Plei Krong		Sesan 3		Sesan 4		Thuong Kontum	
	Unit	Unit Price	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Investment Cost				200,000		171,397		250,913		188,152		514,532		275,526
A.Civil Work														
1.Excavation		(US$)												
Earth	1000m3	3.00	1,800	5,400	1,310	3,930	4,171	12,513	388	1,165	1,335	4,005	1,062	3,186
Rock	1000m3	7.00	540	3,780	461	3,227	2,066	14,461	986	6,904	580	4,057	2,892	20,241
Underground	1000m3	108.00	0	0	50	5,400	27	2,873	49	5,270	129	13,975	149	16,092
2.Embankment														
Earth	1000m3	3.00	500	1,500	4,703	14,109	1,385	4,156	420	1,260	1,742	5,226	1,020	3,060
Rock	1000m3	6.00	0	0	364	2,184	3,199	19,196	2,280	13,679	9,456	56,736	2,680	16,080
Sand and gravel	1000m3	15.00	0	0	156	2,340	533	7,992	300	4,493	1,244	18,663	470	7,050
3.Concrete														
Open	1000m3	130.00	600	78,000	114	14,872	91	11,804	102	13,260	167	21,723	64	8,307
Underground	1000m3	200.00	0	0	14	2,800	10	2,020	18	3,620	49	9,860	49	9,840
Re-Bars	t	756.00	6,032	4,560	4,392	3,320	4,717	3,566	6,007	4,541	10,807	8,170	4,189	3,167
4.Access Road	km	1253.00	16	20,048	15	18,795	10	12,530	0	0	0	0	40	50,120
Sub Total				113,288		70,977		91,111		54,192		142,415		137,143
General Site Installation	10%			11,329		7,098		9,111		5,419		14,242		13,714
Diversion	15%			16,993		10,647		13,667		8,129		21,362		20,571
Others	10%			11,329		7,098		9,111		5,419		14,242		13,714
Total				152,939		95,820		123,000		73,159		192,261		185,142
Cost by PIDC-1				115,909		70,797		146,788		92,500		260,988		151,710
Difference/Investment Cost				19.00%		15.00%		-9.00%		-10.00%		-13.00%		12.00%
B.Hydro-Mecanical equipment														
Metal Structure	ton	7,000.00	1,680	11,760	5,041	35,287	1,849	12,943	2,514	17,598	4,111	28,780	9,621	67,347
Lifting Machine	ton	8,000.00	470	3,760	255	2,040	395	3,160	450	3,600	1,035	8,280	200	1,600
Total				15,520		37,327		16,103		21,198		37,060		68,947
Cost by PIDC-1				12,089		16,645		9,669		13,246		20,939		26,439
Error Ratio				2.00%		12.00%		3.00%		4.00%		3.00%		15.00%
C.Electro-mechanical Equipment														
Installed Capacity		MW	105	-	116	-	120	-	220	-	366	-	260	-
Number of Unit		-	3	-	3	-	2	-	2	-	3	-	4	-
Unit Capacity		MW/Unit	35	-	39	-	60	-	110	-	122	-	65	-
Unit Cost		1,000US$	13,000	-	9,000	-	13,000	-	22,000	-	21,000	-	16,000	-
Cost		1,000US$	-	39,000	-	27,000	-	26,000	-	44,000	-	63,000	-	64,000
Cost by PIDC-1		1,000US$	-	18,892	-	20,509	-	21,590	-	45,760	-	76,127	-	45,967
Difference/Investment Cost		%		10.00%		4.00%		2.00%		-1.00%		-3.00%		7.00%
D.Transmission Lines														
Cost by PIDC-1		1,000US$	-	5,175	-	10,263	-	10,120	-	7,245	-	10,867	-	8,452
E.Contigency														
Cost by PIDC-1		1,000US$	-	6,724	-	5,047	-	8,175	-	7,080	-	16,505	-	10,454
F.Land														
Cost by PIDC-1		1,000US$	-	0	-	0	-	0	-	0	-	0	-	0
G.Administration and Engineering Fee														
Cost by PIDC-1		1,000US$	-	15,361	-	11,300	-	18,623	-	15,859	-	37,456	-	23,457
H.Compensation														
Cost by PIDC-1		1,000US$	-	25,850	-	36,836	-	35,948	-	6,462	-	91,650	-	9,047
TOTAL														
Cost by JICA Team		1,000US$		260,569		223,593		237,969		175,003		448,799		369,499
Cost by PIDC-1		1,000US$		200,000		171,397		250,913		188,152		514,532		275,526
Difference of the review		1,000US$		60,569		52,196		-12,944		-13,149		-65,733		93,973
Total Difference Ratio		%		31.00%		31.00%		-4.00%		-7.00%		-13.00%		34.00%

Appendix 6.2-4 Result of the Review of Civil Work Cost 3

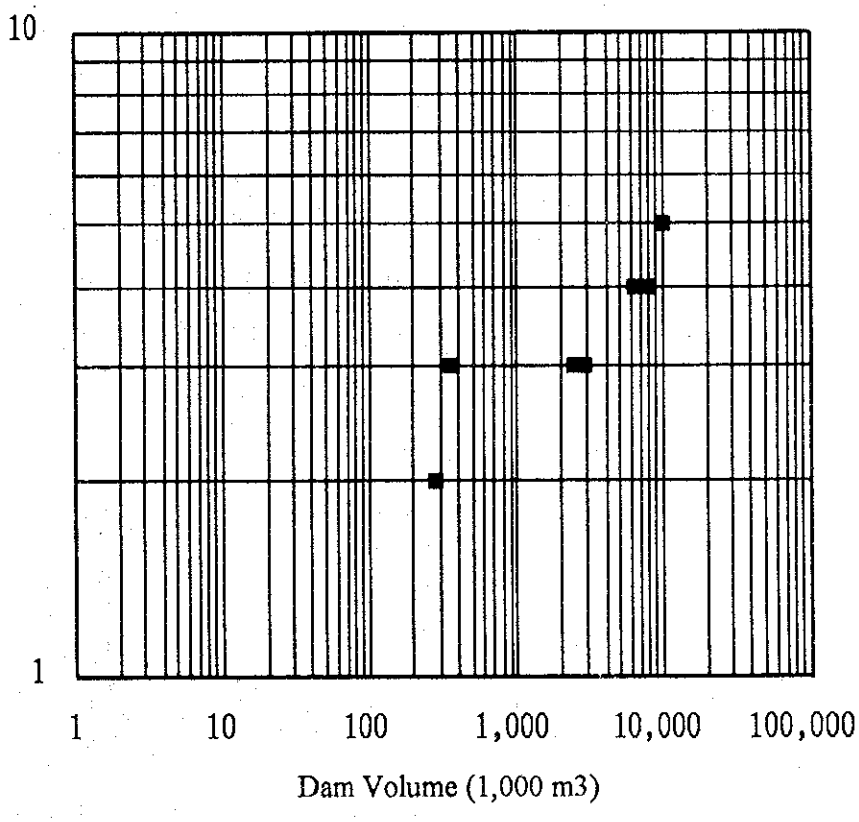
Unit: 1,000US$

Project Name	Unit	Unit Price	Buon Cuop		Rao Quan		Dong Nai 8		Dong Nai 4		Cau Don		Dai Ninh	
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Investment Cost				114,419		138,398		472,774		392,486		116,916		408,535
A.Civil Work														
1.Excavation		(US$)												
Earth	1000m3	3.00	379	1,137	878	2,634	7,020	21,060	5,204	15,612	2,065	6,194	6,252	18,756
Rock	1000m3	7.00	1,361	9,527	303	2,121	6	39	3,619	25,333	1,332	9,324	2,249	15,743
Underground	1000m3	108.00	0	0	245	26,492	0	0	241	26,028	0	0	319	34,452
2.Embankment														
Earth	1000m3	3.00	160	480	1,296	3,889	13,248	39,744	2,071	6,213	536	1,607	8,683	26,049
Rock	1000m3	6.00	1,068	6,408	1,701	10,203	5,319	31,914	3,937	23,622	505	3,031	222	1,332
Sand and gravel	1000m3	15.00	107	1,605	111	1,661	1,373	20,595	454	6,810	63	938	157	2,355
3.Concrete														
Open	1000m3	130.00	120	15,600	65	8,437	350	45,513	358	46,527	129	16,705	321	41,730
Underground	1000m3	200.00	0	0	44	8,700	0	0	80	16,080	0	0	119	23,700
Re-Bars	t	756.00	4,718	3,567	5,369	4,059	11,182	8,454	6,370	4,816	4,361	3,297	30,730	23,232
4.Access Road	km	1253.00	20	25,060	0	0	20	25,060	60	75,180	10	12,530	40	50,120
Sub Total				63,384		68,196		192,379		246,221		53,626		237,469
General Site														
Installation	10%			6,338		6,820		19,238		24,622		5,363		23,747
Diversion	15%			9,508		10,229		28,857		36,933		8,044		35,620
Others	10%			6,338		6,820		19,238		24,622		5,363		23,747
Total				85,568		92,065		259,712		332,398		72,396		320,583
Cost by PIDC-1				67,436		85,104		280,202		252,922		54,790		225,292
Difference/Investment Cost				16.00%		5.00%		-4.00%		20.00%		15.00%		23.00%
B.Hydro-Mecanical equipment														
Metal Structure	ton	7,000.00	1,899	13,293	894	6,255	7,990	55,930	3,668	25,676	1,200	8,400	7,581	53,070
Lifting Machine	ton	8,000.00	500	4,000	180	1,440	670	5,360	1,286	10,288	470	3,760	426	3,404
Total				17,293		7,695		61,290		35,964		12,160		56,474
Cost by PIDC-1				9,017		4,153		25,232		21,099		10,274		27,777
Error Ratio				7.00%		3.00%		8.00%		4.00%		2.00%		7.00%
C.Electro-mechanical Equipment														
Installed Capacity		MW	81	-	80	-	192	-	200	-	50	-	300	-
Number of Unit		-	3	-	3	-	3	-	3	-	2	-	2	-
Unit Capacity		MW/Unit	27	-	27	-	64	-	67	-	25	-	150	-
Unit Cost		1,000US$	8,000	-	8,000	-	16,000	-	16,000	-	6,000	-	28,000	-
Cost		1,000US$	-	24,000	-	24,000	-	48,000	-	48,000	-	12,000	-	56,000
Cost by PIDC-1		1,000US$	-	14,321	-	15,066	-	33,945	-	35,360	-	8,996	-	61,864
Difference/Investment Cost		%		8%		6%		3%		3%		3%		-1%
D.Transmission Lines														
Cost by PIDC-1		1,000US$	-	2,070	-	8,970	-	10,350	-	31,271	-	11,730	-	34,914
E.Contigency														
Cost by PIDC-1		1,000US$	-	4,205	-	4,794	-	15,581	-	14,216	-	3,432	-	14,630
F.Land														
Cost by PIDC-1		1,000US$	-	0	-	0	-	0	-	0	-	0	-	0
G.Administration and Engineering Fee														
Cost by PIDC-1		1,000US$	-	9,498	-	10,911	-	35,496	-	32,360	-	7,749	-	32,956
H.Compensation														
Cost by PIDC-1		1,000US$	-	7,872	-	9,400	-	71,968	-	5,258	-	19,945	-	11,102
TOTAL														
Cost by JICA Team		1,000US$		150,506		157,835		502,397		499,467		139,412		526,659
Cost by PIDC-1		1,000US$		114,419		138,398		472,774		392,486		116,916		408,535
Difference of the review		1,000US$		36,087		19,437		29,623		106,981		22,496		118,124
Total Difference Ratio		%		31.00%		14.00%		7.00%		27.00%		20.00%		29.00%

6.2.5　工期の検討における考え方

下の図は、日本の水力発電所におけるダム堤体積と工期の実績をまとめたものである。まず初めに、各計画が日本国内で建設された場合の工期をこの図から求めた。続いて、各計画地点において道路等の建設に生じるであろうと考えられる工期の遅れを1～2年加えた。さらに、開発途上国に一般的に見られる工期の遅れを加味して余裕を1～2年みた。

Figure 6.2-5　Dam Volume and Construction Term



6.2.6　年経費の計算方法

水力計画地点の等価年経費は償却費と運転保守費からなる。これは、償却率10%と仮定して、総工事費に年経費率を乗じることにより算出される。

- 等価年経費＝年経費率×総工事費
  ＝償却＋便益＋運転保守費

- 償却＋便益＝総工事費×資本回収係数

- 資本回収係数(CRF) ＝$(i\times(1+i)^n)/((1+i)^{n-1})$

ここに、n：耐用年数	土木設備	50	年
	機械設備	25	年
	電気設備	25	年
i：償却率		10	%
	土木設備の資本回収率	10.1	%
	機械設備の資本回収率	11.0	%
	電気設備の資本回収率	11.0	%

- 直接工事費に対する運転保守費率

土木設備	1.5	%
機械設備	1.5	%
電気設備	1.5	%

Appendix 6.2-7 Result of assesment about the projects (under varying Peak Operation Time)

Project	Unit	Son La (S)	Son La (L)	Huoi Quan	Dai Thi*	Cua Dat*	Ban Mai*	Song Con2*	Song Hinh*	An Khe*	Plei Krung	Sesan 3	Sesan 4	Thuong Kontum	Buon Cuop*	Rao Quan*	Ham Thuan	Da Mi	Dong Nai 8	Dong Nai 4	Cau Don	Dai Ninh**
Installed Capacity	MW	2400	3600	800	250	105	350	60	70	116	120	220	366	260	81	80	300	172	192	200	50	300
Firm Power	MW	729	1747	247	86	35	151	17	26.2	41.7	108	77	124	82	23	30.2	100	49	90	42	23.7	81
Annual Output	GWh	10,804	17,396	2,984	1,300	507	1,777	271	253	482	785	1,079	1,810	736	479	286	972	551	946	950	200	1,175
Annual Benefit by Peak Operation Time																						
T=24 hr	1000US$	358,500	713,006	109,829	42,730	17,011	66,330	8,688	10,557	18,167	39,083	36,797	60,503	32,082	13,687	12,072	40,404	21,083	37,589	26,288	9,054	39,396
T=12 hr	1000US$	531,171	1,126,800	168,334	63,100	25,301	102,096	12,714	16,763	28,045	41,925	55,035	89,873	51,504	19,134	19,226	64,090	32,689	58,906	36,236	14,667	58,581
T=10 hr	1000US$	600,239	1,151,907	191,735	71,248	28,617	113,465	14,325	19,245	31,995	41,925	62,331	101,622	59,273	21,313	22,087	73,565	37,332	61,748	40,215	15,283	66,256
T=8 hr	1000US$	703,842	1,151,907	226,838	81,575	33,591	113,465	16,741	20,932	35,766	41,925	70,668	117,823	70,927	24,582	23,868	87,776	44,296	61,748	46,184	15,283	77,767
T=6 hr	1000US$	754,293	1,151,907	240,813	81,575	33,591	113,465	18,873	20,932	35,766	41,925	70,668	117,823	74,243	27,424	23,868	87,776	50,217	61,748	56,132	15,283	91,268
Annual Cost with IDC																				***		
CRF	1000US$	313,229	573,832	97,018	38,464	33,242	70,416	23,356	22,643	28,721	31,773	24,223	65,523	47,760	19,310	17,547	45,643	23,996	59,871	31,711	14,858	47,879
OMC	1000US$	45,517	83,669	14,114	5,608	4,847	10,350	3,410	3,319	4,159	4,667	3,500	9,570	6,873	2,799	2,574	6,657	3,479	8,794	4,650	2,175	6,962
Total Annual Cost	1000US$	358,746	657,501	111,132	44,072	38,089	80,766	26,766	25,962	32,880	36,440	27,723	75,093	54,633	22,109	20,121	52,300	27,475	68,665	46,178	17,033	70,745
B/C																						
T=24		1.00	1.08	0.99	0.97	0.45	0.82	0.32	0.41	0.55	1.07	1.33	0.81	0.59	0.62	0.60	0.77		0.55	0.57	0.53	0.56
T=12		1.48	1.71	1.51	1.43	0.66	1.26	0.48	0.65	0.85	1.15	1.99	1.20	0.94	0.87	0.96	1.21		0.86	0.78	0.86	0.83
T=10		1.67	1.75	1.73	1.62	0.75	1.40	0.54	0.74	0.97	1.15	2.25	1.35	1.08	0.96	1.10	1.39		0.90	0.87	0.90	0.94
T=8		1.96	1.75	2.04	1.85	0.88	1.40	0.63	0.81	1.09	1.15	2.55	1.57	1.30	1.11	1.19	1.66		0.90	1.00	0.90	1.10
T=6		2.10	1.75	2.17	1.85	0.88	1.40	0.71	0.81	1.09	1.15	2.55	1.57	1.36	1.24	1.19	1.73		0.90	1.22	0.90	1.29
Economicity																						
Investment Cost per installed Capacity	US$/kW	854	968	919	1,206	2,482	1,590	3,056	2,549	1,928	2,091	855	1,406	1,421	1,858	1,730	1,193	1,087	2,462	1,250	2,338	1,248
Levelized Unit Cost	US$/kWh	0.0332	0.0378	0.0372	0.0339	0.0751	0.0455	0.0988	0.1026	0.0682	0.0464	0.0257	0.0415	0.0742	0.0462	0.0704	0.0538	0.0499	0.0726	0.0486	0.0852	0.0602

* Projects with "*" are not reviewed for electricity.Therefore,electricity values are quoted from those offered by PIDC-1./** Electricity is quoted from the value of IEV./***This investment cost is ordered to use for asse

Appendix 6.2-7 Result of the Ranking Study of the new hydropower projects in Vietnam

	RANK	Levelized Unit Cost		Compared by "B/C"										Remarks
				T=24		T=12		T=10		T=8		T=6		
		Project Name	($/kWh)	Project Name	B/C	Project Name	B/C	Project Name	B/C	Project Name	B/C	Project Name	B/C	
	1	Sesan 3	0.0257	Sesan 3	1.33	Sesan 3	1.99	Sesan 3	2.25	Sesan 3	2.55	Sesan 3	2.55	B/C better than
	2	Son La (S)	0.0332	Son La (L)	1.08	Son La (L)	1.71	Son La (L)	1.75	Huoi Quan	2.04	Huoi Quan	2.17	"Ham Thuan & Da Mi"
	3	Dai Thi*	0.0339	Plei Krung	1.07	Huoi Quan	1.51	Huoi Quan	1.73	Son La (S)	1.96	Son La (S)	2.10	▲
	4	Huoi Quan	0.0372	Son La (S)	1.00	Son La (S)	1.48	Son La (S)	1.67	Dai Thi*	1.85	Dai Thi*	1.85	|
	5	Son La (L)	0.0378	Huoi Quan	0.99	Dai Thi*	1.43	Dai Thi*	1.62	Son La (L)	1.75	Son La (L)	1.75	|
	6	Sesan 4	0.0415	Dai Thi*	0.97	Ban Mai*	1.26	Ban Mai*	1.40	Sesan 4	1.57	Sesan 4	1.57	
Cheaper than	7	Ban Mai*	0.0455	Ban Mai*	0.82	Sesan 4	1.20	Sesan 4	1.35	Ban Mai*	1.40	Ban Mai*	1.40	
Ham Thuan & Da Mi	8	Buon Cuop*	0.0462	Sesan 4	0.81	Plei Krung	1.15	Plei Krung	1.15	Thuong Kontum	1.30	Thuong Kontum	1.36	
▲	9	Plei Krung	0.0464	Buon Cuop*	0.62	Rao Quan*	0.96	Rao Quan*	1.10	Rao Quan*	1.19	Dai Ninh**	1.29	
|	10	Dong Nai 4	0.0486	Rao Quan*	0.60	Thuong Kontum	0.94	Thuong Kontum	1.08	Plei Krung	1.15	Buon Cuop*	1.24	
|	11	Dai Ninh**	0.0602	Thuong Kontum	0.59	Buon Cuop*	0.87	An Khe*	0.97	Buon Cuop*	1.11	Dong Nai 4	1.22	B/C >1
|	12	An Khe*	0.0682	Dong Nai 4	0.57	Dong Nai 8	0.86	Buon Cuop*	0.96	Dai Ninh**	1.10	Rao Quan*	1.19	▲
|	13	Rao Quan*	0.0704	Dai Ninh**	0.56	Cau Don	0.86	Dai Ninh**	0.94	An Khe*	1.09	Plei Krung	1.15	|
|	14	Dong Nai 8	0.0726	An Khe*	0.55	An Khe*	0.85	Dong Nai 8	0.90	Dong Nai 4	1.00	An Khe*	1.09	|
|	15	Thuong Kontum	0.0742	Dong Nai 8	0.55	Dai Ninh**	0.83	Cau Don	0.90	Dong Nai 8	0.90	Dong Nai 8	0.90	
|	16	Cua Dat*	0.0751	Cau Don	0.53	Dong Nai 4	0.78	Dong Nai 4	0.87	Cau Don	0.90	Cau Don	0.90	
|	17	Cau Don	0.0852	Cua Dat*	0.45	Cua Dat*	0.66	Cua Dat*	0.75	Cua Dat*	0.88	Cua Dat*	0.88	
|	18	Song Con2*	0.0988	Song Con2*	0.32	Song Con2*	0.48	Song Con2*	0.54	Song Con2*	0.63	Song Con2*	0.71	

LUC "Ham Thuan & Da Mi" 0.0524 $/kWh

B/C "Ham Thuan & Da Mi" T=24 0.77 T=12 1.21 T=8 1.39 T=6 1.73

6.2.8 Son La水力計画F/Sにおける検討項目および作業工程

(1) 地形調査

航空写真測量による地形図の作成

- ダム軸付近（ダム軸候補地点すべて）
- 貯水池全域

(2) 地質調査

- PIDC1の実施した地質調査結果の確認、整理
- Pa Vinh地点のボーリングおよび原位置試験
- ダム軸候補地点アバット部および洪水吐予定地点の弾性波探査
- ダム軸候補地点のグラウト試験
- 材料山の選定および候補地点のボーリング
- 貯水池内で地質上問題となると思われる地点のボーリング
- 調査横坑
  - ダム軸候補地点
  - 材料山候補地点
- 材料物性試験
- 貯水池内全域の地質踏査
  - 岩盤内の空洞の存在確認→貯水池からの漏水発生の可能性検討
  - 貯水池法面安定上問題となる地点の抽出
  - 材料山の選定

(3) 水文調査

- 流量気象資料の妥当性確認
- 設計洪水流量の検討
- 堆砂量の推定
- 洪水調節容量の検討
- 下流利水に関する検討

(4) 設計検討

- 土木構造物の概略設計の実施
- ダム安定解析

- 金物関係の概略設計の実施

(5) 施工関連

- 仮設備計画策定
- 土木工事費算出
- 概略工程の策定

(6) 電気機器関連

- 水車発電機に関する検討
- 電気関係工事費算出
- 送電線計画策定
- 系統運用に関する検討

(7) 社会環境関連

- 環境影響調査
- 補償物件数量確認、補償費算定

(8) その他

- 電力の需給予測
- 財務分析
- 開発規模の検討

Appendix 6.2-8 Tentative Time Schedule of the Feasibility Study on Son La Project

	Year																													
	Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Calendar Month	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
	Rainy Season																														
First Stage	- Data collection & site reconnaissance																														
	- Data review & analysis																														
	- Review of existing development schemes & Comparative study for optimum scheme																														
	- Formulation of detailed investigation program																														
	- Preparation of detailed investigation program																														
Second Stage	- Topographic surveys																														
	- Geological investigation & material tests																														
	- Geological & geotechnic studies																														
	- Hydrological survey																														
	- Power survey																														
	- Environmental assessment																														
	- Compensation survey																														
	- Additional data collection																														
Third Stage	- Optimum studies																														
	- Review & study of optimum power generation expansion program																														
	- Feasibility-grade design																														
	- Cost estimation																														
	- Implementation plan																														
	- Economic & financial analyses																														
Report	- Inception Report																														
	- Porgress Report																														
	- Interim Report																														
	- Draft Final Report																														
	- Final Report																														

▬ : Work in Viet Nam by Consultant ▭ : Work in Japan by Consultant - - - : Field Investigation Work by PIDC-1

6.2.9 Son La水力計画に関する地質状況

Son La水力計画地点は、地質的には、多様な地層と貫入岩からなる基盤上に河床堆積物が堆積した状況を呈している。基盤は局所的に変成岩が存在し、その他の部分は褶曲とそれに伴う断層の結果、歪んでいる。本地点は、地質的には決して良好な岩盤ではないため、ダム型式はロックフィルタイプが推奨されるが、RCC、コンクリートフェイシングダム式も可能である。しかしながら、ヴィエトナムにおいては品質管理の点で、これらのダム型式の選択は難しいであろう。

一方、Da川右岸側は、石灰岩層が広く分布している。我々の現地踏査においてもSon Laの町へ至る道沿いに、石灰岩が地表に突出している典型的なカルスト台地的な性状が多々見受けられた。この石灰岩の山の中に空洞が多々見受けられたため、貯水池内においても、石灰岩帯において空洞は多数存在しえるものと考える。したがって、フィジビリティスタデイにおいても貯水池内およびダム軸近傍地点内の空洞調査は是非とも実施する必要がある。これらの空洞はダムの安定性に多大な影響を及ぼす可能性があり、また、貯水池内においては、特に鞍部において、貯水池から他流域への漏水を招く危険性がある。

Pa Vinh地点を除く3地点についてはPIDC1により地質調査が実施されており、ダム軸近傍の地質性状が把握されている。これによると、河床部は10～20mの厚さで堆積物に覆われており、左右岸の岩着部分もダム軸が下流に移動するにつれて表土厚が増し、掘削量の増大が懸念される。現地踏査によれば、上流側のダム軸地点においては露頭も多少見られるようになってくる傾向にある。一方、ボーリング孔における透水試験結果によれば、いずれのダム軸においても透水層が20～50mの厚さで分布しており、ダム工事においては基礎処理が計画完成のキーポイントとなるものと思われる。ダム軸候補地点の地質状況の現段階における比較検討結果を次頁以下の表に示す。現在、調査が実施されていない最上流のPa Vinh地点について、詳細な地質情報を収集した結果、PIDC1の実施した地質調査結果と併せてダム軸候補地点の比較検討を行い、ダム軸位置の選定を行う必要がある。

Table 1 Topographical Characteristics of the Alternative Damsites

	Unit	No. 1 Pa Vinh Damsite	No. 2 Ta Bu Damsite	No. 3 Ban Pau Damsite	No. 4 Ban Tan Damsite	
Name of Cross Section		A - A	A- A	A - A	Upstream C - C (Alternative 265 m)	Downstream D - D (Alternative 215 m)
Elevation of River Bed	m	106.78*	102.23*	92.47*	93.19*	
Width of River Bed	m	220	230	170	180	180
Average Inclination of the Left Abutment	degree	25°	35° (EL. 110 ~ 230 m) 10° (EL. 230 ~ 320 m)	35°	13°	25°
Average Inclination of the Right Abutment	degree	40°	32° (EL. 110 ~ 270 m) 10° (EL. 270 ~ 310 m)	18°	20°	25°
Valley Width at EL. 265 m	m	740	840	920	1,360	-
Valley Width at EL. 245 m	m	670	740	810	1,260	1,260
Valley Width at EL. 215 m	m	580	560	670	1,140	1,130
Minimum Pass Length at EL. 265 m						
Left bank	m	Thick	300	150	220	0
Right bank	m	950	300	Thick	Thick	Thick
Minimum Pass Length at EL. 215 m						
Left bank	m	-	-	-	-	300
Right bank	m	-	-	-	-	Thick
Remarks				Thin ridge of the left bank	Thin saddle (EL. 220 m) on the left bank	

* Ref. Da River Profile

Table 2 Geological Characteristics of the Alternative Damsites (1/2)

	No. 1 Pa Vinh Damsite	No. 2 Ta Bu Damsite	No. 3 Ban Pau Damsite	No. 4 Ban Ta Damsite
Foundation Rocks	Muong Trai Formation (Triassic)	Vien Nam Formation (Permian ~ Triassic)	Vien Nam Formation (Permian ~ Triassic)	Vien Nam Formation (Permian ~ Triassic)
Strata	Left bank ~ Riverbed: (Lower formation)	Left bank ~ Right bank: (Lower subformation)	Left bank ~ Riverbed: (Lower part)	Left bank ~ Right bank: (Upper part)
	Massive basalt porphyrite	Basalt porphyrite, transformed and schistosed, interbedded with green schist layers	Basalt porphyrite, transformed, schistosed, massive, interbedded with green schist layers	Basalt porphyrite, massive, intercalated with green schist layers
	Right bank: (Upper formation)	Right bank: (Upper subformation)	Right bank: (Upper part)	
	Alternation of siltstone, sandstone and tuffaceous sandstone	Basalt porphyrite, massive	Basalt porphyrite, massive	
Intrusive Rocks	Gabbro diabase and rhyolite porphyry along faults	Gabbro diabase and rhyolite porphyry along faults	Gabbro diabase dykes along faults	Gabbro diabase dykes along faults

Table 3 Geological Characteristics of the Alternative Damsites (2/2)

	No. 1 Pa Vinh Damsite	No. 2 Ta Bu Damsite	No. 3 Ban Pau Damsite	No. 4 Ban Ta Damsite
Quaternary System	Alluvium: River bed deposit consisting of fine grained sand with pebble and gravel 3 m in thickness Residual soil: Left bank 5 m thick Right bank 3 m thick	Alluvium: River bed deposit Terrace deposit Reservoir sedimentary silt on both banks Residual soil: Less than 5 m thick (max. 9 m)	Alluvium: River bed deposit Reservoir sedimentary silt on both banks Residual soil: 2 m thick thicker at high elevation max. 10 m	Alluvium: River bed deposit 2 ~ 10 m thick Terrace deposit 2 ~ 5 m thick Residual soil:
Geologic Structure	Anticlinorium: Mainly dipping to the right bank with 40 ~ 80° III grade fault on the right bank	Folding: Mainly dipping 50 ~ 80° Faults, III grade, IV grade, V grade	Monoclinic: Dipping to the right bank with 25 ~ 70° Faults, IV grade, V grade	Monoclinic: Dipping to the right bank Faults
Remarks	No existing borehole	Muong Trai Formation (middle subformation): Massive limestone on the right bank		

Table 4 Engineering Geology of the Alternative Damsite Foundation (1/2)

	No. 1 Pa Vinh Damsite	No. 2 Ta Bu Damsite	No. 3 Ban Pau Damsite	No. 4 Ban Ta Damsite
Foundation Classification				
(1) Alluvium	Estimated less than 15 m in thickness	Estimated less than 10 m in thickness Thick silt sedimentation on both banks	Estimated less than 20 m in thickness Thick silt sedimentation on both banks	Estimated less than 10 m in thickness Thick silt sedimentation on both banks
(2) Residual Soil	Thicker on the gentle left abutment (basalt porphyrite) than the steep right abutment (sandstone and siltstone)	Estimated less than 5 m in thickness on both abutments, but at the right rim, residual soil is 9.1 m at borehole TB-4	Estimated 5 10 m in thickness on the right gentle abutment, and less than 5 m on the left, rather steep, abutment	Estimated to be thick about 10 m in thickness on the gentle slope of the left abutment, and thinner on the right abutment comparatively
(3) Intensively Weathered Zone	No borehole data	Estimated less than 5 m in thickness on the left abutment, 5 ~ 7 m on the right abutment	Estimated less than 10 m in thickness on the right abutment, and less than 20 m at high elevation abutment on the left bank	Estimated less than 10 m in thickness on both abutment, but partially thick about 20 m on the left abutment (Bta 1)
(4) Strongly Weathered to Weathered Zone	No borehole data	Estimated about 15 m in thickness on both abutments	Estimated about 20 m in thickness on the right abutment (massive basalt porphyrite), and thinner less than 5 m on the left abutment (schistosed basalt porphyrite)	Generally thick at high elevation on both abutments

Table 5 Engineering Geology of the Alternative Damsite Foundation (2/2)

	No. 1 Pa Vinh Damsite	No. 2 Ta Bu Damsite	No. 3 Ban Pau Damsite	No. 4 Ban Ta Damsite
(5) Fresh Rock Zone	Lots of fresh outcrops of basalt porphyrite on the riverbed and both banks	Some fresh outcrops on the riverbed	No outcrops of fresh rock on the riverbed, but below alluvium on the riverbed and at low elevations on both banks, fresh rock zone can be observed (BP6, 2, 21, 7)	Some fresh outcrops on the riverbed, and fresh rock zone can be observed below alluvium (BP8, 23)
Permeability	No borehole data	High permeable zone ($q \geq 0.10$) is estimated to be 30 ~ 35 m at the left abutment (strongly fractured zone), thinner at the right abutment but thick, about 55 m, at the right rim (strongly fractured zone)	High permeable zone ($q \geq 0.10$) is estimated to be 25 ~ 55 m on the left abutment (strongly fractured schistosed basalt porphyrite), and thinner on the right abutment (massive basalt porphyrite)	Generally low permeability ($q \leq 0.02$) in fresh rock zone Some high permeable zones along tectonic crushed zones (faults)
Ground Water Level	No borehole data	Low groundwater level at high elevations on both abutments (strongly fractured zone)	Low groundwater level at the left abutment (strongly fractured schistosed basalt porphyrite, thin ridge)	Low groundwater level on the left abutment (strongly fractured zone, thin ridge)
Remarks	Lens of limestone just downstream of the damsite on the left bank	A limestone layer lying on the right bank shall be carefully investigated	Thin ridge on the left abutment	Thin ridge on the left abutment