Table 6.5.1 - 1 Over Load Factor of Transformers of Each Grid Substation in The Year 2010

Provinces	Grid Substations	Voltage Ratio (kV)	Before Reinforcement				After Reinforcement				Countermeasures
			Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Load (%)	
North Centraal	(1) Anuradhapura	132/33	63	48.0	53.3	85	63	42.3	47.0	75	
	(2) Habarana	132/33	63	22.8	25.3	40	63	28.4	31.6	50	
	(3) Polonnaruwa	132/33	32	32.8	36.4	114	32	23.8	26.4	83	
Northern	(4) Chunnakam	132/33	70	67.3	74.8	107	91.5	67.2	74.7	82	Replace od Transformer
	(5) Kilinochchi	132/33	20	13.9	15.4	77	20	13.9	15.4	77	(10MVA to 31.5MVA)
	(6) Vavunia	132/33	10	10.0	11.1	111	20	10.0	11.1	56	
Central	(7) Kiribathkumbura	132/33	94.5	47.6	52.9	56	94.5	47.7	53.0	56	
	(8) Ukuwela	132/33	63	47.9	53.2	84	63	47.8	53.1	84	
	(9) Rantembe	-/132/3	20	10.2	11.3	57	20	10.2	11.3	57	
	(10) Nuwara Eliya	132/33	63	39.1	43.4	69	63	38.6	42.9	68	
	(11) Wimalasurendra	132/33	63	22.7	25.2	40	63	22.6	25.1	40	
	(12) Palekelle	132/33	63	31.7	35.2	56	63	31.7	35.2	56	
North Western	(13) Kurunegala	132/33	63	44.5	49.4	78	63	44.4	49.3	78	
	(14) Puttalam	132/33	63	53.2	59.1	94	63	48.9	54.3	86	
	(15) Bolawatta	132/33	91.5	69.9	77.7	85	91.5	63.8	70.9	77	
	(16) Chilaw	132/33	63	72.1	80.1	127	94.5	72.0	80.0	85	Addition of Trans.
	(17) Kuliyapitiya	132/33	63	83.6	92.9	147	94.5	57.1	63.4	67	Addition of Trans.
	(18) Pannala	132/33					63	34.3	38.1	60	New construction
Western-North	(19) Kotugoda	-/132/33	120	88.6	104.2	87	120	77.1	90.7	76	
	(20) Sapugaskanda	132/33	121.5	146.4	172.2	142	121.5	91.6	107.8	89	
	(21) Biyagama	-/132/33	120	130.3	153.3	128	120	85.9	101.1	84	
	(22) Veyangoda	132/33	63	29.8	35.1	56	63	35.7	42.0	67	
	(23) Aniyakanda	132/33	63	51.4	60.5	96	94.5	50.3	59.2	63	Addition of Trans.
	(24) Kelaniya	132/33	126	146.5	172.4	137	189	117.5	138.2	73	Addition of Trans.
	(25) Muthuragawella	132/33	63	70.4	82.8	131	126	85.2	100.2	80	Addition of Trans.
	(26) Gonawala	132/33	94.5	91.0	107.1	113	126	80.1	94.2	75	Addition of Trans.
	(27) Katana	132/33	63	40.6	45.1	72	94.5	54.7	60.8	64	Addition of Trans.
	(28) Imbulgoda	132/33					126	86.7	96.3	76	New construction
Eastern	(29) Trincomalee	132/33	63	31.9	35.4	56	63	31.9	35.4	56	
	(30) Inginiyagara	132/33	30	0.8	0.9	3	30	2.9	3.2	11	
	(31) Valaichchenai	132/33	63	12.2	13.6	22	63	15.5	17.2	27	
	(32) Ampara	132/33	63	18.4	20.4	32	63	21.0	23.3	37	
Western-South	(33) Ratmalana	132/33	123	123.2	144.9	118	123	91.3	107.4	87	
	(34) Pannipitiya	132/33	123	99.9	117.5	96	123	92.2	108.5	88	
	(35) O.D.S.S(Kotonnawa)	132/33	157.5	146.9	172.8	110	157.5	117.5	138.2	88	
	(36) Matugama	132/33	94.5	24.9	29.3	31	94.5	13.9	16.4	17	
	(37) Avissawella	132/33	63	41.0	48.2	77	63	43.5	51.2	81	
	(38) Panadura	132/33	63	64.5	75.9	120	94.5	70.4	82.8	88	Addition of Trans.
	(39) Sithawaka	132/33	63	34.0	40.0	63	63	25.4	29.9	47	
	(40) Athurugiriya	132/33	63	45.3	53.3	85	94.5	65.3	76.8	81	Addition of Trans.
	(41) Sri Jaya'pura	132/33	126	111.6	131.3	104	126	77.7	91.4	73	
	(42) Dehiwala	-/132/33	126	139.2	163.8	130	189	103.8	122.1	65	Addition of Trans.
	(43) Horana	132/33	63	30.0	33.3	53	63	31.6	37.2	59	
	(44) Kesbewa	132/33					94.5	66.7	78.5	83	New construction
	(45) Angoda	132/33					94.5	62.1	73.1	77	New construction
Southern	(46) Galle	132/33	91.5	80.9	89.9	98	91.5	66.3	73.7	81	
	(47) Deniyaya	132/33	30	30.3	33.7	112	46.5	24.6	27.3	59	Replace of Trans.(1unit)
	(48) Matara	132/33	63	55.4	61.6	98	94.5	58.9	65.4	69	Addition of Trans.
	(49) New Galle	132/33	94.5	80.7	89.7	95	94.5	66.3	73.7	78	
	(50) Ambalangoda	132/33	63	35.1	39.0	62	63	20.7	23.0	37	
	(51) Hambantota	132/33	20	12.1	13.4	67	20	13.4	14.9	74	
	(52) Boossa	132/33					63	47.4	52.7	84	New construction
Uva	(53) Badulla	132/33	94.5	37.1	41.2	44	94.5	38.3	42.6	45	
	(54) Medagama	132/33	10	4.4	4.9	49	10	4.4	4.9	49	
Sabaraga-muwa	(55) Balangoda	132/33	63	16.5	18.3	29	63	16.4	18.2	29	
	(56) Thulhiriya	132/33	94.5	82.1	91.2	97	94.5	60.0	66.7	71	
	(57) Embilipitiya	132/33	63	8.9	9.9	16	63	9.0	10.0	16	
	(58) Ratnapura	132/33	63	77.6	86.2	137	94.5	60.3	67.0	71	Addition of Trans.
	(59) Kegalle	132/33	63	76.3	84.8	135	94.5	59.2	65.8	70	Addition of Trans.
	(60) Aguruwella	132/33					63	44.7	49.7	79	New construction
	(61) Eheliyagoda	132/33					63	30.2	33.6	53	New construction
Colombo	(62) Kelanitissa(KTS)	132/33	120	59.5	70.0	58	120	59.4	69.9	58	
	(63) Sub-E(Kollipitiya)	132/11	90	38.2	69.1	77	90	38.1	69.0	77	
	(64) Sub-F(Fort)	132/11	90	43.2	101.6	113	90	32.3	76.0	84	
	(65) Town Hall	132/11	126	39.2	92.2	73	126	29.3	53.0	42	
	(66) Sub-B	132/11					126	32.3	76.0	60	New construction
TOTAL			4325	3214	3807	88	5570	3214	3799	68	

Remarks: a) Load factor for calculation of peak load in MVA is assummed as 85% for Western-North, Western-South and Colombo and 90% for other areas.

b) Peak load in MVA of Kollipitiya and Fort grid substations is calculated in the basis of day-time peak, i.e 0.65 for Kollipitiya and 0.5 for Fort.

Table 6.5.1 - 2 Over Load Factor of Transformers of Grid Substation by Year between 2005 and 2010

Provinces	Grid Substations	2005				2006								2007								2008								2009								2010			
		After Reinforcement				Before Reinforcement				After Reinforcement				Before Reinforcement				After Reinforcement				Before Reinforcement				After Reinforcement				Before Reinforcement				After Reinforcement				After Reinforcement			
		Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Over Load (%)
North Central	(1) Anuradhapura	63	32.3	35.9	57	63	34.9	38.8	62	63	34.9	38.8	62	63	37.8	42.0	67	63	33.8	37.6	60	63	36.2	40.2	64	63	36.2	40.2	64	63	39.1	43.4	69	63	39.1	43.4	69	63	42.3	47.0	75
	(2) Habarana	63	24.2	26.9	43	63	25.9	28.8	46	63	25.9	28.8	46	63	27.8	30.9	49	63	22.8	25.3	40	63	24.4	27.1	43	63	24.4	27.1	43	63	26.3	29.2	46	63	26.3	29.2	46	63	28.4	31.6	50
	(3) Polonnaruwa	32	14.4	16.0	50	32	15.5	17.2	54	32	15.5	17.2	54	32	16.8	18.7	58	32	19.2	21.3	67	32	20.5	22.8	71	32	20.5	22.8	71	32	22.1	24.6	77	32	22.1	24.6	77	32	23.8	26.4	83
Northern	(4) Chunnakam	70	49.7	55.2	79	70	53.4	59.3	85	70	53.4	59.3	85	70	57.2	63.6	91	91.5	57.9	64.3	70	91.5	60.9	67.7	74	91.5	60.9	67.7	74	91.5	64.0	71.1	78	91.5	63.9	71.0	78	91.5	67.2	74.7	82
	(5) Kilinochchi	20	9.9	11.0	55	20	10.8	12.0	60	20	10.8	12.0	60	20	11.7	13.0	65	20	11.8	13.1	66	20	12.6	14.0	70	20	12.6	14.0	70	20	13.3	14.8	74	20	13.2	14.7	73	20	13.9	15.4	77
	(6) Vavunia	10	6.8	7.6	76	10	7.4	8.2	82	10	7.3	8.1	81	10	8.0	8.9	89	20	8.1	9.0	45	20	8.6	9.6	48	20	8.6	9.6	48	20	9.3	10.3	52	20	9.3	10.3	52	20	10.0	11.1	56
Central	(7) Kiribathkumbura	94.5	36.5	40.6	43	94.5	38.4	42.7	45	94.5	38.4	42.7	45	94.5	40.5	45.0	48	94.5	41.0	45.6	48	94.5	42.8	47.6	50	94.5	42.8	47.6	50	94.5	45.2	50.2	53	94.5	45.1	50.1	53	94.5	47.7	53.0	56
	(8) Ukuwela	63	32.0	35.6	56	63	34.6	38.4	61	63	34.6	38.4	61	63	37.6	41.8	66	63	38.0	42.2	67	63	40.8	45.3	72	63	40.7	45.2	72	63	44.2	49.1	78	63	44.1	49.0	78	63	47.8	53.1	84
	(9) Rantembe	20	7.5	8.3	42	20	7.9	8.8	44	20	7.9	8.8	44	20	8.5	9.4	47	20	8.6	9.6	48	20	9.0	10.0	50	20	9.0	10.0	50	20	9.6	10.7	53	20	9.5	10.6	53	20	10.2	11.3	57
	(10) Nuwara Eliya	63	30.6	34.0	54	63	32.0	35.6	56	63	32.0	35.6	56	63	33.6	37.3	59	63	33.7	37.4	59	63	35.0	38.9	62	63	35.0	38.9	62	63	36.8	40.9	65	63	36.7	40.8	65	63	38.6	42.9	68
	(11) Wimalasurendra	63	18.2	20.2	32	63	22.9	25.4	40	63	22.9	25.4	40	63	19.8	22.0	35	63	20.0	22.2	35	63	20.7	23.0	37	63	20.7	23.0	37	63	21.6	24.0	38	63	21.6	24.0	38	63	22.6	25.1	40
	(12) Palekelle	63	21.9	24.3	39	63	23.8	26.4	42	63	23.8	26.4	42	63	25.6	28.4	45	63	25.9	28.8	46	63	27.5	30.6	49	63	27.5	30.6	49	63	29.5	32.8	52	63	29.5	32.8	52	63	31.7	35.2	56
North Western	(13) Kurunegala	63	30.8	34.2	54	63	33.1	36.8	58	63	33.1	36.8	58	63	35.6	39.6	63	63	36.1	40.1	64	63	38.4	42.7	68	63	38.4	42.7	68	63	41.3	45.9	73	63	41.2	45.8	73	63	44.4	49.3	78
	(14) Puttalam	63	33.3	37.0	59	63	36.5	40.6	64	63	36.5	40.6	64	63	40.1	44.6	71	63	40.6	45.1	72	63	44.1	49.0	78	63	44.1	49.0	78	63	48.4	53.8	85	63	48.4	53.8	85	63	48.9	54.3	86
	(15) Bolawatta	91.5	46.5	51.7	56	91.5	50.3	55.9	61	91.5	50.3	55.9	61	91.5	54.7	60.8	66	91.5	50.3	55.9	61	91.5	54.1	60.1	66	91.5	54.0	60.0	66	91.5	58.7	65.2	71	91.5	58.7	65.2	71	91.5	63.8	70.9	77
	(16) Chilaw	63	45.5	50.6	80	63	49.8	55.3	88	63	49.8	55.3	88	63	54.7	60.8	96	94.5	55.3	61.4	65	94.5	60.0	66.7	71	94.5	60.0	66.7	71	94.5	65.7	73.0	77	94.5	65.7	73.0	77	94.5	72.0	80.0	85
	(17) Kuliyapitiya	63	43.9	48.8	77	63	49.9	55.4	88	63	49.9	55.4	88	63	56.9	63.2	100	94.5	57.6	64.0	68	94.5	64.8	72.0	76	94.5	64.7	71.9	76	94.5	73.5	81.7	86	94.5	73.5	81.7	86	94.5	57.1	63.4	67
	(18) Pannala																																					63	34.3	38.1	60
Western-North	(19) Kotugoda	120	60.6	71.3	59	120	65.0	76.5	64	120	65.0	76.5	64	120	70.3	82.7	69	120	59.5	70.0	58	120	63.6	74.8	62	120	66.1	77.8	65	120	71.4	84.0	70	120	71.4	84.0	70	120	77.1	90.7	76
	(20) Sapugaskanda	122	87.7	103.2	85	122	96.9	114.0	94	122	77.7	91.4	75	122	86.3	101.5	84	122	87.4	102.8	85	122	95.9	112.8	93	122	87.4	102.8	85	122	96.7	113.8	94	122	82.6	97.2	80	122	91.6	107.8	89
	(21) Biyagama	120	72.4	85.2	71	120	81.3	95.6	80	120	81.2	95.5	80	120	91.6	107.8	90	120	85.0	100.0	83	120	94.6	111.3	93	120	68.4	80.5	67	120	76.7	90.2	75	120	76.6	90.1	75	120	85.9	101.1	84
	(22) Veyangoda	63	21.5	25.3	40	63	22.9	26.9	43	63	22.9	26.9	43	63	24.5	28.8	46	63	27.8	32.7	52	63	29.4	34.6	55	63	31.3	36.8	58	63	33.4	39.3	62	63	33.4	39.3	62	63	35.7	42.0	67
	(23) Aniyakanda	63	34.8	40.9	65	63	37.5	44.1	70	63	37.5	44.1	70	63	40.6	47.8	76	63	47.6	56.0	89	63	50.9	59.9	95	63	42.9	50.5	80	63	46.5	54.7	87	63	46.4	54.6	87	94.5	50.3	59.2	63
	(24) Kelaniya	126	82.7	97.3	77	126	92.5	108.8	86	126	92.4	108.7	86	126	103.9	122.2	97	126	95.2	112.0	89	126	105.9	124.6	99	126	93.2	109.6	87	126	104.7	123.2	98	189	104.6	123.1	65	189	117.5	138.2	73
	(25) Muthuragawella	63	40.9	48.1	76	63	45.5	53.5	85	94.5	45.5	53.5	57	94.5	50.8	59.8	63	94.5	70.4	82.8	88	94.5	77.5	91.2	96	94.5	69.0	81.2	86	94.5	76.7	90.2	95	126	76.6	90.1	72	126	80.1	94.2	75
	(26) Gonawala	94.5	50.5	59.4	63	94.5	56.7	66.7	71	94.5	63.4	74.6	79	94.5	71.5	84.1	89	94.5	68.5	80.6	85	94.5	76.3	89.8	95	94.5	63.5	74.7	79	94.5	71.4	84.0	89	94.5	71.3	83.9	89	126	85.2	100.2	80
	(27) Katana	63	29.9	33.2	53	63	31.7	35.2	56	63	31.7	35.2	56	63	33.7	37.4	59	63	46.1	51.2	81	63	48.4	53.8	85	63	48.4	53.8	85	63	51.5	57.2	91	94.5	51.5	57.2	61	94.5	54.7	60.8	64
	(28) Imbulgoda																									94.5	68.7	76.3	81	94.5	77.2	85.8	91	126	77.2	85.8	68	126	86.7	96.3	76
Eastern	(29) Trincomalee	63	23.4	26.0	41	63	24.8	27.6	44	63	24.8	27.6	44	63	26.5	29.4	47	63	26.8	29.8	47	63	28.2	31.3	50	63	28.1	31.2	50	63	30.0	33.3	53	63	29.9	33.2	53	63	31.9	35.4	56
	(30) Inginiyagala	30	0.6	0.7	2	30	0.6	0.7	2	30	0.6	0.7	2	30	0.7	0.8	3	30	2.5	2.8	9	30	2.6	2.9	10	30	2.6	2.9	10	30	2.8	3.1	10	30	2.8	3.1	10	30	2.9	3.2	11
	(31) Valaichchenai	63	8.9	9.9	16	63	9.4	10.4	17	63	9.4	10.4	17	63	10.1	11.2	18	63	13.0	14.4	23	63	13.7	15.2	24	63	13.6	15.1	24	63	14.6	16.2	26	63	14.5	16.1	26	63	15.5	17.2	27
	(32) Ampara	63	14.8	16.4	26	63	15.4	17.1	27	63	15.4	17.1	27	63	16.1	17.9	28	63	18.4	20.4	32	63	19.1	21.2	34	63	19.1	21.2	34	63	20.1	22.3	35	63	20.0	22.2	35	63	21.0	23.3	37
Western-South	(33) Ratmalana	123	76.0	89.4	73	123	83.5	98.2	80	123	73.9	86.9	71	123	81.7	96.1	78	123	82.7	97.3	79	123	90.1	106.0	86	123	90.0	105.9	86	123	99.1	116.6	95	123	83.0	97.6	79	123	91.3	107.4	87
	(34) Pannipitiya	123	66.6	78.4	64	123	71.9	84.6	69	123	66.7	78.5	64	123	72.2	84.9	69	123	73.1	86.0	70	123	78.2	92.0	75	123	78.2	92.0	75	123	84.9	99.9	81	123	84.8	99.8	81	123	92.2	108.5	88
	(35) O.D.S.S(Kolonnawa)	158	96.4	113.4	72	158	104.5	122.9	78	158	104.4	122.8	78	158	113.7	133.8	85	158	103.4	121.6	77	158	111.6	131.3	83	158	108.0	127.1	81	158	117.7	138.5	88	158	107.8	126.8	81	158	117.5	138.2	88
	(36) Matugama	94.5	17.1	20.1	21	94.5	18.3	21.5	23	94.5	18.3	21.5	23	94.5	19.7	23.2	25	94.5	21.7	25.5	27	94.5	23.1	27.2	29	94.5	23.1	27.2	29	94.5	24.8	29.2	31	94.5	22.0	25.9	27	94.5	13.9	16.4	17
	(37) Avissawella	63	27.0	31.8	50	63	29.2	34.4	55	63	29.2	34.4	55	63	31.8	37.4	59	63	38.6	45.4	72	63	41.8	49.2	78	63	39.8	46.8	74	63	43.6	51.3	81	63	43.2	50.8	81	63	43.5	51.2	81
	(38) Panadura	63	40.8	48.0	76	63	44.6	52.5	83	63	44.6	52.5	83	63	49.0	57.6	92	94.5	48.0	56.5	60	94.5	52.1	61.3	65	94.5	52.1	61.3	65	94.5	57.1	67.2	71	94.5	64.1	75.4	80	94.5	70.4	82.8	88
	(39) Sithawaka	63	19.8	23.3	37	63	22.0	25.9	41	63	22.0	25.9	41	63	24.6	28.9	46	63	18.7	22.0	35	63	20.6	24.2	38	63	20.6	24.2	38	63	22.9	26.9	43	63	22.9	26.9	43	63	25.4	29.9	47
	(40) Athurugiriya	63	30.9	36.4	58	63	33.2	39.1	62	63	47.5	55.9	89	63	51.4	60.5	96	94.5	52.0	61.2	65	94.5	55.6	65.4	69	94.5	55.6	65.4	69	94.5	60.3	70.9	75	94.5	60.2	70.8	75	94.5	65.3	76.8	81
	(41) Sri Jaya'pura	126	72.0	84.7	67	126	78.4	92.2	73	126	78.4	92.2	73	126	85.8	100.9	80	126	86.8	102.1	81	126	93.7	110.2	87	126	93.7	110.2	87	126	102.2	120.2	95	126	71.2	83.8	66	126	77.7	91.4	73
	(42) Dehiwala	126	88.9	104.6	83	126	99.7	117.3	93	126	75.8	89.2	71	126	82.0	96.5	77	126	83.0	97.6	77	126	88.8	104.5	83	126	88.8	104.5	83	126	96.0	112.9	90	189	95.9	112.8	60	189	103.8	122.1	65
	(43) Horana	63	20.0	23.5	37	63	21.7	24.1	38	63	21.6	25.4	40	63	23.5	26.1	41	63	25.1	29.5	47	63	26.9	31.6	50	63	26.9	31.6	50	63	29.2	32.4	51	63	29.1	34.2	54	63	31.6	37.2	59
	(44) Keshewa									63	38.2	44.9	71	63	42.1	46.8	74	63	42.7	50.2	80	63	46.5	54.7	87	63	46.5	54.7	87	63	51.1	56.8	90	94.5	60.7	71.4	76	94.5	66.7	78.5	83
	(45) Angoda																																	94.5	57.0	67.1	71	94.5	62.1	73.1	77
Southern	(46) Galle	91.5	52.5	58.3	64	91.5	57.1	63.4	69	91.5	57.1	63.4	69	91.5	62.4	69.3	76	91.5	63.2	70.2	77	91.5	68.2	75.8	83	91.5	68.1	75.7	83	91.5	74.2	82.4	90	91.5	60.8	67.6	74	91.5	66.3	73.7	81
	(47) Deniyaya	30	21.1	23.4	78	30	22.6	25.1	84	30	22.6	25.1	84	30	24.3	27.0	90	30	20.1	22.3	74	30	21.3	23.7	79	30	21.3	23.7	79	30	28.1	31.2	104	30	22.9	25.4	85	46.5	24.6	27.3	59
	(48) Matara	63	40.8	45.3	72	63	43.2	48.0	76	63	43.2	48.0	76	63	46.0	51.1	81	63	49.3	54.8	87	63	51.9	57.7	92	94.5	51.9	57.7	61	94.5	55.3	61.4	65	94.5	55.3	61.4	65	94.5	58.9	65.4	69
	(49) New Galle	94.5	52.4	58.2	62	94.5	57.0	63.3	67	94.5	57.0	63.3	67	94.5	62.2	69.1	73	94.5	63.0	70.0	74	94.5	68.0	75.6	80	94.5	67.9	75.4	80	94.5	74.0	82.2	87	94.5	60.8	67.6	71	94.5	66.3	73.7	78
	(50) Ambalangoda	63	23.7	26.3	42	63	25.6	28.4	45	63	25.6	28.4	45	63	27.7	30.8	49	63	28.0	31.1	49	63	30.0	33.3	53	63	30.0	33.3	53	63	32.4	36.0	57	63	19.3	21.4	34	63	20.7	23.0	37
	(51) Hambantota	20	10.0	11.1	56	20	10.3	11.4	57	20	10.3	11.4	57	20	10.7	11.9	59	20	12.1	13.4	67	20	12.4	13.8	69	20	12.4	13.8	69	20	12.9	14.3	72	20	12.9	14.3	72	20	13.4	14.9	74
	(52) Boossa																																	63	42.6	47.3	75	63	47.4	52.7	84
Uva	(53) Badulla	94.5	28.0	31.1	33	94.5	29.5	32.8	35	94.5	29.5	32.8	35	94.5	31.3	34.8	37	94.5	32.7	36.3	38	94.5	34.2	38.0	40	94.5	34.2	38.0	40	94.5	36.2	40.2	43	94.5	36.2	40.2	43	94.5	38.3	42.6	45
	(54) Medagama	10	3.4	3.8	38	10	3.6	4.0	40	10	3.6	4.0	40	10	3.7	4.1	41	10	3.8	4.2	42	10	4.0	4.4	44	10	3.9	4.3	43	10	4.2	4.7	47	10	4.2	4.7	47	10	4.4	4.9	49
Sabaragamuwa	(55) Balangoda	63	12.5	13.9	22	63	13.2	14.7	23	63	13.2	14.7	23	63	14.0	15.6	25	63	14.2	15.8	25	63	14.7	16.3	26	63	14.7	16.3	26	63	15.5	17.2	27	63	15.5	17.2	27	63	16.4	18.2	29
	(56) Thulhiriya	94.5	48.4	53.8	57	94.5	54.0	60.0	63	94.5	54.0	60.0	63	94.5	60.0	66.7	71	94.5	46.0	51.1	54	94.5	50.5	56.1	59	94.5	50.5	56.1	59	94.5	56.0	62.2	66	94.5	56.0	62.2	66	94.5	60.0	66.7	71
	(57) Embilipitiya	63	7.0	7.8	12	63	7.3	8.1	13	63	7.3	8.3	13	63	7.7	8.6	14	63	7.9	8.8	14	63	8.2	9.1	14	63	8.2	9.1	14	63	8.6	9.6	15	63	8.6	9.6	15	63	9.0	10.0	16
	(58) Ratnapura	63	40.4	44.9	71	63	46.3	51.4	82	63	46.2	51.3	81	63	52.7	58.6	93	63	45.7	50.8	81	63	51.5	57.2	91	94.5	60.0	66.7	71	94.5	68.2	75.8	80	94.5	68.1	75.7	80	94.5	60.3	67.0	71
	(59) Kegalle	63	44.5	49.4	78	63	49.7	55.2	88	63	49.6	55.1	87	63	55.4	61.6	98	63	43.6	48.4	77	63	48.1	53.4	85	63	48.1	53.4	85	63	53.5	59.4	94	94.5	53.4	59.3	63	94.5	59.2	65.8	70
	(60) Aguruwella																	63	31.2	34.7	55	63	34.4	38.2	61	63	36.4	40.4	64	63	40.4	44.9	71	63	40.4	44.9	71	63	44.7	49.7	79
	(61) Eheliyagoda																																					63	30.2	33.6	53
Colombo	(62) Kelanitissa(KTS)	120	43.9	51.6	43	120	46.5	54.7	46	120	46.5	54.7	46	120	49.4	58.1	48	120	50.0	58.8	49	120	52.6	61.9	52	120	52.5	61.8	51	120	55.9	65.8	55	120	55.8	65.6	55	120	59.4	69.9	58
	(63) Sub-E(Kollupitiya)	90	27.9	50.5	56	90	29.6	53.6	60	90	29.6	53.6	60	90	31.5	57.0	63	90	31.9	57.7	64	90	33.6	60.8	68	90	33.6	60.8	68	90	35.8	64.8	72	90	35.8	64.8	72	90	38.1	69.0	77
	(64) Sub-F(Fort)	90	31.5	74.1	82	90	33.4	78.6	87	90	33.4	78.6	87	90	35.6	83.8	93	90	27.0	63.5	71	90	28.5	67.1	75	90	28.5	67.1	75	90	30.3	71.3	79	90	30.3	71.3	79	90	32.3	76.0	84
	(65) Town Hall	126	31.5	57.0	45	126	33.4	78.6	62	126	33.4	60.5	48	126	35.6	83.8	66	126	27.0	48.9	39	126	28.5	51.6	41	126	28.5	51.6	41	126	30.3	71.3	57	126	30.3	54.8	44	126	29.3	53.0	42
	(66) Sub-B																	126	27.0	63.5	50	126	28.5	67.1	53	126	28.5	67.1	53	126	30.3	71.3	57	126	30.3	71.3	57	126	32.3	76.0	60
TOTAL		4325	2088	2469	57	4325	2277	2707	63	4420	2277	2691	61	4420	2481	2946	67	4766	2508	2978	62	4766	2705	3209	67	4924	2705	3204	65	4924	2953	3507	71	5365	2948	3490	65	5570	3214	3799	68

Table 6.5.1 - 3 Proposed New Subprojects for Transmission System up to the Year 2010

Augmentation and Extension of GSS	Re-marks	Proposed Commiss. Year
(1) Power Transmission Facilities Related to Trincomalee Coal-Fired Thermal Plant		
(1-1) Construction of Trincomalee - Veyangoda 220kV Line		2007
a) Trincomalee P/S - Habarana 220kV line (2cct, 95km, 4xZebra)		
b) Habarana - Wariyapola 220kV line (2cct, 80km, 4xZebra)		
c) Wariyapola - Veyangoda 220kV line (2cct, 65km, 4xZebra)		
d) Veyangoda (two 220kV T/L bays for Wariyapola line)		
(1-2) Construction of 220kV Habarana Switching Substation	a	2007
a) Habarana 220kV Switching Station		
b) Double pi-connection of Kotmale - New Anuradhapura 220kV line (2x2cct, 0.5km, Zebra)		
(1-3) Construction of 220kV Wariyapola Switching Station	a	2007
a) Wariyapola 220kV Switching Station		
(1-4) Construction of 220kV Matale Substation		2009
a) Matale (2x150MVA (220/132kV))	b	
b) Double pi-connection of Kotmale - Habarana 220kV line (2x2cct, 0.5km, Zebra)		
c) Double pi-connection of Ukuwela - Habarana 132kV line (2x2cct, 2.0km, Lynx)		
(1-5) Construction of Trincomalee P/S Substation		2007
a) Trincomalee P/S (2x150MVA (220/132kV))		
b) Trincomalee P/S - Trincomalee 132kV line (2cct, 10km, 2xZebra)		
c) Trincomalee (two 132kV T/L bays for Trincomalee P/S line)		
(1-6) Construction of Victoria - Padukka 220kV Line	c	2009
a) Victoria - New Polipitiya 220kV line (2cct, 40km, 2xZebra)		
b) New Polipitiya - Padukka 220kV line (2cct, 60km, 2xZebra)		
c) Victoria power station (two T/L bays for Padukka line)		
(1-7) Construction of 220kV Padukka Switching Substation	a	2007
a) Padukka switching station		
(1-8) Construction of 220kV New Polpitiya Substation		2009
a) New Polpitiya (2x150MVA (220/132kV))		
b) Double pi-connection of Polpitiya - Avissawella 132kV line (2x2cct, 2.0km, Lynx&2xZebra)		
c) Reconductoring of Polpitiya - New Polpitiya section (2cct, 4.0km, 2xZebra)		
(1-9) Construction of Veyangoda - Padukka 220kV Line		2007
a) Veyangoda - Padukka line (2cct, 37km, 4xZebra)		
b) Veyangoda (two 220kV T/L bays for Padukka line)		
(1-10) Construction of Padukka - Pannipitiya 220kV Line		2007
a) Padukka - Pannipitiya line (2cct, 18km, 4xZebra)		
b) Pannipitiya (two T/L bays for 220kV Padukka line)		
(2) Construction of Pannala Substation		2010
a) Veyangoda - Pannala 132kV line (2cct, 20km, Zebra)		
b) Pannala (2 x 31.5MVA)		

Table 6.5.1 - 3 Proposed New Subprojects for Transmission System up to the Year 2010

Augmentation and Extension of GSS	Re-marks	Proposed Commiss. Year
(3) Construction of Eheliyagoda 132kV Substation		2010
a) Avissawella - Eheliyagoda 132kV line (2cct, 17km, Bear)		
b) Eheliyagoda - Ratnapura 132kV line (2cct, 25km, Bear)		
c) Eheliyagoda (2 x 31.5MVA)		
d) Avissawella (four 132kV T/L bays for Eheliyagoda line & double pi arrangement)		
e) Ratunapura (two 132kV T/L bays for Eheliyagoda line)		
f) Double pi-connection for Avisawella (2cct, 0.3km, Lynx)		
(4) Construction of Imbulgoda 132kV Substation		2008
a) Biyagama - Imbulgoda 132kV line (2cct, 12km, Zebra)		
b) Imbulgoda (3x31.5MVA)		
c) Biyagama (two 132kV T/L bays for Imbulgoda line)		
(5) Construction of Angoda 132kV Substation		2009
a) Angoda (3 x 31.5MVA)		
b) Double pi-connection for Angoda (2x2cct, 0.1km, Lynx)		
(6) Construction of Aguruwella 132kV Substation		2007
a) Aguruwella (2 x 31.5MVA)		
b) Connection of Polpitiya 132kV line (1x2cct, 0.2km, Lynx)		
c) Connection of Thulhiriya 132kV line (1x2cct, 0.2km, Lynx)		
d) Connection of Kolonnawa 132kV line (1x2cct, 0.2km, Lynx)		
(7) Construction of Kesbewa 132kV Substation		2006
a) Kesbewa (2 x 31.5MVA)		
b) Double pi-connection for Kesbewa (2x2cct, 1.0km, Lynx)		
(8) Construction of Sub-B 132kV Substation (GIS)		2007
a) Kelanittissa - Sub-B underground cables (1cct, 3.5km, Cu800sq.mm,CV Cables)		
b) Sub-B (2 x 63MVA (Final : 3 x 63MVA))		
c) Single pi-connection of Kelanittissa - Fort UGC (2x1cct, 0.2km, Cu500, OF Cables)		
d) Kelanittissa (one 132kV T/L bay for Sub-B line)		
(9) Power Transmission Facilities Related to Boossa Thermal Plant		
(9-1) Construction of Boossa - Pannipitiya 220kV Line		2008
a) Boossa - Matugama 220kV line (2cct, 54km, 2xZebra)		
b) Matugama - Pannipitiya 220kV line (2cct, 45km, 2xZebra)		
c) Pannipitiya (two 220kV T/L bays for Boossa line)		
(9-2) Construction of Boossa Substation		2008
a) Boossa (2x150MVA (220/132kV), 2x31.5MVA (132/33kV))		
(9-3) Construction of Boossa - New Galle 132kV Line		2008
a) Boossa - New Galle 132kV line (2cct, 12km, 2xZebra)		
b) New Galle (two 132kV T/L bays for Boossa line)		
(9-4) Construction of Matugama 220kV Substation	d	2008
a) Matugama (2x150MVA (220/132kV))		
b) Connection to existing 132kV Matugama substayion		

Table 6.5.1 - 3 Proposed New Subprojects for Transmission System up to the Year 2010

Augmentation and Extension of GSS	Re-marks	Proposed Commiss. Year
(10) Construction of Trincomalee - Kilinochchi 132kV Line		2007
a) Trincomalee - Kilinochchi Line (2cct, 140km, Lynx)		
b) Trincomalee (two 132kV T/L bays for Kilinochchi line)		
c) Kilinochchi (two 132kV T/L bays for Trincomalee line)		
(11) Construction of Pulmoddai 132kV Substation		2007
a) Pulmoddai (1 x 10MVA)	e	
b) Single pi-connection line for Pulmoddai (2cct, 8km, Lynx)		
(12) Construction of Mannar 132kV Substation		2006
a) Vavuniya - Mannar 132kV line (1st cct of 2cct construction, 80km, Lynx)		
b) Mannar (1 x 10MVA)	e,f	
c) Vavunia (one 132kV T/L bays for Mannar line)		
(13) Construction of Galenbindunuwewa 132kV Substation		2006
a) Galenbidunuwewa (1x10MVA)	e	
b) Single pi-connection line for Galenbidunuwewa (2cct, 1.0km, Lynx)		
(14) Construction of Daladagama 132kV Substation		2006
a) Kuliyapitiya - Daladagama 132kV line (1st cct of 2cct construction, 50km, Bear)		
b) Daladagama (1 x 10MVA)	e,f	
c) Kuliyapitiya (one 132kV T/L bays for Daladagama line)		
(15) Construction of Batticaloa 132kV Substation		2008
a) Batticalloa (1 x 10MVA)	e	
b) Single pi-connection line for Batticaloa (2cct, 5km, Lynx)		
(16) Construction of Girandurukotre 132kV Substation		2008
a) Rantembe - Girandurukotre 132kV line (1st cct of 2cct construction, 40km, Lynx)		
b) Girandurukotre (1 x 10MVA)	e,f	
c) Rantembe (one 132kV T/L bays for Girandurukotre line)		
(17) Construction of Wellawaya 132kV Substation		2008
a) Badulla - Wellawaya 132kV line (1st cct of 2cct construction,40km, Lynx)		
b) Wellawaya (1 x 10MVA)	e,f	
c) Badulla (one T/L bays for 132kV Wellawaya line)		
(18) Construction of Tissamaharama 132kV Substation		2006
a) Hambantota - Tissamaharama 132kV line (1st cct of 2cct construction, 30km, Lynx)		
b) Embilipitiya - Hambantota 132kV line (2nd cct of 2cct construction, 24.0km, Bear)		
c) Tissamaharama (1 x 10MVA)	e,f	
d) Embilipitiya (one 132kV T/L bay for Hambantota line)		
e) Hambantota (two 132kV T/L bays for Embilipitiya & Tissamaharama line)		
(19) Addition of Transformers		
(19-1) Chilaw (132/33kV, 1x31,5MVA, total 3x31.5MVA)		2007
(19-2) Kuliyapitiya (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2007
(19-3) Aniyakanda (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2010
(19-4) Kelaniya (132/33kV, 1x63MVA, total 3x63MVA)		2009

Table 6.5.1 - 3 Proposed New Subprojects for Transmission System up to the Year 2010

Augmentation and Extension of GSS	Re-marks	Proposed Commiss. Year
(19-5) Gonawala (132/33kV, 1x31.5MVA, total 4x31.5MVA)		2010
(19-6) Katana (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2009
(19-7) Panadura (1x31.5MVA, total 3x31.5MVA)		2007
(19-8) Dehiwala (132/33kV, 1x63MVA, total 3x63MVA)		2009
(19-9) Matara (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2008
(19-10) Ratnapura (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2009
(19-11) Kegalle (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2009
(19-12) Athurugiriya (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2007
(19-13) Vavunia (132/33kV, 1x10MVA, total 2x10MVA)		2007
(19-14) Kesbewa (132/33kV, 1x31.5MVA, total 3x31.5MVA)		2009
(19-15) Imbulgoda (132/33kV, 1x31.5MVA, total 4x31.5MVA)		2009
(20) Replace of Transformers		
(21-1) Chunnakam (only 1x10MVA to 1x31.5MVA, total 91.5MVA)		2007
(21-2) Deniyaya (only 1x15MVA to 1x31.5MVA, total 46.5MVA)		2010
New Subprojects Proposed by Power System Analysis		
(21) Addition of 220/132kV Tie Transformers		
(21-1) Pannipitiya (1x250MVA, total 3x250MVA)		2007
(21-2) Veyangoda (1x150MVA, total 3x150MVA)		2007
(21-3) Kotugoda (1x250MVA, total 3x250MVA)		2008
(21-4) New Chilaw (1x150MVA, total 3x150MVA)		2008
(21-5) Biyagama (1x250MVA, total 3x250MVA)		2008
(22) Static Capacitor		
(22-1) Ampara (10MVA)		2009
(22-2) Biyagama (60MVA)		2008
(22-3) Chunnakam (20MVA, total 40MVA)		2007
(22-4) Dehiwala (60MVA)		2009
(22-5) Inginiyagara (10MVA)		2008
(22-6) Kegalle (20MVA)		2009
(22-7) Kelaniya (60MVA)		2009
(22-8) Kolonnawa (120MVA)		2007
(22-9) Kotugoda (30MVA, total 60MVA)		2008
(22-10) Matugama (80MVA)		2008
(22-11) Thulhiriya (40MVA)		2008
(22-12) Valaichchenai (10MVA)		2009
(23) Replacement of 132kV Circuit Breakers		
(23-1) Anuradhapura (11kA to 31.5kA, 6sets)		2007
(23-2) Kollupitiya (25kA to 40kA, 6sets)		2007
(23-3) Trincomalee (12.5kA to 31.5kA, 2sets)		2007

Remarks :

(a) Land space for future extension of 132kV switchgear shall be considered.
(b) Space for installation of distribution transformer(s) in future shall be considered.
(c) Righht of way of the abolished 66kV line may be used for the proposed 220kV line.
(d) Land space adjoinning to the existing 132kV Matugama substation is available for the 220kV substation.
(e) One unit only is proposed to be provided for cost saving, since no high demand is expected.
(f) A circuit breaker is proposed not to be provided for cost saving.

Table 6.6.1-1 Over Load Factor of Transformers of Each Grid Substation in The Year 2015

Provinces	Grid Substations	Voltage Ratio (kV)	Before Reinforcement				After Reinforcement				Countermeasures
			Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Load (%)	Trans. Cap. (MVA)	Peak Load (MW)	Peak Cap. (MVA)	Load (%)	
North Central	(1) Anuradhapura	132/33	63	62.8	69.8	111	94.5	62.8	69.8	74	Addition of trans.
	(2) Habarana	132/33	63	41.8	46.4	74	63	41.9	46.6	74	
	(3) Polonnaruwa	132/33	32	34.7	38.6	120	63	34.7	38.6	61	Replace of trans.
Northern	(4) Chunnakam	132/33	91.5	86.1	95.7	105	94.5	86.1	95.7	101	Replace of trans.
	(5) Kilinochchi	132/33	20	17.8	19.8	99	30	17.9	19.9	66	Addition of trans.
	(6) Vavuniя	132/33	20	14.5	16.1	81	20	14.5	16.1	81	
Central	(7) Kiribathkumbura	132/33	94.5	62.6	69.6	74	94.5	62.6	69.6	74	
	(8) Ukuwela	132/33	63	70.7	78.6	125	94.5	70.8	78.7	83	Addition of trans.
	(9) Ranterbe	-/132/3	20	14.0	15.6	78	20	14.0	15.6	78	
	(10) Nuwara Eliya	132/33	63	48.9	54.3	86	63	49.0	54.4	86	
	(11) Wimalasurendra	132/33	63	27.9	31.0	49	63	28.1	31.2	50	
	(12) Palekelle	132/33	63	45.1	50.1	80	63	45.1	50.1	80	
North Western	(13) Kurunegala	132/33	63	63.8	70.9	113	94.5	63.9	71.0	75	Addition of trans.
	(14) Puttalam	132/33	63	76.0	84.4	134	94.5	76.1	84.6	89	Addition of trans.
	(15) Bolawatta	132/33	91.5	96.5	107.2	117	123	96.6	107.3	87	Addition of trans.
	(16) Chilaw	132/33	94.5	113.2	125.8	133	126	99.4	110.4	88	Addition of trans.
	(17) Kuliyapitiya	132/33	94.5	107.3	119.2	126	126	94.5	105.0	83	Addition of trans.
	(18) Pannala	132/33	63	64.4	71.6	114	126	92.4	102.7	81	Addition of trans.
Western-North	(19) Kotugoda	-/132/33	120	112.5	132.4	110	120	90.4	106.4	89	
	(20) Sapugaskanda	132/33	121.5	152.6	179.5	148	121.5	152.7	179.6	148	
	(21) Biyagama	-/132/33	120	150.1	176.6	147	120	150.3	176.8	147	
	(22) Veyangoda	132/33	63	49.2	57.9	92	94.5	49.2	57.9	61	Addition of trans.
	(23) Aniyakanda	132/33	94.5	74.5	87.6	93	126	89.9	105.8	84	Addition of trans.
	(24) Kelaniya	132/33	189	207.6	244.2	129	189	207.8	244.5	129	
	(25) Muthuragawella	220/33	126	143.2	168.5	134	189	143.3	168.6	89	Addition of trans.
	(26) Gonawala	132/33	126	141.6	166.6	132	126	141.7	166.7	132	
	(27) Katana	132/33	94.5	73.7	86.7	92	126	81.2	90.2	72	Addition of trans.
	(28) Imbulgoda	132/33	126	153.1	180.1	143	126	153.2	170.2	135	
Eastern	(29) Trincomalee	132/33	63	43.1	47.9	76	63	43.1	47.9	76	
	(30) Inginiyagara	132/33	30	3.6	4.0	13	30	3.6	4.0	13	
	(31) Valaichchenai	132/33	63	21.1	23.4	37	63	21.1	23.4	37	
	(32) Ampara	132/33	63	26.6	29.6	47	63	26.6	29.6	47	
Western-South	(33) Ratmalana	132/33	123	145.5	171.2	139	123	145.6	171.3	139	
	(34) Panmipitiya	132/33	123	138.7	163.2	133	123	138.8	163.3	133	
	(35) O.D.S.S(Kolonnawa)	132/33	157.5	180.5	212.4	135	157.5	162.0	190.6	121	
	(36) Matugama	132/33	94.5	17.4	20.5	22	94.5	34.3	40.4	43	
	(37) Avissawella	132/33	63	68.4	80.5	128	94.5	71.2	83.8	89	Addition of trans.
	(38) Panadura	132/33	94.5	110.7	130.2	138	126	99.8	117.4	93	Addition of trans.
	(39) Sithawaka	132/33	63	42.8	50.4	80	63	42.8	50.4	80	
	(40) Athuruginiya	132/33	94.5	97.1	114.2	121	126	97.2	114.4	91	Addition of trans.
	(41) Sri Jaya'pura	132/33	126	118.4	139.3	111	189	118.6	139.5	74	Addition of trans.
	(42) Dehiwala	132/33	189	153.3	180.4	95	189	153.4	180.5	95	
	(43) Horana	132/33	63	47.5	55.9	89	63	47.5	55.9	89	
	(44) Kesbewa	132/33	94.5	106.3	125.1	132	126	106.4	125.2	99	
	(45) Angoda	132/33	94.5	94.8	111.5	118	126	94.8	111.5	89	Addition of trans.
Southern	(46) Galle	132/33	91.5	101.3	112.6	123	91.5	98.3	109.2	119	
	(47) Deniyaya	132/33	46.5	35.2	39.1	84	46.5	35.2	39.1	84	
	(48) Matara	132/33	94.5	80.6	89.6	95	126	80.6	89.6	71	Addition of trans.
	(49) New Galle	132/33	94.5	101.3	112.6	119	94.5	98.3	109.2	116	
	(50) Ambalangoda	132/33	63	29.4	32.7	52	63	29.4	32.7	52	
	(51) Hambantota	132/33	20	16.0	17.8	89	30	16.5	18.3	61	Addition of trans.
	(52) Boossa	132/33	63	70.8	78.7	125	94.5	67.8	75.3	80	Addition of trans.
Uva	(53) Badulla	132/33	94.5	50.6	56.2	59	94.5	50.7	56.3	60	
	(54) Medagama	132/33	10	5.6	6.2	62	10	5.7	6.3	63	
Sabaragamuwa	(55) Balangoda	132/33	63	21.1	23.4	37	63	20.5	22.8	36	
	(56) Thulhiriya	132/33	91.5	100.1	111.2	118	126	100.2	111.3	88	Addition of trans.
	(57) Embilipitiya	132/33	63	11.4	12.7	20	63	11.4	12.7	20	
	(58) Ratnapura	132/33	94.5	112.8	125.3	133	126	112.9	125.4	100	Addition of trans.
	(59) Kegalle	132/33	94.5	95.3	105.9	112	126	95.3	105.9	84	Addition of trans.
	(60) Aguruwella	132/33	63	74.8	83.1	132	94.5	74.8	83.1	88	Addition of trans.
	(61) Eheliyagoda	132/33	63	56.4	62.7	99	94.5	56.4	62.7	66	Addition of trans.
Colombo	(62) Kelanitissa(KTS)	132/33	120	79.8	93.9	78	120	87.8	103.3	86	
	(63) Sub-E(Kollipitiya)	132/11	90	51.8	93.8	104	90	34.6	62.6	70	
	(64) Sub-F(Fort)	132/11	90	43.9	103.3	115	90	29.3	68.9	77	
	(65) Town Hall	132/11	126	39.9	93.9	75	126	53.2	96.3	76	
	(66) Sub-B	132/11	126	43.9	103.3	82	189	67.4	158.6	84	Addition of trans.
	TOTAL		5570	4944	5862	105	6569	4943	5832	89	

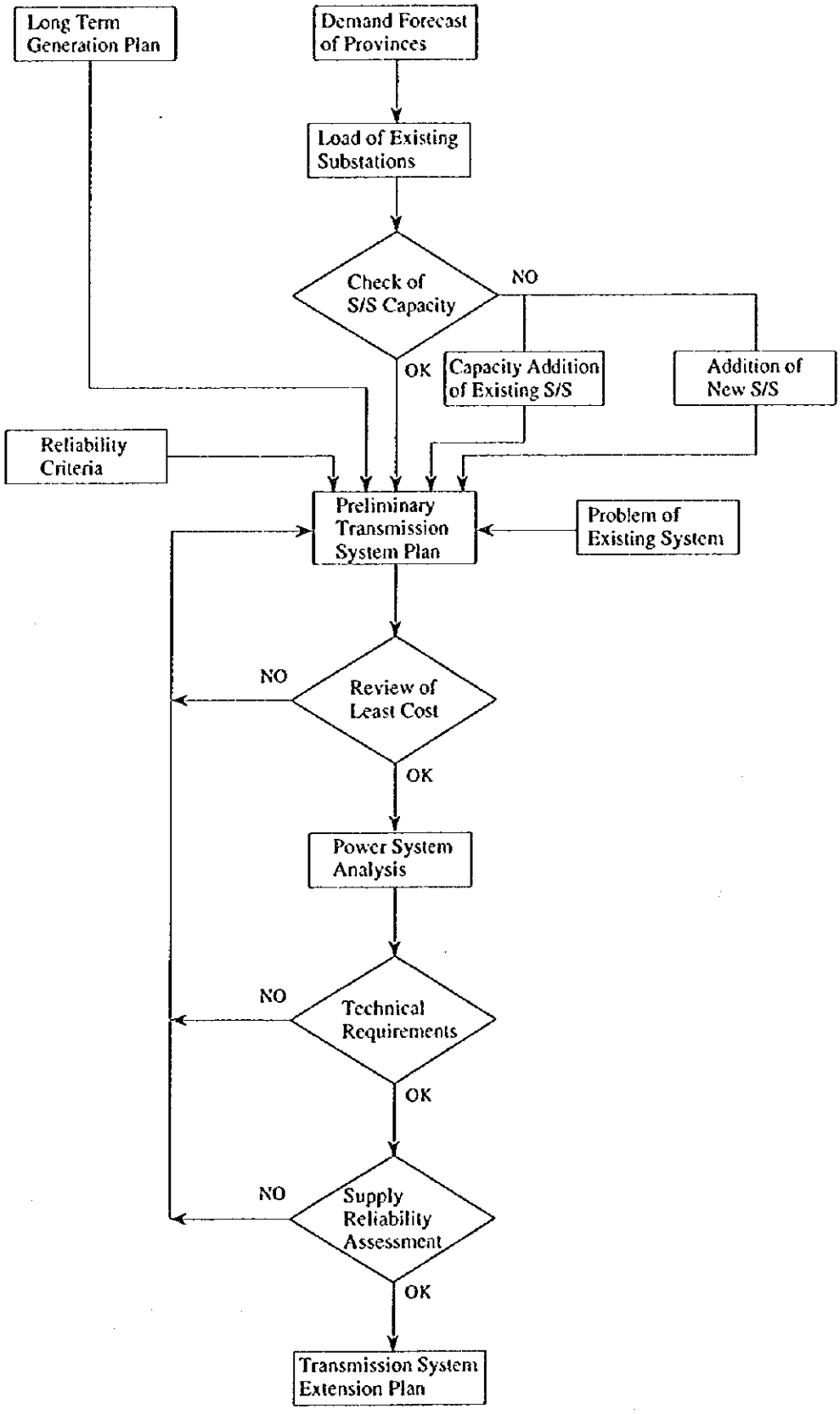
Remarks:
a) Load factor for calculation of peak load in MVA is assummed as 85% for Western-North, Western-South and Colombo and 90% for other areas.
b) Peak load in MVA of Kollipitiya and Fort grid substations is calculated in the basis of day-time peak, i.e 0.65 for Kollipitiya and 0.5 for Fort.
c) Only rearrangement of 33kV feeders and transformer addition are considered.

Table 6.6.1-2 Proposed New Subprojects for Transmission System up to The Year 2015

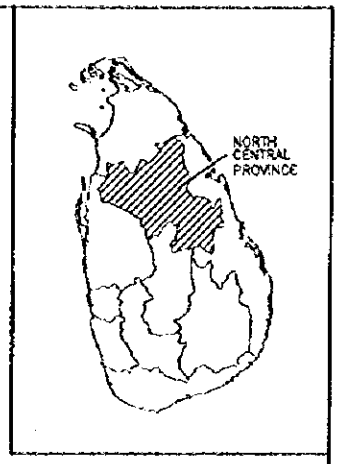
Sub-projects for Augmentation and Extension	Re-marks	Proposed Commiss. Year
(1) Power Transmission Facilities Related to Mawella Coal-fired Thermal Plant		
(1-1) Construction of Mawella - Padukka 220kV Line		2013
a) Mawella - Kahawatta Line (2cct, 100km, 4xZebra)		
b) Kahawatta - Padukka Line (2cct, 90km, 4xZebra)		
c) Padukka (two T/L bays for Kahawatta line)		
(1-2) Construction of Khawatta Switching Station		2013
(1-3) Construction of Mawella - Boossa Line		2013
a) Mawella - Boossa line (2cct, 70km, 2xZebra)		
b) Boossa (two T/L bays for Kahawatta line)		
(2) Construction of Mullaittivu 132kV Substation		2012
a) Single pi-connection of Trincomalee - Kilinochchi line (2cct, 3km, Lynx)		
b) Mullativu (1x10MVA)		
(3) Construction of Palattadichchenai 132kV Substation		2011
a) Trincomalee P/S - Palattadichchenai line (1st cct on 2cct, 35km, Lynx)		
b) Palattadichchenai (1x10MVA)		
c) Trincomalee (one T/L bay for Palattadichchenai line)		
(4) Construction of Maha Oya 132kV Substation		2012
a) Rantembe - Maha Oya line (1st cct on 2cct, 70km, Lynx)		
b) Maha Oya (1x10MVA)		
c) Rantembe (one T/L bay for Maha Oya line)		
(5) Construction of Pottuvil 132 kV Substation		2011
a) Single T-branch line for Pottuvil (1st cct on 2cct, 40km, Lynx)		
b) Pottuvil (1x10MVA)		
(6) Construction of Substations		
(6-1) North - A (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(6-2) North Western - A (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(6-3) North Western - B (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(6-4) Western North - A (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-5) Western North - B (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-6) Western North - C (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-7) Western North - D (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-8) Western North - E (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-9) Western North - F (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-10) Western South - A (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-11) Western South - B (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-12) Western South - C (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-13) Western South - D (3x31.5MVA, TL 1x2cct, 10km, Zebra)		
(6-14) Sabaragamuwa - A (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(6-15) Sabaragamuwa - B (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(6-16) South - A (2x31.5MVA, TL 1x2cct, 10km, Bear)		
(7) Addition of Transformers		
(7-1) Anuradhapura (132/33kV, 2x31.5MVA, total 4x31.5MVA)		
(7-2) Kilinochchi (132/33kV, 1x10MVA, total 3x10MVA)		
(7-3) Ukuwela (132/33kV, 1x31.5MVA, total 3x31.5MVA)		

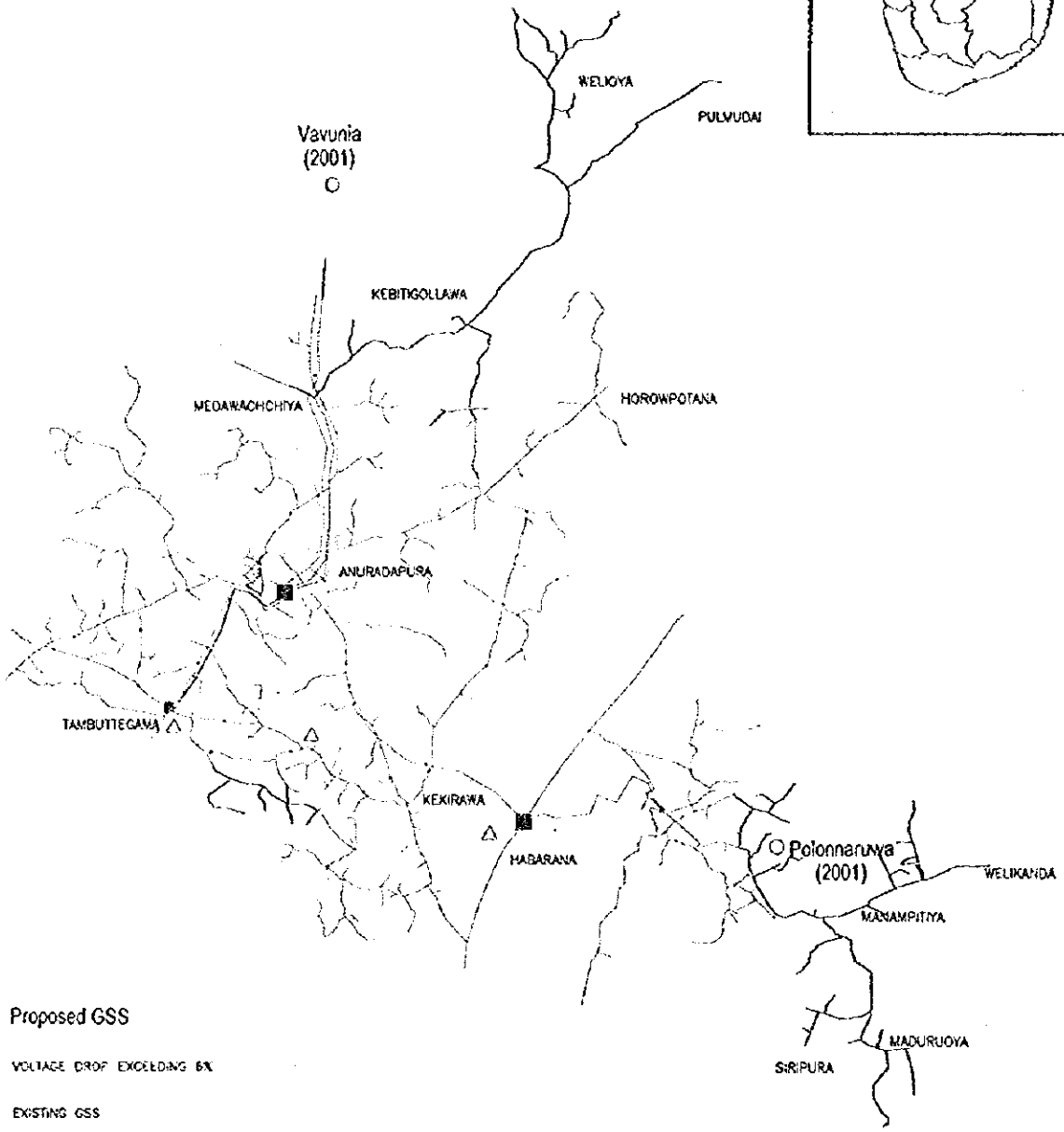
Table 6.6.1-2 Proposed New Subprojects for Transmission System up to The Year 2015

Sub-projects for Augmentation and Extension	Re-marks	Proposed Commiss. Year
(7-4) Kurunegara (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-5) Putallam (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-6) Bolawatta (132/33kV, 1x31.5MVA, total 123MVA)		
(7-7) Chilaw (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-8) Kuliyapitiya (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-9) Pannala (132/33kV, 2x31.5MVA, total 4x31.5MVA)		
(7-10) Veyangoda (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-11) Aniyakanda (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-12) Muthuragawella (220/33kV, 1x63MVA, total 3x63MVA)		
(7-13) Katana (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-14) Avissawella (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-15) Panadura (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-16) Athurugiriya (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-17) Kesbewa (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-18) Angoda (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-19) Hambantota (132/33kV, 1x10MVA, total 3x10MVA)		
(7-20) Boossa (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-21) Thulhiriya (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-22) Ratnapura (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-23) Kegalle (132/33kV, 1x31.5MVA, total 4x31.5MVA)		
(7-24) Aguruwella (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(7-25) Eheliyagoda (132/33kV, 1x31.5MVA, total 3x31.5MVA)		
(8) Replacement of Transformers		
(8-1) Polonnaruwa (132/33kV, 2x16MVA to 2x31.5MVA)		
New Subprojects Proposed by Power System Analysis		
(9) Addition of 220/132kV Tie Transformers		
(9-1) Boossa (1x150MVA, total 3x150MVA)		2011
(9-2) Kolonnawa (1x250MVA, total 3x250MVA)		2013
(9-3) Matale (1x150MVA, total 3x150MVA)		2013
(9-4) Trincomalee (1x150MVA, total 3x150MVA)		2013
(9-5) Biyagama (1x250MVA, total 4x250MVA)		2013
(9-6) Pannipitiya (1x250MVA,total 4x250MVA)		2013
(9-7) New Chilaw (1x150MVA, total 4x150MVA)		2014
(9-8) Veyangoda (1x150MVA, total 4x150MVA)		2014
(10) Static Capacitor		
Addition 700MVA in total in the system		



CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.1.3 - 1 Procedure of Transmission System Planning





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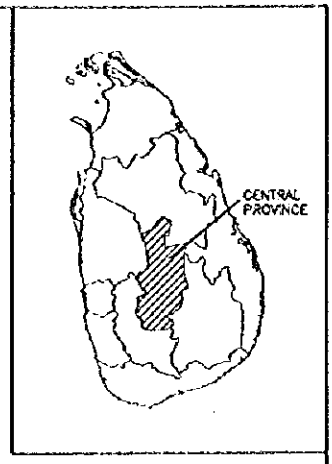

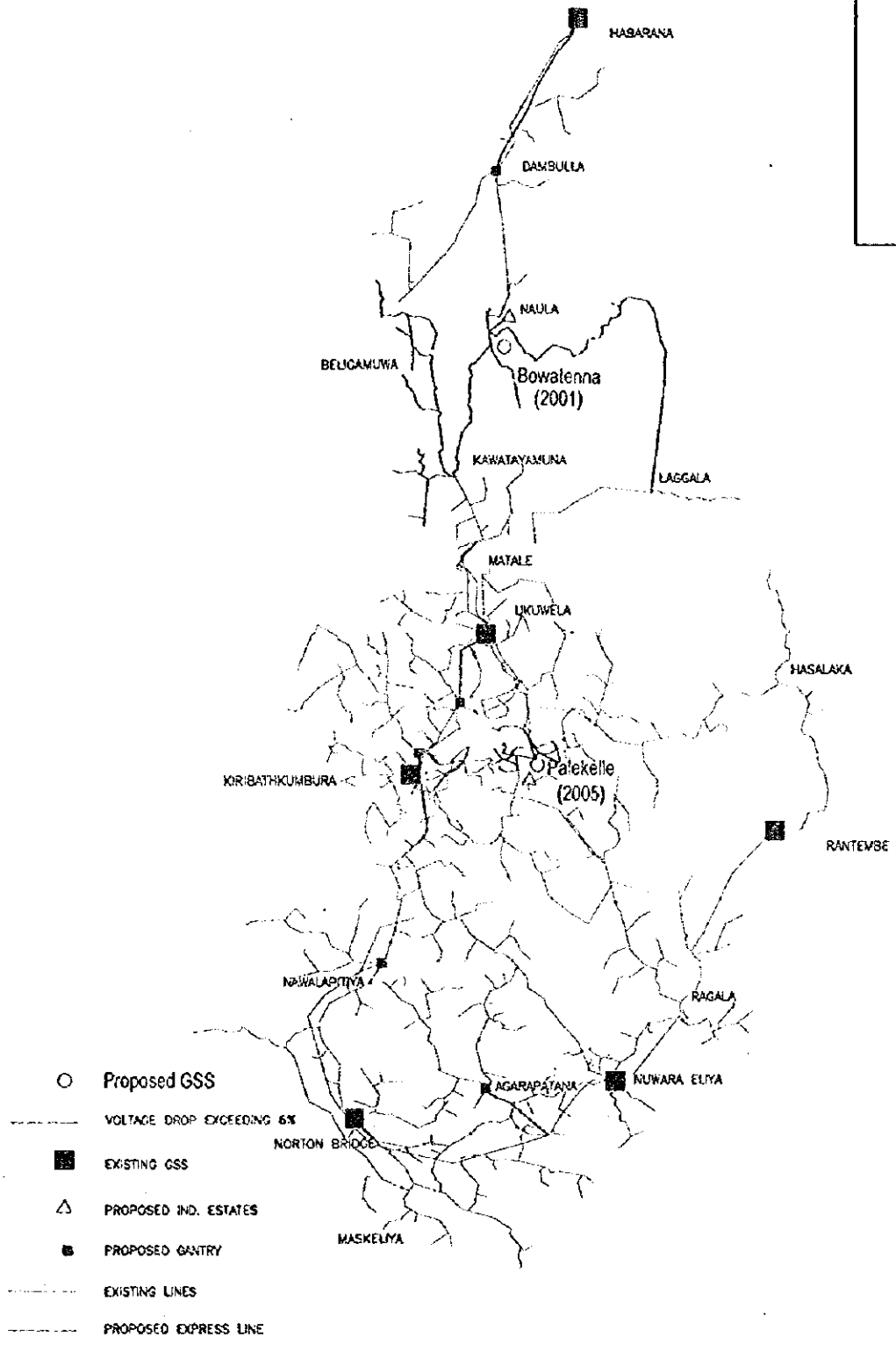

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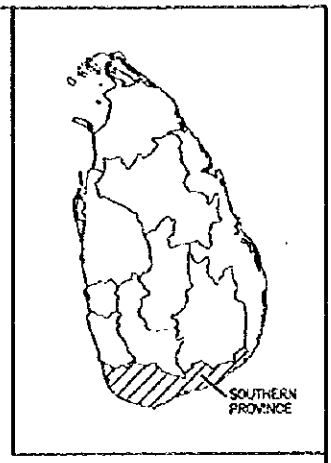

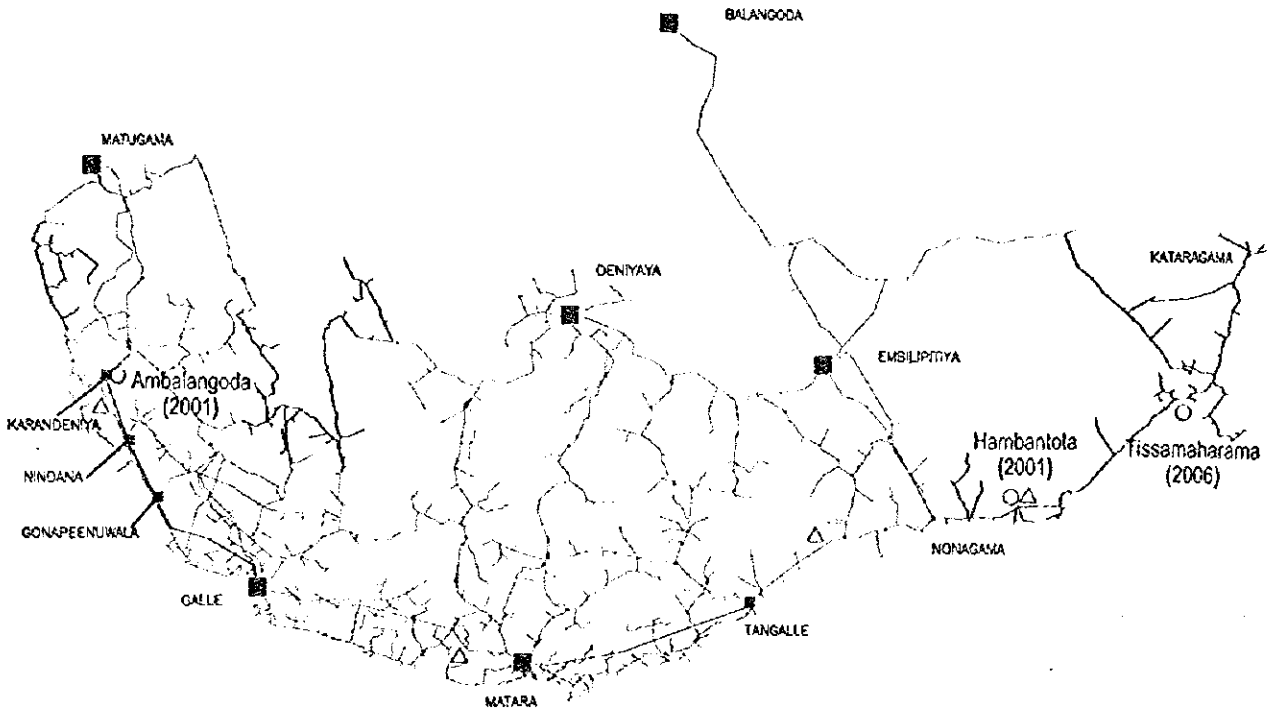

○ Proposed GSS

VOLTAGE DROP EXCEEDING 6%

EXISTING GSS

△ PROPOSED IND. ESTATES

PROPOSED GANTRY

EXISTING LINES

PROPOSED EXPRESS LINE

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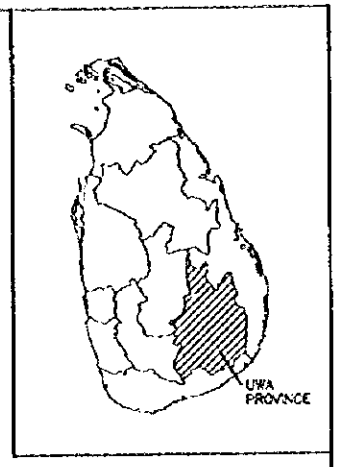
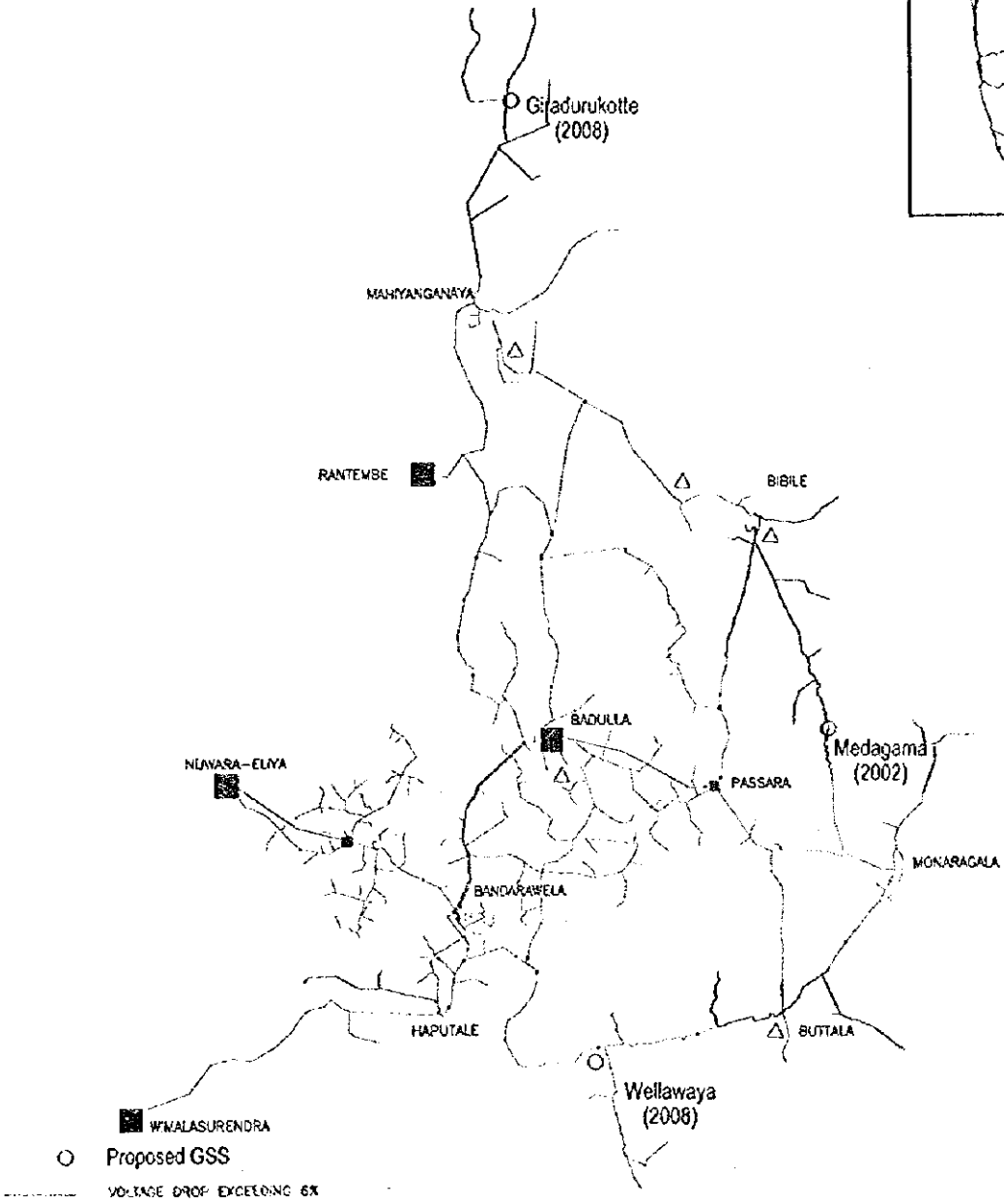




CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.1.5 - 4 MV Network of UVA Province

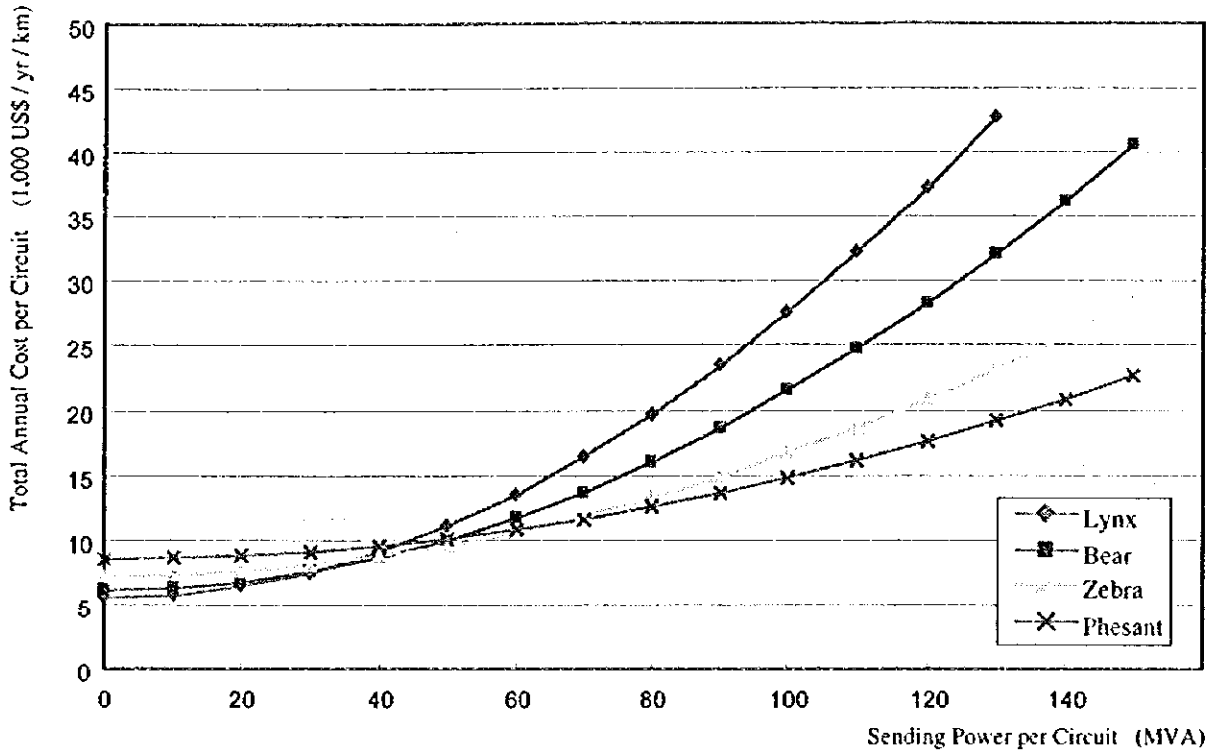


Fig. 6.1.6 - 1 Total Annual Cost of 132kV Transmission Line

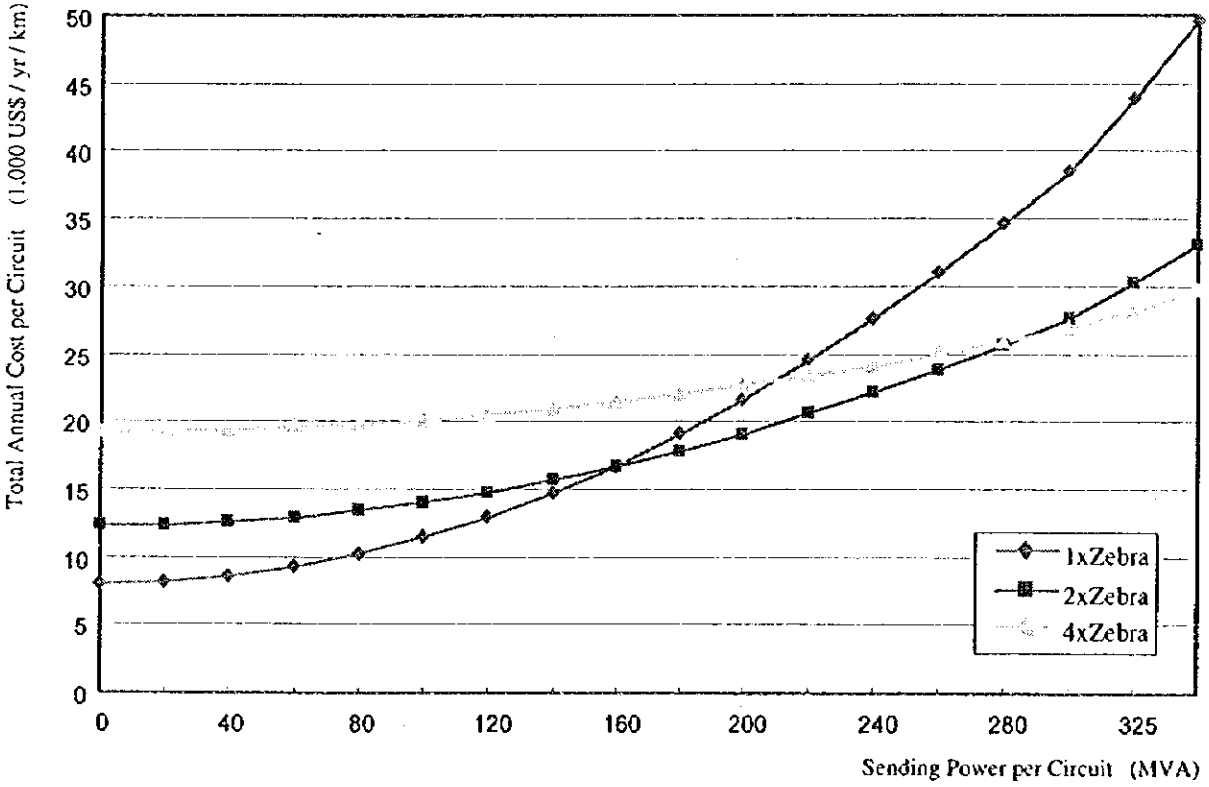
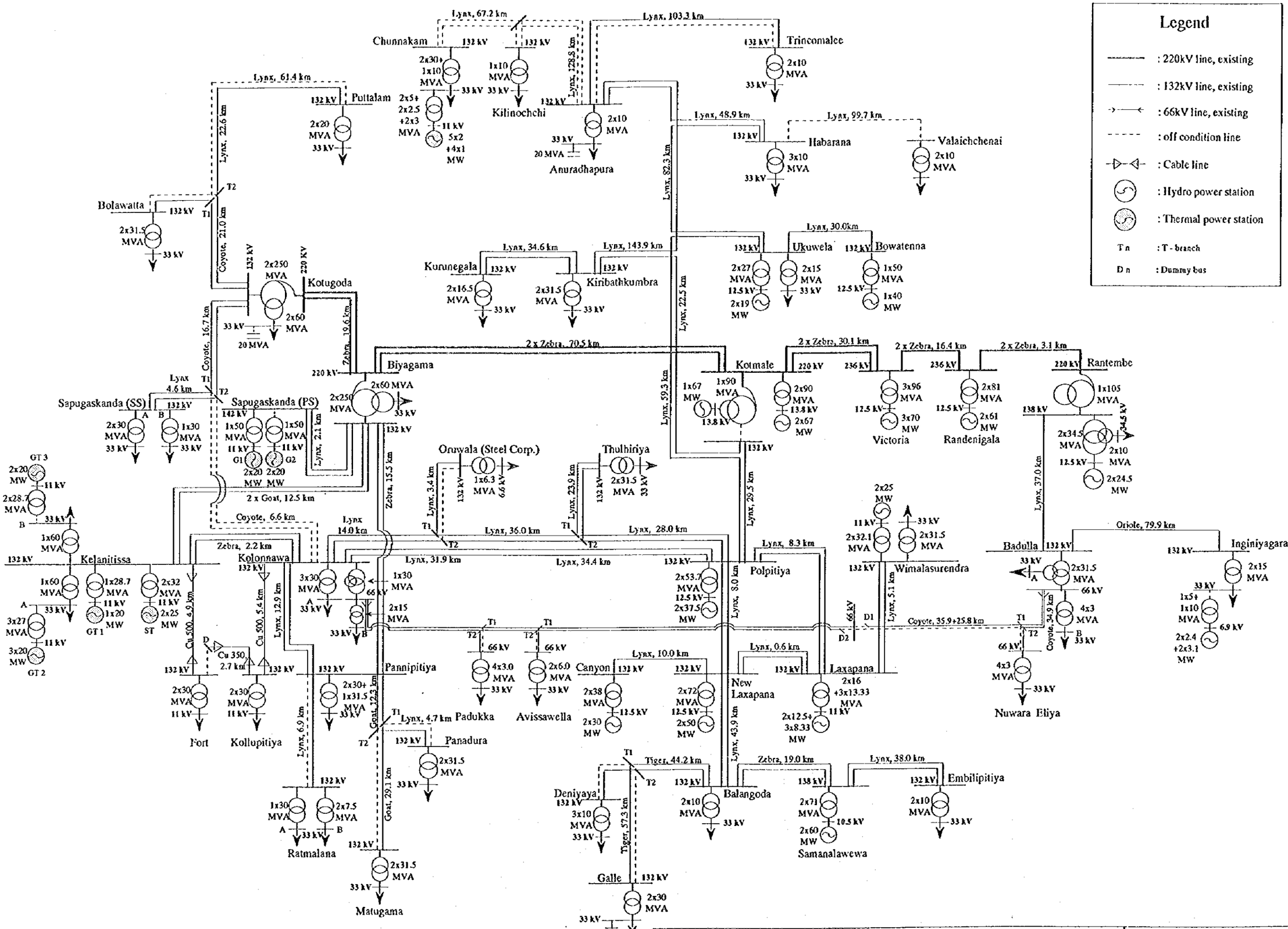
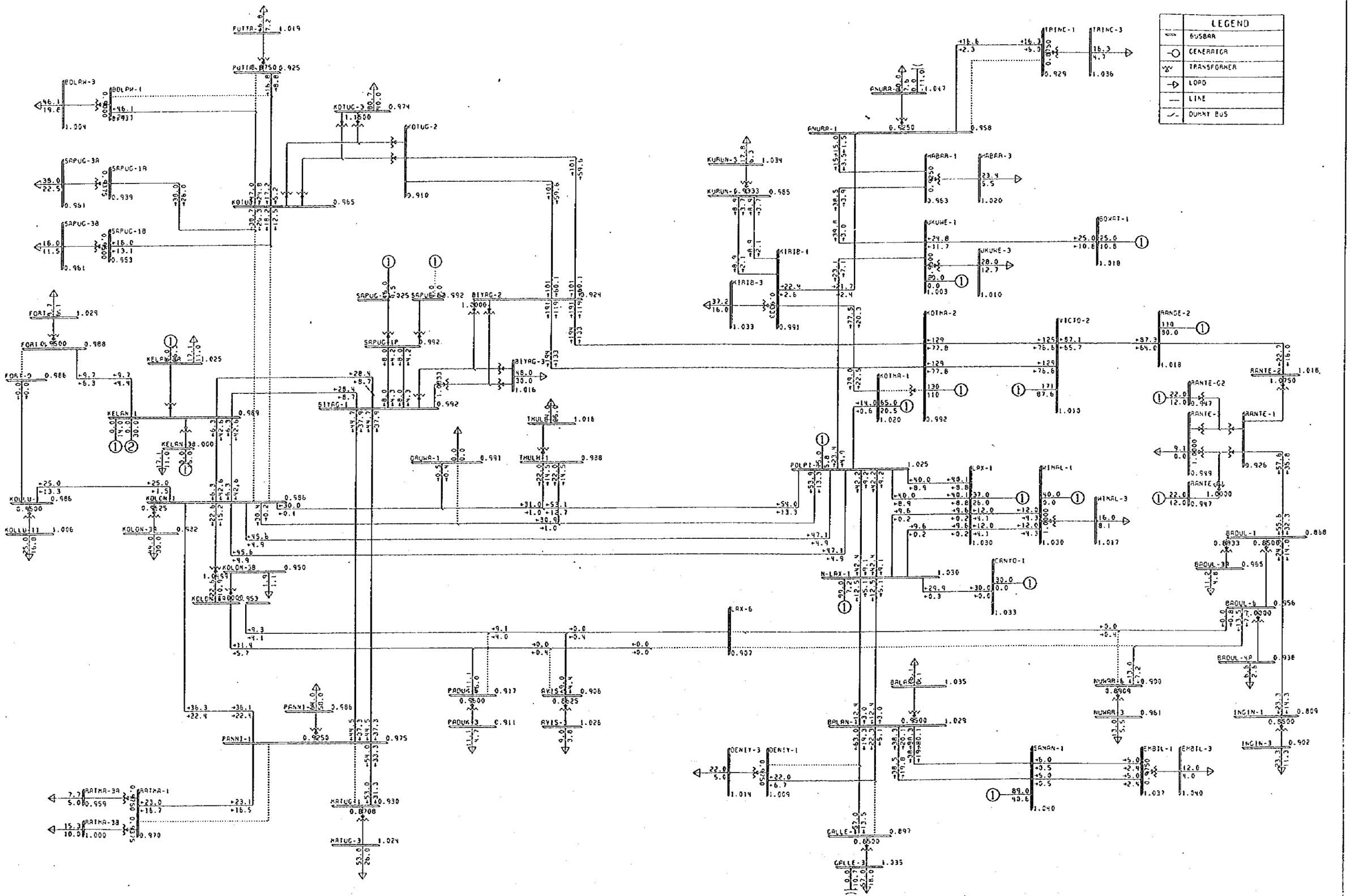


Fig. 6.1.6 - 2 Total Annual Cost of 220kV Transmission Line

Note : Assumed annual load factor is 60%.

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE
	NIPPON KOEI CO., LTD. Consulting Engineer		


Legend
: 220kV line, existing
: 132kV line, existing
: 66kV line, existing
: off condition line
: Cable line
: Hydro power station
: Thermal power station
T n : T - branch
D n : Dummy bus
Chunnakam
Puttalam
Kilinochchi
Anuradhapura
Trincomalee
Habarana
Valaichchenai
Bolawatta
Kotugoda
Kurunegala
Kiribathkumbra
Ukuwela
Bowatenna
Biyagama
Kotmale
Victoria
Randenigala
Rantembe
Sapugaskanda (SS)
Sapugaskanda (PS)
Oruwala (Steel Corp.)
Thulhiriya
GT 3
GT 1
ST
GT 2
Kelanitissa
Kolonnawa
Fort
Kollupitiya
Ratmalana
Matugama
Pannipitiya
Padukka
Panadura
Avissawella
Canyon
Deniyaya
Galle
Polpitiya
New Laxapana
Laxapana
Balangoda
Wimalasurendra
Samanalawewa
Embilipitiya
Badulla
Inginiyagara
Nuwara Eliya
Oriole, 79.9 km
Lynx, 67.2 km
Lynx, 103.3 km
Lynx, 61.4 km
Lynx, 48.9 km
Lynx, 99.7 km
Lynx, 30.0km
Lynx, 34.6 km
Lynx, 143.9 km
2 x Zebra, 70.5 km
2 x Zebra, 30.1 km
2 x Zebra, 16.4 km
2 x Zebra, 3.1 km
2 x Goat, 12.5 km
Lynx, 36.0 km
Lynx, 28.0 km
Lynx, 31.9 km
Lynx, 34.4 km
Lynx, 10.0 km
Tiger, 44.2 km
Zebra, 19.0 km
Lynx, 38.0 km
Coyote, 35.9+25.8 km
Coyote, 6.6 km
Zebra, 2.2 km
Cu 500, 4.9 km
Cu 500, 5.4 km
Cu 350, 2.7 km
Goat, 29.1 km
Goat, 12.3 km
Lynx, 4.7 km
Lynx, 0.6 km
Lynx, 8.3 km
Lynx, 4.6 km
Lynx, 2.1 km
Lynx, 3.4 km
Lynx, 23.9 km
Lynx, 29.5 km
Lynx, 59.3 km
Lynx, 22.5 km
Lynx, 82.3 km
Lynx, 128.8 km
Lynx, 22.6 km
Lynx, 21.0 km
Coyote, 16.7 km
Zebra, 19.6 km
Lynx, 12.9 km
Lynx, 6.9 km
Lynx, 14.0 km
Lynx, 43.9 km
Lynx, 8.0 km
Lynx, 5.1 km
Lynx, 37.0 km
CEYLON ELECTRICITY BOARD
JAPAN INTERNATIONAL COOPERATION AGENCY
NIPPON KOEI CO., LTD. Consulting Engineer
MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA
TITLE
Fig. 6.2 - 1
CEB Power System Diagram in 1995



PRESENT SYSTEM ANALYSIS	50 % RATES
28 NOVEMBER 1995 NIGHT PEAK	0.950UV 1.050 OV
95WIP1.SAV,95WIA1.DAW THU, OCT 10 1996 13:33	KV: s60 .s120 .s200

BUS - VOLTAGE (PU)	
BRANCH - MW/MVAR	
EQUIPMENT - MW/MVAR	

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.2 - 2 Result of Power Flow Calculation in 1995

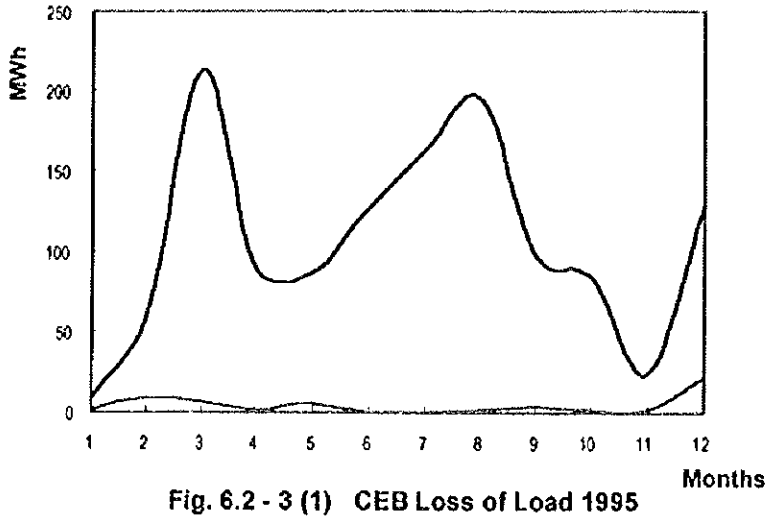


Fig. 6.2 - 3 (1) CEB Loss of Load 1995

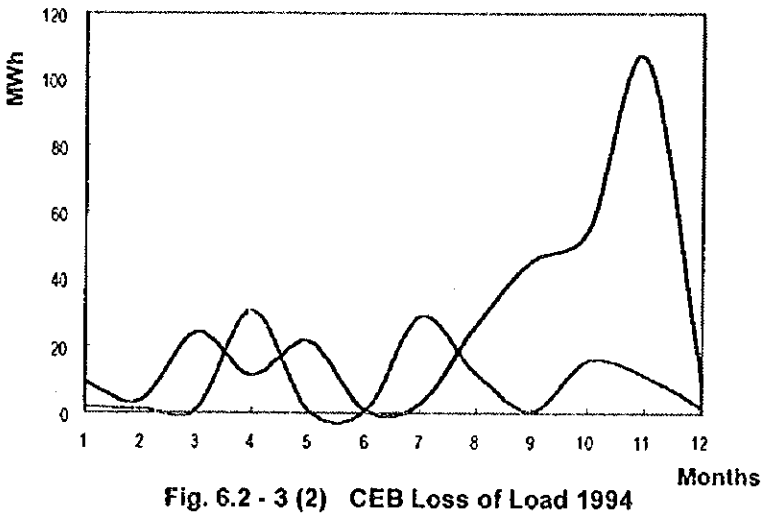


Fig. 6.2 - 3 (2) CEB Loss of Load 1994

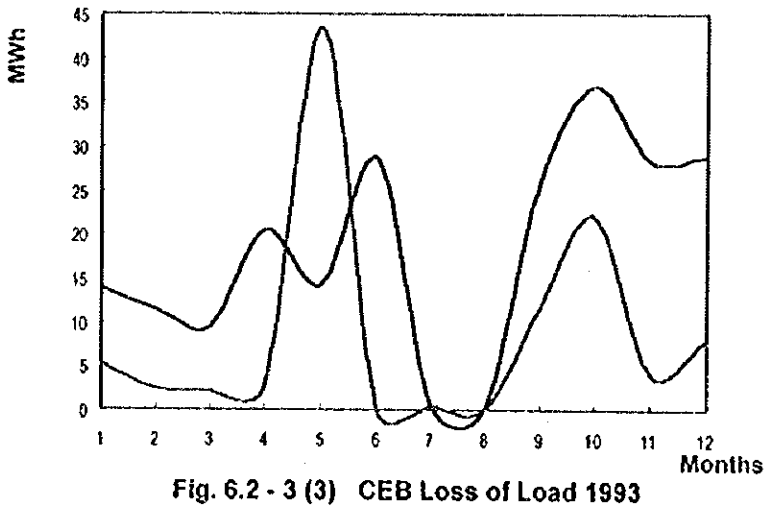


Fig. 6.2 - 3 (3) CEB Loss of Load 1993

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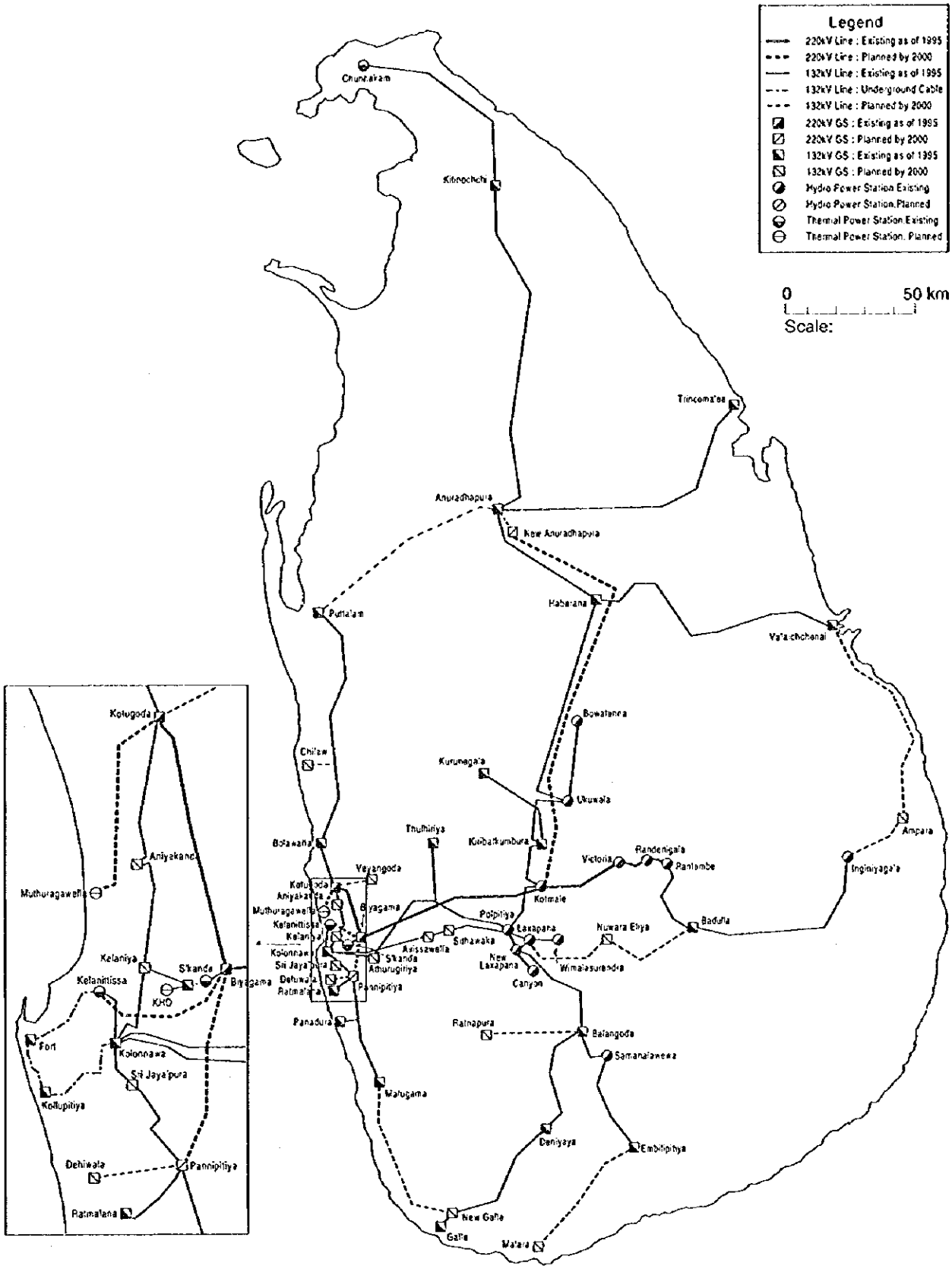
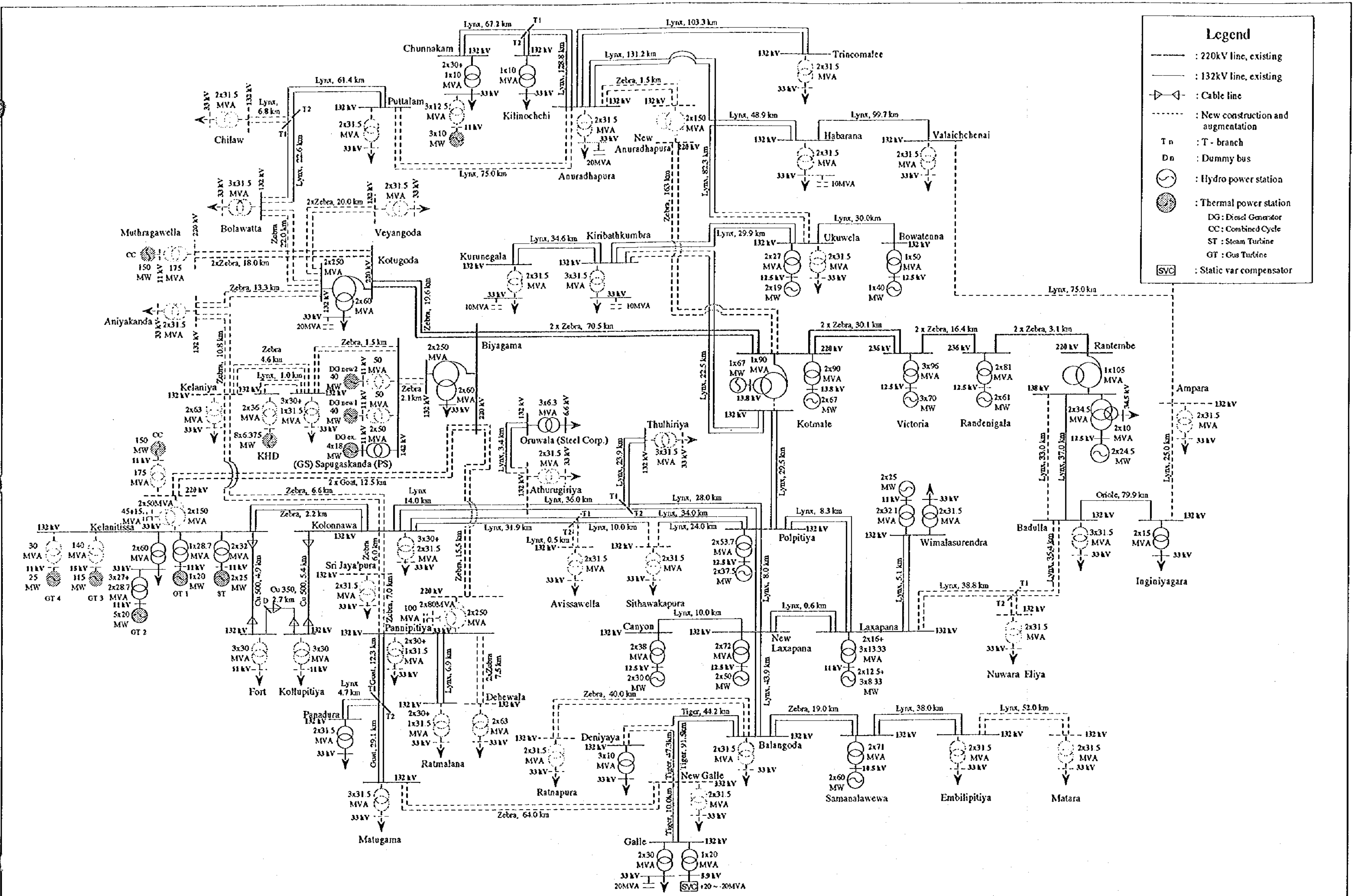


CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE: Fig. 6.3.1-1 CEB Transmission Line System in 2000



CEYLON ELECTRICITY BOARD

JAPAN INTERNATIONAL COOPERATION AGENCY

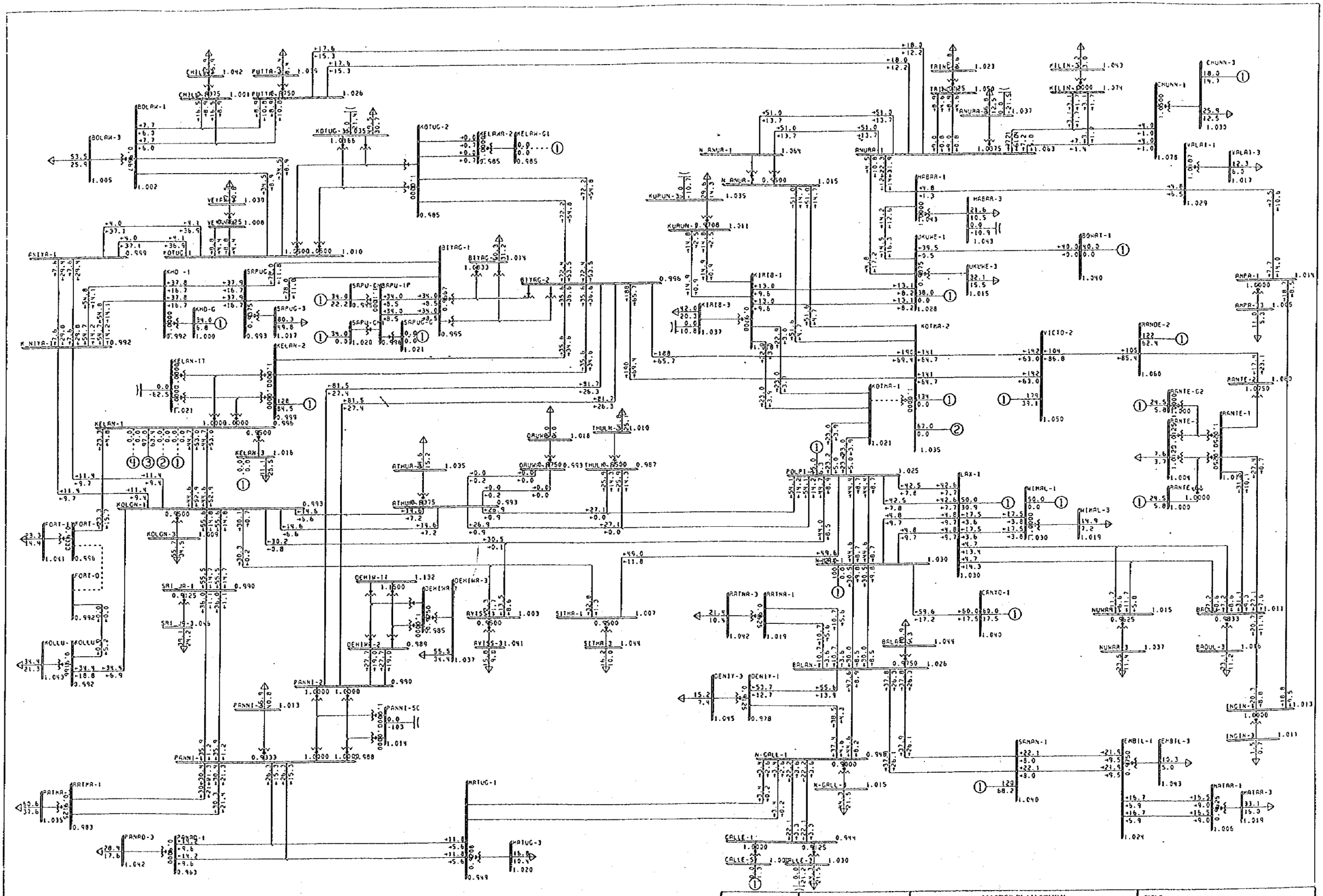
NIPPON KOEI CO., LTD. Consulting Engineers, TOKYO JAPAN

MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

TITLE

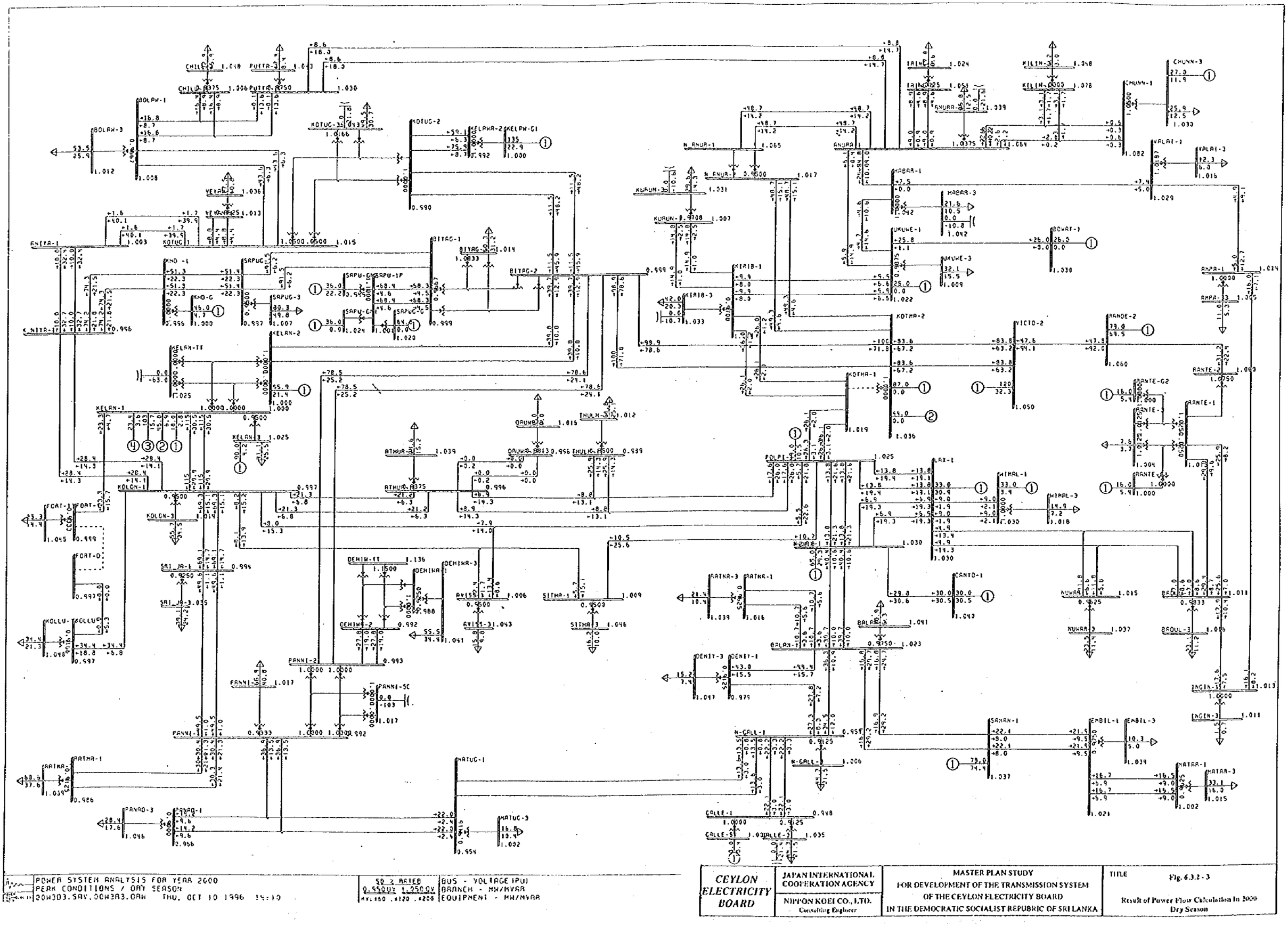
Fig. 6.3.2 - 1

CEB Power System Diagram in 2000



POWER SYSTEM ANALYSIS FOR YEAR 2000 PEAK CONDITIONS / RAINY SEASON 00R3A3.SAV, 00R3A3.DAW THU, OCT 10 1996 14:07	50 % RATED 0.950MW 1.050MV MVA:500 .&120 .&200	BUS - VOLTAGE (PU) BRANCH - MW/MVAR EQUIPMENT - MW/MVAR	

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.3.2 - 2 Result of Power Flow Calculation in 2000 Rainy Season



POWER SYSTEM ANALYSIS FOR YEAR 2000
PEAK CONDITIONS / DRY SEASON
DOW303.SAV.DOW3R3.OAH THU, OCT 10 1996 14:10

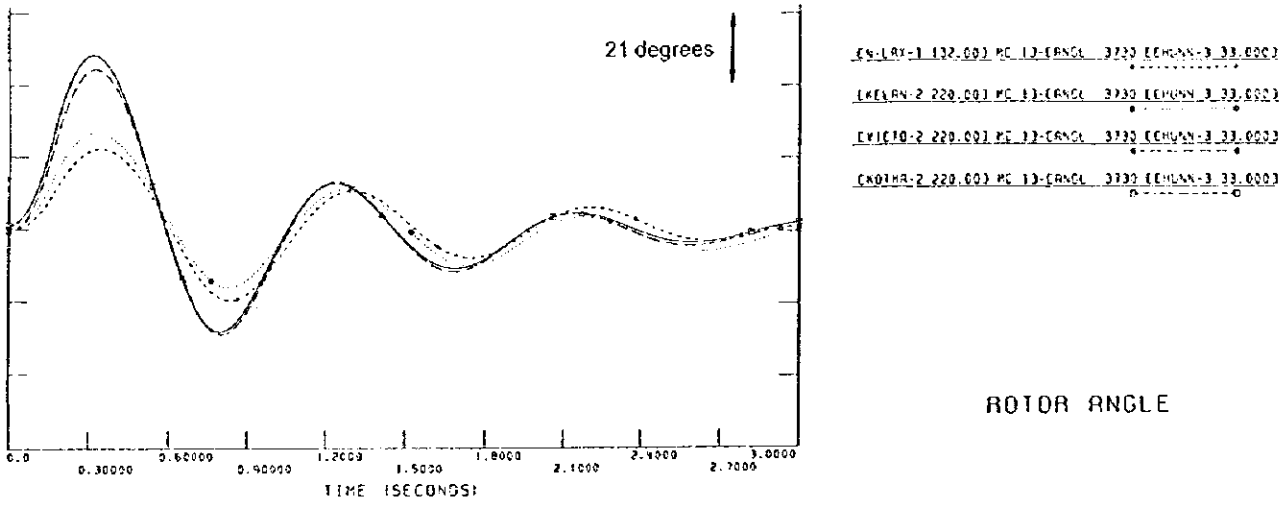
50 % RATED
0.550KV 1.250KV
kV: 550 .4120 .4200

BUS - VOLTAGE (PU)
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR

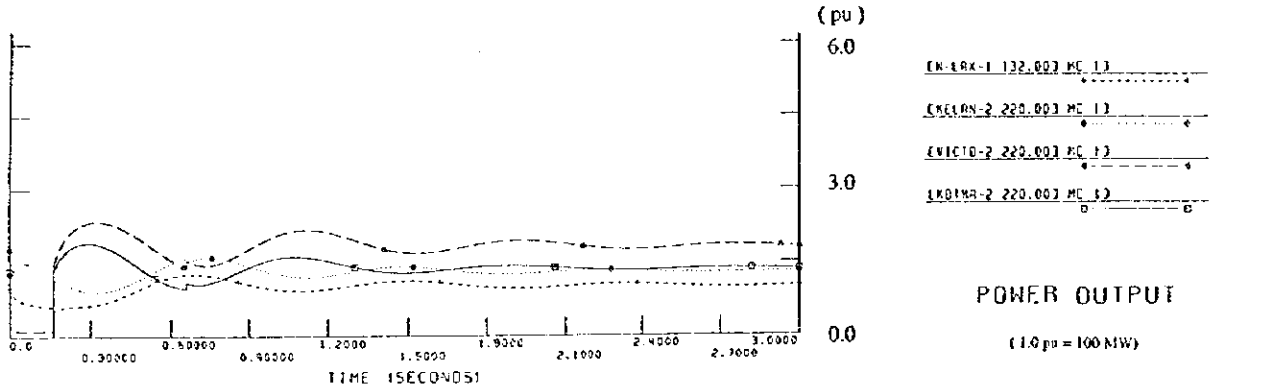
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA

TITLE Fig. 6.3.2-3

Result of Power Flow Calculation In 2000
Dry Season

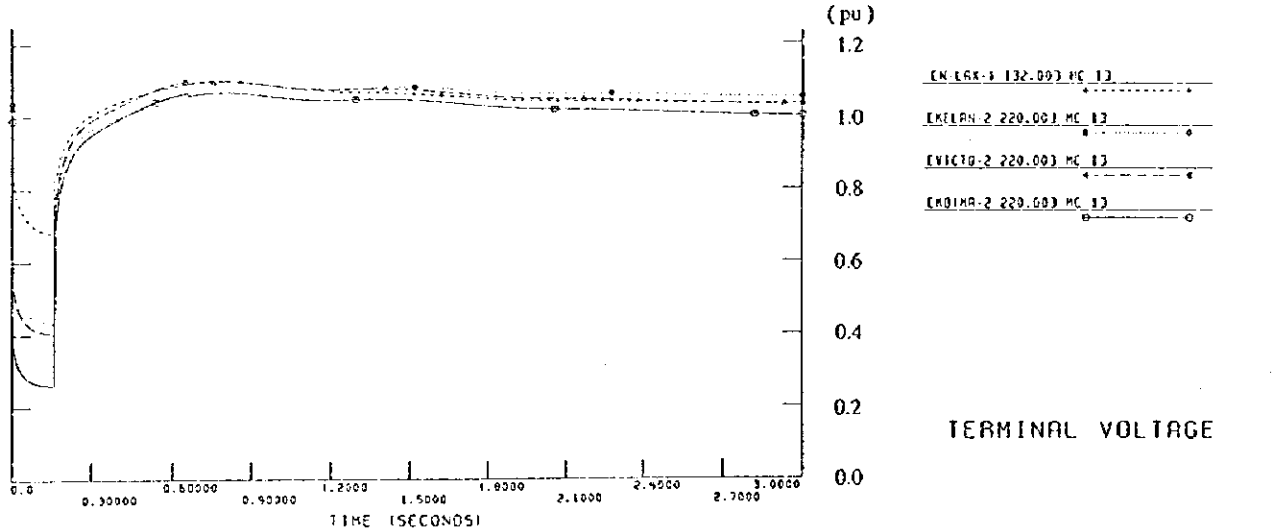


ROTOR ANGLE



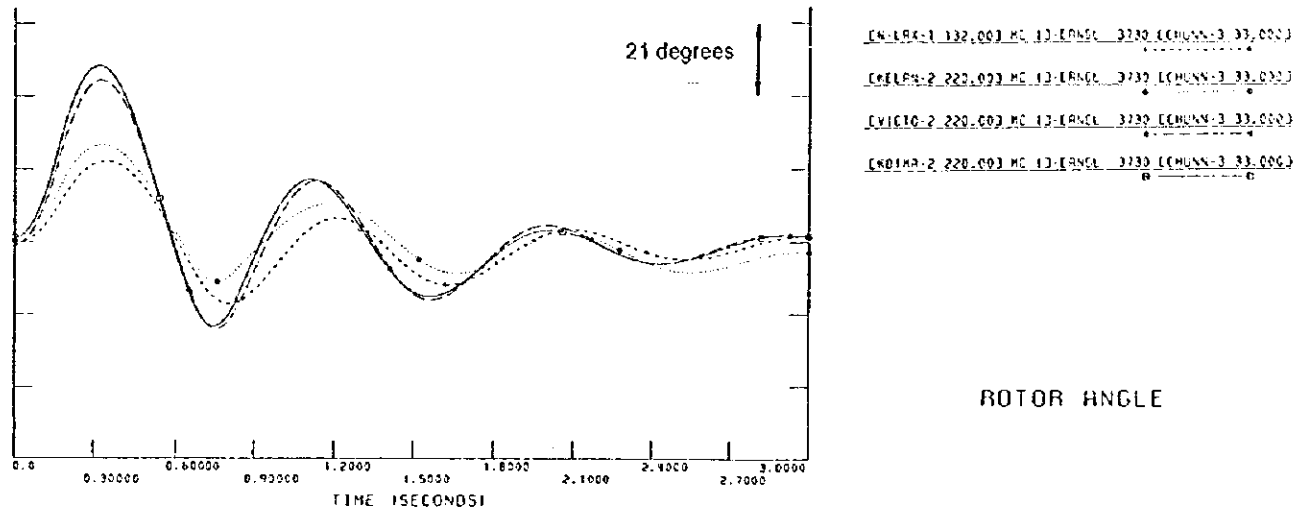
POWER OUTPUT

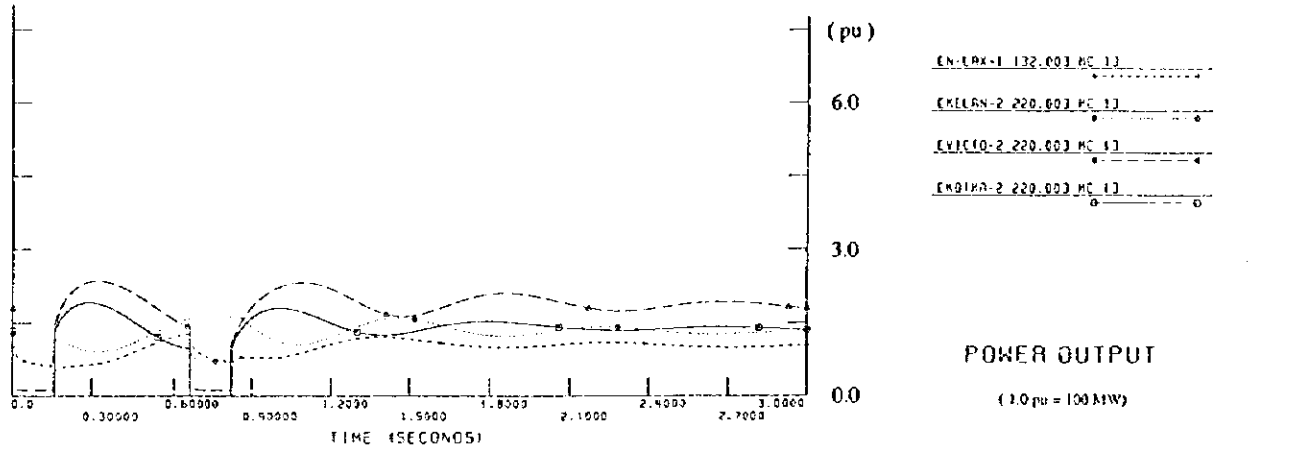
(1.0 pu = 100 MW)

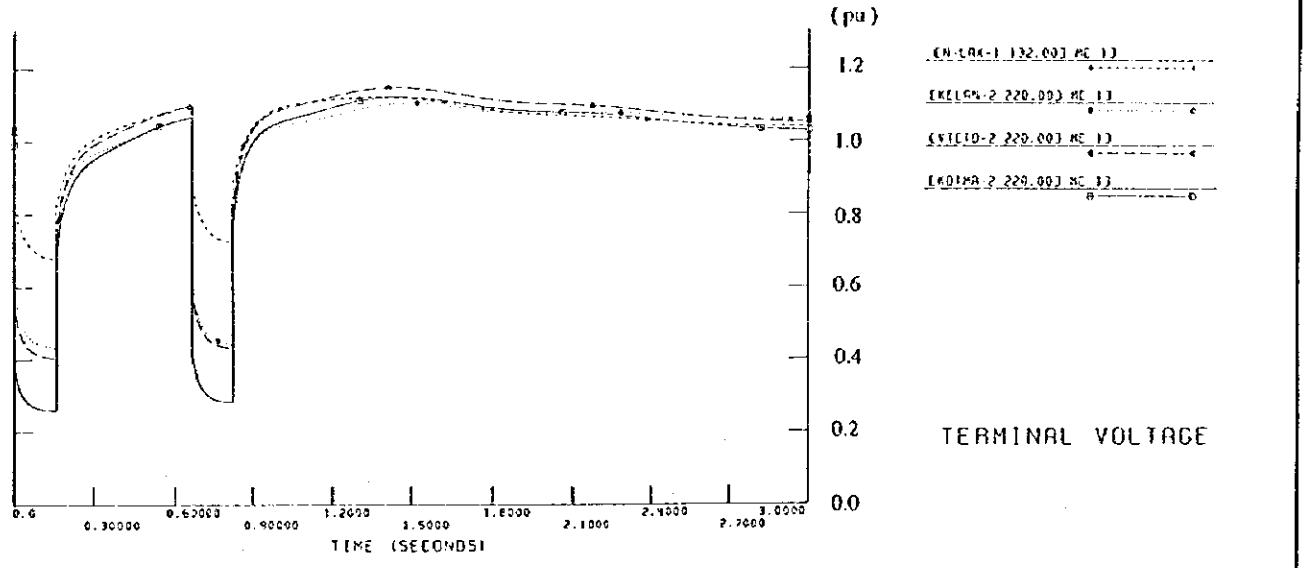


TERMINAL VOLTAGE

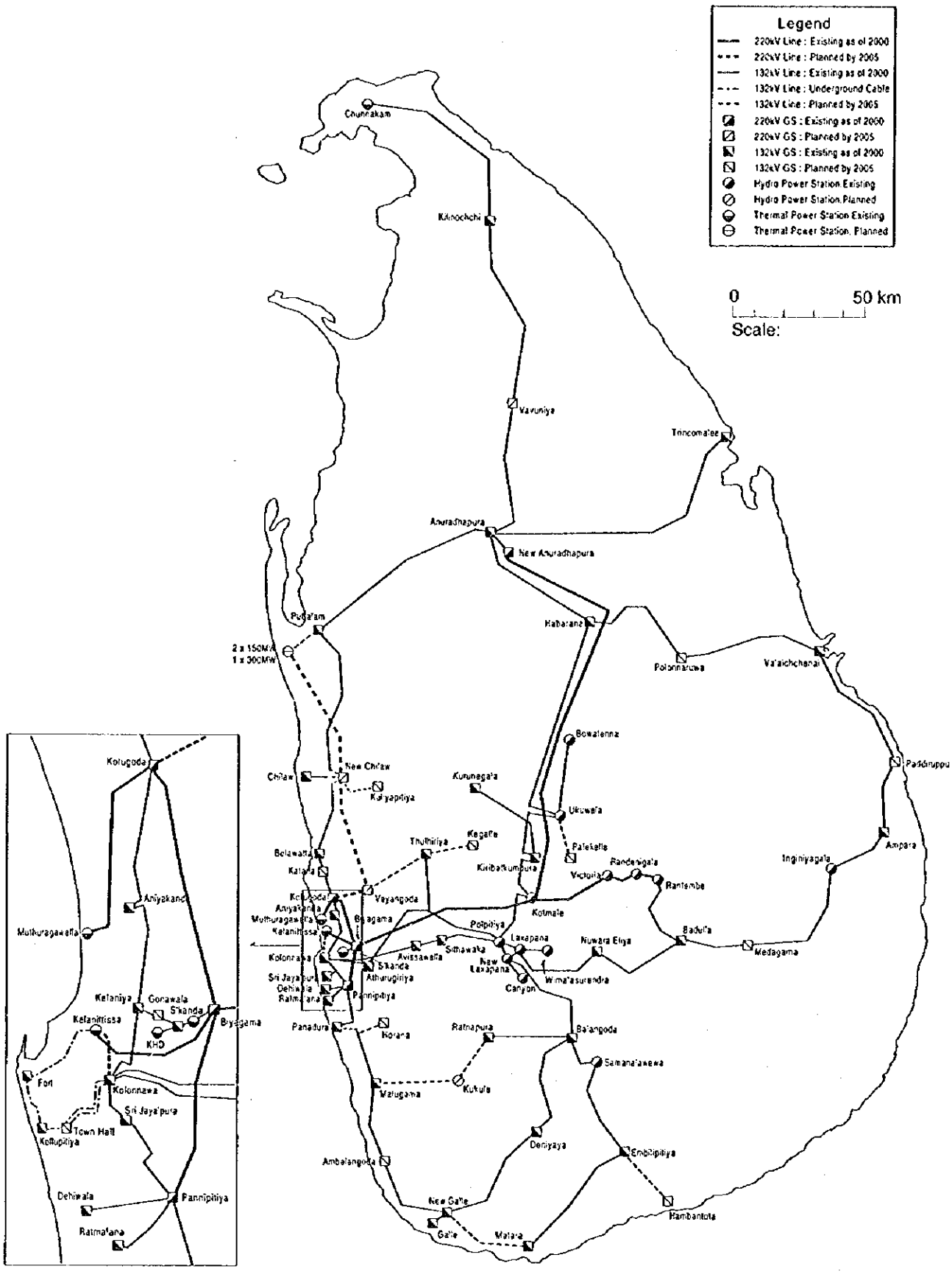
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.3.2 - 4 Result of Dynamic Stability Analysis in 2000 Rainy Season (Successful Reclosing of Kotmale - Biyagama 220kV Line)



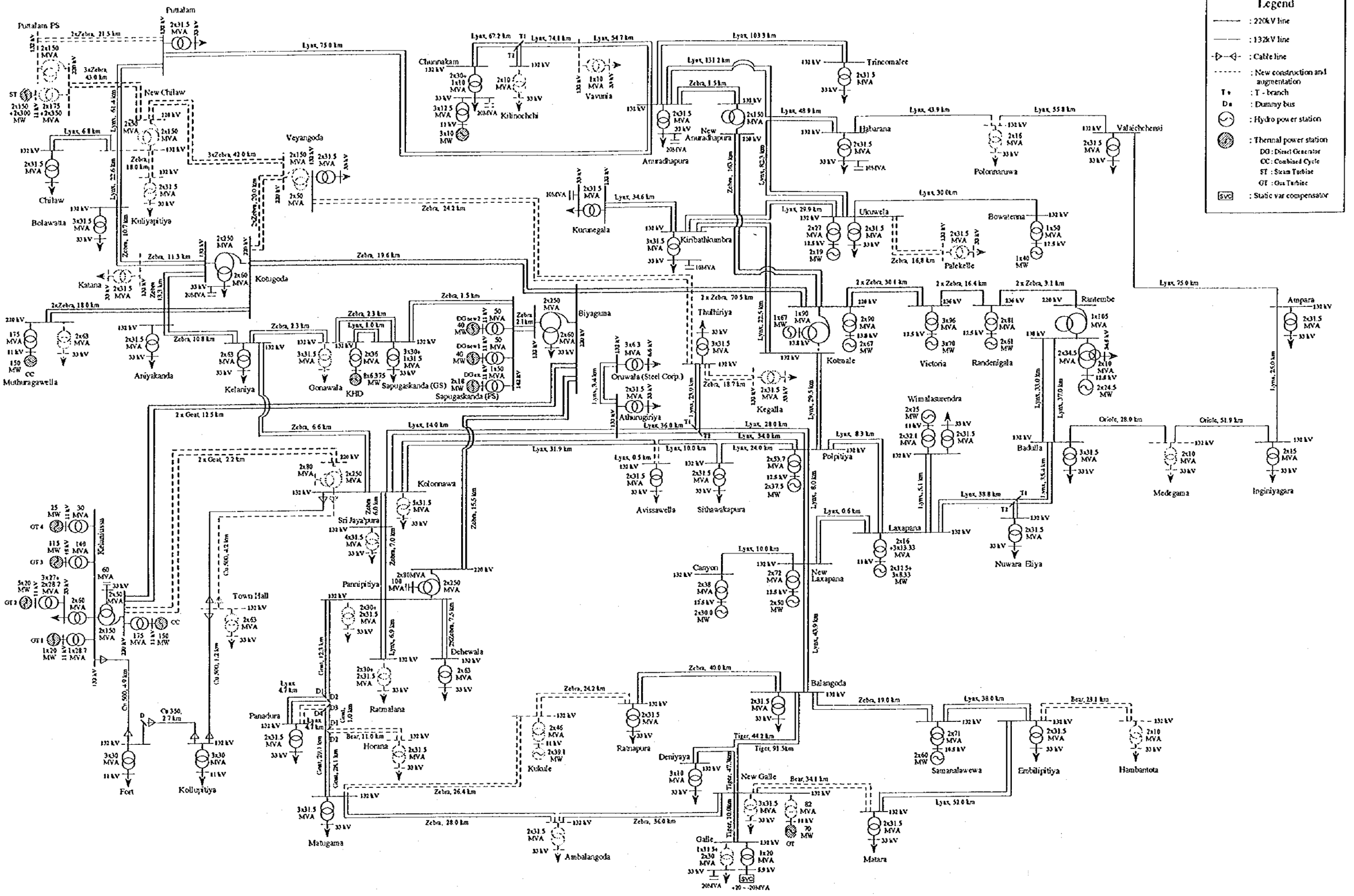




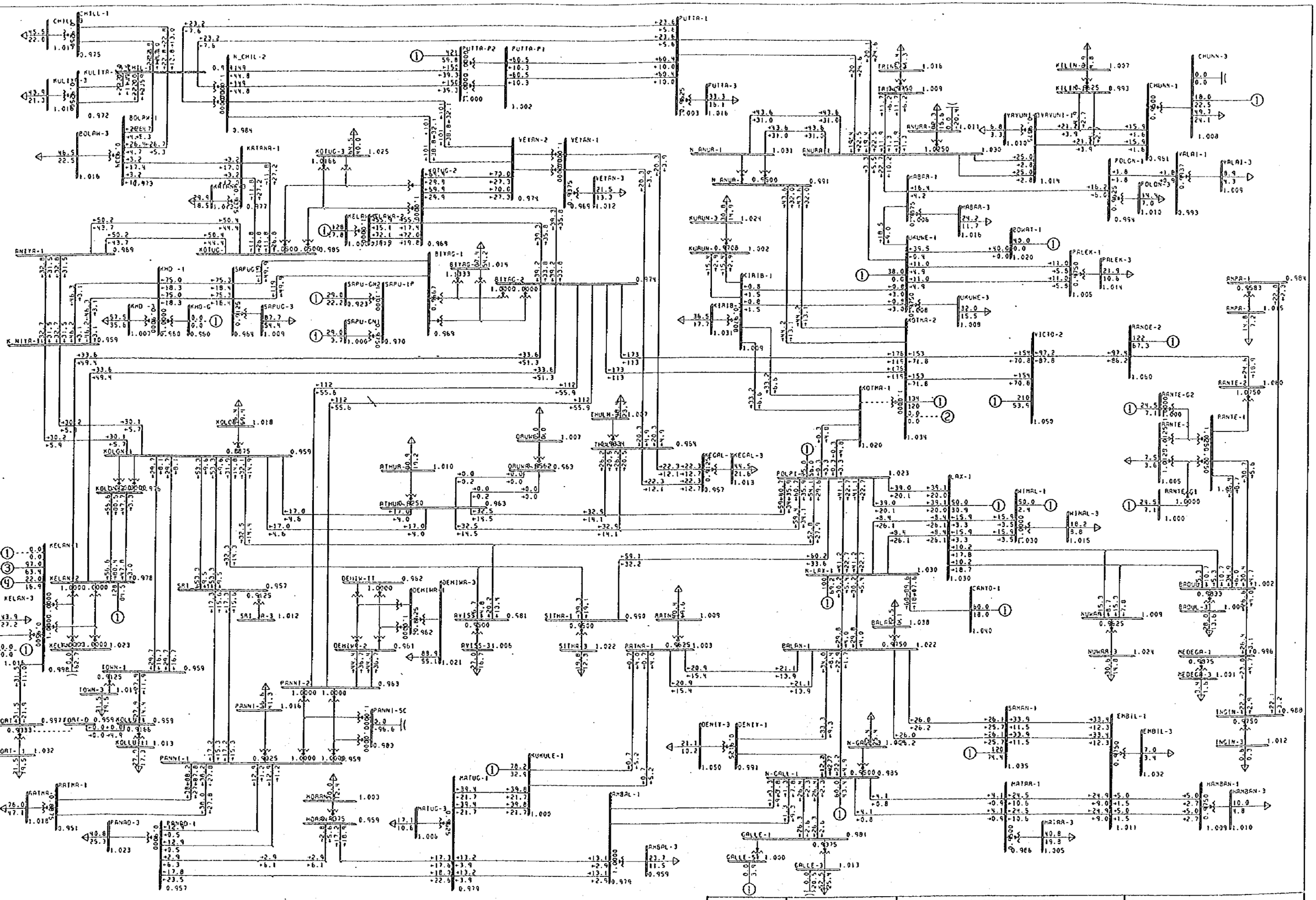
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.3.2 - 5 Result of Dynamic Stability Analysis in 2000 Rainy Season (Unsuccessful Reclosing of Kotmale - Biyagama 220kV Line)

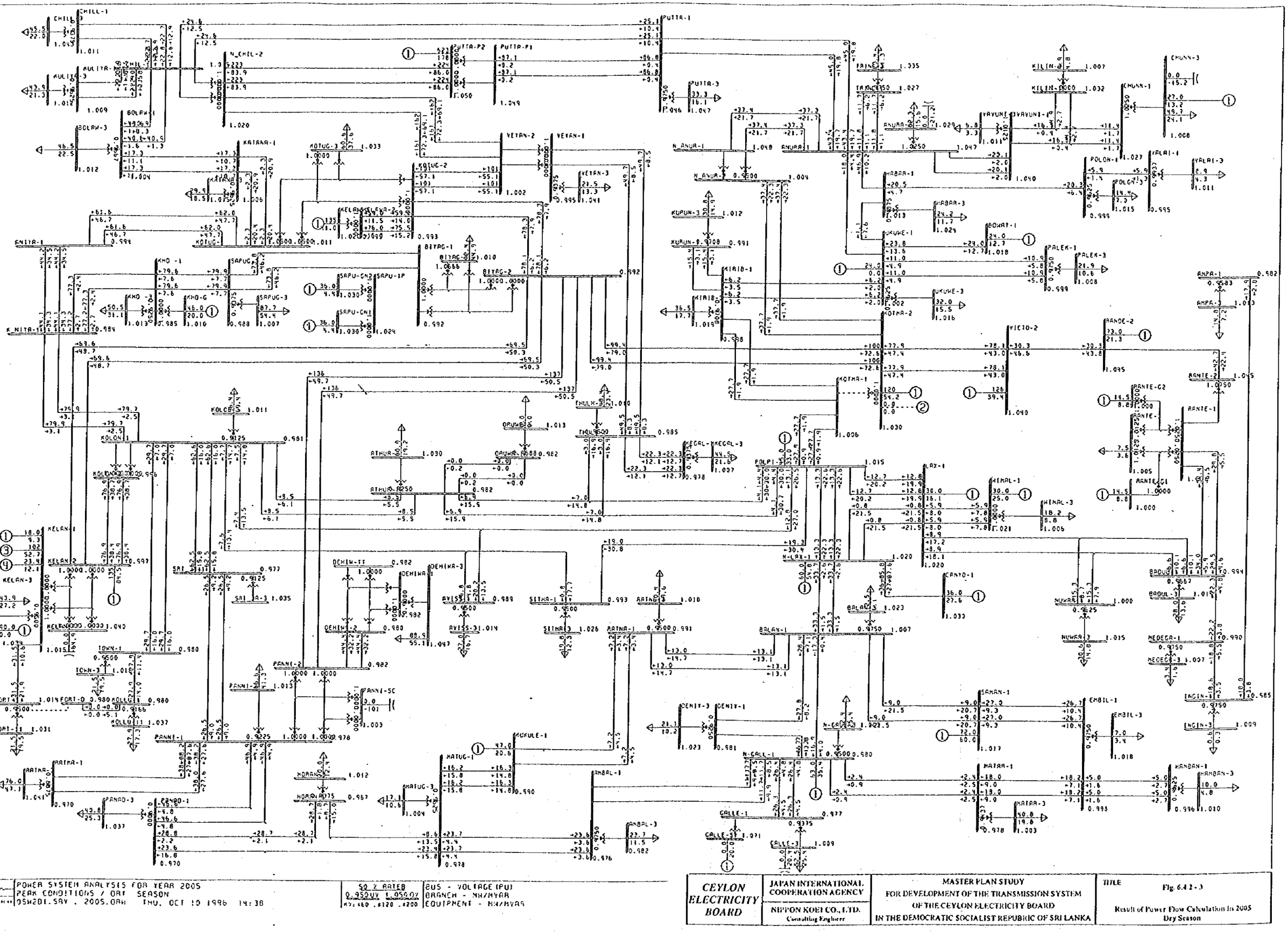


CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineers	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE Fig. 6. 4. 1 - 1 CEB Transmission Line System in 2005



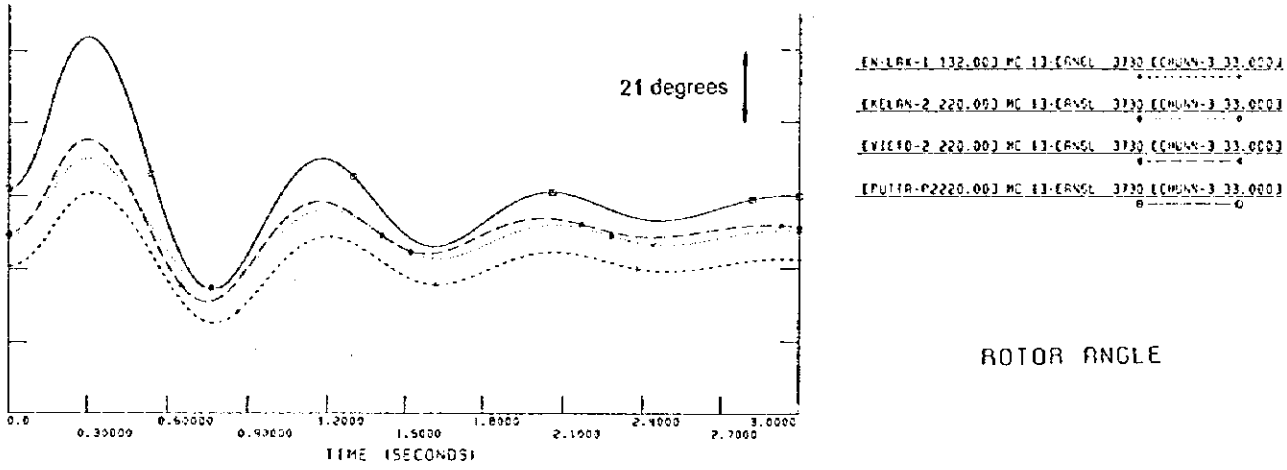
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer, TOKYO JAPAN	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE Fig. 6.4.2 - 1 CEB Power System Diagram in 2005

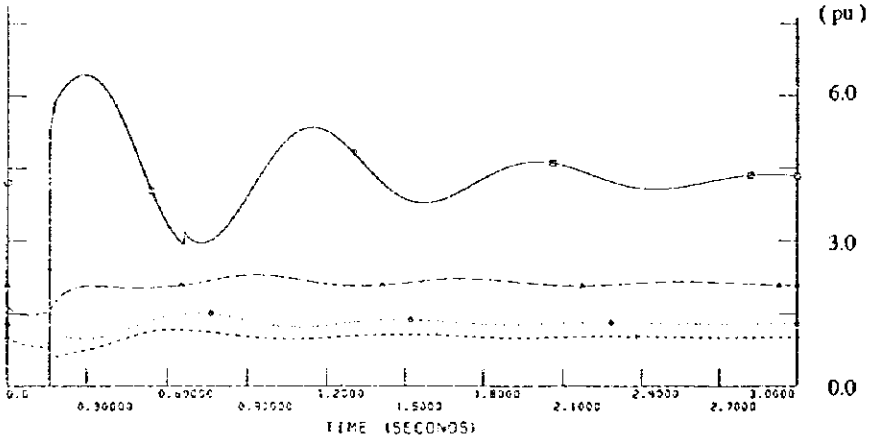

POWER SYSTEM ANALYSIS FOR YEAR 2005
PEAK CONDITIONS /RAINY SEASON
OSH2R2.SAV, 2005.08W THU, OCT 10 1996 14:35
50 % RATED
0.950UV 1.050UV
BUS - VOLTAGE (PU)
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR
CEYLON ELECTRICITY BOARD
JAPAN INTERNATIONAL COOPERATION AGENCY
NIPPON KOEI CO., LTD.
Consulting Engineer
MASTER PLAN STUDY
FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM
OF THE CEYLON ELECTRICITY BOARD
IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA
TITLE
Fig. 6.4.2 - 2
Result of Power Flow Calculation In 2005
Rainy Season

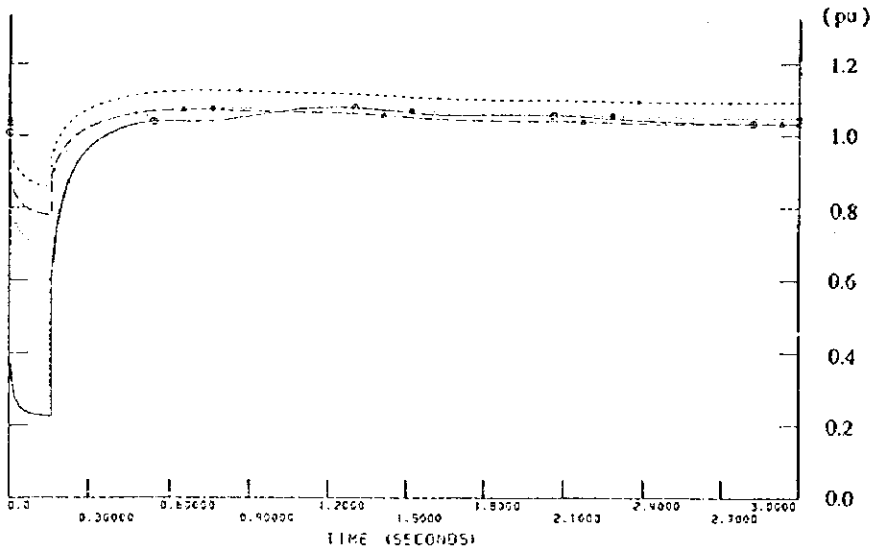


POWER SYSTEM ANALYSIS FOR YEAR 2005 PEAK CONDITIONS / DRY SEASON 05H2DE.SAV , 2005.DRH THU, OCT 10 1996 14:38	50 % RATED 0.950UV 1.050OV KV: 560 ,6120 ,6200	BUS - VOLTAGE (PU) BRANCH - MW/MVAR EQUIPMENT - MW/MVAR	CEYLON ELECTRICITY BOARD

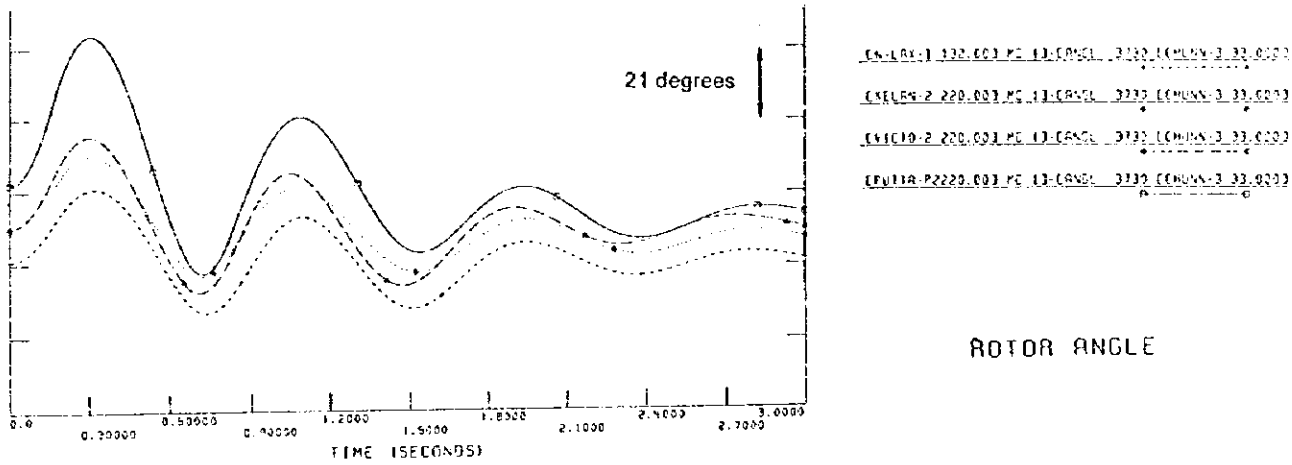
JAPAN INTERNATIONAL COOPERATION AGENCY	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE Fig. 6.4.2 - 3 Result of Power Flow Calculation In 2005 Dry Season
NIPPON KOEI CO., LTD. Consulting Engineer		



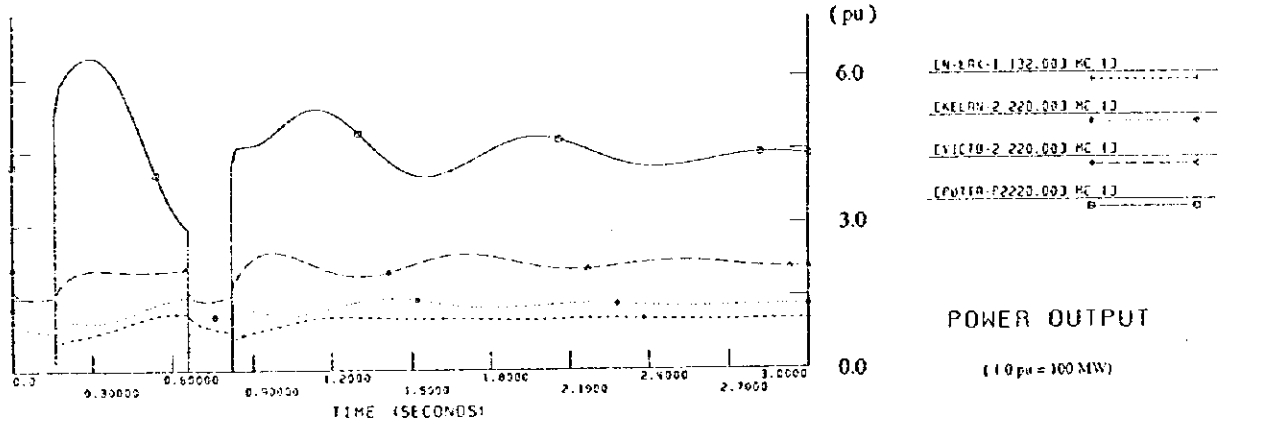




CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.4.2 - 4 Result of Dynamic Stability Analysis in 2005 Rainy Season (Successful Reclosing of Kotmale - Biyagama 220kV Line)

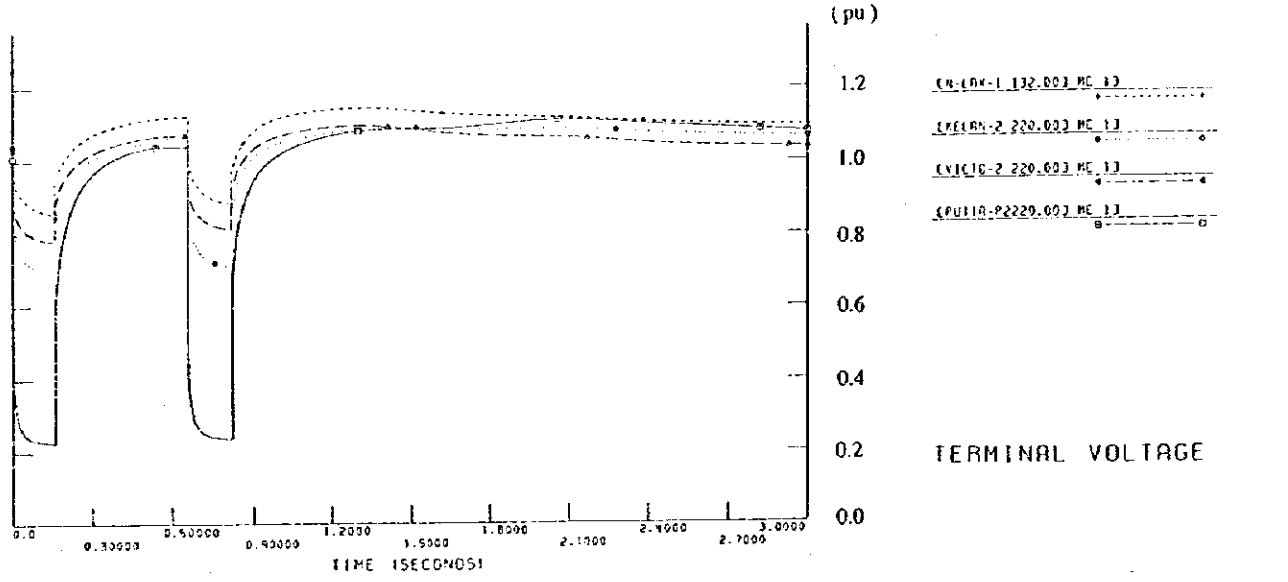


ROTOR ANGLE



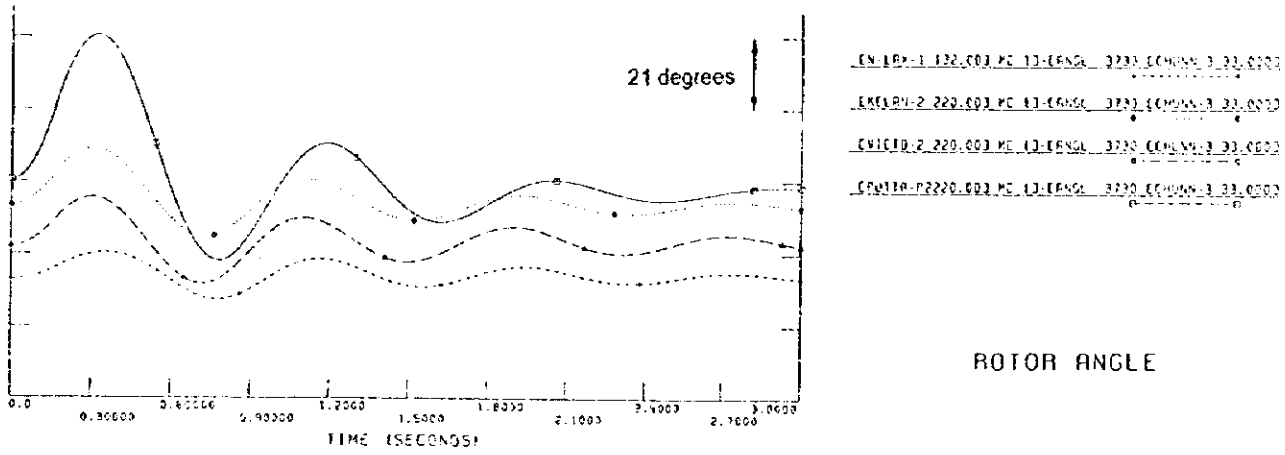
POWER OUTPUT

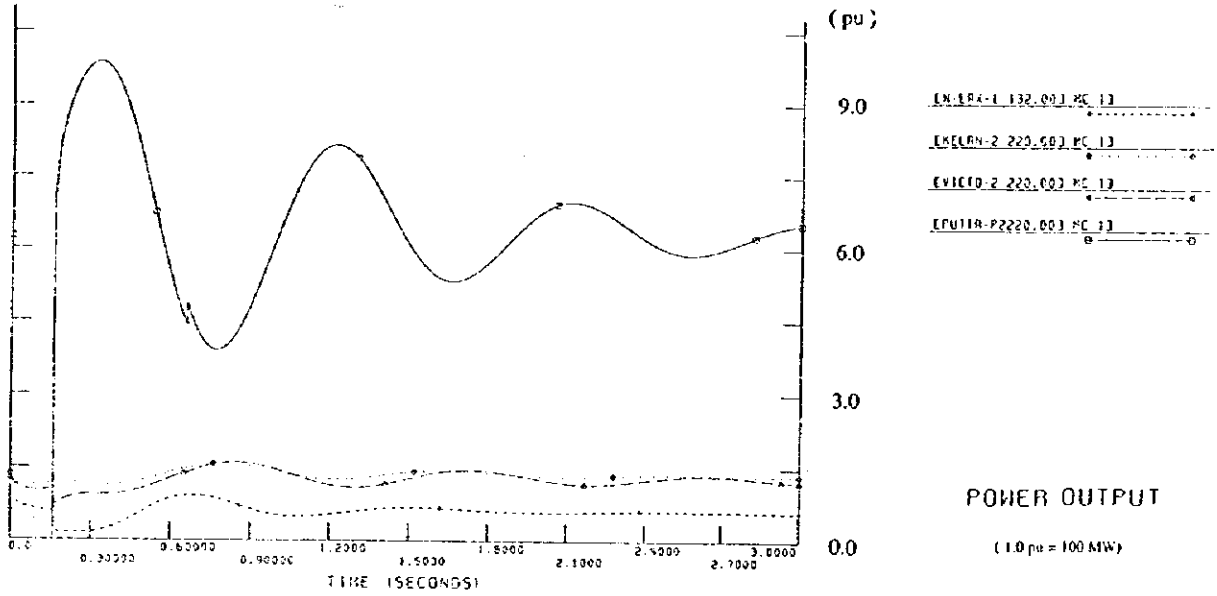
(1.0 pu = 300 MW)

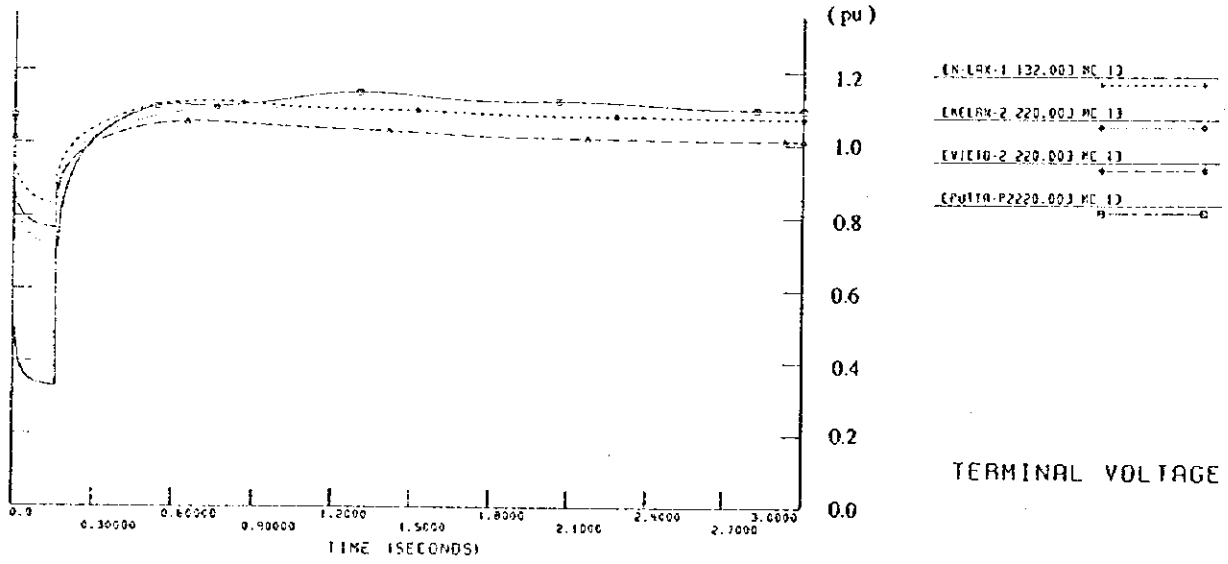


TERMINAL VOLTAGE

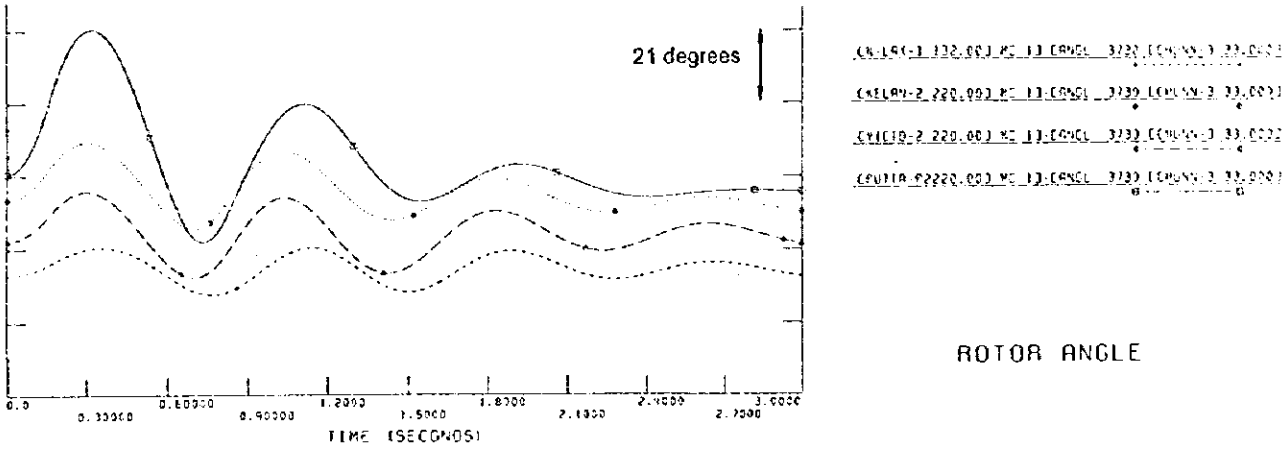
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.4.2 - 5 Result of Dynamic Stability Analysis in 2005 Rainy Season (Unsuccessful Reclosing of Kotmale - Biyagama 220kV Line)



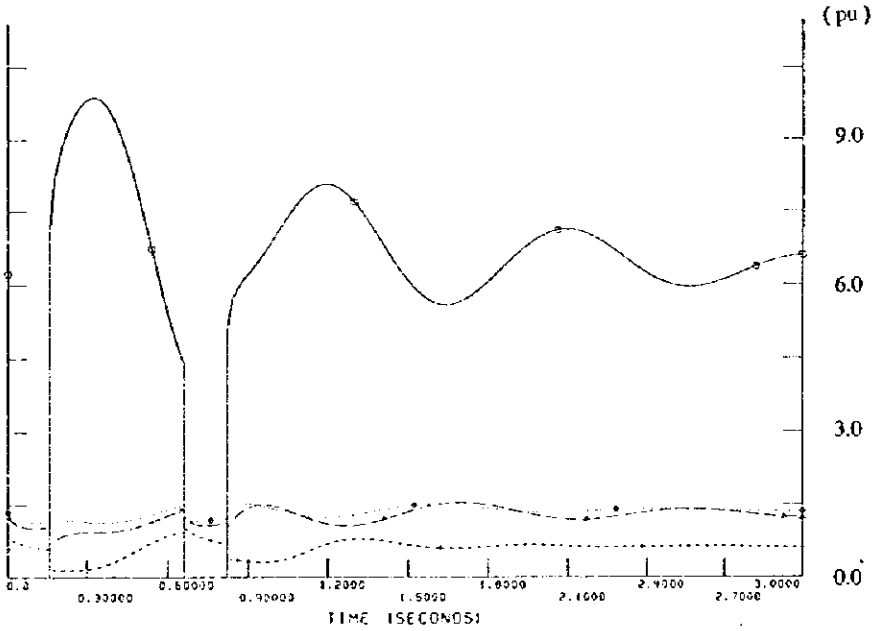




CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.4.2 - 6 Result of Dynamic Stability Analysis in 2005 Dry Season (Successful Reclosing of Puttalam P/S - New Chilaw 220kV Line)

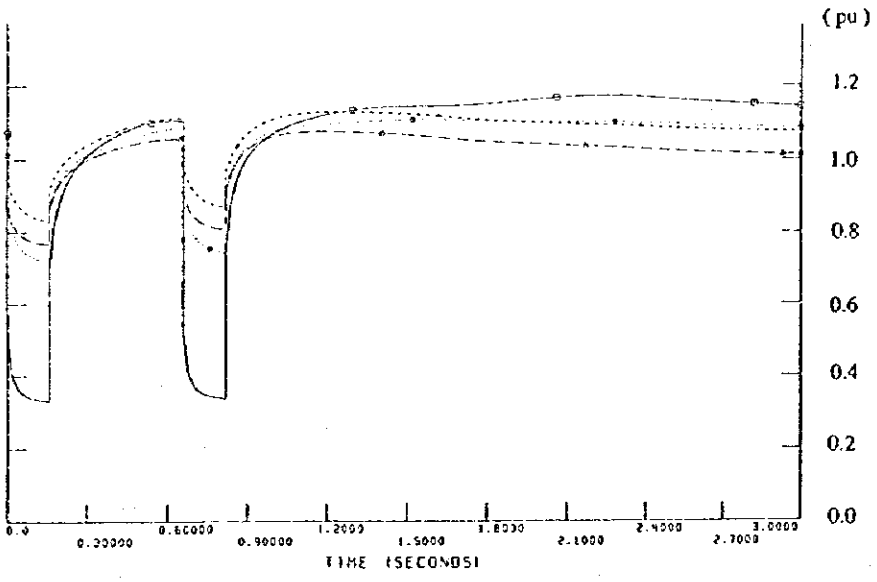


ROTOR ANGLE



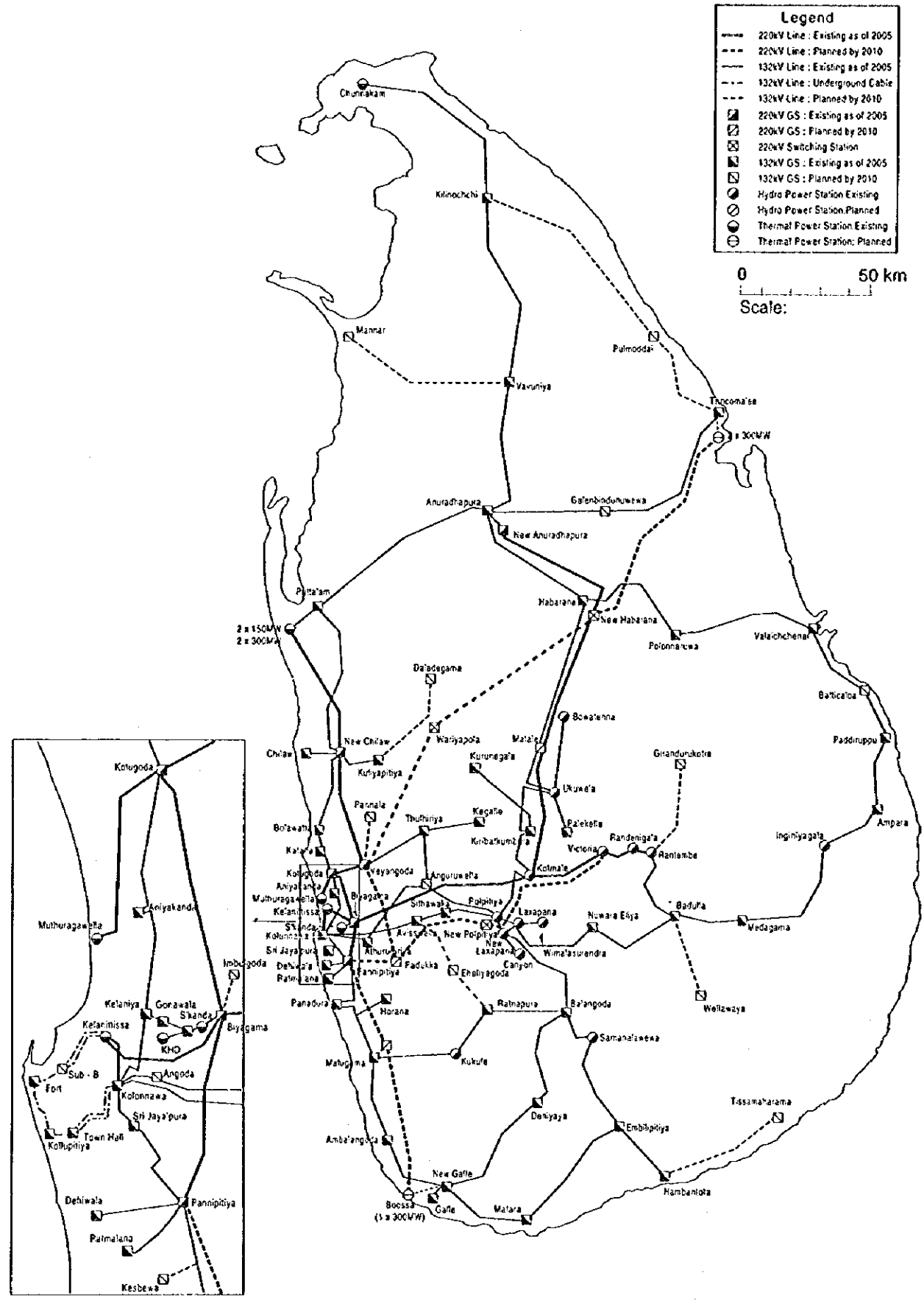
POWER OUTPUT

(1.0 pu = 100 MW)

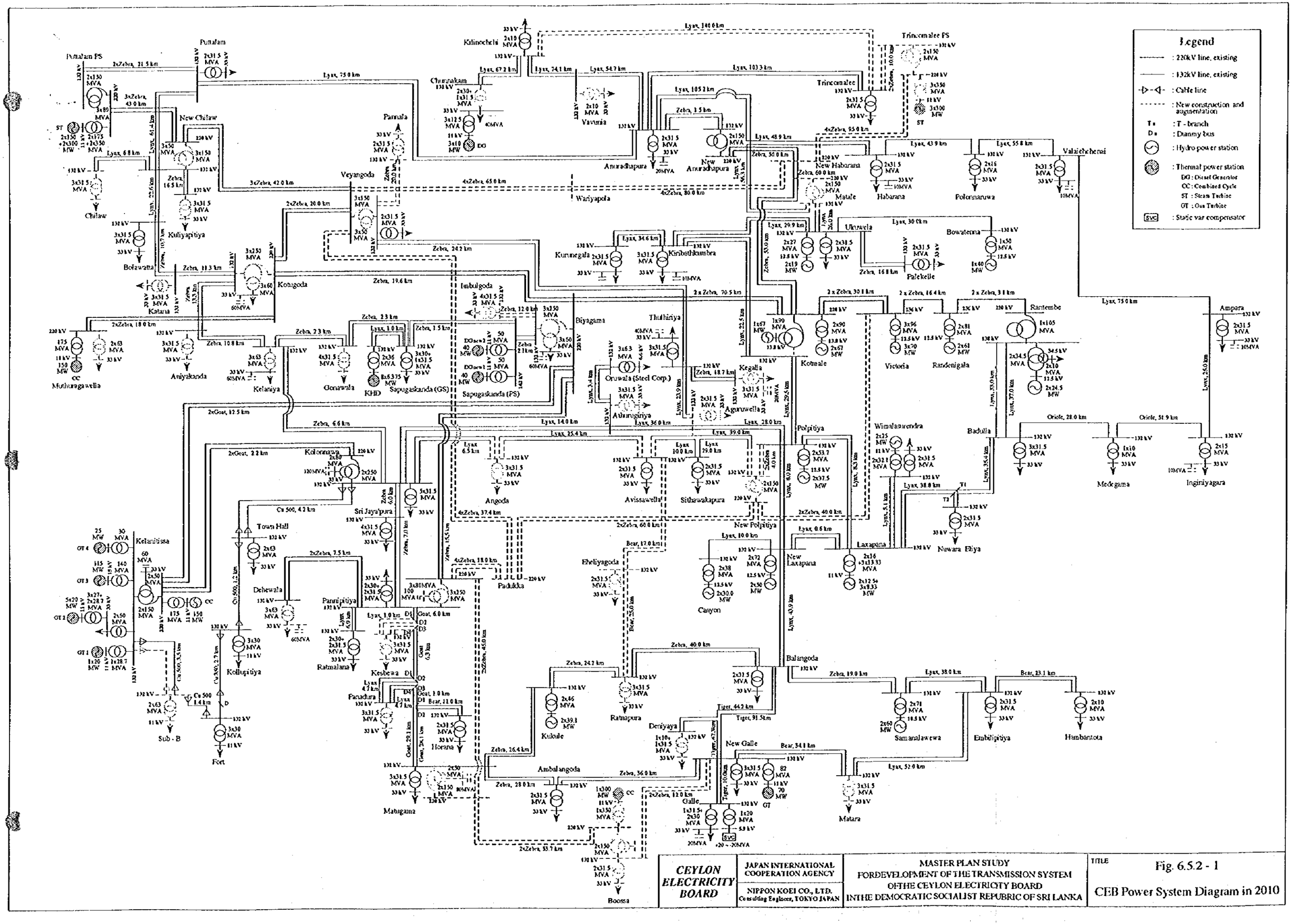


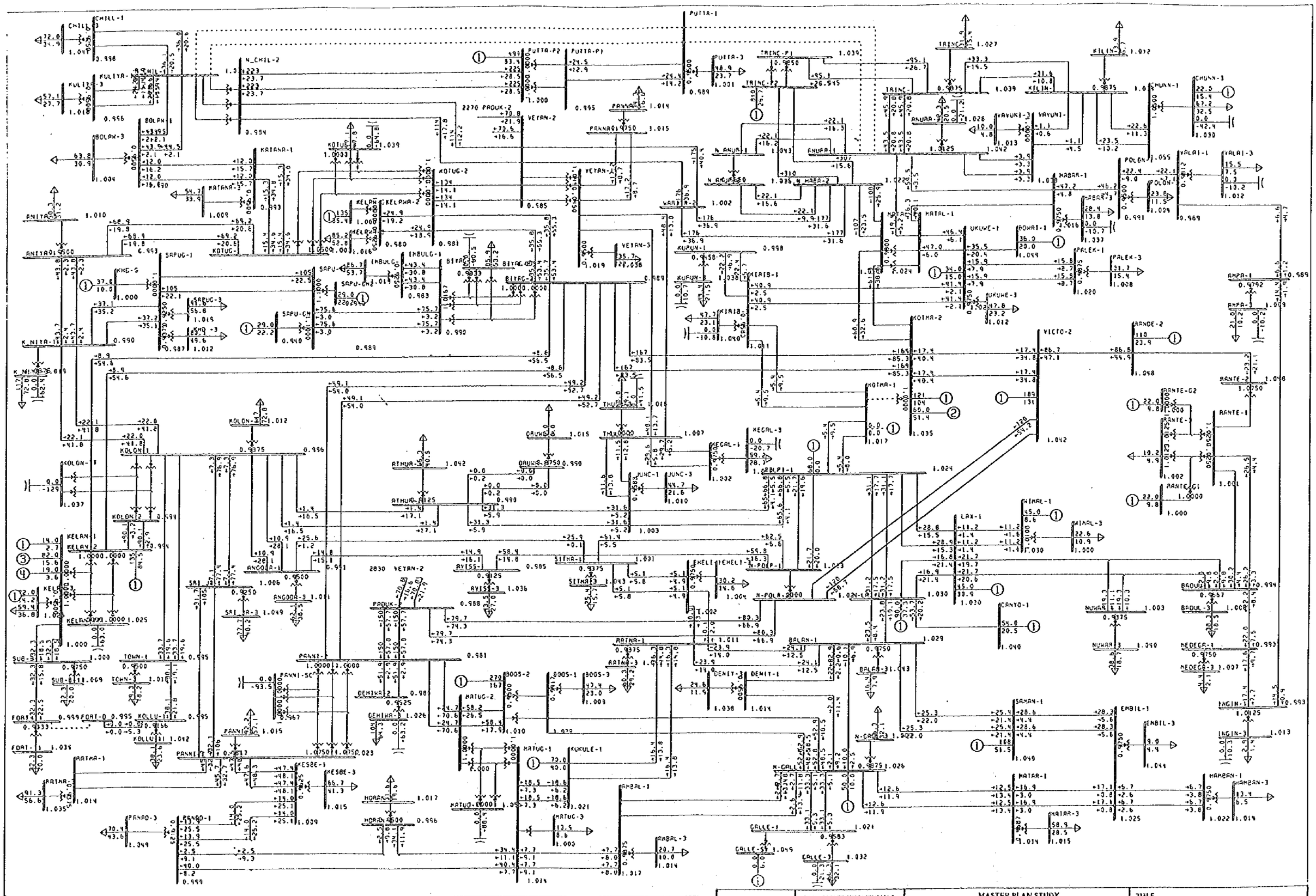
TERMINAL VOLTAGE

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.4.2 - 7 Result of Dynamic Stability Analysis in 2005 Dry Season (Unsuccessful Reclosing of Puttalam PS - New Chilaw 220kV Line)



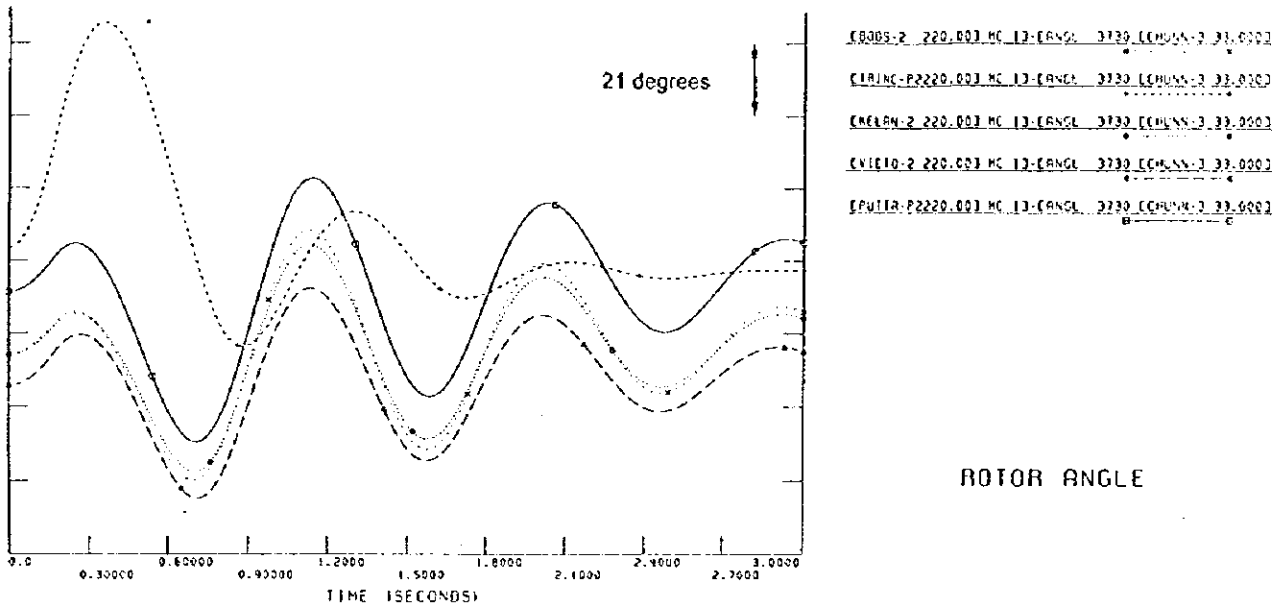
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE Fig. 6. 5 - 1 CEB Transmission Line System in 2010


Legend
: 220kV line, existing
: 132kV line, existing
: Cable line
: New construction and augmentation
T n : T - branch
D n : Dummy bus
: Hydro power station
: Thermal power station
DG : Diesel Generator
CC : Combined Cycle
ST : Steam Turbine
GT : Gas Turbine
SVC : Static var compensator
Puttalam
Puttalam PS
Kilinochchi
Trincomalee PS
Trincomalee
New Chilaw
Chilaw
Kuliyapitiya
Pannala
Veyangoda
Anuradhapura
New Anuradhapura
Wariyapola
Chunnakam
Vavuniya
New Habarana
Matale
Habarana
Polonnaruwa
Valaichchenai
Ukuwela
Bowatenna
Palekelle
Bolawatta
Katana
Kotugoda
Kurunegala
Kiribathkumbra
Embulgoda
Biyagama
Thulhiriya
Kotmale
Victoria
Randenigala
Rantembe
Ampara
Muthurajawella
Aniyakanda
Kelaniya
Gonawala
KHD
Sapugaskanda (GS)
Sapugaskanda (PS)
Oruwala (Steel Corp.)
Kegalla
Aturugiriya
Aguruwella
Polpitiya
Wimalasurendra
Badulla
Oriole, 28.0 km
Oriole, 51.9 km
Medagama
Inginiyagala
Kolonnawa
Angoda
Avissawella
Sithawakapura
New Polpitiya
Laxapana
New Laxapana
Nuwara Eliya
Kelanitissa
Town Hall
Sri Jayapura
Dehiwala
Pannipitiya
Ratmalana
Kesbewa
Padukka
Kollupitiya
Sub - B
Fort
Matugama
Horana
Panadura
Eheliyagoda
Canyon
Ratnapura
Kukule
Ambalangoda
Galle
Deniyaya
New Galle
Matara
Balangoda
Samanalawewa
Embilipitiya
Hambantota
Boossa
CEYLON ELECTRICITY BOARD
JAPAN INTERNATIONAL COOPERATION AGENCY
NIPPON KOEI CO., LTD. Consulting Engineer, TOKYO JAPAN
MASTER PLAN STUDY FORDEVELOPMENT OF THE TRANSMISSION SYSTEM OFTHE CEYLON ELECTRICITY BOARD INTHE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA
TITLE
Fig. 6.5.2 - 1
CEB Power System Diagram in 2010

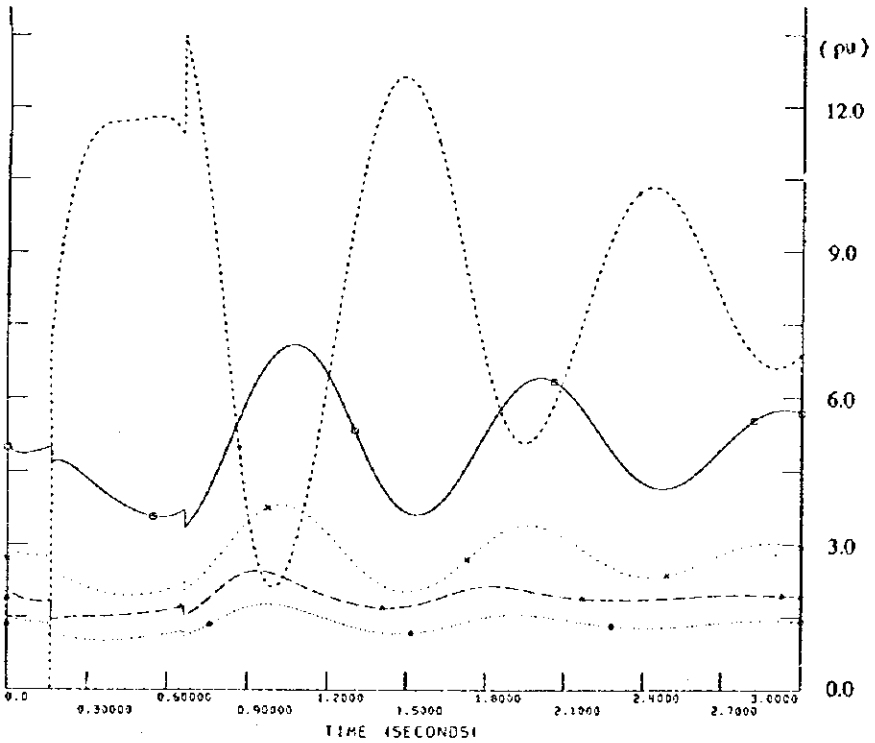


POWER SYSTEM ANALYSIS FOR YEAR 2010 PEAK CONDITIONS 10W2B3.SAV, 2010.DBA THU, OCT 10 1996 14:48	50 % RATED 0.350kV 1.050kV MW:sBB .s120 .s200	BUS - VOLTAGE (PU) BRANCH - MW/MVAR EQUIPMENT - MW/MVAR	CEYLON ELECTRICITY BOARD

JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 2 Result of Power Flow Calculation in 2010

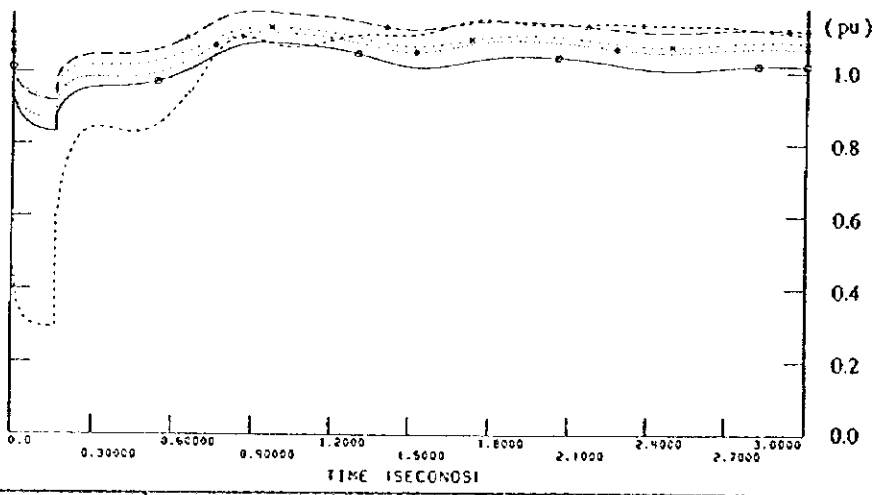


ROTOR ANGLE



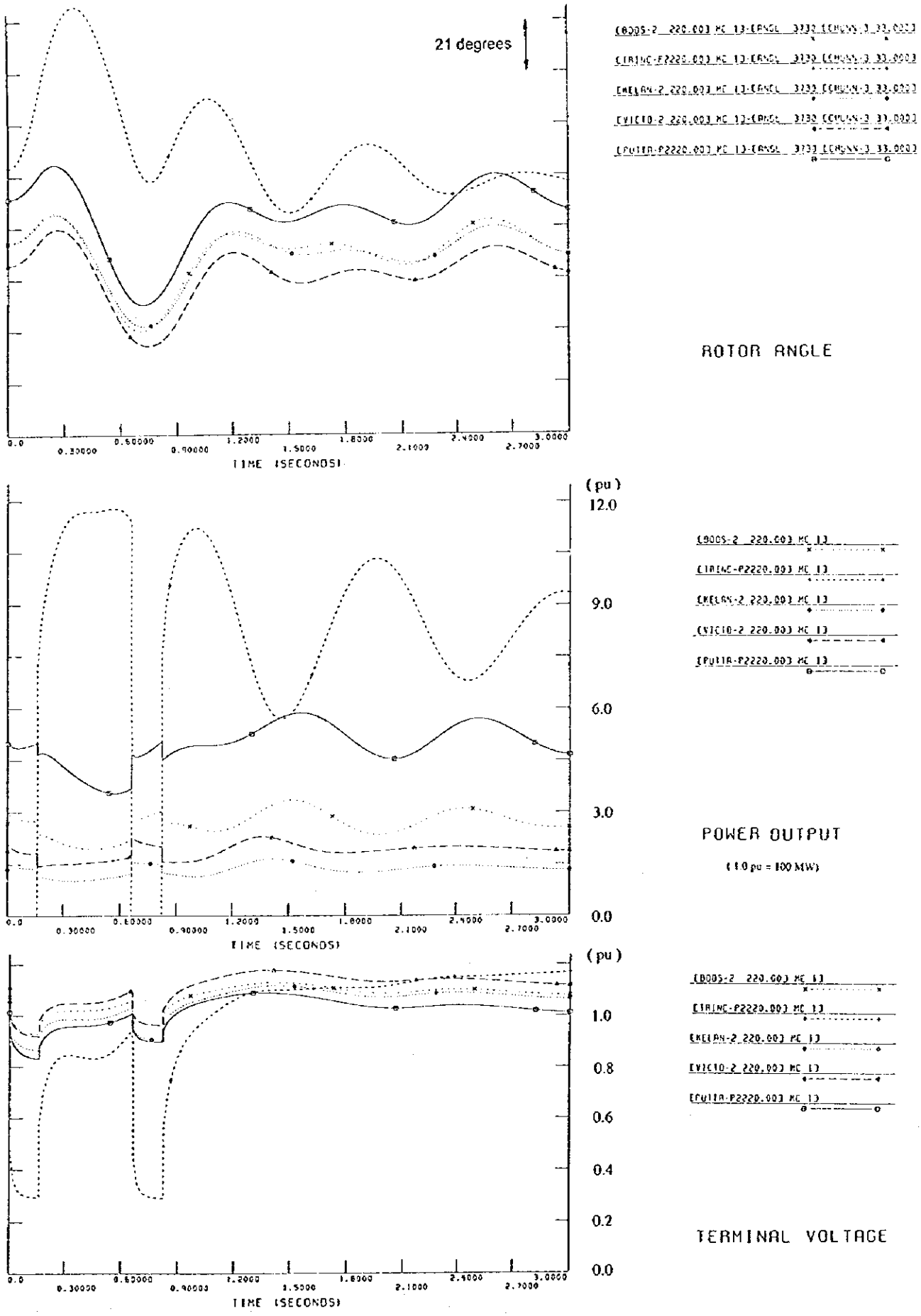
POWER OUTPUT

(1.0 pu = 100 MW)

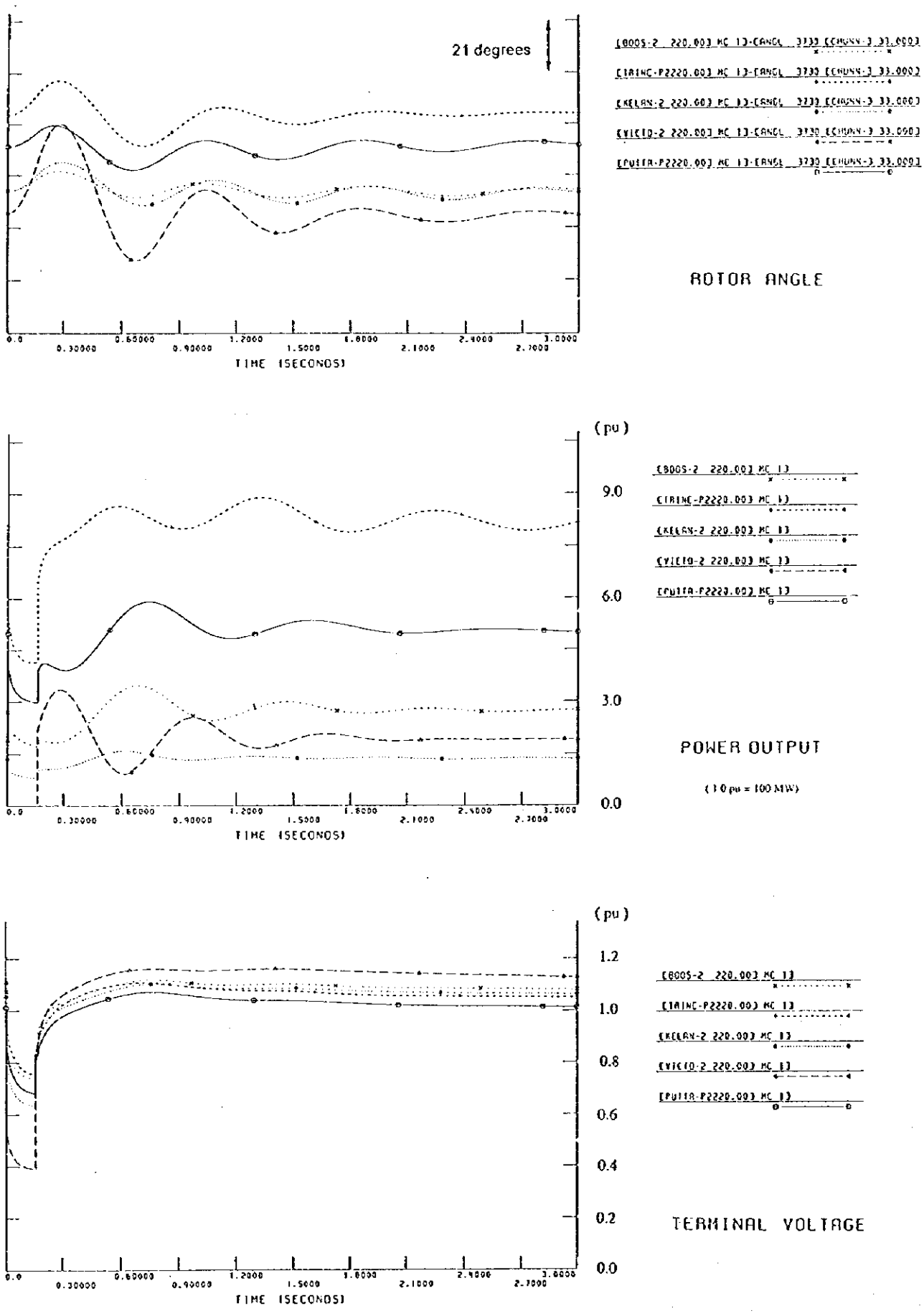


TERMINAL VOLTAGE

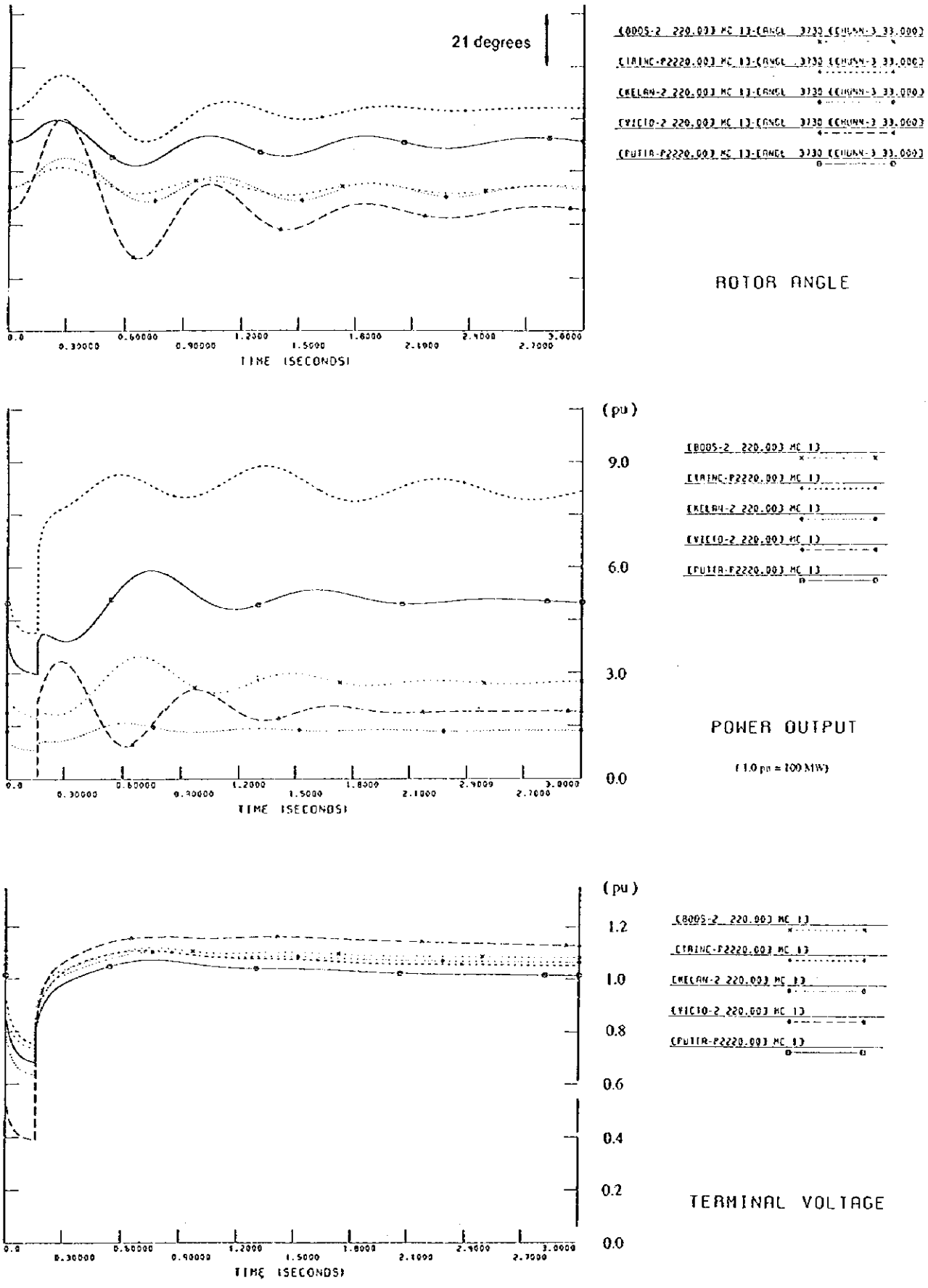
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 3 Result of Dynamic Stability Analysis In 2010 (Successful Reclosing of Talawmalwe PSS - New Habarana 220kV Line)



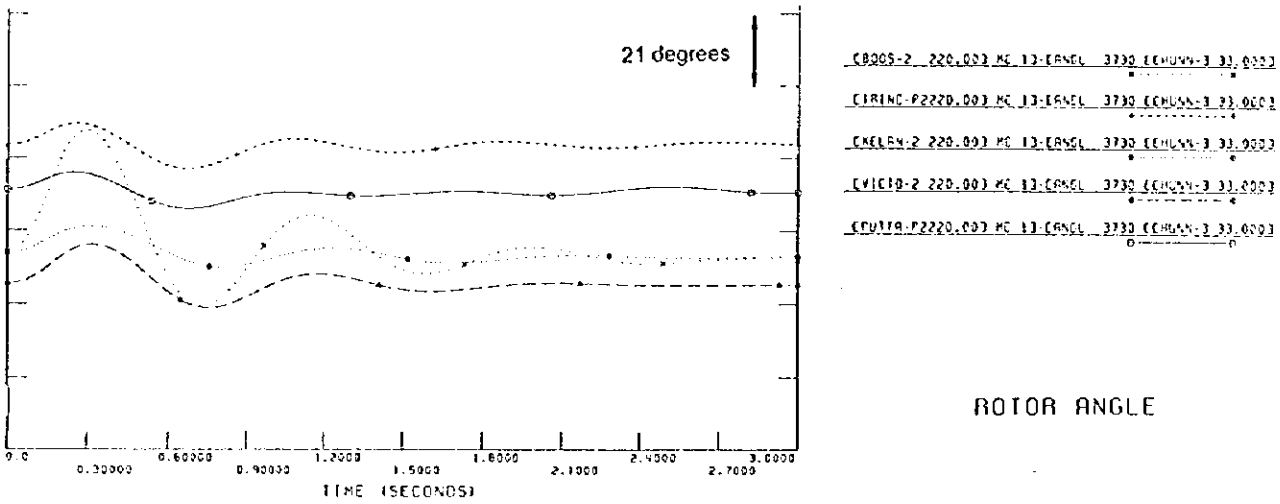
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 4 Result of Dynamic Stability Analysis in 2010 (Successful Reclosing of Trincomalee PS - New Habarana 220kV Line)



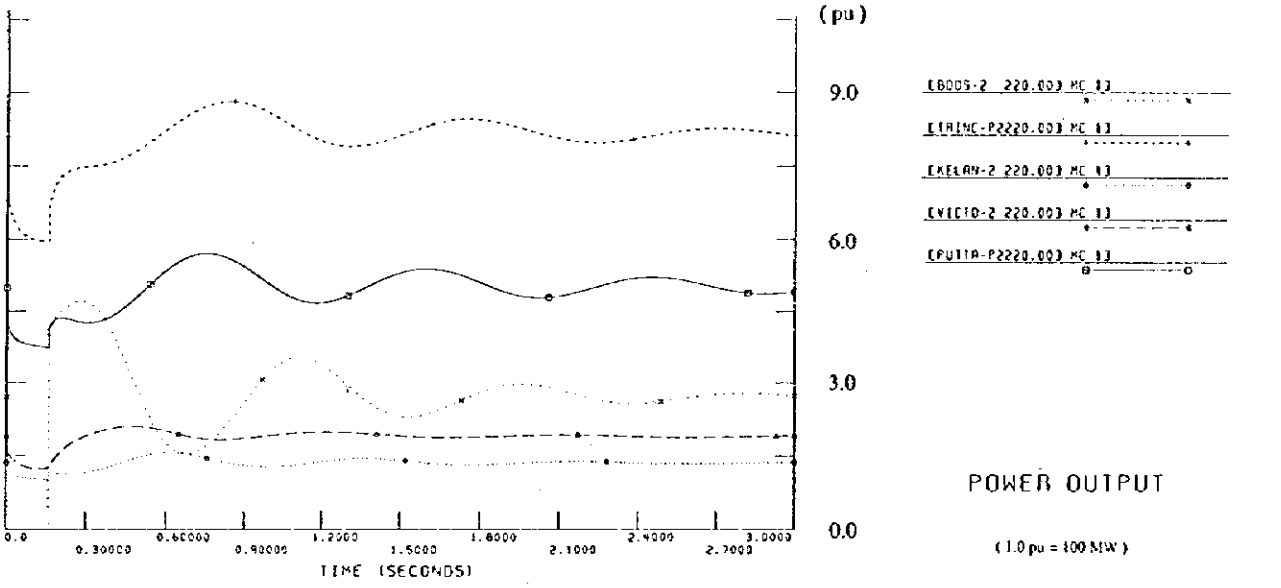
CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 5 Result of Dynamic Stability Analysis In 2010 (Successful Reclosing of Victoria - New Polpitiya 220kV Line)



CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 6 Result of Dynamic Stability Analysis In 2010 (Unsuccessful Reclosing of Victoria - New Polpitiya 220kV Line)

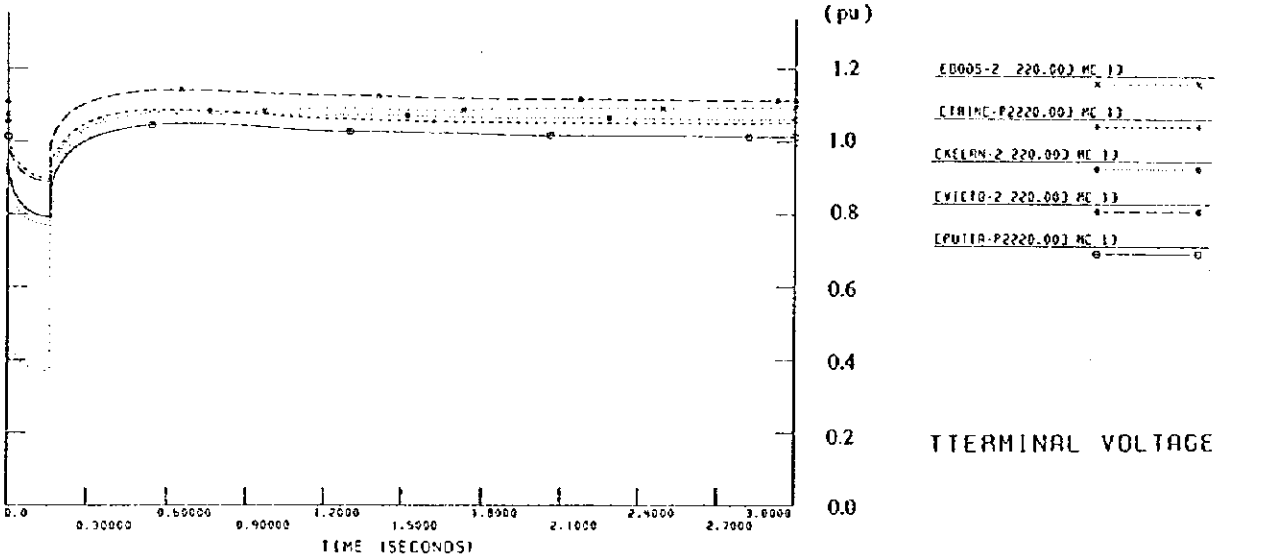


ROTOR ANGLE



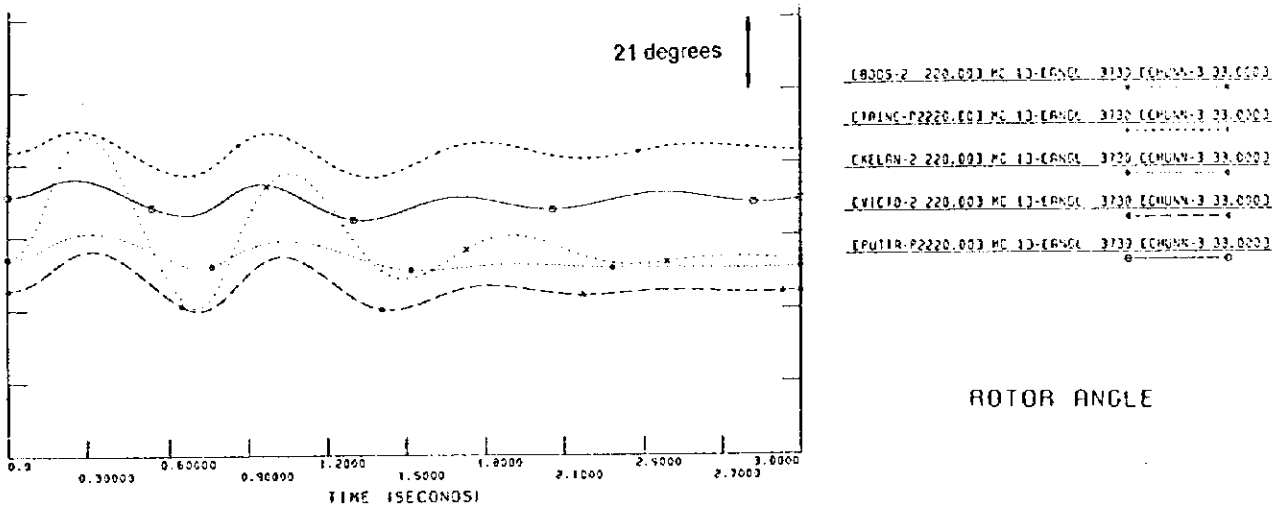
POWER OUTPUT

(1.0 pu = 100 MW)

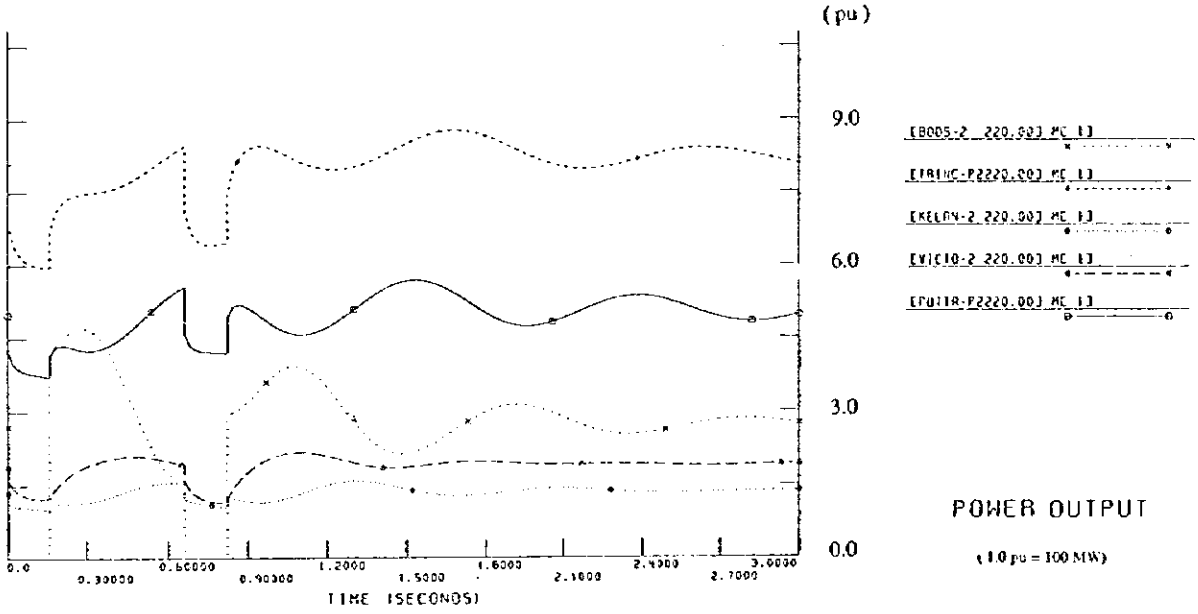


TERMINAL VOLTAGE

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 7 Result of Dynamic Stability Analysis in 2010 (Successful Reclosing of Bus-a - Matugama 220kV Line)

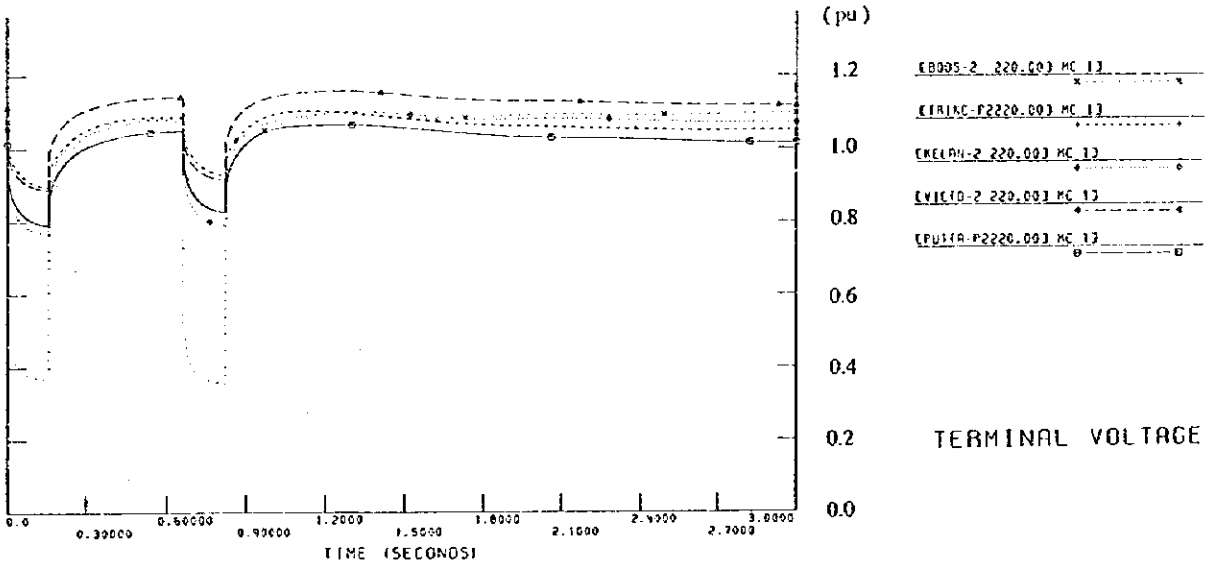


ROTOR ANGLE



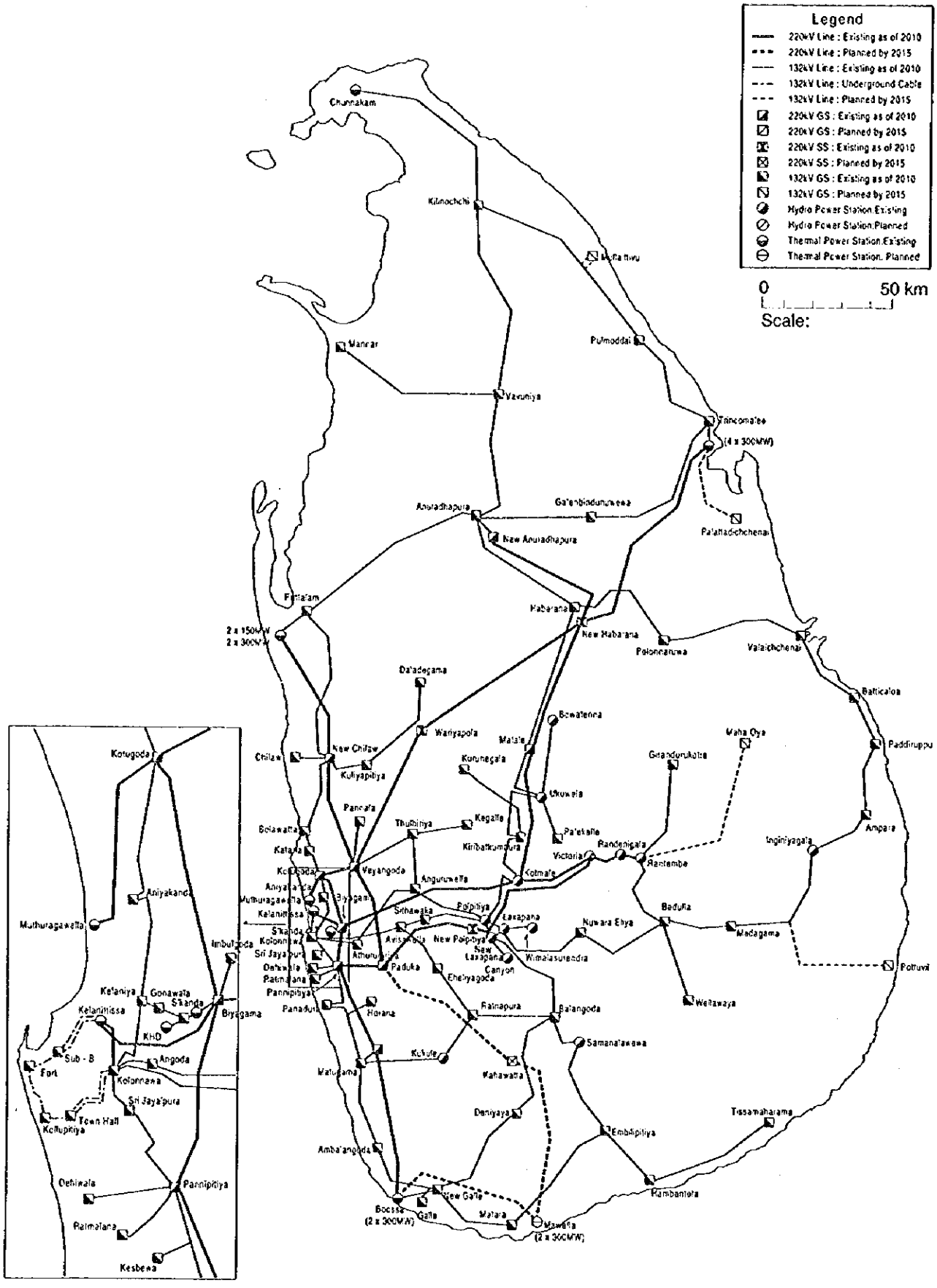
POWER OUTPUT

(1.0 pu = 100 MW)

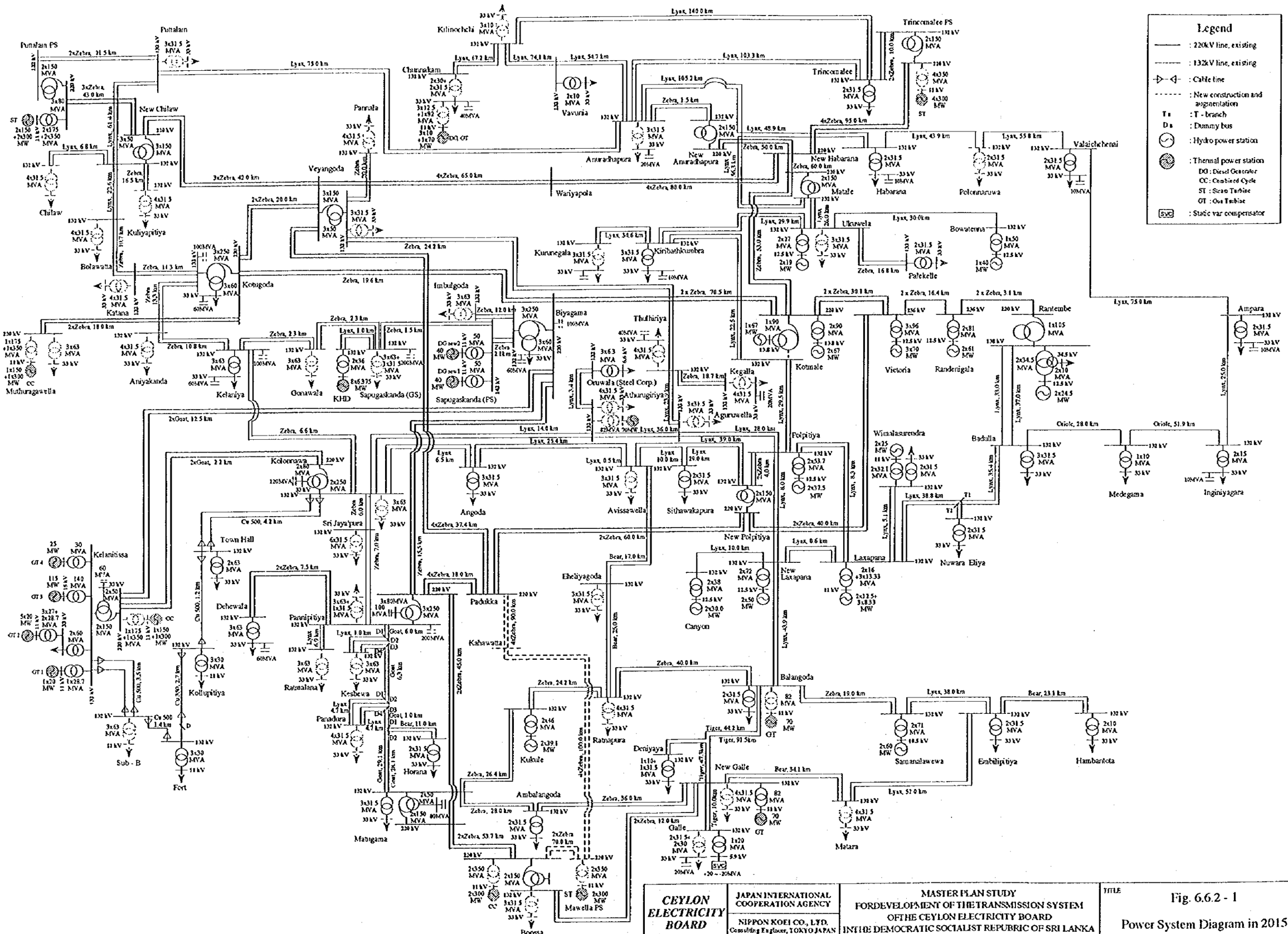


TERMINAL VOLTAGE

CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineer	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBRIC OF SRI LANKA	TITLE Fig. 6.5.2 - 8 Result of Dynamic Stability Analysis in 2010 (Unsuccessful Reclosing of Bolawa - Madampe 220kV Line)



CEYLON ELECTRICITY BOARD	JAPAN INTERNATIONAL COOPERATION AGENCY NIPPON KOEI CO., LTD. Consulting Engineers	MASTER PLAN STUDY FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM OF THE CEYLON ELECTRICITY BOARD IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA	TITLE Fig. 6. 6 - 1 CEB Transmission Line System in 2015


Legend
: 220kV line, existing
: 132kV line, existing
: Cable line
: New construction and augmentation
Tn : T - branch
Dn : Dummy bus
: Hydro power station
: Thermal power station
DG : Diesel Generator
CC : Combined Cycle
ST : Steam Turbine
GT : Gas Turbine
SVC : Static var compensator
Puttalam PS
Puttalam
Kilinochchi
Trincomalee PS
Trincomalee
Chunnakam
Vavuniya
Anuradhapura
New Anuradhapura
Pannala
Veyangoda
Wariyapola
New Habarana
Matale
Habarana
Polonnaruwa
Valaichchenai
New Chilaw
Chilaw
Kuliyapitiya
Bolawatta
Katana
Kotugoda
Kurunegala
Kiribathkumbra
Ukuwela
Bowatenna
Palekelle
Imbulgoda
Biyagama
Thulhiriya
Kotmale
Victoria
Randenigala
Rantembe
Ampara
Muthurajawella
Aniyakanda
Kelaniya
Gonawala
KHD
Sapugaskanda (GS)
Sapugaskanda (PS)
Oruwala (Steel Corp.)
Kegalla
Aguruwella
Kolonnawa
Sri Jayapura
Angoda
Avissawella
Sithawakapura
Polpitiya
New Polpitiya
Wimalasurendra
Badulla
Oriole
Medegama
Inginiyagara
Nuwara Eliya
Laxapana
New Laxapana
Canyon
Kelanitissa
Town Hall
Kollupitiya
Dehiwala
Pannipitiya
Ratmalana
Kesbewa
Horana
Padukka
Kahawatta
Eheliyagoda
Ratnapura
Kukule
Ambalangoda
Mahiyanganaya
Mahiyanganaya
Balangoda
Deniyaya
New Galle
Galle
Matara
Samanalawewa
Embilipitiya
Hambantota
Sub - B
Fort
Mahiyanganaya
Mawella PS
Boossa
CEYLON ELECTRICITY BOARD
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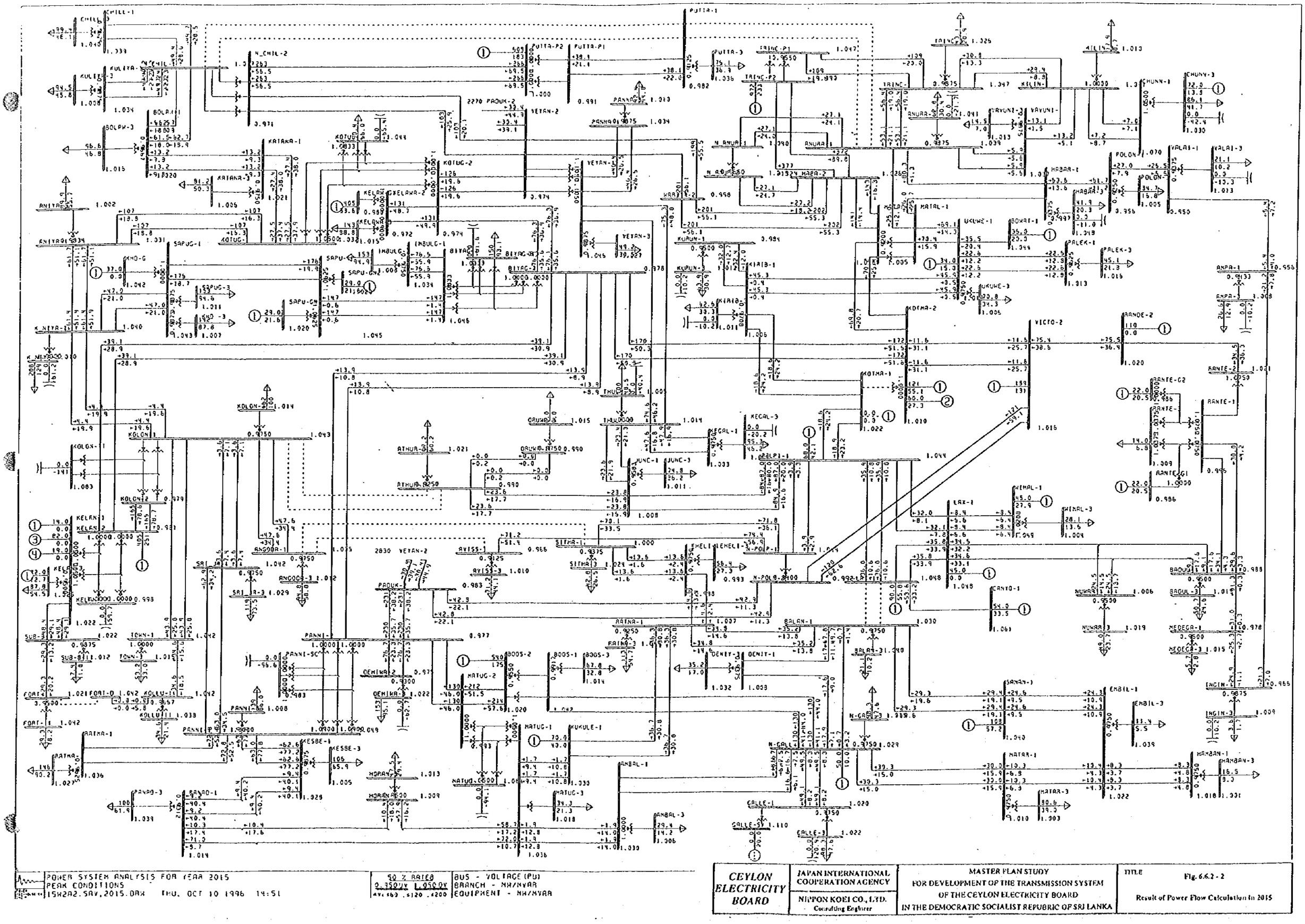
TITLE
Fig. 6.6.2 - 1
Power System Diagram in 2015


POWER SYSTEM ANALYSIS FOR YEAR 2015
PEAK CONDITIONS
I5W2A2.SAV,2015.DAX THU, OCT 10 1996 14:51
90 % RATED
0.950KV 1.050 KV
AVR:1.063 .5120 .4200
BUS - VOLTAGE (PU)
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR
CEYLON ELECTRICITY BOARD
JAPAN INTERNATIONAL COOPERATION AGENCY
NIPPON KOEI CO., LTD.
Consulting Engineer
MASTER PLAN STUDY
FOR DEVELOPMENT OF THE TRANSMISSION SYSTEM
OF THE CEYLON ELECTRICITY BOARD
IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
TITLE
Fig. 6.6.2 - 2
Result of Power Flow Calculation in 2015