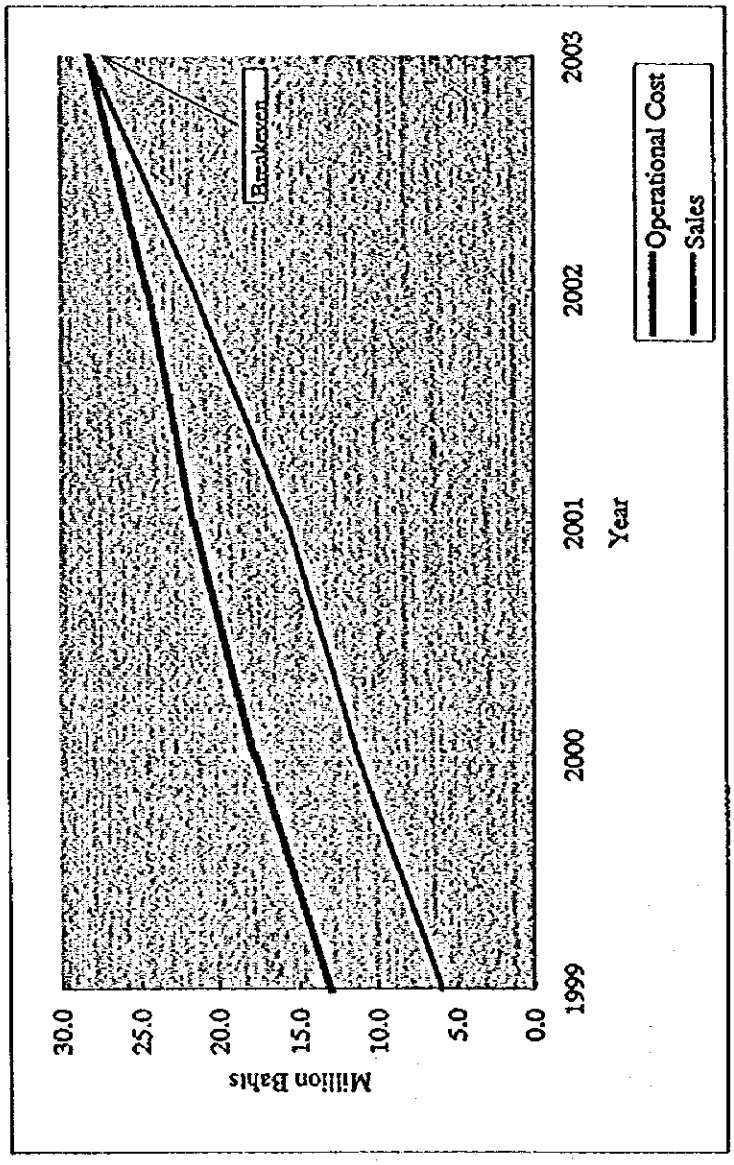
Million Bahts
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1999
2000
2001
2002
2003
Year
Operational Cost
Sales
Breakeven

Sales Breakdown and Profit/Loss Estimates for EEI

(Bahts)	1999			2000			2001			2002			2003			*
	Unit	Price/Unit	Total	Unit	Price/Unit	Total	Unit	Price/Unit	Total	Unit	Price/Unit	Total	Unit	Price/Unit	Total	
1. Policy Making Support (Dept. of Policy Support and Research)																
1.1 Study project	5	300,000	1,500,000	6	300,000	1,800,000	7	300,000	2,100,000	8	300,000	2,400,000	9	300,000	2,700,000	I
1.2 Standards Development	1*8	84,000	672,000	2*8	84,000	1,344,000	2*8	84,000	1,344,000	2*8	84,000	1,344,000	2*8	84,000	1,344,000	J
Sub-total			2,172,000			3,144,000			3,444,000			3,744,000			4,044,000	
Operational Cost			2,050,840			2,732,912			3,376,400			3,316,951			3,359,667	
Achievement(%)			105.9			115.0			102.0			112.9			120.4	
2. Information Service (Dept. of Information Center + Dept. of Industrial Promotion and Marketing)																
2.1 Member Fee	100	20,000	2,000,000	130	20,000	2,600,000	160	20,000	3,200,000	190	20,000	3,800,000	220	20,000	4,400,000	K
2.2 Publication (1)	30	500	15,000	50	500	25,000	70	500	35,000	90	500	45,000	110	500	55,000	L
2.3 Publication (2)	30	500	15,000	50	500	25,000	70	500	35,000	90	500	45,000	110	500	55,000	M
2.4 Seminar	0	200,000	0	1	200,000	200,000	2	200,000	400,000	2	200,000	400,000	2	200,000	400,000	N
Sub-total			2,030,000			2,850,000			3,670,000			4,290,000			4,910,000	
Operational Cost			3,418,067			6,149,051			8,778,640			9,287,462			9,407,067	
Achievement(%)			59.4			46.3			41.8			46.2			52.2	
3. Testing and Calibration Services (Testing and Calibration Center)																
3.1 T/C Service (1)	13*76	9,000	8,892,000	17*76	9,000	11,628,000	22*76	9,000	15,048,000	26*76	9,000	17,784,000	30*76	9,000	20,520,000	O
3.2 T/C (2)	2*76	20,000	3,040,000	3*76	20,000	4,560,000	3*76	20,000	4,560,000	4*76	20,000	6,080,000	5*76	20,000	7,600,000	P
Sub-total			11,932,000			16,188,000			19,608,000			23,864,000			28,120,000	
Utilization Ratio & Sales		50%	5,966,000		70%	11,331,600		80%	15,686,400		90%	21,477,600		100%	28,120,000	Q
Operational Cost			12,988,653			17,763,926			21,608,960			24,545,436			28,221,200	
Achievement(%)			45.9			63.8			72.6			87.5			99.6	
4. Consulting Service (Dept. of Consultation Services)																
	3	900,000	2,700,000	5	900,000	4,500,000	5	900,000	4,500,000	5	900,000	4,500,000	5	900,000	4,500,000	R
Sub-total			2,700,000			4,500,000			4,500,000			4,500,000			4,500,000	
Operational Cost			2,050,840			2,732,912			3,376,400			3,316,951			3,359,667	
Achievement(%)			131.7			164.7			133.3			135.7			133.9	
TOTAL SALES			12,868,000			21,825,600			27,300,400			34,011,600			41,574,000	
TOTAL OPERATIONAL COST			20,508,400			29,378,800			37,140,400			40,466,800			44,347,600	
Profit/Loss (a)			-7,640,400			-7,553,200			-9,840,000			-6,455,200			-2,773,600	
Achievement(%)			62.7			74.3			73.5			84.0			93.7	
Subsidy (b)			14,436,000			15,000,000			20,000,000			25,000,000			25,000,000	
Net: (a) + (b)			6,795,600			7,446,800			10,160,000			18,544,800			22,226,400	

Appendix-1

List of Existing Equipment & Machinery at TISI-Bampoo

No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
1	Watt meter	1	11,000	33,000	60AN0620 C1.01.00	204/2	YEW	2041	1	210	JICA	2533	0.50x1.00(0.5)
2	Watt meter	1	11,000	33,000	60AN0622 C1.01.00	204/3	YEW	2041	1	212	JICA	2533	
3	Watt meter	1	11,000	33,000	60AN0621 C1.01.00a	204/4	YEW	2041	1	212	JICA	2533	
4	Watt meter	1	11,000	33,000	60AN0568 C1.01.00a	204/5	YEW	2041	1	212	JICA	2533	
5	Watt meter	1	11,000	33,000	60AN0566 C1.01.01	204/6	YEW	2041 1.5A	1	212	JICA	2533	
6	Watt meter	1	11,000	33,000	60AN0554 C1.01.01	204/7	YEW	2041 1.5A,120x10W	1	212	JICA	2533	
7	Watt meter	1	11,000	33,000	60AN0572 C1.01.01a	204/8	YEW	2041 1.5A	1	212	JICA	2533	
8	Watt meter	1	11,000	33,000	60AN0641 C1.01.01a	204/9	YEW	2041 1.5A	1	212	JICA	2533	
9	Watt meter	1	19,667	59,000	60AN0576 C1.01.02a	204/10	YEW	2041 5.25A	1	212	JICA	2533	
10	Watt meter	1	19,667	59,000	60AN0530 C1.01.02a	204/11	YEW	2041 5.25A,120x50W	1	212	JICA	2533	
11	Digital Watt meter	1	74,111	222,333	50AH0015 C1.01.03	204/12	YEW	2509 MAX 10A	1	212	JICA	2533	
12	Digital Watt meter	1	74,111	222,333	50AH0016 C1.01.03	204/13	YEW	2509 MAX 10A	1	212	JICA	2533	0.60x1.20(0.72)
13	Digital Watt meter	1	74,111	222,333	50AH0017 C1.01.03	204/14	YEW	2509 MAX 10A	1	212	JICA	2533	
14	Digital Watt meter	1	61,000	183,000	90021403 C1.02.00a	204/15	HIOKI	3161 500V,500A	1	212	JICA	2533	
15	Watt meter	1	42,000	126,000	90074239 C1.02.01	204/16	HIOKI	3184 3□ 500V,20A	1	212	JICA	2533	
16	Watt meter	1	42,000	126,000	9006776 C1.02.01a	204/17	HIOKI	3184 3□ 500V,20A	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
17	Watt-hour meter	1	35,333	106,000	90079631 C1.02.02	204/18	HIOKI	3181 1□250V.15A	1	212	JICA	2533	
18	Watt-hour meter	1	35,333	106,000	90079632 C1.02.02	204/19	HIOKI	3181	1	212	JICA	2533	
19	Watt-hour meter	1	35,333	106,000	90079633 C1.02.02	204/20	HIOKI	3181	1	212	JICA	2533	
20	Watt-hour meter	1	35,333	106,000	90079634 C1.02.02	204/21	HIOKI	3181	1	212	JICA	2533	
21	Watt-hour meter	1	35,333	106,000	90079635 C1.02.02	204/22	HIOKI	3181	1	212	JICA	2533	
22	Recorder	1	33,133	99,400	90063317 C1.02.02	436/19	HIOKI	3171	1	212	JICA	2533	
23	Recorder	1	33,133	99,400	90063326 C1.02.02	436/20	HIOKI	3171	1	212	JICA	2533	
24	Recorder	1	33,133	99,400	90063329 C1.02.02	436/21	HIOKI	3171	1	212	JICA	2533	
25	Recorder	1	33,133	99,400	90063330 C1.02.02	436/22	HIOKI	3171	1	212	JICA	2533	
26	Recorder	1	33,133	99,400	90037888 C1.02.02	436/23	HIOKI	3171	1	212	JICA	2533	
27	Digital Power Factor Meter	1	82,000	246,000	50AS0013 C1.02.04	205/2	YEW	2524 480V..10A	1	212	JICA	2533	
28	Digital Power Factor Meter	1	82,000	246,000	50AS0014 C1.02.04	205/3	YEW	2524 480V..10A	1	212	JICA	2533	
29	AC voltmeter	1	9,444	28,333	60AE3248 C1.03.00	427/1	YEW	2013 15,30V.	1	212	JICA	2533	
30	AC voltmeter	1	9,444	28,333	60AE3301 C1.03.00	427/2	YEW	2013 15,30V.	1	212	JICA	2533	
31	AC voltmeter	1	9,444	28,333	60AE3252 C1.03.00	427/3	YEW	2013 15,30V.	1	212	JICA	2533	
32	AC voltmeter	1	9,533	28,600	60AE3228 C1.03.01	427/4	YEW	2013 150,300V.	1	212	JICA	2533	
33	AC voltmeter	1	9,533	28,600	60AE3292 C1.03.01	427/5	YEW	2013 150,300V.	1	212	JICA	2533	
34	AC voltmeter	1	9,533	28,600	60AE3250 C1.03.01	427/6	YEW	2013 150,300V.	1	212	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
35	AC voltmeter	1	9,533	28,600	60AE3296 C1.03.01	427/7	YEW	2013 150,300V.	1	212	JICA	2533	
36	AC voltmeter	1	9,533	28,600	60AE3279 C1.03.01	427/8	YEW	2013 150,300V.	1	212	JICA	2533	
37	AC voltmeter	1	9,444	28,333	70AD00064 C1.03.02	427/9	YEW	2017 30,75,150,300V.	1	212	JICA	2533	
38	AC voltmeter	1	9,444	28,333	70AD0070 C1.03.02	427/10	YEW	2017 30,75,150,300V.	1	212	JICA	2533	
39	AC voltmeter	1	9,444	28,333	70AD00063 C1.03.02	427/11	YEW	2017 30,75,150,300V.	1	212	JICA	2533	
40	AC voltmeter	1	9,500	28,500	60AE3316 C1.03.03	427/12	YEW	2013 300,750V.	1	212	JICA	2533	
41	AC voltmeter	1	9,500	28,500	60AE3258 C1.03.03	427/13	YEW	2013 300,750V.	1	212	JICA	2533	
42	Electro-static voltmeter	1	27,667	83,000	60AU0018 C1.03.03	427/14	YEW	2064	1	212	JICA	2533	
43	Electro-static voltmeter	1	11,667	35,000	- C1.03.05a	427/15	YEW	2065	1	207	JICA	2533	
44	DC voltmeter	1	9,111	27,333	70AA02593 C1.04.00.1	427/16	YEW	2011 3,10,30,100V.	1	212	JICA	2533	
45	DC voltmeter	1	9,111	27,333	70AA02639 C1.04.00.1	427/17	YEW	2011 3,10,30,100V.	1	212	JICA	2533	
46	DC voltmeter	1	9,111	27,333	70AA02637 C1.04.00.1	427/18	YEW	2011 3,10,30,100V.	1	212	JICA	2533	
47	DC voltmeter	1	9,167	27,500	70AA02640 C1.04.00.2	427/19	YEW	2011	1	212	JICA	2533	
48	DC voltmeter	1	9,167	27,500	70AA02643 C1.04.00.2	427/20	YEW	2011	1	212	JICA	2533	
49	DC voltmeter	1	9,133	27,400	70AA02405 C1.04.00a	427/21	YEW	2011 30,100,300,1000V.	1	212	JICA	2533	
50	DC voltmeter	1	9,133	27,400	70AA02406 C1.04.00a	427/22	YEW	2011 30,100,300,1000V.	1	212	JICA	2533	
51	DC voltmeter	1	9,133	27,400	70AA02778 C1.04.00a	427/23	YEW	2011 30,100,300,1000V.	1	212	JICA	2533	
52	DC voltmeter	1	9,133	27,400	70AA02781 C1.04.00a	427/24	YEW	2011 30,100,300,1000V.	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
53	DC voltmeter	1	9,133	27,400	70AA02802 C1.04.00a	427/25	YEW	2011 30,100,300,1000V.	I	212	JICA	2533	
54	DC voltmeter	1	16,500	49,500	70AC00215 C1.06.00	428/1	YEW	2012 1mA~30A	I	212	JICA	2533	
55	DC voltmeter	1	16,500	49,500	70AC00219 C1.06.00	428/2	YEW	2012 50mV~1000V.	I	212	JICA	2533	
56	DC voltmeter	1	16,500	49,500	70AC00217 C1.06.00a	428/3	YEW	2012 1mA~30A	I	212	JICA	2533	
57	DC voltmeter	1	16,500	49,500	70AC00221 C1.06.00a	428/4	YEW	2012 50mV~1000V.	I	212	JICA	2533	
58	AC volt-ammeter	1	18,167	54,500	60AG0617 C1.07.00	428/5	YEW	2014 0.15A~30A 30V~750V.	I	212	JICA	2533	
			0										
59	AC volt-ammeter	1		54,500	60AG0590 C1.07.00	428/6	YEW	2014 0.15A~30A 30V~750V.	I	212	JICA	2533	
			0										
60	AC volt-ammeter	1	18,167	54,500	60AG0589 C1.07.00	428/7	YEW	2014 0.15A~30A 30V~750V.	I	212	JICA	2533	
			0										
61	AC volt-ammeter	1		54,500	60AG0585 C1.07.00	428/8	YEW	2014 0.15A~30A 30V~750V.	I	212	JICA	2533	
			0										
62	AC ammeter	1	9,867	29,600	60AE2743 C1.08.01	428/9	YEW	2013 0.1,0.2,0.5,1A	I	212	JICA	2533	
63	AC ammeter	1	9,867	29,600	60AE2754 C1.08.01	428/10	YEW	2013 0.1,0.2,0.5,1A	I	212	JICA	2533	
64	AC ammeter	1	9,867	29,600	60AE3302 C1.08.01	428/11	YEW	2013 0.1,0.2,0.5,1A	I	212	JICA	2533	
65	AC ammeter	1	9,867	29,600	60AE3313 C1.08.01	428/12	YEW	2013 0.1,0.2,0.5,1A	I	212	JICA	2533	
66	AC ammeter	1	9,867	29,600	60AE3317 C1.08.01	428/13	YEW	2013 0.1,0.2,0.5,1A	I	212	JICA	2533	
67	AC ammeter	1	9,867	29,600	60AE2928 C1.08.02	428/14	YEW	2013 0.5,1,2,5A	I	212	JICA	2533	
68	AC ammeter	1	9,867	29,600	60AE2929 C1.08.02	428/15	YEW	2013 0.5,1,2,5A	I	212	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
69	AC ammeter	1	9,867	29,600	60AE2932 C1.08.02	428/16	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
70	AC ammeter	1	9,867	29,600	60AE2941 C1.08.02	428/17	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
71	AC ammeter	1	9,867	29,600	60AE2963 C1.08.02	428/18	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
72	AC ammeter	1	9,867	29,600	60AE2973 C1.08.02a	428/19	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
73	AC ammeter	1	9,867	29,600	60AE3299 C1.08.02a	428/20	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
74	AC ammeter	1	9,867	29,600	60AE3312 C1.08.02a	428/21	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
75	AC ammeter	1	9,867	29,600	60AE3318 C1.08.02a	428/22	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
76	AC ammeter	1	9,867	29,600	60AE3324 C1.08.02a	428/23	YEW	2013 0.5,1,2,5A	1	212	JICA	2533	
77	AC ammeter	1	9,867	29,600	60AE3249 C1.08.03	428/24	YEW	2013 2.5,10,20A	1	212	JICA	2533	
78	AC ammeter	1	9,867	29,600	60AE3294 C1.08.03	428/25	YEW	2013 2.5,10,20A	1	212	JICA	2533	
79	AC ammeter	1	9,867	29,600	60AE3308 C1.08.03	428/26	YEW	2013 2.5,10,20A	1	212	JICA	2533	
80	AC ammeter	1	9,867	29,600	60AE3320 C1.08.03	428/27	YEW	2013 2.5,10,20A	1	212	JICA	2533	
81	AC ammeter	1	9,867	29,600	60AE3314 C1.08.03	428/28	YEW	2013 2.5,10,20A	1	212	JICA	2533	
82	AC ammeter	1	9,867	29,600	60AE3285 C1.08.04	428/29	YEW	2013 10,30,100,300mA	1	212	JICA	2533	
83	AC ammeter	1	9,867	29,600	60AE3286 C1.08.04	428/30	YEW	2013 10,30,100,300mA	1	212	JICA	2533	
84	AC ammeter	1	9,867	29,600	60AE3315 C1.08.04	428/31	YEW	2013 10,30,100,300mA	1	212	JICA	2533	
85	AC ammeter	1	9,867	29,600	60AE3323 C1.08.04	428/32	YEW	2013 10,30,100,300mA	1	212	JICA	2533	
86	AC ammeter	1	9,867	29,600	60AE3326 C1.08.04	428/33	YEW	2013 10,30,100,300mA	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
87	DC voltmeter	1	7,933	23,800	70AA02614 C1.09.01	428/34	YEW	2011 10,30,100,300mA	1	212	JICA	2533	
88	DC voltmeter	1	7,933	23,800	70AA02574 C1.09.01	428/35	YEW	2011 10,30,100,300mA	1	212	JICA	2533	
89	DC voltmeter	1	7,933	23,800	70AA02613 C1.09.01	428/36	YEW	2011 10,30,100,300mA	1	212	JICA	2533	
90	DC voltmeter	1	7,933	23,800	70AA02572 C1.09.00	428/37	YEW	2011 10,30,100,300mA	1	212	JICA	2533	
91	DC voltmeter	1	7,933	23,800	70AA02573 C1.09.01	428/38	YEW	2011 10,30,100,300mA	1	212	JICA	2533	
92	DC voltmeter	1	7,933	23,800	70AA02820 C1.09.02	428/39	YEW	2011 0.1,0.3,1.3A	1	212	JICA	2533	
93	DC voltmeter	1	7,933	23,800	70AA02828 C1.09.02	428/40	YEW	2011 0.1,0.3,1.3A	1	212	JICA	2533	
94	DC voltmeter	1	7,933	23,800	70AA02823 C1.09.02	428/41	YEW	2011 0.1,0.3,1.3A	1	212	JICA	2533	
95	DC voltmeter	1	7,933	23,800	70AA02829 C1.09.02	428/42	YEW	2011 0.1,0.3,1.3A	1	212	JICA	2533	
96	DC voltmeter	1	7,933	23,800	70AA02830 C1.09.02	428/43	YEW	2011 0.1,0.3,1.3A	1	212	JICA	2533	
97	DC voltmeter	1	7,933	23,800	70AA02758 C1.09.03	428/44	YEW	2011 1,3,10,30A	1	212	JICA	2533	
98	DC voltmeter	1	7,933	23,800	70AA02771 C1.09.03	428/45	YEW	2011 1,3,10,30A	1	212	JICA	2533	
99	DC voltmeter	1	7,933	23,800	70AA02770 C1.09.03	428/46	YEW	2011 1,3,10,30A	1	212	JICA	2533	
100	DC voltmeter	1	7,933	23,800	70AA02756 C1.09.03	428/47	YEW	2011 1,3,10,30A	1	212	JICA	2533	
101	DC voltmeter	1	7,933	23,800	70AA02762 C1.09.03	428/48	YEW	2011 1,3,10,30A	1	212	JICA	2533	
102	DC voltmeter	1	7,800	23,400	70AA02768 C1.09.03a	428/49	YEW	2011 1,3,10,30A	1	212	JICA	2533	
103	DC voltmeter	1	7,800	23,400	70AA02749 C1.09.03a	428/50	YEW	2011 1,3,10,30A	1	212	JICA	2533	
104	DC voltmeter	1	7,800	23,400	70AA02764 C1.09.03a	428/51	YEW	2011 1,3,10,30A	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
105	DC voltmeter	1	7,800	23,400	70AA02773 C1.09.03a	428/52	YEW	2011 1,3,10,30A	I	212	JICA	2533	
106	DC voltmeter	1	7,800	23,400	70AA02799 C1.09.03a	428/53	YEW	2011 1,3,10,30A	I	212	JICA	2533	
107	Thermo-couple type ammeter	1	35,000	105,000	60AJ00164 C1.10.01	428/54	YEW	2016 5,10,20,50mA	I	212	JICA	2533	
108	Thermo-couple type ammeter	1	35,000	105,000	60AJ00191 C1.10.02	428/55	YEW	2016 20,50,100,200mA	I	211	JICA	2533	
109	Thermo-couple type ammeter	1	35,000	105,000	60AJ0134 C1.10.03	428/56	YEW	2016 100,200,500,1000mA	I	212	JICA	2533	
110	Thermo-couple type ammeter	1	35,000	105,000	60AJ0168 M1.03.01	428/57	YEW	2016 5,10,20,50mA	I	207	JICA	2533	
111	Thermo-couple type ammeter	1	35,000	105,000	60AJ0092 M1.03.02	428/58	YEW	2016	I	207	JICA	2533	
112	Thermo-couple type ammeter	1	35,000	105,000	60AJ0169 M1.03.03	428/59	YEW	2016	I	207	JICA	2533	
113	Thermo-couple type ammeter	1	34,167	102,500	60AJ0152 C1.10.04	428/60	YEW	2016 15,30,75,150V	I	212	JICA	2533	
114	Thermo-couple type ammeter	1	34,167	102,500	60AJ0139 C1.10.04	428/61	YEW	2016 15,30,75,150V	I	212	JICA	2533	
115	Digital AC meter	1	412,000	1,236,000	50AU0449 C1.11.00	429/1	YEW	2533	I	212	JICA	2533	
116	Digital AC meter	1	412,000	1,236,000	50AU0451 C1.11.00	429/2	YEW	2533	I	212	JICA	2533	
117	Digital AC meter	1	412,000	1,236,000	90022026 C1.11.01	429/3	HIOKI	3191	I	212	JICA	2533	
118	Digital AC meter	1	412,000	1,236,000	90022027 C1.11.01a	429/4	HIOKI	3191	I	212	JICA	2533	
119	Digital AC meter	1	412,000	1,236,000	90022028 C1.11.02	429/5	HIOKI	3191	I	212	JICA	2533	
120	Digital AC meter	1	223,500	670,500	030146A122 C1.12.00	429/6	NATIONAL	VP-2710A	I	212	JICA	2533	
121	Digital multimeter	1	223,500	670,500	030147A122 C1.11.00	429/7	NATIONAL	VP-2710A	I	212	JICA	2533	
122	Digital multimeter	1	21,167	63,500	99AH0076 C1.03.00	429/8	YEW	7542	I	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
123	Digital multimeter	1	21,167	63,500	99AM0189	429/9	YEW	7542	1	212	JICA	2533	
124	Clamp multimeter	1	2,333	7,000	0B0270	429/10	HIOKI	3128	1	212	JICA	2533	
125	Clamp multimeter	1	2,333	7,000	0C0153 C1.14.00a	429/11	HIOKI	3128	1	219	JICA	2533	
126	Digital circuit tester	1	4,000	12,000	89223804 C1.15.00	375/2	HIOKI	3231	1	212	JICA	2533	
127	Digital circuit tester	1	4,000	12,000	89223810 C1.15.00	375/3	HIOKI	3231	1	114	JICA	2533	
128	Digital circuit tester	1	4,000	12,000	90017723 C1.15.00	375/4	HIOKI	3231	1	219	JICA	2533	
129	Digital circuit tester	1	4,000	12,000	89223817 C1.15.00	375/5	HIOKI	3231	1	207	JICA	2533	
130	Digital circuit tester	1	4,000	12,000	89223822 C1.15.00	375/6	HIOKI	3231	1	207	JICA	2533	
131	Digital circuit tester	1	4,000	12,000	90059270 C1.15.00a	375/7	HIOKI	3231	1	212	JICA	2533	
132	Digital circuit tester	1	4,000	12,000	90008245 C1.15.00a	375/8	HIOKI	3231	1	212	JICA	2533	
133	Digital multimeter	1	4,000	12,000	90017724 C1.15.00a	375/9	HIOKI	3231	1	212	JICA	2533	
134	Digital multimeter	1	4,000	12,000	90059276 C1.15.00a	375/10	HIOKI	3231	1	212	JICA	2533	
135	Digital multimeter	1	4,000	12,000	90059276 C1.15.00a	375/11	HIOKI	3231	1	212	JICA	2533	
136	Capacitance motor	1	183,000	549,000	463419 C1.16.00	430/1	ANDO	AG-4304	1	212	JICA	2533	
137	Wheatstone bridge	1	94,000	282,000	50FC0024 C2.01.00	202/2	YEW	2768	1	108	JICA	2533	
138	Wheatstone bridge	1	94,000	282,000	50FC0026 M1.04.00	202/3	YEW	2768	1	207	JICA	2533	
139	Double bridge	1	131,333	394,000	50ES0037 C2.02.00	202/4	YEW	2752	1	207	JICA	2533	
140	Double bridge	1	148,000	444,000	50ES0039 M1.06.00	202/5	YEW	2752	1	108	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
141	Electronic golvanometer	1	76,667	230,000	50EC0045 C2.03.00	431/1	YEW	2709	1	207	JICA	2533	
142	Electronic golvanometer	1	80,333	241,000	50EC0039 M1.05.00	431/2	YEW	2709	1	207	JICA	2533	
143	Decade resistance box: lowZ	1	54,583	163,750	50FT0308	432/1-1	YEW	2793	1	108	JICA	2533	
144	Decade resistance box: lowZ	1	54,583	163,750	50FT0304	432/1-2	YEW	2793	1	108	JICA	2533	
145	Decade resistance box: lowZ	1	54,583	163,750	50FT0302	432/1-3	YEW	2793	1	108	JICA	2533	
146	Decade resistance box: lowZ	1	54,583	163,750	50FT0306	432/1-4	YEW	2793	1	108	JICA	2533	
147	Decade resistance box: lowZ	1	54,667	164,000	50FT0307 M1.07.00	432/2	YEW	2793	1	207	JICA	2533	
148	Decade resistance box: HighZ	1	88,667	266,000	50FT1088 C2.05.00	432/3-1	YEW	2793	1	108	JICA	2533	
149	Decade resistance box: HighZ	1	88,667	266,000	50FT1086 C2.05.00	432/3-2	YEW	2793	1	108	JICA	2533	
150	Decade resistance box: HighZ	1	88,667	266,000	50FT1085 C2.05.00	432/3-3	YEW	2793	1	108	JICA	2533	
151	Decade resistance box: HighZ	1	88,667	266,000	50FT1054 C2.05.00	432/3-4	YEW	2793	1	108	JICA	2533	
152	Resistors for discharge test	1	54,500	163,500	- C2.06.00	433/1-1	TAIYOO KEIKI	-	1	212	JICA	2533	
153	Resistors for discharge test	1	54,500	163,500	- C2.06.00	433/1-2	TAIYOO KEIKI	-	1	212	JICA	2533	
154	Rheostat	1	9,000	27,000	89804 C2.07.00	433/2	OGAWA SEIKI	OSK-10244	1	212	JICA	2533	
155	Rheostat	1	9,000	27,000	89805 C2.07.00	433/3	OGAWA SEIKI	OSK-10244	1	212	JICA	2533	
156	Switch resistance tester	1	71,833	215,500	041680B122 C2.08.00	202/6	NATIONAL	VP-2811A	1	212	JICA	2533	
157	Switch resistance tester	1	71,833	215,500	041681B122 C2.08.00	202/7	NATIONAL	VP-2811A	1	212	JICA	2533	
158	Oscilloscope	1	84,778	254,333	040167E125 C3.01.00.1	434/1-1	NATIONAL	VP-5566A	1	211	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
159	Oscilloscope	1	84,778	254,333	040152E125 C3.01.00.1	434/1-2	NATIONAL	VP-5566A	1	211	JICA	2533	
160	Oscilloscope	1	84,778	254,333	03136E125 C3.01.00.1	434/1-3	NATIONAL	VP-5566A	1	211	JICA	2533	
161	Oscilloscope	1	84,778	254,333	030123E125 C3.01.00.1	434/1-4	NATIONAL	VP-5566A	1	211	JICA	2533	
162	Oscilloscope	1	84,778	254,333	030133E125 C3.01.00.1	434/1-5	NATIONAL	VP-5566A	1	211	JICA	2533	
163	Oscilloscope	1	84,778	254,333	040154E125 C3.01.00.1	434/1-6	NATIONAL	VP-5566A	1	211	JICA	2533	
164	Storage oscilloscope	1	173,667	521,000	21171109 C3.02.00	434/2	IWATSU	MS-5311	1	211	JICA	2533	
165	Storage oscilloscope	1	173,667	521,000	2171110 C3.02.00a	434/3	IWATSU	MS-5311	1	211	JICA	2533	
166	Frequency meter	1	14,167	42,500	70AF00111 C3.03.00	435/1.1	YEW	2038	1	212	JICA	2533	
167	Frequency meter	1	14,167	42,500	70AF00087 C3.03.00	435/1.2	YEW	2038	1	212	JICA	2533	
168	Frequency meter	1	14,000	42,000	60AS0016 C3.03.01	435/2	YEW	2038	1	212	JICA	2533	
169	Frequency meter	1	14,000	42,000	60AS0015 C3.03.02	435/3	YEW	2038	1	212	JICA	2533	
170	Stop clock	1	7,800	23,400	902970 C4.04.00	40/15	SEIKO	S-111	1	211	JICA	2533	
171	Stop clock	1	7,800	23,400	902220 C4.04.00	40/16	SEIKO	S-112	1	211	JICA	2533	
172	Stop clock	1	7,800	23,400	902235 C4.04.00	40/17	SEIKO	S-113	1	211	JICA	2533	
173	Stop clock	1	7,800	23,400	902235 C4.04.00	40/18	SEIKO	S-114	1	211	JICA	2533	
174	Stop clock	1	7,800	23,400	- C4.04.00	40/19	SEIKO	S-115	1	211	JICA	2533	
175	Digital stroboscope	1	71,667	215,000	0017231 C4.05.00	245/6	SUGAWARA	OSK-4795	1	211	JICA	2533	
176	Digital stroboscope	1	71,667	215,000	0017232 C4.05.00	245/7	SUGAWARA	OSK-4795	1	211	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
177	Digital thermometer	1	113,833	341,500	50CC0015 C5.01.00	254/2.1-1	YEW	2571	1	211	JICA	2533	
178	Digital thermometer	1	113,833	341,500	50CC1016 C5.01.00	254/2.1-2	YEW	2571	1	211	JICA	2533	
179	30 point selector	1	39,667	119,000	50GJ0017 C5.01.00	254/2.2-1	YEW	2815	1	211	JICA	2533	
180	30 point selector	1	39,667	119,000	50GJ0019 C5.01.00	254/2.2-2	YEW	2815	1	211	JICA	2533	
181	Hybrid recorder	1	254,667	764,000	40SB0130 C5.02.00.1	436/1	YEW	3081	1	211	JICA	2533	0.44x0.37(0.16)
182	Hybrid recorder	1	254,667	764,000	40SB0131 C5.02.00.2	436/2	YEW	3081	1	212	JICA	2533	
183	Hybrid recorder	1	230,389	691,167	40RA0198 C5.03.00	436/3	YEW	3087	1	113	JICA	2533	
184	Hybrid recorder	1	230,389	691,167	40RA0197 C5.03.00	436/4	YEW	3087	1	207	JICA	2533	
185	Hybrid recorder	1	230,389	691,167	40RA0195 C5.03.00	436/5	YEW	3087	1	208	JICA	2533	0.32x0.34(0.10)
186	Hybrid recorder	1	230,389	691,167	40RA0196 C5.03.00	436/6	YEW	3087	1	212	JICA	2533	
187	Hybrid recorder	1	230,389	691,167	40RA0193 C5.03.00	436/7	YEW	3087	1	212	JICA	2533	0.32x0.35(0.11)
188	Hybrid recorder	1	230,389	691,167	40RA0194 C5.03.00	436/8	YEW	3087	1	114	JICA	2533	
189	Pocket thermometer	1 1 1 1 1	14,533 14,533 14,533 14,533 14,533	43,600 43,600 43,600 43,600 43,600	TIS070/01 TIS070/02 TIS070/03 TIS070/04 TIS070/05 C5.05.00	254/3	YEW	2542	1	211	JICA	2533	
190	Flat bed recorder	1	137,833	413,500	DA4117PS C6.01.00	436/9	TOA DEMPA	FBR-253A	1	210	JICA	2533	
191	Flat bed recorder	1	137,833	413,500	DA4127PS C6.01.00	436/10	TOA DEMPA	FBR-253A	1	211	JICA	2533	
192	Flat bed recorder	1	137,833	413,500	DA4137PS C6.01.00	436/11	TOA DEMPA	FBR-253A	1	211	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
193	Flat bed recorder	1	137,833	413,500	DA4387QS C6.01.00	436/12	TOA DEMPA	FBR-253A	1	211	JICA	2533	
194	X-Y recorder	1	137,667	413,000	0040281 C6.02.00	436/13	GRAPHTECH	WX-1200	1	211	JICA	2533	
195	X-Y recorder	1	137,667	413,000	0040282 C6.02.00	436/14	GRAPHTECH	WX-1201	1	211	JICA	2533	
196	X-Y recorder	1	137,667	413,000	0040496 C6.03.00	436/15	GRAPHTECH	WX-2300-2Z	1	211	JICA	2533	
197	X-Y recorder	1	137,667	413,000	0040497 C6.03.00	436/16	GRAPHTECH	WX-2300-2Z	1	211	JICA	2533	
198	X-Y recorder	1	137,667	413,000	0040482 C6.04.00	436/17	GRAPHTECH	WX-2400-2Z	1	211	JICA	2533	
199	X-Y recorder	1	137,667	413,000	0040483 C6.04.00	436/18	GRAPHTECH	WX-2400-2Z	1	211	JICA	2533	
200	AC single phase voltage regulator	1	145,667	437,000	C00202 C7.00.00.1	437/1	MATSUNAGA	TA-229	1	211	JICA	2533	
201	AC single phase voltage regulator	1	145,667	437,000	C00201 C7.01.00.1	437/2	MATSUNAGA	TA-229	1	211	JICA	2533	0.50x0.60(0.3)
202	AC single phase voltage regulator	1	145,555	436,666	C00203 C7.01.00.2	437/3	MATSUNAGA	TA-2245	1	210	JICA	2533	0.50x0.80(0.40)
203	AC single phase voltage regulator	1	145,555	436,666	C00202 C7.01.00.2	437/4	MATSUNAGA	TA-2245	1	207	JICA	2533	
204	AC single phase voltage regulator	1	145,555	436,666	C000201 C7.00.00.2	437/5	MATSUNAGA	TA-2245	1	212	JICA	2533	0.50x0.60(0.3)
205	AC single phase voltage regulator	1	145,667	437,000	C00201 C7.01.00.3	437/6	MATSUNAGA	TA-229-V	1	207	JICA	2533	0.50x0.60(0.3)
206	AC three phase voltage regulator	1	441,667	1,325,000	00201 C7.02.00	437/7	MATSUNAGA	TA3-10-380G	1	212	JICA	2533	0.60x0.70(0.42)
207	DC power supply source	1	100,000	300,000	12989011 C7.03.01.1	424/3-1	TAKASAGO	GP035-50	1	212	JICA	2533	
208	DC power supply source	1	100,000	300,000	12989012 C7.03.01.1	424/3-2	TAKASAGO	GP035-50	1	212	JICA	2533	
209	DC power supply source	1	100,000	300,000	12989013 C7.03.01.1	424/4-1	TAKASAGO	GP035-50	1	212	JICA	2533	
210	DC power supply source	1	100,000	300,000	12989014 C7.03.01.1	424/4-2	TAKASAGO	GP035-50	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
211	DC power supply source	1	109,667	329,000	17989018 C7.03.01.2	424/5	TAKASAGO	GPO250-10R	1	211	JICA	2533	0.45x0.50(0.22)
212	DC power supply source	1	109,667	329,000	C7.03.01a	424/6	TAKASAGO	GPO250-10R	1	212	JICA	2533	
213	DC power supply source	1	109,667	329,000	C7.03.01a	424/7	TAKASAGO	GPO250-10R	1	212	JICA	2533	
214	DC power supply source	1	109,667	329,000	20289042 C7.03.02	424/8	TAKASAGO	GPO650-05R	1	113	JICA	2533	
215	DC power supply source	1	21,333	64,000	11989303 C7.04.01.1	424/9	TAKASAGO	GPO35-5	1	212	JICA	2533	
216	DC power supply source	1	21,333	64,000	11989304 C7.04.01.2	424/10	TAKASAGO	GPO35-5	1	212	JICA	2533	
217	DC power supply source	1	21,333	64,000	11989305 C7.04.01.2	424/11	TAKASAGO	GPO35-5	1	212	JICA	2533	
218	DC power supply source	1	21,333	64,000	11989306 C7.04.01.3	424/12	TAKASAGO	GPO35-5	1	207	JICA	2533	
219	DC power supply source	1	21,333	64,000	11989309 C7.04.01.3	424/13	TAKASAGO	GPO35-5	1	207	JICA	2533	
220	DC power supply source	1	450,667	1,352,000	2890577 C7.05.02	424/14	TAKASAGO	GPO35-200R	1	211	JICA	2533	0.50x0.62(0.31)
221	Variable AC source	1	411,000	1,233,000	C7.05.00.1	424/15	TAKASAGO	AA330F	1	212	JICA	2533	
222	Variable AC source	1	411,000	1,233,000	48489053 C7.05.00.2	424/16	TAKASAGO	AA2000F	1	114	JICA	2533	0.50x0.60(0.3)
223	Variable AC source	1	411,000	1,233,000	2890568 C7.05.00.3	424/17	TAKASAGO	AA5000	1	211	JICA	2533	0.50x0.60(0.3)
224	Variable AC source	1	543,000	1,629,000	00201 C7.06.00	424/18	MATSUNAGA	SVC-22136	1	113	JICA	2533	0.50x0.70(0.42)
225	High voltage testing device Control board	1	2,959,333	8,878,000	C7.07.00	438/1 438/1-1	OGAWA SEIKI	OSK6593	1	108	JICA	2533	4.00x4.50(18)
226	Impluse generator	1			C7.07.00	438/1-2	TTC	-	1	108	JICA	2533	
227	Digital storageoscilloscope	1			BOZ0866	438/1-3	TEKTRONIX	2221	1	108	JICA	2533	
228	Oscilloscope camera	1			016-0359	438/1-4	TEKTRONIX	C-5C	1	108	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
229	High voltage power supply unit	1	31,167	93,500	No.1 C7.08.00	424/19-1	OGAWA SEIKI	OSK11912	1	212	JICA	2533	
230	High voltage power supply unit	1	31,167	93,500	No.2 C7.08.00	424/19-2	OGAWA SEIKI	OSK11912	1	212	JICA	2533	
231	Step-up transformer	1	124,667	374,000	7686 C7.10.00	439/1	OGAWA SEIKI	OSK10235	1	212	JICA	2533	0.50x0.50(0.25)
232	Step-down transformer	1	27,333	82,000	1059 C7.11.00	439/2	MATSUNAGA	WTC-4KB	1	212	JICA	2533	
233	Step-down transformer	1	27,333	82,000	1060 C7.11.00	439/3	MATSUNAGA	WTC-4KB	1	212	JICA	2533	
234	Step-down transformer	1	27,333	82,000	1061 C7.11.00a	439/4	MATSUNAGA	WTC-4KB	1	212	JICA	2533	
235	Insulation transformer	1	1,667	5,000	1027 C7.12.00.1	439/5	MATSUNAGA	WTC-1K 1□ Max4.5A	1	211	JICA	2533	
236	Insulation transformer	1	1,667	5,000	1031 C7.12.00.1	439/6	MATSUNAGA	WTC-1K 1□ Max4.5A	1	211	JICA	2533	
237	Insulation transformer	1	1,667	5,000	1034 C7.12.00.1	439/7	MATSUNAGA	WTC-1K 1□ Max4.5A	1	211	JICA	2533	
238	Insulation transformer	1	1,667	5,000	1036 C7.12.00.2	439/8	MATSUNAGA	WTC-1K 1	1	212	JICA	2533	
239	Insulation transformer	1	1,667	5,000	1033 C7.12.00.2	439/9	MATSUNAGA	WTC-1K 1	1	211	JICA	2533	
240	Insulation transformer	1	1,667	5,000	1030 C7.12.00.2	439/10	MATSUNAGA	WTC-1K 1	1	211	JICA	2533	
241	Insulation transformer	1	1,667	5,000	1029 C7.12.00.3	439/11	MATSUNAGA	WTC-1K 1□ Max4.5A	1	212	JICA	2533	
242	Insulation transformer	1	1,667	5,000	1032 C7.12.00.4	439/12	MATSUNAGA	WTC-1K	1	114	JICA	2533	
243	Insulation transformer	1	1,667	5,000	1028 C7.12.00.5	439/13	MATSUNAGA	WTC-1K	1	211	JICA	2533	
244	Insulation transformer	1	1,667	5,000	C7.12.00.6	439/14	MATSUNAGA	WTC-1K	1	202	JICA	2533	
245	Current transformer	1	21,167	63,500	No.1 C7.13.00.1	439/15	TAKASAGO	-	1	212	JICA	2533	
246	Current transformer	1	21,167	63,500	No.2 C7.13.00.1	439/16	TAKASAGO	-	1	212	JICA	2533	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
247	Current transformer	1	21,167	63,500	11875 C7.13.00.2	439/17	YEW	2243-00	1	212	JICA	2533	
248	Current transformer	1	21,167	63,500	00876 C7.13.00.2	439/18	YEW	2243-00	1	212	JICA	2533	
249	Current transformer	1	21,167	63,500	00879 C7.13.00.2	439/19	YEW	2243-00	1	212	JICA	2533	
250	Current transformer	1	21,167	63,500	00882 C7.13.00.2	439/20	YEW	2243-00	1	212	JICA	2533	
251	Current transformer	1	21,167	63,500	10249 C7.13.00.3	439/21	YEW	2241-00	1	212	JICA	2533	
252	Current transformer	1	21,167	63,500	10261 C7.13.00.3	439/22	YEW	2241-00	1	212	JICA	2533	
253	Current transformer	1	21,167	63,500	10269 C7.13.00.3	439/23	YEW	2241-00	1	212	JICA	2533	
254	Current transformer	1	21,167	63,500	10257 C7.13.00.3	439/24	YEW	2241-00	1	212	JICA	2533	
255	Filament heating transformer	1	93,333	280,000	1038 C7.14.00	439/25	MATSUNAGA	WTC-30	1	212	JICA	2533	
256	Filament heating transformer	1	93,333	280,000	1037 C7.14.00	439/26	MATSUNAGA	WTC-30	1	212	JICA	2533	
257	Volt slider	1	10,500	31,500	B00203 C7.15.01.1	440/1	MATSUNAGA	SD264.5-J	1	212	JICA	2533	
258	Volt slider	1	10,500	31,500	B00201 C7.15.01.1	440/2	MATSUNAGA	SD264.5-J	1	212	JICA	2533	
259	Volt slider	1	10,556	31,667	B00205 C7.15.01.2	440/3	MATSUNAGA	SD264.5-J	1	211	JICA	2533	
260	Volt slider	1	10,222	30,667	B00202 C7.15.01.2	440/4	MATSUNAGA	SD264.5-J	1	211	JICA	2533	
261	Volt slider	1	10,556	31,667	B00204 C7.15.01.2	440/5	MATSUNAGA	SD264.5-J	1	211	JICA	2533	
262	Volt slider	1	10,500	31,500	KF863 C7.15.02.1	440/6	MATSUNAGA	SD269-J	1	211	JICA	2533	0.26x0.23(0.59)
263	Volt slider	1	10,500	31,500	KF864 C7.15.02.1	440/7	MATSUNAGA	SAT-2010SP	1	211	JICA	2533	
264	Volt slider	1	10,500	31,500	KF865 C7.15.02.2	440/8	MATSUNAGA	SD269-J	1	212	JICA	2533	0.25x0.25(0.6)

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
265	Volt slider	1	10,500	31,500	KF862 C7.15.02.2	440/9	MATSUNAGA	SD269-J	1	212	JICA	2533	
266	Volt slider	1	10,500	31,500	KF860 C7.15.03	440/10	MATSUNAGA	SD2627.3-J	1	212	JICA	2533	
267	Volt slider	1	10,500	31,500	KF861 C7.15.03	440/11	MATSUNAGA	OSK10234-10	1	212	JICA	2533	
268	Volt slider	1	10,667	32,000	K00201 C7.15.04	440/12	MATSUNAGA	S3-402.6-G	1	212	JICA	2533	
269	Volt slider	1	10,667	32,000	K00201 C7.15.05	440/13	MATSUNAGA	S3-405.2-G	1	212	JICA	2533	
270	Volt slider	1	10,667	32,000	KF859 C7.15.06	440/14	MATSUNAGA	S3-4015.2-G	1	212	JICA	2533	
271	Megaohm tester	1	7,333	22,000	70LC01562 C7.16.00.1	441/1	YEW	3213	1	212	JICA	2533	
272	Megaohm tester	1	7,333	22,000	70LC01563 C7.16.00.2	441/2	YEW	3213	1	108	JICA	2533	
273	Insulation+breakdown tester	1	52,333	157,000	29120706 C7.17.00.1	442/1	KIKUSUI	TOS8700	1	207	JICA	2533	1.00x1.00(1)
274	Insulation+breakdown tester	1	52,333	157,000	29120707 C7.17.00.2	442/2	KIKUSUI	TOS8700	1	108	JICA	2533	
275	Insulation+breakdown tester	1	52,333	157,000	10018607 C7.17.00.3	442/3	KIKUSUI	TOS8650	1	212	JICA	2533	
276	Insulation+breakdown tester	1	52,333	157,000	10018609 C7.17.00.4	442/4	KIKUSUI	TOS8650	1	207	JICA	2533	
277	Insulation+breakdown tester	1	52,333	157,000	10018608 C7.17.00.5	442/5	KIKUSUI	TOS8650	1	208	JICA	2533	0.60x1.20(0.72)
278	Insulation resistance meter	1	138,000	414,000	05791802 C7.18.00.1	202/8	ANDO	HR-4G	1	207	JICA	2533	0.45x0.90(0.40)
279	Insulation resistance meter	1	138,000	414,000	05791801 C7.18.00.1	202/9	ANDO	HR-4G	1	207	JICA	2533	
280	Insulation resistance meter	1	138,000	414,000	CE2797QZ C7.18.01.1	202/10	TOA DEMPA	SM-10E	1	211	JICA	2533	
281	Insulation resistance meter	1	138,000	414,000	CE2807QZ C7.18.01.1	202/11	TOA DEMPA	SM-10E	1	211	JICA	2533	
282	High frequency breakdown tester	1	260,333	781,000	14N1269 C7.19.00	435/4	TOKYO SEIDEN	OSK10231-SP	1	212	JICA	2533	0.43x0.40(0.17)

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
283	Sparktester	1	623,000	1,869,000	5822 C7.20.00	443/1	YASUDA SEIKI	160(YST-1)	1	108	JICA	2533	1.00x4.00(4)

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Appendix-1

List of Existing Equipment & Machinery at TISI-Bampoo

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
284	Tracking resistance tester	1	411,333	1,234,000	0A31310A040 C7.20.01	444/2	TOKYO SEIDEN	OSK10229-A-SP	1	208	JICA	2533	0.45x0.52(0.23)
285	Arc resistance tester	1	466,000	1,398,000	KG3935-1-2 C7.20.02	445/1	TOKYO SEIDEN	OSK10229-C-SP	1	211	JICA	2533	0.62x0.62(0.38)
286	Leakage current taster	1	43,000	129,000	No.1 C7.21.00	446/1	SIMPSON	229-2	1	212	JICA	2533	
287	Leakage current taster	1	43,000	129,000	No.2 C7.21.00	446/2	SIMPSON	229-2	1	212	JICA	2533	
288	Leakage current taster	1	43,000	129,000	No.3 C7.21.00	446/3	SIMPSON	229-2	1	212	JICA	2533	
289	Leakage current taster	1	43,000	129,000	No.4 C7.21.00	446/4	SIMPSON	229-2	1	212	JICA	2533	
290	Earth continuity tester	1	43,667	131,000	10020411 C7.22.00	447/1	KIKUSUI	TOS 6100	1	212	JICA	2533	
291	Earth continuity tester	1	43,667	131,000	10020412 C7.22.00	447/2	KIKUSUI	TOS 6100	1	212	JICA	2533	
292	Safety test tool kit (not perfect)	8	279,000	837,000	Ca.01.00	448			1		JICA	2533	
293	1. Spring impact test hammer	1			9003087.19 Ca.01.00	448/1-1	EXCEL	CB-1	1	212	JICA	2533	
294	2. Push pull gauge	1			9004109.11 Ca.01.00	448/1-2	EXCEL	CB-1	1	212	JICA	2533	
295	3.1. Test finger	1			- Ca.01.00	448/1-3	EXCEL	CB-1	1	212	JICA	2533	
296	3.2. Test finger	1			- Ca.01.00	448/1-4	EXCEL	CB-1	1	212	JICA	2533	
297	3.3. Test finger	1			- Ca.01.00	448/1-5	EXCEL	CB-1	1	212	JICA	2533	
298	3.4. Test finger	1			- Ca.01.00	448/1-6	EXCEL	CB-1	1	212	JICA	2533	
299	4. Test pin	1			- Ca.01.00	448/1-7	EXCEL	CB-1	1	212	JICA	2533	
300	5. Ball pressure	1			- Ca.01.00	448/1-8	EXCEL	CB-1	1	212	JICA	2533	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Aren WXL(m3)
301	6. Sharp edge tester	1			- Ca.01.00	448/1-9	EXCEL	CB-1	1	212	JICA	2533	
302	7.1. Steel sphere	1			- Ca.01.00	448/1-10	EXCEL	CB-1	1	212	JICA	2533	
303	7.2. Steel sphere	1			- Ca.01.00	448/1-11	EXCEL	CB-1	1	212	JICA	2533	
304	8. IS gauge	1			- Ca.01.00	448/1-12	EXCEL	CB-1	1	212	JICA	2533	
305	Safety test tool kit	1	221,333	664.000	Ca.02.00	448/3			1	212	JICA	2533	
306	1. Spring impact test hammer	1			- Ca.02.00	448/3.1	EXCEL	CB-2	1	212	JICA	2533	
307	2. Push pull gauge	1			- Ca.02.00	448/3.2	EXCEL	CB-2	1	212	JICA	2533	
308	3.1. Test finger	1			- Ca.02.00	448/3.3	EXCEL	CB-2	1	212	JICA	2533	
309	3.2. Test finger	1			- Ca.02.00	448/3.4	EXCEL	CB-2	1	212	JICA	2533	
310	4. Test pin	1			- Ca.02.00	448/3.5	EXCEL	CB-2	1	212	JICA	2533	
311	5. Steelshere	1			- Ca.02.00	448/3.6	EXCEL	CB-2	1	212	JICA	2533	
312	6. IS gauge	1			- Ca.02.00	448/3.7	EXCEL	CB-2	1	212	JICA	2533	
313	Standard Lamp caps and holders for dimension testing	1	4,149,667	12,449,000	Ca.05.00	449/1		CB-2	1	212	JICA	2533	
314	1. Gauge for the slots in lampholder B 15	1			- Ca.05.00	449/1.1	DAIICHI SOKUHAN	7006-13	1	212	JICA	2533	
315	2. Gauge for the slots in lampholder B22	1			- Ca.05.00	449/1.2	DAIICHI SOKUHAN	7006-13	1	212	JICA	2533	
316	3. Plug gauge for E27 lampholder for testing contact making	1			- Ca.05.00	449/1.3	DAIICHI SOKUHAN	7006-21-3	1	212	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
317	4. Plug gauge for E27 lamphoder for testing protection	1			- Ca.05.00	449/1.4	DAIICHI SOKUHAN	7006-22A-3	1	212	JICA	2533	
318	5. Plug gauge for E27 lampholder for testing contact	1			- Ca.05.00	449/1.5	DAIICHI SOKUHAN	7006-22-3	1	212	JICA	2533	
319	6. Plug gauge for E40 lampholderr for testing contact	1			- Ca.05.00	449/1.6	DAIICHI SOKUHAN	7006-23-2	1	212	JICA	2533	
320	7. Plug gauge for E40 lampholder for testing contact	1			- Ca.05.00	449/1.7	DAIICHI SOKUHAN	7006-24-2	1	212	JICA	2533	
321	8. "GO" plug gauge for screw threads of lampholder E40 accidental contact	1			- Ca.05.00	449/1.8	DAIICHI SOKUHAN	7006-25-4	1	212	JICA	2533	
322	9. "GO" plug gauge for screw threads of lampholder E27	1			- Ca.05.00	449/1.9	DAIICHI SOKUHAN	7006-25A-1	1	212	JICA	2533	
323	10. "NOT GO" plug gauge for screw threads oflampholder E27	1			- Ca.05.00	449/1.10	DAIICHI SOKUHAN	7006-26-2	1	212	JICA	2533	
324	11. "NOT GO" plug gauge for screw threads of lampholder E40	1			- Ca.05.00	449/1.11	DAIICHI SOKUHAN	7006-26-2	1	212	JICA	2533	
325	12. "GO" Gauge for dimension "S1" of E27 Cap on finished lamp	1			- Ca.05.00	449/1.12	DAIICHI SOKUHAN	7006-27B-1	1	212	JICA	2533	
326	13. "GO" Gauge for dimension "S1" of E27 Cap on finished lamp	1			- Ca.05.00	449/1.13	DAIICHI SOKUHAN	7006-27C-1	1	212	JICA	2533	
327	14. "NOT GO" Gauge for E27 Cap on finished lamp	1			- Ca.05.00	449/1.14	DAIICHI SOKUHAN	7006-28A-1	1	212	JICA	2533	
328	15. "NOT GO" Gauge for E40 cap on finished lamp	1			- Ca.05.00	449/1.15	DAIICHI SOKUHAN	7006-28-4	1	212	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
329	16. G13 "GO" and "NOT GO" Gauge for BI-PIN cap G13: NOT for use on finished lamp	1			- Ca.05.00	449/1.16	DAIICHI SOKUHAN	7006-44-3	1	212	JICA	2533	
330	17. "GO" Gauge for BI-PIN cap G13 on finished lamp				- Ca.05.00	449/1.17	DAIICHI SOKUHAN	7006-45-3	1	212	JICA	2533	
331	18. "GO" and "NOT GO" Gauge for BI-PIN cap G5: NOT for use on finished lamp	1			- Ca.05.00	449/1.18	DAIICHI SOKUHAN	7006-46-2	1	212	JICA	2533	
332	19. "GO" Gauge for BI-PIN cap G5 on finished lamp	1			- Ca.05.00	449/1.19	DAIICHI SOKUHAN	7006-46A-2	1	212	JICA	2533	
333	20. Plug gauge for inflexible lampholder G5 for testing contact making	1			- Ca.05.00	449/1.20	DAIICHI SOKUHAN	7006-47A-1	1	212	JICA	2533	
334	21. Gauge for finished lamp fitted with E27 cap for testing contact	1			- Ca.05.00	449/1.21	DAIICHI SOKUHAN	7006-50-1	1	212	JICA	2533	
335	22. Gauge for finished lamp fitted with E27 cap for testing protection against accidental contact	1			- Ca.05.00	449/1.22	DAIICHI SOKUHAN	7006-51-1	1	212	JICA	2533	
336	23. Gauge for finished lamp fitted with E27 cap for testing protection against accidental contact	1			- Ca.05.00	449/1.23	DAIICHI SOKUHAN	7006-51A-1	1	212	JICA	2533	
337	24. Gauge for finished lamp fitted with E40 Cap for testing contact	1			- Ca.05.00	449/1.24	DAIICHI SOKUHAN	7006-51-1	1	212	JICA	2533	
338	25. Gauge for finished lamp fitted with E40 cap for testing protection against accidental contact	1			- Ca.05.00	449/1.25	DAIICHI SOKUHAN	7006-53-1	1	212	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
339	26. Plug gauge for inflexible lampholder G13 for testing contact making	1			- Ca.05.00	449/1.26	DAIICHI SOKUHAN	7006-60A-1	1	212	JICA	2533	
340	Enamal wire testing	1	249,333	748,000	5815 Ca.09.00	450/1	YASUDA SEIKI	553	1	212	JICA	2533	
341	Card flexing tester	1	1,385,333	4,156,000	Ca.10.00a	460/1	-	-	1	113	JICA	2533	1.00x1.00(1)
342	1. Captyre cord flexing tester	1			44860 Ca.10.00a	460/1.1	EVERTRON	-	1	113	JICA	2533	
343	2. Load box	1			44861 Ca.10.00a	460/1.2	EVERTRON	-	1	113	JICA	2533	0.70x1.80(1.26)
344	Cord bending fatique tester	1	467,333	1,402,000	Ca.10.00b	460/2	TESTER SANGYO	BE-801-M	1	113	JICA	2533	0.67x179(1.19)
345	Triple parallel plate plastometer	1	628,333	1,885,000	12290 7600 Ca.11.00	461/1	TOYO SEIKI	534W-3	1	113	JICA	2533	
346	Tumble barrel	1	162,000	486,000	Ca.12.00	462/1	TAIYO KEIKI	-	1	113	JICA	2533	0.60x1(0.6)
347	Test table for heating test	1	18,667	56,000	Ca.13.00	463/1	TAIYO KEIKI	-	1	212	JICA	2533	
348	Hot mandrel heat resistance tester (not function)	1	757,667	2,273,000	9004109.1 Ca.14.00	464/1	EXCEL	T-01.05	1	208	JICA	2533	0.90x1.80(1.62)
349	V-belt electrical resistance measurment stand	1	127,667	383,000	CA.21.00	465/1	TAIYO KEIKI	-	1	212	JICA	2533	
350	Flamability tester	1	680,667	2,042,000	LAMABILITE1.08.02	466/1	EXCEL	BT-1500A	1	208	JICA	2533	1.00x3.50(3.5)
352	Flux meter	1	30,333	91,000	50KR0335 G1.06.00	468/1	YEW	3254	1	212	JICA	2533	
353	Lux meter	1	9,667	29,000	60BH0260 G1.07.00	469/1	YEW	3281	1	212	JICA	2533	
354	Photometric intergrating sphere	1	9,775,000	29,325,000	G1.08.00	470/1	-	-	1	213	JICA	2533	4.0x6.00(24)
355	1. Intergrating	1		-	- G1.08.00	470/1.1	TOSHIBA	A	1	213	JICA	2533	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL.(m3)
356	2. Measuring rack for incandescent lamp	1		-	- G1.08.00	470/1.2	TOSHIBA	A	1	213	JICA	2533	
357	3. Measuring rack for fluorescent	1		-	- G1.08.00	470/1.3	TOSHIBA	A	1	213	JICA	2533	
358	4. Computer	1			- G1.08.00	154/101	TOSHIBA	J-3100GX	1	213	JICA	2533	
359	5. Printer	1			- G1.08.00	425/35	TOSHIBA	PWS5267A	1	213	JICA	2533	
360	Photometric Bench (Problem with Air conditioner / high ambient temp.)	1	3,398,333	10,195,000	C-90A-02 G1.09.00	471/1		-	1	213	JICA	2533	2.00x4.50(9)
361	1. Bench 4 meters	1			- G1.09.00	-	TOSHIBA	-	1	213	JICA	2533	
362	2. Lamp Fixing Stand	1			- G1.09.00	-	TOSHIBA	-	1	213	JICA	2533	
363	3. Shad	1			- G1.09.01	-	TOSHIBA	-	1	213	JICA	2533	
364	4. Photo Receiver	1			- G1.09.01	-	TOSHIBA	-	1	213	JICA	2533	
365	Digital Photometer	1	132,000	396,000	B092820 G1.15.00.1	470/2	TEKTRONIX	J16	1	213	JICA	2533	
366	Colorimetry	1	6,130,333	18,391,000	G1.16.00	472/1			1	213	JICA	2533	2.00x3.00(6)
367	1. Colorimetry Set	1			G1.16.00	472/1-1	TOSHIBA	-	1	213	JICA	2533	
368	2. Lighting Table	1			G1.16.00	472/1-2	TOSHIBA		1	213	JICA	2533	
369	3. Computer	1			G1.16.00	154/102	TOSHIBA		1	213	JICA	2533	
370	4. Printer	1			G1.16.00	425/36	TOSHIBA	PWS5267A	1	213	JICA	2533	
371	5. Standard Lamps of Colour Temp	1			G1.16.00		TOSHIBA	B	1	213	JICA	2533	
372	Lamp Chamber tester	1	451,667	1,355,000	G1.19.00	473/1	TAIYO KEIKI		1	212	JICA	2533	1.20x1.20(1.44)

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
373	Life Test Rack for Candescent Lamp	1	588,667	1,766,000	C-90A-04 G1.20.00	474/1-1	TOSHIBA	-	1	113	JICA	2533	0.50x2.00(1)
374	Life Test Rack for Fluorescent Lamp	1	946,333	2,839,000	C-90A-05 G1.21.00	474/1-2	TOSHIBA	-	1	113	JICA	2533	0.50x1.50(0.75)
375	Life Test Rack for Fluorescent Lamp	1	956,333	2,869,000	- G1.21.00	474/1-3	TOSHIBA	-	1	113	JICA	2533	0.50x1.20(0.6)
376	Testing Circuits for Fluorescent Lamp	1	794,333	2,383,000	C-90A-07 G1.22.00	475/1	TOSHIBA	-	1	212	JICA	2533	0.78x1.82(1.41)
377	Testing Cirucuits for Incandescent lamp	1	56,000	168,000	G1.23.01	475/2	TAIYO KEIKI		1	212	JICA	2533	
378	AM/FM Signal Generator	1	246,500	739,500	033718C126 Lo.01.00	476/1	NATIONAL	VP-8179B10	1	211	JICA	2533	
379	AM/FM Signal Generator	1	246,500	739,500	023693C126 Lo.01.00	476/2	NATIONAL	VP-8179B10	1	211	JICA	2533	
380	Stereo Signal Generator	1	123,000	369,000	041862B122	477/1	NATIONAL	VP-7635A	1	211	JICA	2533	
381	Audio Signal Generator	1	82,500	247,500	C80419E Lo.03.00	478/1	TOA DEMPA	CRS-121A	1	211	JICA	2533	
382	Audio Signal Generator	1	82,500	247,500	C80416E Lo.03.00	478/2	TOA DEMPA	CRS-121A	1	211	JICA	2533	
383	Furction Generator	1	77,667	233,000	042191E122 Lo.04.00	479/1	NATIONAL	VP-7420A	1	211	JICA	2533	
384	Electronic Voltmeter	1	34,133	102,400	131361 Lo.05.00	427/26	NF	M-174B	1	211	JICA	2533	
385	Electronic Voltmeter	1	34,133	102,400	131362 Lo.05.00	427/27	NF	M-174B	1	211	JICA	2533	
386	Electronic Voltmeter	1	34,133	102,400	131363 Lo.05.00	427/28	NF	M-174B	1	211	JICA	2533	
387	Electronic Voltmeter	1	34,133	102,400	131364 Lo.05.00	427/29	NF	M-174B	1	211	JICA	2533	
388	Electronic Voltmeter	1	34,133	102,400	49090585 Lo.06.00	427/30	NF	M-174B	1	211	JICA	2533	
389	Frequency Counter	1	16,500	49,500	49090586 Lo.06.00	435/5	KIKUSUI	FC01130	1	211	JICA	2533	
390	Frequency Counter	1	16,500	49,500	49090587 Lo.06.00	435/6	KIKUSUI	FC01130	1	211	JICA	2533	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
391	Audio Analyzer	1	358,333	1,075,000	041479D122 Lo.07.00	480/1	NATIONAL	VP-7722A	1	211	JICA	2533	
392	Audio Analyzer	1	358,333	1,075,000	041482D122 Lo.07.00	480/2	NATIONAL	VP-7722A	1	211	JICA	2533	
393	Wow Flutter Meter	1	38,333	115,000	291036369	481/1	KIKUSUI	677D	1	211	JICA	2533	
394	Wow Flutter Meter	1	38,333	115,000	29103659	481/2	KIKUSUI	677D	1	211	JICA	2533	
395	Oscilloscope	1	169,667	509,000	10040225 Lo.09.00	434/4	KIKUSUI	COM7200A	1	211	JICA	2533	
396	DC Power Supply	1	29,417	88,250	11989310 Lo.11.00	424/20	TAKASAGO	GP035-5	1	211	JICA	2533	
397	DC Power Supply	1	29,417	88,250	11989311 Lo.11.00	424/21	TAKASAGO	GP035-5	1	211	JICA	2533	
398	DC Power Supply	1	29,417	88,250	11989312 Lo.11.00	424/22	TAKASAGO	GP035-5	1	211	JICA	2533	
399	DC Power Supply	1	29,417	88,250	11989313 Lo.11.00	424/23	TAKASAGO	GP035-5	1	211	JICA	2533	
400	Field Strength Meter	1	164,000	492,000	M53464 Lo.12.00	482/1	ANRITSU	M-262F	1	211	JICA	2533	1.00x2.00(2)
401	FM Detecter	1	229,667	689,000	M27367 Lo.13.00	483/1	ANRITSU	MS-618	1	211	JICA	2533	
402	Shield Room	1	691,333	2,074,000	Lo.14.00		Nippon shield	AIR-23-WS	1	211	JICA	2533	
403	Dummy Antena	1	20,333	61,000	031390A122 Lo.15.00.1	277/15	NATIONAL	VQ-085C	1	211	JICA	2533	
404	DC Volt-ammeter	1	16,333	49,000	70AC00212 M1.01.00a	427/31	YEW	2012	1	211	JICA	2533	
405	AC Volt-ammeter	1	18,000	54,000	60AG0579 M1.02.00	427/32	YEW	2014	1	207	JICA	2533	
406	DC Voltage/current Standard	1	73,667	221,000	50BE0348 M1.08.00	427/33	YEW	2554	1	207	JICA	2533	
407	AC Voltage/current Standard	1	291,333	874,000	50AZ0105 M1.09.00	427/34	YEW	2558	1	207	JICA	2533	
408	Temperature oven	1	263,333	790,000	PHL-T46&/40 E1.04.00	484/1	TAKAHUGI	9078	1	207	JICA	2533	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
409	Anemometer	1	15,000	45,000	Bo.01.00	485/1	OGAWA SEIKI	DA-1	1	113	JICA	2533	
410	Anemometer	1	15,000	45,000	Bo.01.00	485/2	OGAWA SEIKI	DA-2	1	113	JICA	2533	
411	Heating Efficiency Test Stand	1	149,667	449,000	Bo.03.00	463/2	TAIYO KEIKI	-	1	212	JICA	2533	
412	Mechanical Endurances Test for speed Regulator: Rotary Type	1	1,090,333	3,271,000	Bo.05.01	486/1	TAIYO KEIKI	-	1	316-4	JICA	2533	1.00×2.00 (2)
413	Mechanical Endorances Test for Speed Regulator: Push Type	1	934,667	2,804,000	Bo.05.02	486/2	TAIYO KEIKI	-	1	212	JICA	2533	
414	Microphone: 1 inch	1	80,000	240,000	1503165 G2.01.00	54/101	B+K	4145	1	217	JICA	2533	
415	Microphone: 1 inch	1	80,000	240,000	1503185 G2.01.00	54/102	B+K	4145	1	217	JICA	2533	
416	Microphone:□"inch	1	39,000	117,000	1517929	54/103	B+K	4133	1	217	JICA	2533	
417	Microphone:□"inch	1	39,000	117,000	1517931	54/104	B+K	4133	1	217	JICA	2533	
418	Pre-amplifier	1	53,500	160,500	G2.03.00	54/105	B+K	26395	1	217	JICA	2533	
419	Pre-amplifier	1	53,500	160,500	G2.03.00	54/106	B+K	26395	1	217	JICA	2533	
420	Measuring Amplifier	1	655,000	1,965,000	1537483 G2.07.00	54/107	B+K	2636	1	217	JICA	2533	
421	Sine wave Generator	1	492,333	1,477,000	1501442 G2.08.00	54/108	B+K	1051	1	217	JICA	2533	
422	Level Recorder	1	950,000	2,850,000	1470478 G2.09.00	54/109	B+K	2307	1	217	JICA	2533	
423	Band Pass Filter	1	502,667	1,508,000	1536706 G2.10.00	54/110	B+K	1617	1	217	JICA	2533	
424	Power Amplifier	1	140,000	420,000	1517549 G2.11.00	54/111	B+K	2706	1	217	JICA	2533	
425	Sound Level Meter	1	95,667	287,000	10300134 G2.12.01.02	54/112-1	RION	NA-29E	1	217	JICA	2533	

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
426	Sound Level Meter	1	95,667	287,000	10300133 G2.12.01.02	54/112-2	RION	NA-29E	1	217	JICA	2533	
427	Sound Level Meter	1	95,667	287,000	66106401 G2.12.01.02	54/112-3	RION	NA-20	1	217	JICA	2533	
428	Sound Level Meter	1	95,667	287,000	66106402 G2.12.01.02	54/112-4	RION	NA-20	1	215	JICA	2533	
429	Sound Level Meter	1	191,333	574,000	93017 G2.12.01.02	54/112-5	RION	CP-10	1	215	JICA	2533	
430	Sound Level Meter	1	191,333	574,000	930178 G2.12.01.02	54/112-6	RION	NC-11	1	215	JICA	2533	
431	Level Recorder	1	115,333	346,000	82302730 G2.13.00	54/113	RION	LR-04	1	215	JICA	2533	
432	Level Recorder	1	115,333	346,000	82302731 G2.13.00	54/114	RION	LR-04	1	215	JICA	2533	
433	Piston phone	1	71,667	215,000	00402445 G2.14.00	54/115	RION	NC-72	1	215	JICA	2533	
434	Anechoic Room	1	15,545,000	46,635,000	G2.03.00	54/116			1	215	JICA	2533	
435	1. Speaker	1			-	54/116.1	TANNOY	LYNX	1	215	JICA	2533	
436	1. Speaker	1			-	54/116.2	TANNOY	LYNX	1	215	JICA	2533	
437	2. Speaker	1			-	54/116.3	TANNOY	LYNX	1	215	JICA	2533	
438	Calorimeter Room -Calorimeter Control panel -Control Peanel	1 1 1	43,556,667	130,670,000	Bo.02.00	487/1	OHNISHI	-	1	219	JICA	2533	
439	1. Computer -Moniter	1 1			2804A11356 8911K01650 Bo.02.00	154/100	Hewlett Packard	9122C 35731B	1	219	JICA	2533	
440	2. Printer	1			2646J10282 Bo.02.00	425/34	Hewlett Packard	41031A	1	219	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
441	3. UPS	1			Bo.02.00	426/20	YAMABISHI	1000HF	1	219	JICA	2533	
442	4. 4.1 Cyclometric Box	1			Bo.02.00	487/1.1	CHINO	-	1	219	JICA	2533	
443	4.2 Cyclometric Box	1			Bo.02.00	487/1.2	CHINO	-	1	219	JICA	2533	
444	3. Pressure Equilizer	1			Bo.02.00	487/1.3	AENIX	WH-0535	1	219	JICA	2533	
445	4. Pressure Equilizer	1			Bo.02.00	487/1.4	AENIX	WH-0535	1	219	JICA	2533	
446	4.5 Scanner for Thermocouple	1			Bo.02.00	487/1.5	YOKOGAWA	388262	1	219	JICA	2533	
447	4.6 Electronic Balance	1			Bo.02.00	487/1.6	AND	-	1	219	JICA	2533	
448	4.7 Electronic Balance	1			Bo.02.00	487/1.7	AND	-	1	219	JICA	2533	
449	4.8 Water Pump	1			Bo.02.00 9000188	487/1.8	HITACHI	W-P80F	1	219	JICA	2533	
450	4.9 Water Pump	1			Bo.02.00 9000203	487/1.9	HITACHI	W-P80F	1	219	JICA	2533	
451	4.10 Chiller Unit	1			Bo.02.00 7154232	487/1.10.1	HITACHI	RCU5Y	1	219	JICA	2533	
452	4.11 Chiller Unit	1			Bo.02.00 7154333	487/1.10.2	HITACHI	RCU5Y	1	219	JICA	2533	
453	4.12 Distiller	1			Bo.02.00	487/1.11		-	1	219	JICA	2533	
454	4.13 Water Pump	1			Bo.02.00	487/1.12	HITACHI	WT-K200F	1	219	JICA	2533	
455	4.14 Air Compressure	1			Bo.02.00 RH631622	487/1.13	HITACHI	WT-K200F 0.75P-9.5V	1	219	JICA	2533	
456	4.15 Cooling Town	1			Bo.02.00	487/1.14	Shinwa Sangyo	MXC-P50AS	1	219	JICA	2533	
457	4.16 Refrigerator	1			Bo.02.00 U21900446	487/1.15	HITACHI	30 3H2-AW	1	219	JICA	2533	
458	4.17 Refrigerator	1			Bo.02.00 U21900448	487/1.16	HITACHI	30 3H2-AW	1	219	JICA	2533	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
459	4.18 Refrigerator	1			Bo.02.00 U21900449	487/1.17	HITACHI	30 3H2-AW	1	219	JICA	2533	
460	4.19 Refrigerator	1			Bo.02.00 2190447	487/1.18	HITACHI	30 3H2-AW	1	219	JICA	2533	
461	4.20 Refrigerator	1			Bo.02.00 U2190445	487/1.19	HITACHI	30 3H2-AW	1	219	JICA	2533	
462	Safety test tool kit (not perfect)	8	279.000	837.000	CA.01.00a	448/2	-	-	1	212	JICA	2533	
463	1. Spring impact test hammer	1			9003087.13 CA.01.00a	448/2.1	EXCEL	CB-1	1	212	JICA	2533	
464	2. Push pull gauge	1			- CA.01.00a	448/2.2	EXCEL	CB-1	1	212	JICA	2533	
465	3. Test finger	1			- CA.01.00a	448/2.3	EXCEL	CB-1	1	212	JICA	2533	
466	4. Test pin	1			- CA.01.00a	448/2.4	EXCEL	CB-1	1	212	JICA	2533	
467	5. Ball pressure	1			- CA.01.00a	448/2.5	EXCEL	CB-1	1	212	JICA	2533	
468	6. Sharp edge tester	1			- CA.01.00a	448/2.6	EXCEL	CB-1	1	212	JICA	2533	

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List of Existing Equipment & Machinery at TISI-Bampoo

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
469	7. Steel sphere	1			- CA.01.00a	448/2.7	EXCEL	CB-1	1	212	JICA	2535	
470	8. IS gauge	1			- CA.01.00a	448/2.8	EXCEL	CB-1	1	212	JICA	2535	
471	Lux meter	1	46,700		62BK0110	275/2	YOKOGAWA	3286-1992	1	213	THAI	2535	
472		1	17,976		-	423/1	YOKOGAWA	H-12	1	219	THAI	2535	
473		1	17,976		-	423/2	YOKOGAWA	H-12	1	219	THAI	2535	
474		1			6237HCV4191 23442601N133	154/86	COMPAQ	3/25 S	1	212	THAI	2535	
475		1			6237HCV4138	154/87	COMPAQ	3/25 S	1	212	THAI	2535	
476	IEC impact hammer	1	160,000	480,000	CA.03.00	448/1.1	EXCEL	F22.50	1	212	JICA	2535	
477	Testing Circuit of starter	1	713,333	2,140,000	CA.24.00	552/1	Precision		1	211	JICA	2535	0.78x1.82(1.41)
478	Gauges of starter	1	163,333	490,000	CA.25.00	553/1			1	211	JICA	2535	
479	Torque meter (fluorescent lamp)	1	60,000	180,000	00490G	219/3	TONICHI	2-TM 50	1	212	JICA	2535	
480	PRINTER	1			53B0017333	425/7	EPSON	LQ-1170	1	212	THAI	2535	
481	PRINTER	1			53B0018749	425/8	EPSON	LQ-1170	1	212	THAI	2535	
482		1			Ca.22.00	492/1		-	1	212	THAI	2535	0.72x0.76(0.54)
483		1				413/2		-	1	113	THAI	2535	0.70x1.80(1.26)
484	Water activity	1	1,065		-	455/1		Rotronic DT 1.	1	219	THAI	2536	
485	Stabilizer	1			90803	427/35	Stavol Matsunaga	TSA-1020F	1	212	THAI	2536	0.50x0.80(0.4)

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No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
486		1	22,149		-	182/3	IWATA CSP	SPC-1SP.B.	1	207	THAI	2536	0.50x1.00(0.5)
487		1	6,597		-	330/2	JETWELD	-	1	219	THAI	2536	0.50x0.50(0.25)
488		1	1,575		-	458/1	IMPERIAL	496-CD	1	219	THAI	2536	
489		1	31,500		-	100/3	MARVAC	B-30	1	219	THAI	2536	
490		1	4,083		-	248/11	GALCO	FRIOGAS 22	1	219	THAI	2536	
491		1	4,083		-	248/12	GALCO	FRIOGAS 22	1	219	THAI	2536	
492		1	9,270		-	459/1	IMPERIAL	-	1	219	THAI	2536	
493	GO/contact gauge (not complete)	1	51,520	224,000	CA-28.00	449/2			1	212	JICA	2536	
494	Grip for torque test of incandescent lamps	1	113,850	495,000	G1.24.00	559/1			1	212	JICA	2536	
495	Fault condition test apparatus	1	106,950	465,000	CA.30.00	560/1			1	207	JICA	2536	0.70x1.00(0.7)
496	Impact tester	1	50,000		CA.27.00	561/1			1	211	JICA	2536	1.26x0.55(0.69)
497	Glow-wire test apparatus	1	805,000	3,500,000	CA.29.00	562/1	HITACHI	HAT-214	1	211	JICA	2536	0.72x0.75(0.54)
498		1	13,289	-	301560	490/1	CIGWELD	COMET 5000/3000 Kpa	1	219	THAI	2536	
499	TOP LOAD	1	50,000		0255-35	72/27	Transmate	EDI-302	1	219	THAI	2537	
500		1	16,146	-	-	245/8	-	-	1	219	THAI	2537	
501		1	10,000		H2GB600388	200/10	SAMSUNG	CVM4787	1	212	THAI	2537	
502		1	172,100		203441	254/5	MINOLTA	CL-100	1	310	THAI	2537	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
503	UPS	1	20,000		-	426/28	-	-	1	212	THAI	2537	
504		1	158,360		-	474/2	TOSHIBA	-	1	113	THAI	2537	0.60x2.00(1.2)
505		1	69,229		GL059400557	154/119	SOCOS	486 DX2-66 CM-1448	1	212	THAI	2537	
506		1	4,250		-	2.6/296	-	-	1	211	THAI	2537	
507		1	10,433		53FR7069	433/3	YOKOGAWA	2791	1	212	THAI	2537	
508		1	10,433		-	433/4	YOKOGAWA	OSK-10244	1	212	THAI	2537	
509		1	1,928		100487	440/15	MATSUWAGA	TSB-5M	1	212	THAI	2537	
510		1	1,928		-	440/16	MATSUWAGA	TSB-5M	1	212	THAI	2537	
511		1	1,928		100517	440/17	MATSUWAGA	TSB-5M	1	212	THAI	2537	
512		1	8,988		-	446/5	SIMPSON	229-2	1	212	THAI	2537	
513		1	8,988		-	446/6	SIMPSON	229-2	1	212	THAI	2537	
514		1	50,932		-	219/3	TOHNICHI	-	1	212	THAI	2537	
515		1	17,816		-	510/1	ADVANTEST	-	1	213	THAI	2537	
516		1	17,816		-	510/2	-	-	1	213	THAI	2537	
517		1	17,816		-	510/3	-	-	1	213	THAI	2537	
518		1	662,150		-	441/3	SCKEN	-	1	114	THAI	2537	
519		1	78,645		-	441/4	HIOKT	-	1	212	THAI	2537	0.90x1.50(1.35)
520	UPS	1	9,600		-	426/49	APC	Back-ups 600 I	1	212	THAI	2537	

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No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
521		1	735,946		13002181	484/2	TAKASUGI	PR-1 ST 9028	1	212	THAI	2537	0.78x0.96(0.74)
522		1	63,130		-	6/259	-	-	1	208	THAI	2537	
523		1			-	484/3	-	-	1	208	THAI	2537	0.45x0.70(0.31)
524	Probe	1	8,276	36,000	12391-2	566/1	TOKYO DENPA	PTY 124 H	1	219	JICA	2537	
525	Anemometer	1	45,517	198,000	541016	542/1	KANOMAX	MODEL24-6111	1	219	JICA	2537	
526		1	64,368	280,000	36A1655	455/3	COSMO	DM3500	1	219	JICA	2537	
527		1	88,506	385,000	263	567/1	YAMATO	DZ-41	1	207	JICA	2537	
528	(Ventilated Psychrometer) (Mitsubishi Daiya Brand Room air conditioners fo model)	1	30,344.83	132,000	94166	254/9	YOSHINO KEIKI	SY-1D	1	219	JICA	2537	
	1. (SRC 502L)	1	17,315	75,320	SRK12791472 SRC471500033	6/280	MITSUBISHI	1540BTU(CL)	1	219	JICA		
529	2. SRK 324K-W (SRC 204)	1	11,122	48,380	SRK22840037 SRC26700327	6/281	MITSUBISHI	9560BTU(CL) 12970BTU(HP)	1	219	JICA	2537	
530	3. SRK 205-W (SRC 204)	1	11,122	48,380	SRK33800025 SRC365208805	6/282	MITSUBISHI	6140BTU(CL) 8530BTU(HP)	1	219	JICA	2537	
531	4.WV183 C-W	1	10,503	45,690	314402392R	6/283	MITSUBISHI	5460BTU	1	219	JICA	2537	
532	5. SRK 253 CENF-W (SRC 253 CENF)	1	6,897	30,000	RW4002A033	6/284	MITSUBISHI	7500BTU	1	219	JICA	2537	
533	6. SRK 186-W (SRC 186)	1	6,460	28,100	RC0003A706	6/285	MITSUBISHI	5460BTU(CL)	1	219	JICA	2537	
534	Circulator Cooling	1	114,483	498,000	308555	532/1	YAMATO	BL-51	1	219	JICA	2537	0.40x0.52(0.20)
535	Quartx Thermometer	1	459,310	1,998,000	12391 12392	254/7	TOKYO DENPA	DMT-610B	1	219	JICA	2537	
536		1	9,500		-	523/1	PATTANA ENG.	-	1	201	THAI	2538	

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
537		1	46,500		-	524/1	PATTANA ENG.	-	1	211	THAI	2538	
538		1	2,429		-	290/2	-	-	1	219	THAI	2538	
539		1	2,270		-	290/3	IMPERIAL EASTMAN	432-CM	1	219	THAI	2538	
540		1	32,849		-	527/1	-	-	1	107	THAI	2538	
541		1	48,021		94010401 Ca.35.00	416/2	MECMESIN tokyo testing	AFG 50N	1	211	THAI	2538	
542		1	73,500		-	199/3	-	-	1	113	THAI	2538	
543		1	85,000		-	535/1	-	-	1	113	THAI	2538	
544		1	618,246		Ca..41.00	191/2	sidumt	95-181	1	207	THAI	2538	1.00x1.00(1)
545		1	2,290,000		-	536/1	PATTANA ENG.	-	1	207	THAI	2538	
546	1 KVA	1	5,564		-	440/19	-	-	1	212	THAI	2539	
547	1 KVA	1	5,564		-	440/20	-	-	1	212	THAI	2539	
548	2 KVA	1	10,272		-	440/21	-	-	1	212	THAI	2539	
549	2 KVA	1	10,272		-	440/22	-	-	1	212	THAI	2539	
550	2 KVA	1	10,272		-	440/23	-	-	1	212	THAI	2539	
551	2 KVA	1	10,272		-	440/24	-	-	1	212	THAI	2539	
552		1	15,300		-	125/3	-	-	1	212	THAI	2539	0.35x0.35(0.12)
553	MITUTOYO	1	2,630		-	349/3	-	-	1	212	THAI	2539	
554	MITUTOYO	1	2,630		-	349/4	-	-	1	212	THAI	2539	

Appendix-1

No.	Items	Quantity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
555	MITUTOYO	1	10,101		0014601	149/5	Mitutoyo	CD-6"C(500-17)	1	212	THAI	2539	
556	MITUTOYO	1	10,101		0014602	149/6	Mitutoyo	CD-6"C	1	212	THAI	2539	
557	MITUTOYO	1	13,501		6201014	348/9	Mitutoyo	293-421-20	1	212	THAI	2539	
558	MITUTOYO	1	13,501		6201800	348/10	-	293-421-20	1	212	THAI	2539	
559					-	575/1		-	1	212	THAI	2539	0.80x1.80(1.44)
560		1 1		-	SG70301538 KR65285164	154/236	HEWLETT PAKARD HP HEWLETT PAKARD HP	VL4 5/133 M 1280 D 2811	1	212	THAI	2540	0.80x1.50(1.2)
561		1 2		-	SG70301398 KR65285527	154/243	HEWLETT PAKARD HP HEWLETT PAKARD HP	VL4 5/133 M 1280 D 2812	1	212	THAI	2540	0.80x1.50(1.2)
562		1	9,000		L 094153	245/11	DIGITAL DIGICON	SB-15	1	219	THAI	2540	
563		1	60,000		53767	580/1	WAP POWER-CLASS	9900	1	219	THAI	2540	
564		1	1,239,863		8466	484/5	Gallenkamp	HCC110.CF4J 1x1x0.8	1	212	THAI	2540	1.32x1.95(2.57)
565		1	174,410	-	4110026	439/27			1	8	THAI	2541	8
566		1	320,000	-	-	439/27			1	108	THAI	2538	2.00x4.00(6)
567		1							1	113	THAI	2541	0.42x1.00(0.42)
568		1							1	113	THAI	2541	0.42x1.00(0.42)
569		1	83,333	250,000					1	113	THAI	2541	0.60x1.50(0.9)
570		1	83,333	250,000					1	113	THAI	2541	0.60x1.50(0.9)

Appendix-1

No.	Items	Quan-tity	Price (Baht)	Price (Yen)	Code	Registration Number	Name of Producer	Model/Size	Div. in charge	Location Room No.	Received from	Budget Year	Using Area WXL(m3)
			10,771,270										

Appendix-2(1)

Cost for New Equipment

(Million Bahts, 1B=3yen)

			Yen	Amount	Investment Year	
Calibration	Direct Current Low Frequency	A	119	39.7	2002	
	High Frequency	B	76	25.3	2003	
	Length,Shape	C	174	58.0	2000	
	Temperature	D	71	23.7	2000	
	Sub-Total		440	146.7		
Testing Laboratory	Reliability Testing	E	200	66.7	2001	
	Safety Testing	F	31	10.3	2000	
	Parts Testing	G	45	15.0	2000	
	Home Electronics Products Testing	H	75	25.0	2001	
	AV Products Testing	I	707	235.7	2001-2003	2001/2002=150Each
	Information Comunication OA Testing	J	110	36.7	2002	
	Sub-Total		1168	389.3		

Investment Amount	Category		Amount	
Year 2000	Length,Shape,Teperature-Calibration	C,D	321	107.0
	Safety Testing, Parts Testing	F,G		
2001	Reliability Testing	E	425	141.7
	Home Eletronics Products Testing	H		
	AV Products Testing	I		
2002	Direct Current Low Frequency Calibration	A	379	126.3
	Information Communication OA Testing	J		
	AV Products Testing	I		
2003	High Frequency Calibration	B	483	161
	AV Products Testing	I		

List of New Equipment and Machinery

Calibration Laboratory	Direct Current Low Frequency	A
	High Frequency	B
	Length,Shape	C
	Temperature	D

Testing Laboratory	Reliability Testing	E
	Safety Testing	F
	Parts Testing	G
	Home Electronics Products Testing	H
	AV Products Testing	I
	Information Comunication OA Testing	J

		MillionYen Amount	Existing Equipment in TISI	No.
Category A (Direct Current and Low Frequency) Calibration	Standard Voltage Generator			
	Standard Voltage Potentiometer			
	Calibrator			
	Alternating Current Measurement Standard			
	Aternating and Direct Current Comparator			
	Potentiometer			
	Direct Current Nanovolt Calibrator			
	High Voltage Divider			
	Digital High Voltmeter			
	Alternating Current Digital High Voltmeter			
	Direct Current High Voltage Power Supply			
	Alternating Current High Voltage Power Supply			
	Electric Power Converter			
	Phase Shifter			
	Alternating Current Standard Voltage & Current Generator			
	Digital Power Meter			
	Digital Power Factor Meter			
	Calibrator			
	Precise Resistance Measurement Equipment			

	Standard Resistor		
	Standard Decade Divider		
	Digital High Resistance Meter		
	Standard Resistor		
	Standard Resistor		
	Standard Resistor		
	Standards Capacitor		
	Standards Capacitor		
	Standards Capacitor		
	Standards Capacitor		
	Standard Inductor		
	Decade Inductor		
	Precision Capacitance Measurements System		
	Precision LCR Meter		
	Q Meter		
	Q Standard		
	Standard Magnet		
	Weak Magnetic Field Standard		
	Gauss Meter		
	Cable Measurement Jig		
	Sub-Total	119	

Category B High Frequency Calibration	Attenuation Quantity Calibrating Apparatus	
	Standard Attenuator	
	Standard Attenuator	
	Variable Resistance Attenuator	
	VHF Attenuator	
	Calibration Receiver	
	Power Meter Calibrating System	
	Power Meter	
	RF Voltmeter	
	Video Noise Meter Calibrating System	
	Signal Generator	
	Signal Generator	
	TV Signal Generator	
	Distortion Meter	
	Standard Termination	
	Standard Miss-Match	
	Slotedline	
	VSWR Meter	
	Laser Power Standard	
	He-Ne-Laser	
	GPS Receiving Equipment	
	Rubidium Frequency Standard	
	Frequency Comparator	
	Microwave Counter	
	Electronic Counter	
	Modulation Analyzer	
	Spectral Network Analyzer	
	Side Band Analyzer	
	FM Calibrator	
	Quartz Timer	
	Wow Flutter Jitter Calibrator	
	CD Jitter Meter Calibrator	
	VTR Jitter Meter Calibrator	
	Cable, Measurement Jig	
	Sub-Total	76

Category C Length, Shape Calibration	Gage Block Automatic Checker
	Length Measuring Machine
	Electric Micro Meter
	Dial Gage Automatic Checker
	00 Class Gage Block
	Thin Gage Block
	0 Class Gage Block
	Caliper Checker
	Linear Height
	Precision Check Master
	Glass Scale 250 mm
	Glass Scale 50mm to 300 mm
	All-around Microscope
	Square
	Ostium Caliber Measure
	Magnification Calibrator
	Laser Micrometer
	Precision Plain Form Squares
	Precision Blade Form Squares
	Optical Flat
	Ring Gage
	Three Wires for Thread Measurement Gage
	Cylindrical Standard Master
	Roundness Glass Master
	Roundness Measuring Machine
	Roundness Magnification Standard Fragment
	Cylindrical Squares
	Cylindrical Master
	Cylindrical Test Bar 30X 150mm
	Cylindrical Test Bar 30X 300mm
	Mini Level 150 mm
	MDC Measurement System
	Precise Stone Surface Plate
	Surface Roughness Standard Fragment
	Sine Bar

	Plain-Shaped Spirit Level	
	4-right-angle master	
	Surface Roughness Measuring Instrument	
	Three Dimensional Measuring Instrument	
	Sub-Total	174
Category D Temperature Calibration	Fixed Point of Temperature,Silve,Tin and Zinc	
	Water Triple Point Equipment	
	Automatic Calibration Apparatus of thermocouple and Platinum Resistance	
	Hot Thermocouple Automatic Calibrating Apparatus	
	Standard Thermocouple	
	Standard Platinum Resistance Bulb	
	Liquid Layer Agitator	
	Digital Thermometer	
	Zero Con	
	Blackbody Furnace	
	Radiation Thermometer	
	Surface Termperature Calibrating Apparatus	
	Calibrating Apparatus of Temperature of Soldering Iron Tip	
	Sub-Total	71
Category E Reliability Testing (Testing)	Thermostat +40-500 C	
	High Low Termperature Thermostat -85 to + 180C	
	Fixed Temperature and Fixed Humidity Chamber -40 to +150 C	
	Pressure Cooker	
	Dewfall Cycle Testing Device Hot Side, Cold Side	
	Thermal-Shock Test Machine Gaseous System	
	Thermal-Shock Test Machine Liquid System	
	Vibration Test Machine	
	Shock Testor	
	Direct Current Stabilization Power Supply for hot load test and humid test	
	Decompression Testing Machine	
	Leakage Tester	
	Gas Corrosion Testing Machine	
	Saltwater Spray Testing Machine	
	Sub-Total	200

			Existing Equipment in TISI	No.
Category F Safety Testing	Burning Testing Device Vertical Burning Testing of 20 mm			
	Burning Testing Device V-0,V-1, V-2			
	Burning Testing Device Combustibility Testing Condenser			
	Burning Testing Device High Voltage Parts IC Burning Test			
	Life Test Equipment			
	Inner Flamer Tester			
	High-Voltage-Resistance Testing Machine		High Voltage Testing Device	1
	Serge Generator			
	Tester of Static Electricity Tolerance Degree			
	Pressure-Resistance Insulation Testing Device			
	Leakage Current Meter			
	Thermograph			
	Digital Wattmeter			
	Digital Volt Meter		Electronic Voltmeter	46
	High Frequency Wattmeter			
	Drop Test Equipment			
	Sub-Total	31		
Category G Parts Testing (Testing)	Wire Cable Test Equipment		Flexing Tester on Electrical Machinery Part	9
	Fuse Testing Device			
	Wiring Appliance Testing Machine		Glow-Wire Test Apparatus	41
	Small Transformer For Discharge			
	Ballast Set Tester For Discharge			
	Motor Testing Device			
	Sub-Total	45		
Category H Home Electronics Products Testing	Voltmeter		AC Voltmeter,Variable AC Source	3,8,13,14,26,27,28,42,52,53
	Ammeter		Termo-Couple Type Ammeter,AC Ammeter	44,50
	Wattmeter		Watt Meter,Digital Watt Meter	43,51
	Digital Power Meter			
	Multiple Wattmeter			
	Insulation Voltage Set Tester		Insulation Resistance Meter	11,12,15,16,17,49
	Leakage Current Meter			
	High Frequency Wattmeter		High Frequency Breakdown Tester	33

	Thermometer	
	Thermograph	
	Cleaner Suction Tester	
	Tester of Washer Cleaning Degree	
	Air-Conditioner Ability Lab	
	Thermograph	
	Sub-Total	75

Category I AV Products Testing Machine (Testing) = Difficult	**Television Receiver Characteristic Test Instrument JIS Testi**	20
	VTR Characteristic Test Instrument	20
	Radio Characteristic Test Instrument	5
	Magnetic Tape Recorder Characteristic Test Instrument	5
	CD Characteristic Test Instrument	10
	MD Characteristic Test Instrument	5
	DVD Characteristic Test Instrument	20
	Audience Room 32 m2 , Interior Construction	5
	Shield Room 32 m2, Upholstery Construction Set	10
	EMC Evaluation Room	80
	TEM Cell 1 GHz	5
	Life Test Room 32m2	7
	CRT Destruction Strength Testing Device	5
	Television Camera Set Tester	10
	Video Camera Set Tester	10
	Transmission Machine Set for TV, PAL NTSC SECAM	80
	AV cost of Construction, Electric Wave Anechoic Chamber of 1	400
	AV cost of Construction Shield Room	10
	Sub-Total	707

Category J Communication Information Product Testing	Telephone Characteristic Test Instrument	
	Cordless Telephone Characteristic Test Instrument	
	Transceiver Charateristic Test Instrument	
	Carrying Telephone Characteristic Test Instrument	
	Facsimile Characteristic Test Instrument Resolution	
	Copier Characteristic Test Instrument Resolution, Concentration	
	Sub-Total	110

Appendix-3: List of Office Equipment, Furniture & Fixture for EEI

No.	Items	Quantity	Price/Unit (Baht)	Amount (Baht)
1	Car for Exectutive Director	1	1,200,000	1,200,000
2	Office Car	3	900,000	2,700,000
3	Table and chair for Director of Institute	1	15,000	15,000
4	Table and Chair for Director of Division	6	12,000	72,000
5	Table and Chair for Officer	75	7,000	525,000
6	Table and Chair for Meeting Room	10	5,000	50,000
7	Cabinet for Documents	20	3,500	70,000
8	Copy Machine	1	90,000	90,000
9	Personal Computer	8	40,000	320,000
10	Printer	6	20,000	120,000
11	Table and Chair for Computer work	8	3,500	28,000
12	Projector which use for computer	1	250,000	250,000
13	Facsimile Machine	2	34,000	68,000
14	Telephone Machine	20	1,500	30,000
15	Mobile Phone	4	30,000	120,000
16	Air Condition for Office	15	35,000	525,000
17	Air Condition for Testing/Calibration Labo.	20	35,000	700,000
18	Electrical Typewriter	1	34,000	34,000
19	Telephone Box, Line Box, and Equipment	-	260,000	260,000
20	Place Decoration Fee	400/m^2	5,000	2,000,000
	TOTAL			9,177,000

Project No. S3: SIC - Tool and Mold Technology Development Project

This is not an entirely new project, as it has already been discussed by JICA with the BSID as a possible project qualifying for technical cooperation. Inclusion of this project will significantly contribute to the BSID effort at promoting supporting industry. Particularly noteworthy is the horizontal assistance it will give to the work of the new strategic Institutes for the automotive and electric/electronic parts industries.

1. Rationale

1.1 Background of the Project

The JICA report, "Study on Industrial sector development – Supporting Industry – in the Kingdom of Thailand," (March 1995) recommended organizational reforms in order for the DIP to better promote SMEs. Reforms were made in 1996, including creation of the BSID. The Metalworking and Machinery Industry Development Institute (MIDI) was then placed under the management of the BSID. This Institute had been founded in 1985 with grant aid cooperation from Japan.

The JICA study team at that time suggested in its report that MIDI be made into a full-fledged entity for providing technical support to support industry by inclusion in it of functions related to plastics processing. In conjunction with that, the New Energy and Industrial Technology Development Organization (NEDO), of Japan, provided plastic injection machinery and related technical services to BSID in 1997. Subsequently, in July 1999 JICA signed a memorandum of agreement with DIP for the supply of technical cooperation for transfer of technology elated to tools and molds. By these steps, BSID acquired the wide span of technical capability needed basic production technology in the metalworking, machinery, and plastics forming industries.

1.2 Rationale

Thailand faces the need to make additional progress in import substitution, as the ratio of imported parts in both the automotive and electric/electronic industries is still high. This has acquired even greater urgency as a consequence of the shift to export markets by assemblers who have experienced a collapse or great drop in domestic demand for their finished products as one effect of the 1997 crisis. Requirements related to cost, quality, delivery and development are appreciably higher for export markets as compared to the domestic market. Moreover, for the Thai parts industry as a whole the need to improve development ability has been identified as an especially important need.

It is said that product quality is determined to the extent of 70% by the quality of the mold or die used to make it. Efforts at improving competitiveness are not always best when companies rely on imported mold and molds for precision parts, as is the case in developing countries in general. Weakness in the ability to make tools and molds is one basic constraint to improvement of competitiveness of developing country manufacturers. It is necessary to realize accelerated improvement of the ability to design parts and to design the molds and molds needed to make them, so that productivity can be enhanced and reject rates can be reduced. Without possession of tool and die technology, we cannot expect much development of the R&D related technology in a given country.

This project therefore seeks to improve the technical capabilities of BSID staff and to supply them with the plastic mold technology that they need in order to assist manufacturers. It is anticipated that subsequently it will be possible to produce domestically tools and molds of superior quality, enabling more effective production of parts on the basis of improved competitiveness.

2. Overall Goal and Project Purpose

2.1 Overall Goal

The Thai plastic toll and mold industries are to be made internationally competitive so as to provide assembly industries in Thailand with high quality tools and molds.

2.2 Purpose

Technical capability of BSID is to be upgraded to enable it to offer quality services for the Thai plastic tool and mold industries.

3. Target Group of the Project

The target group of the SIC project is initially the Thai counterparts of BSID and is then to be expanded to the plastic tool and mold industries in Thailand.

4. Output of the Project

(1) An operation system of the SIC project is prepared.
(2) The machinery and equipment of the SIC project are installed as originally planned.
(3) The counterpart personnel are trained to provide technical guidance to Thai plastic tool and mold industry.
(4) Technical training and seminars.
(5) Trail services information supply and advisory services to the target industries.
(6) Samples of tools and molds are produced.

5. Activities

(1) Allocate necessary personnel.
(2) Formulate plans of activities.
(3) Plan budget and execute properly.
(4) Establish and operate management system.
(5) Make and implement facility refurbishment plan,
Provide and install necessary machinery and equipment,
Operate and maintain the machinery and equipment properly,
Prepare Technical Cooperation Program,
Implement technology transfer,
Monitor and evaluate the result of technology transfer to the C/P
(6) Plan, implement and monitor technical training and seminars.

(7) Plan, trail technical information and advisory services; collect and compile technical information and materials, implement trial technical information and advisory services; monitor same.
(8) Plan, implement and monitor a trial prototyping service.

6. Project Description

6.1 Site of the Project

A building named the Supporting Industries Center ("SIC") is now under construction next to the existing BSID building. The building of SIC will be completed by the end of January 2000, as a core facility for the activities of BSID's supporting industries promotion. General Administration Section, Subcontracting Promotion Division, Plastic and Electronic Components Industries Division and Packaging Division of BSID are supposed to move to the new SIC building. The site for the Project should be the existing Workshop A; the address is Soi Treemtri, Rama IV Rd., Klongtoey, Bangkok 10110.

It is expected that at the SIC the Thai Automotive Institute and the Electric and Electronics Institute also will be operational in the very near future. The cost of erecting buildings for the Institutes will be borne by the Thai Government.

6.2 Supply of the Equipment

JICA is expected to provide the following items, at the cost of about ¥270 million. The equipment to be supplied by BSID also will come from Japan.

1)	CAD/CAM system network station	:	1 set
2)	Wire-cut EDM	:	1
3)	CNC vertical machinery center	:	1
4)	Electric discharge machine	:	1
5)	Small hole drilling machine	:	1
6)	Polishing equipment	:	1
7)	Profile grinder	:	1
8)	Large size injection machine	:	1
9)	Tools, tools and jigs, measuring equipment, accessories, etc.		

6.3 Expatriates and Counterparts

To implement the transfer of technology from the latter half of 1999 to the latter half of 2004 (five years) JICA will dispatch to BSID the following experts: chief advisor, coordinator, mold designer, mold processing expert, and mold assembling and trial shot expert, other experts in the specific fields of technology may be dispatched.

BSID counterpart personnel are to be as follows:

	1998		1999		2000 – 2005
	Preliminary	First Supplementary	Second Supplementary	Implementation Study	
Mold Design	5	(1) 6	(-3) 3	(0) 3	(0) 3
NC Programming	-	(0) -	(3) 3	(1) 4	(0) 4
Mold Processing	6	(1) 7	(-3) 4	(2) 6	(0) 6
Mold Assembling and Trial Shot	-	(0) -	(3) 3	(1) 4	(0) 4
Networking	-	(0) -	(1) 1	(0) 1	(0) 1
Additional C/P	- -	- -	(4) 4	(-4) -	(0) -
Total	(0) 11	(2) 13	(5) 18	(0) 18	(0) 18

Notes:
1. The chart above only covers the technical counterparts.
2. The numbers in brackets show the increment and decrement of the counterparts as requested by the Team.

6.4 Fields of Technology Transfer

Mold Design
NC Programming
Mold Processing
Mold Assembling and Trial Shot
Networking

6.5 Methodology of Technology Transfer

Considering the routine work of the counterparts as well as effectiveness of the technology transfer, in addition to daily on-the-job training, that a certain time for the technology transfer should be secured at least two or three times a week. In case of the dispatch of short-term experts, the time allocation of the counterparts to the project would be made in a flexible manner to make the best use of the dispatched experts.

The detailed schedules are to be finalized by six months from the commencement of the project, by consultation between those concerned.

The provisional allocation of time for the technology transfer is that 30% of the time is for lectures using the case study method, while the rest is for hands-on training with the factory visits every week at the initial stage of the project.

The counterparts would be divided into groups in accordance with the progress of the technology transfer. Every person will be somehow responsible and specialized at least one target product.

6.6 Budget for the Project

SIC Construction – Thai Government (Unit: Million Bahts)

1997	:	9.6
1998	:	34.0
1999	:	54.9
2000	:	35.0
Total		133.5

Note: Budget of procurement of machinery and equipment is unknown.

JICA Cooperation – Grant (Unit: Million Yen)

Machinery and equipment	:	270
Expatriates and expenses	:	480
Total		750

7. Weakness and Strength of the Project

7.1 Weakness

(1) The transfer of technology may not be as successful as planned if the counterparts assigned by MIDI leave MIDI during or after the project.

(2) It is not certain at this time whether the plastic formers and mold-making companies have a high level of interest in the services BSID proposes to provide.

7.2 Strength

(1) The SIC has within its organization two institutes, for automotive and electric/electronic parts suppliers, making it easier for SIC to function as a linkage between industries.

(2) By means of this project the BSID will acquire essentially all the technical service capability needed for the metalworking and plastics forming SIs. In fact as well as name these supporting industries will function as a one-stop service center.

8. Expected Benefit of the Project

Thailand's supporting industries face a threat to their survival unless they acquire international competitiveness. Overcoming problems related to tools and mold technology will be a significant help in promoting the industry's further development.

9. Success Indicators of the Project

(1) The level of satisfaction of present and former service beneficiaries, and level of satisfaction of industries – Verifiable by questionnaire to and interview with related industries.

(2) Number of newly improved services and the target group – Verifiable by BSID records.

ANNEX IV Companies and Institutions Visited by JICA Team

List of companies visited

1. Government Agencies, Financial Institutions, Training Centers, and Other Organizations

Name	Address	Tel/Fax	Persons Contacted
TAI	4th Fl., Narai Bldg. 75/6, Rama VI Road, Ratchathewi, Bangkok	Tel: 202-3269~70 Fax: 202-3269	Mr. Alongkot Chutinan, Executive Director
EEI	6th Floor, Department of Industrial Building 57 Thanon Phrasumen, Pharanakon, BKK 10200	Tel: 512-0270, 662-280-7272 Fax: 513-0305, 662-280-7277	Mr. Pakdee Ratanawichien, Executive Director
Thai-German Institute, TGI	700/1 Moo 1, Bangpakong Industrial Park II, KM. 57, Bangna-Trad Rd., Tambol Klong Tamru, Amphur Muang, Chonburi 20000	Tel: (038) 215-033~45 Fax: (038) 743-467	Narong Rattana, Thai Director Vachara Nakvachara, Marketing & Sales Director
Thai Industrial Standards Institute, TISI	Rama 6 St., Ratchathewee, Bangkok 10400	Tel: (6638) 891919 Fax: (6638) 891955	Pairoj Sanyadechakul, Deputy Secretary General
Thailand Productivity Institute, FTPI	19-20th Floor, Exim Building, 1193 Phahonyothin Rd., Bangkok 10400	Tel: (02) 272-4033 Fax: (02) 271-3007	Prasit Tansuvan, Executive Director
International Inspection Co., Ltd.	87/109 Modern Town Building, 12 Floor, Tower B Sukhumvit 63 Rd., Klongtoey, Bangkok 10110, Thailand	Tel: 381-7745~7 Fax: 381-7748	Pittaya Piriyametha, Director
Technology Promotion Institute			Vichien Benjavatanapon, Director-General
Testing Centre (Bangpoo), Thai Industrial Standards Institute			Virat Aja-apisit, Testing Centre Director
Management System Certification Institute	5th Floor, TISI Bldg. , Rama VI Road, Ratchathewi	Tel: 247-9912 Fax: 247-9348	Charnnawin Sookjamsai, Executive Director
IFCT	1770 New Pethburi Road, Bangkok 10320	Tel: 253-7111 Fax: 253-7019	Patara Vasantasingh Suvit Vithayasai Wanida Tananate
Krung Thai Bank	15th Floor, Two Pacific Place	Tel: 653-2333 Extension 260	Sutthichai Krairit, Group Head
The World Bank	14th Fl.Tower A Diethelm Towers 93/1 Wireless Road, Bangkok 10330	Tel: 256-7792 Fax: 256-7794	Michael Markels, Senior Advisor, Financial Sector
The Thai Bankers' Association	4th Floor, Lake Rajada Office Complex Bldg 2 CDF House 195/5-7	Tel: 264-0883-87 Fax: 264-08888	Twatchai Yongkittikul, Secretary General
Asian Development Bank, Thailand Office	Fiscal Policy Office,4th Floor Ministry of Finance, Rama VI Road Bangkok	Tel: 278-4150 Fax: 278-4151	Craig Steffensen, Resident Advisor

List of companies visited

1. Government Agencies, Financial Institutions, Training Centers, and Other Organizations

Name	Address	Tel/Fax	Persons Contacted
The Industrial Bank of Japan,Ltd. Bangkok Branch	15th Floor, Thai Obayashi Bldg. Rajdamr 161 Rajdamri Road. Lumpini, Pathumwan Bangkok	Tel: 255-5991 Fax: 651-8156	Takeo Asahara, Senior Manager
The Sakura Bank, Ltd. Bangkok Branch	Boon-MITR Bldg. No.138 Silom Road Bangkok,	Tel: 234-3841 Fax: 236-8920	Mr.Hitosi Yoshimatsu, General Representative General Manager
Ministry of Labor and Social welfare	Din Daeng MITR-MAITRI Road, Bangkok 10400	Tel/Fax: 247-6602	Mr. Somchart Dheva-Varodom, Deputy Director General of Department of Skill Development Ms. Areeya Rojvithee, Director of Technical Studies and Planning Mr. Tadamasa IKENOYA, JICA Expert, Human Resources Development, DSD
Ayuttaya Technical Training Centre	HI-TECH Industrial Estate, Aisa Road., Moo 5 Banwa, Bangpa-in, Pranakornsri Ayutthaya 13160	Tel: 66-35-350-137 Fax: 66-35-350-136	Mr. Yongyut Trimek B.Ed. (Ed. Admin), Director, ATTC
BISD (Bureau of Industrial Sector Development)	Soi Timitr, Rama IV Rd., Klongtoey	Tel: 367-8020 Fax: 381-0757	S. Intarachote, Director S. Boonyodom, Director of General Inds, Div. S. Aranyabhaga, Director of Ceramic Dev. Centre T. Kaewmanee Director of Furniture Industry Div. V. Srilert, Director of Agro Industry Div. N. Sawangnimiitkul, Textile Industry Div.
BSDI (Bureau of Supporting Industries Development)	Soi Timitr, Rama IV Rd., Klongtoey	Tel: 381-1813 Fax: 381-1056	Nuntapit Nakasarn, Director Pasu Loharjun, Director of Plastics & Ele. Inds. Div. Paiboon Chaenngsanoh, Plastics & Ele. Inds. Div. Pongsak Vongrasametong, Plastics ' Ele. Inds. Div.
BOI (Office of the Board of Investment)	555 Viphavadee Rangsit Rd., Chatuchak	Tel: 537-8111 Fax: 537-8124	Polapat Surabote, Industrial Technical Officer, BUILD Kota Nagai, Adviser
OIE (Office of Industrial Economies)	Rama VI Rd., Ratchathewi	Tel: 202-4250 Fax: 246-8015	Cherdpong Siriwit, Director General Suchada Varaphorn, Director Nat Chulkarattana, Director of Industrial Info Centre Sunisa Tamthai, Industrial Technical Officer Ittichai Yossri, Industrial Technical Officer
Japanese Chamber of Commerce	15th Floor, Amarin Tower 500 Ploehchit Road Bangkok, 10330	Tel: 256-9170 Fax: 256-9621	Hirokazu Nitta, Secretary General

List of companies visited

1. Government Agencies, Financial Institutions, Training Centers, and Other Organizations

Name	Address	Tel/Fax	Persons Contacted
OECF	2nd Fl., Thai Farmers Bank Bldg., No. 400/22 PHAHOLYOTHIN Avenue, Bangkok 10400	Tel: 270-1001～3 ext; 203 Fax: 271-3535	Mr. Kazuo KOJIMA, Representative, The Overseas Economic Cooperation Fund of Japan

List of companies visited

2. Enterprises, Factories and Industrial Associations

<Electrical / Electronics>

Name	Address	Tel/Fax	Products	Persons Contacted
Sharp Thebnakorn Co., Ltd.	58 M.3 T.Sampatuan A.Nakornchisri Nakornpathom 73120 Thailand	Tel: (034)389200-2 Fax: (034)389203	CTV	Motoyoi Kaise
VRK Spectrum Co. Chatchawan Electronics Co., Ltd.	198/2-3 Issarapab Rd. Watkallaya Thonburi Bangkok 10600	Tel: 4661594-7 Fax: (662)4721228	Transformer De gaussing coil Power supply	Wiroj Uransathian
Pibul Printing Co., Ltd.	Plant93 Soi Watsuannsom,Poochao. Rd., Samutprakarn 10130	Tel: 3941204, 3319839-9 Fax: 662-3315721	Package printing	Suwal Jungpaibul
Chavin Metal Products Co., Ltd.	22/1 M.5 Taparak Rd. Bangplee Yai Bangplee,Samuthprakarn 10540	Tel: 3855975-9 Fax: 3855182	Steel Water pump Rice cooking	Anucha Saengcharoenwana-kul
Meridian Technologies Co., Ltd.	805 Sukumvit 49/14,Khet Wattana Bangkok 10110	Tel: 662-7126007-9 Fax: 662-3916261	High V. panel Low V. panel MCC panel	Yodsak Unhavaithaya
Kulthorn Kirby Public Co., Ltd.	44/1 Moo7 Chalongkrung Rd. Khwaeng Lamplatew,Khet Latkrabang,Bangkok 10520	Tel: 662-3260529-32 Fax: 662-3260837	Compressor	Thavipong Kittichungchit
Muramoto Electron Public Co., Ltd.	1 M.6 Bangna-Trat Rd. K.M.25 T.bangsaow-thong,A.Bangsaowthong,Samutprakarn 10540	Tel: 3381535 Fax: 3381539	VCR classis, CRT parts FDD parts, CD parts	Kohei Muramoto
Ekarat Engineering Public Co., Ltd.	190/1 M.6 T.Thasa-An,A.Bangpakong Chachoengsao 24130	Tel: 038-531818 Fax: 038-531505	Transformer	Aphichat sonsai
Thai Samsung Electronics Co., Ltd.	313 M.1 Sukhaphiban 8 Rd. Sriracha industry park,T.Bung,A.Sriracha Cholburi 20230	Tel: 038-480065-69, 481441-42 Fax: 038-480271, 481443	CTV, Refrigerator Air condition Washing machine	Somchai Masrungsun
Thai CRT Co., Ltd.	87/9 M.2 Sukhlapibarn 7 Rd.,Tungsukhla Sriracha Chonburi 20230	Tel: 038-490220-5 Ext.600 Fax: 038-490240	CRT	Polshom Chan-urai
Distar Electric Corporation Public Co., Ltd.	140 M.4 Huay Prab-Pluak Daeng Rd. Mhabyangporn,Pluak Daeng,Rayong21140	Tel: 038-891100-9 Fax: 038-891113	CTV, VDO classette Player, Audio	Pornchai Boonyakitjinda
Daewoo Consumer Electronic Co., Ltd.	140/1 M.4 T.Marbyangporn,A.Pluakdang Rayong 21140	Tel: 038-891811-15 Fax: 038-891822	Refrigerator	Lek Nagern
Toranado (Thailand) Co., Ltd.	85/7M.6 T.Samnaktorn A.Banchang Rayong 21130	Tel: 038-963523-5, 963607-10 Fax: 038-963526	Faxmodem	Nobharat Trakarnpruks;

List of companies visited

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
Federal Electric Corp., Ltd.	64/1 M.4Kingkaew Rd. Rajatheva,Bangplee Samutprakarn 10540	Tel: 3124190-5, 3124800-2 Fax: 3124185	Airon, Jar, Pot Refrigerator	Wiwat Phanomphithoon
Korat Denki Ltd.	149 M.10 T.Chokchai A.Chokchai Nakhonratchasima 30190	Tel: 044-491362, 491277 Fax: 044-491151	CTV, Sub assembly complete set Electronic product	Somporn Krutsri
Y. Shiina (Thailand) Co., Ltd.	151 M.3 Suranaree Industrial Zone, Ratchasima-Chokchi Rd. T.Nhongbuasala A.Muang,Nakhonratchasima 30000	Tel: 044-212226-8, 212136 Fax: 044-212137	Plastic electronic parts	Shin-ichi Yamauchi
Triangle Cables (Thailand) Co., Ltd.	82/1 M.5 Khoksung Rd.,Khamtalesor Nakhonratchasima 30280	Tel: 044-333374-6 Fax: 044-3333274	Welding cable	Manu Boonya-utthayan
MOCAM	138 Moo16,Bangpa-in Industry Estate Phase 2 Tambol Bangkrasan, Amphur Bangpa-in Ayutava 13160	Tel: 035-221567 Fax: 035-221743	FDD motor actulstor	Takeshi Iida
MBT (Matsushita Battery Thailand)	166 Moo4 Sukhunvit Road T. Teparak Sumutprakarn 10270	Tel: 384-1156-8 Fax: 384-2136	Dry battery Car battery	Yoshikazu Yokoe
Alpine Technology Manufacturing	210 Moo 13 Suwansorn Roard, Tambol Dong-Khee-lek Amphur Muang Prachinburi	Tel: 037-403330-4 Fax: 037-403335	PCB for FAX printer, Car audio, CD changer	Terutaka Suzuki
Thepharak Transformer Co.,	947/66 Moo 12, Bangna Complex, 12 A Flr,. Bagna-Trad Roard Km 3 Bangna, Prakanong,	Tel: 361-8474	Transformer	Dech-anan Suvarnasara
Mobile Audio Co. Hifi Hitech Co.	142/ 7 Soi Ladphrad 81, Ladphrao Rd,. Wangthonglang, Bangkapi 10310	Tel: 662-931781 Fax: 662-9330493	Mobile audio Hi-fi amp	Charoen
KSS Electronics	89 Moo4,Tambol Banklamg, Amphur Muang, Lamphun 51000,Thailand	Tel: 053-581201 Fax: 053-581206	Crystal	Suzuki
Tokyo Try	64NorthernRegion Industrial Estate Asian Highway (Chanmgmai-Lamphum)	Tel: 053-581055 Fax: 053-581059	View finder	Kanji Muroyama, MD
Panasonic (Matsushita Electric AVC)	101 Moo2 Teparak Road,T,Bangsaothong Ging A. Bangsathong Sumutprakarn 10540	Tel: 708-1111 Fax: 338-1057	Television & audio set	Ikeuchi Kozo
Thai Toshiba Electric Industry	Dusit Thani Bldg Room 806 181/1 Moo 2 tivanon Road Tambol Tasai	Tel: 5883010 Fax: 5890160	Display devices, Home appliance	Hideo Konnno Ishibashi Itaru
Universal Electric Company	19 Sukhunvit Road Soi,103 BKK, 10260	Tel: 398-0120 Fax: 398-34708	TV, Audio, Home appliance	Suradej Boonvawatana
TPA	201 Soipuakchit Vibhavadee Rangsit Road Ladvao Chatujak Bangkok 10900	Tel: 512-0270 Fax: 513-0305		Ms. Niramol, Chairman
FTI	67 moo11,Bbanna-trad Road Km 20 Bangplee Samutprakan 10540 ngplee	Tel: 337-2900 Fax: 337-2439		Mr. Praphat, Vice Chairman
Artisan Co., Ltd	92/1-4 M002, Sukhunvit Roard, Taiban, Samutprakarn	Tel: 389-1190-1 Fax: 3891189	Rilay, Coil	Mr. Niphanth
T. P. Victory Co., Ltd.	404 Moo. 6 Soi Sukkapiban 20, Taiban Raord Samutprakarn 10270	Tel: 389-1391-5 Fax: 224-9160	Injection	Mr. Viboon

List of companies visited

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
Saha Charoen Metal Plastic Production Co., SCM	111/1 Moo12 Kingkaew Roard , Bangpleeyai Bangplee, Samutprakarn 10540	Tel: 337-3595-8 Fax: 337-3599	Injection	Mr. Phongsak
TIT Electronics Co., Ltd	231 Moo 13 Petchkasem Roard, Omnoi, Krathumban, Samutsakhon 74130	Tel: 881-0001-3 Fax: 881-0001-4	Winding, Coil	Saiphin Suthumruk

<Automotive>

General Motors (Thailand)	111/1 Moo4, Eastern Seaboard Industrial Estate,	Tel: (6638) 954999 Fax: (6638) 955009	Opel automobile	Henry J. Gnacke, VP Material Management Gianluca Romano, Mgr. Customs & Int.
MMC Sittipol Co., Ltd.	199 Moo 3, Laemchabang Industrial Estate, A. Sriracha, Cholburi 20230	Tel: (6638) 491950 Fax (6638) 490300	Mitsubishi automobile	Boonchuay Choakdeewanitdhumrong, Senior Vice President Asanee Kulakowit, Senior General Manager
DENSO (Thailand) Co., Ltd. Bangpakong Plant	700/87, Moo 1, Amata Nakorn Industrial Estate, A. Panthong, Cholburi 20160	Tel: (6638) 214649 Fax: (6638) 214658	Automotive electrical parts	Kazuo Hironaka, President Hatsuo Nagata, Plant Manager Thavorn Chalassthien, Plant Mgr.
Toyota Motor Thailand Co., Ltd.	186/1 Moo1 Old Railway Rd. Samrongtai, Samutprakarn 10130	Tel: (662) 386-1000 Fax: (662) 384-0932	Toyota automobiles	Yoshinori Muramatsu, President Ninnart Chaithirapinyo, Senior Vice
Thai Honda Manufacturing Co., Ltd.	410 Lardkrabang Industrial Estate, Lardkrabang, Bangkok 10620	Tel: (662) 326-0641 Fax: (662) 326-0640	Honda motorcycles	Keiichi Yamada, President Adisak Rohitasune, Director Asian Honda Motor Co., Ltd.
Thai Yazaki/Thai Arrow Products Co., Ltd.	Two Pacific Place Building, 142 Sukhumvit Rd., Klongtoey, Bangkok 10110	Tel: (662) 653-2550 Fax: (662) 653-2615	Electrical wire harness for automobile and motorcycle	Yuji Kinumura, President, Thai Arrow Products Co., Ltd. Chikanori Saito, Supreme Councillor, Thai Yazaki Corp., Ltd.
Siam Cement Public Co., Ltd.	1 Siam Cement Rd., Bangsue, Bangkok 10800	Tel: (662) 586-4300 Fax: (662) 587-0749	Share holder of several automotive parts manufacturers	Pramon Sutivong, Senior Vice President
Thai Bridgestone Co., Ltd.	Abdulrahim Place, 990 Rama IV Rd., Silom, Bangkok 10500	Tel: (662) 636-1505 Fax: (662) 636-1544	Tires for automobile	Ichiro Fukumori、President
Thai Stanley Electric Public Co., Ltd.	29/3 Moo 1, Sangpoon-Rangsit Rd., Sanklang, Pathumthanee 12000	Tel: (662) 581-5462 Fax: (662) 581-5397	Electrical parts for automobile and motorcycle	Masaru Wakita、Executive Vice President
Tri Petch Isuzu Sales Co., Ltd.	1088, Vibhawadee Rangsit Rd., Ladyao, Chatuchak, Bangkok 10900	Tel: (662) 966-2111 Fax: (662) 966-2049	Isuzu automobile	Goro Shintani, President Koichi Murai, Senior Vice President

List of companies visited

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
Thai Engineering Products Co., Ltd.	1 Siam Cement Rd., Bangsue, Bangkok 10800	Tel: (662) 586-4235 Fax: (662) 586-2990	Aluminum casting parts for automobile and	Preecha Huttaporn, Managing Director
Ampas Industries Co., Ltd.	355, Moo4, Bangpoo Industrial Estate, Samutprakarn 10280	Tel: (662) 324-0950 Fax: (662) 324-0949	Rear mirrors for automobile and motorcycle. Combination lamps	Surasak Niruntasukrat、Vice President
NHK Spring (Thailand) Co., Ltd.	72 Moo 1, Klongtoey-Chorakeinoi Rd., T. Samrongtai, Samutprakarn 10130	Tel: (662) 384-0030 Fax: (662) 384-1422	Springs for automobile Interior parts for automobile	Yoshinori Omori, President
Auto Alliance (Thailand) Co., Ltd.	49 Moo 4, Pluakdaeng, Eastern Seaboard Industrial Estate, Rayong 21140	Tel: (6638) 891919 Fax: (6638) 891955	Mazda and Ford automobile	Toshihide Saeki, President
Thai Koito Co., Ltd.	370 Moo17, Bangplee Industrial Estate, Bangsaothong, Samutprakarn 10540	Tel : (662) 315-5350 Fax: (662) 315-3281	Electrical parts for automobile and motorcycle	Teruhisa Machida, President
Siam Yamaha Co., Ltd.	64 Moo1, Bangsaotong, Samutprakarn 10540	Tel : (662) 312-8409 Fax : (662) 312-8416	Yamaha motorcycle	Yukihiko Abe, executive Vice President, Production Samphan Aranyanart, Vice President Production & Product Planning
Izumi Piston Manufacturing Co., Ltd.	9/1-2, Moo4, Bangchan Industrial Estate, Serithai Rd., Kannayao, Bangkok 10230	Tel : (662) 517-0035 Fax : (662) 517-0372	Pistons for automobile combustion engine	Tsutomu Nakanishi、Managing Director
DENSO (Thailand) Co., Ltd. Head Office, Samrong Plant	369 Moo3, Theparak Rd., Am Muang, Samutprakarn 10270	Tel: (662) 384-2871 Fax: (662) 384-0884	Electrical parts for automobile and motorcycle	Isao Masaoka, Deputy Managing Director Atsushi Shinoda, Director
Thai Radiator Mfg. Co., Ltd.	1091/244-245, New Petchburi Rd., Bangkok 10400	Tel: (662) 253-1546 Fax: (662) 321-0052	Radiator for automobile	Prakitti Siripraiwan, President

<Consumer Goods>

Somtana International Co., Ltd.	521/93-97 Moo2, Bangpoon Road, Tambon Prachatipat, Amphor Tanyaburi Pathumtani, 12130 Thailand	Tel: (662) 5164726 9581373, 9581372 Fax: (662) 5161751	Shoes, Bag, Sandal	Somchint Wongpanich, Director
Thai Leather Goods Association	184/72 16th Fl.. Forum Tower, Ratchadapisek Road, Huaykwang, Bangkok	Tel: 645-3505~7 Fax: 645-3509	Leather goods ass.	Sunanta Wuthisakul, President

List of companies visited

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
B. I. R. Leather Manufacturing Co., Ltd.	328, 330, 332, 334 Soi Chokechaijong-jumroen, Rama 3rd., Bangpongpang, Yannawa, Bangkok 10120 Thailand	Tel: 683-0841~5 Fax: 294-0239	Jewelry box, Bag, Writing instruments, Pierre Cardin license goods, Anadi license	Suphat Chumroonsilp, Executive Director Suphat Busayapong, Publisher
Classic Inter Leather Products Co, Ltd.	Praram 3 Road, Yannawa, Bangkok 10120 Thailand	Tel: 294-0303 Fax: 294-4848	Wallet, Folder, Portfolio, Document bag	Sayan Ho (何清極), Managing Director Somchit Ho
B. I. R. Leather Manufacturing Co., Ltd. (subsidiary)	117 Moo 1 Malaiman Road, Tumboledistrict Amphur Meung, Supanburi 72000	Tel: 035-545517	Jewelry box, Bag	Prasit Othapornchai, Industrial Promotion Center 8
Donprom Footwear Co. Ltd.	51 Mu4 Donpromtaladkhet Rd., Nongbo Amphor Songpeenong Suphanburi 72190	Tel: 035-589408 01-2135087 Fax: 035-589408	Lady shoes	Natchanok Karoon-ngampun, Factory Manager
Dong Muang Pork	KM26 Sapanmai Dongmuang Bangkok 10900	Tel: 523-8374, 531-1043	Pork (Shredded and satted bound fightly with banaleaves)	Pao
Siam Agritech Foods Co., Ltd.	53-55 Ditsamak Road, Thepsirin Bangkok 10100 Thailand	Tel: (621)694659 01-4944594 Fax: 6216960 2255214	Dehydrated foods	Chaiporn Saungswang, Marketing Manager
Imperial General Foods Industry Co., Ltd.	3059, 3059/1-3 Sukhumvit Road Prakanong Bangkok 10260	Tel: 332-8040-9 331-6968-70 331-6910 Fax: 331-6891 331-6911	Cookie	Tong Dhiranusornkit (陳根忠), Deputy Manager Director Damrong Vipawatanakul, Director Vichai Vipawatanakul (陳根泉), Managing Director
Sweet Tamarind	1824 Ladprao Soi 71 Ladprao Road, Bangkok 10310 Thailand	Tel: (662)-932 4754 539-8741 Mobile: (661)9178385	Tamarine candy and Tamarine products	Natkamol Rattanaphol
Technifood Ltd.	18 Onnuj 35 Onnuj Road, Suan Luang Bangkok 10250	Tel: 322-3203~5 Fax: 321-9866 Factory: 315-2339~40	Spices, Breader, Seasoning	Min Kamsaeng, General Manager
Bangkok Paisan Industies Co., Ltd.	339/2 Moo 5, Soi Suksawad 74, Suksawad Rd., Prapradaeng, Samulprakarn	Tel: 463-0156-7 / 463-7436	Knitting dyeing and Garment factory	Sutee Tappong, Plant Manager

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
ST Textile Co., Ltd.	17 moo 14 Bang Mek koa, Tumbon Taiban Samutprakarn	Tel/Fax: 7038114, 3892377 / 3870883	Weaving factory	Ms. Warge Pongsarojanavit
Rama Textile Industry	386 moo 2 Sukhumvit Rd., Bangpoo Mai, Samutprakarn	Tel/Fax: 323-9067 / 3239631	Dyeing & printing weaving	Yingchit Sikarinkul, Executive Director
Polymed Apparel Co., Ltd.	162 Soi 81 Ladprao Rd., Wangthonglang, Bangkok	Tel/Fax: 538-4576, 539-0580, 539-8503 / 538-0463	Garment factory	Chananya Haputpong
Meesilp Ceramic Fac.	418 M.8 Sobtui Pongsanthong Lampang	Tel: 054-226418 Fax: 054-226418	Vase, Flower pot, Gardening ware	Adhipoom Kamthornvorapin
P.N.Cearmic Fac.	324 M.6 Phahonyothin Rd. Chompoo Lampang	Tel: 054-221598	Coffee set, Teapot, Tableware	Narong Techawichit
K.K.Ceramic Co., Ltd.	254 Phahonyothin Rd., Chompoo Lampang	Tel: 054-221580	Gifeware, Coffee set, Decorative items	Chatcai Kittirojana, Somporn Production Manager
Indra Ceramic Co., Ltd.	382 Lampang-Denchai Rd, Km.1, Muang, Lampang 52000	Tel: 054-221189 Fax: 054-221227	Coffee set, Teapot, Tableware	Athapol Napaivan, Administrative Director
Sang Arun Ceramic Co., Ltd.	28 Nakuam Nue Road, T. Chomphu, A. Mang. Lampang 52100	Tel: 054-222815 Fax: 054-224815	Giftware, Tableware, Decorative items	Mr. Kiti Korpanitchkul, Administrative Director
Inter Confort Co., Ltd.	Acme Group., 12/399 Moo 15 bangna-Trad Rd., Km.5 Bangkaew Bangplee Samutprakarn 10540	Tel: 361-6706, 3991192 Fax: 361-6705, 399119	Wooden furniture for dining room and bedroom	Pongsak Iarmsirikulmur
Thai Bamboo and Wood Products Co., Ltd.	46 Moo 14 Bangchan Industrial Estate, Serithai Rd., (sukhapiban 2) Minburi,	Tel: 517-0064~7 Fax: 517-1463	Wooden furniture for children	Theerapol Pianurulyidja
WDI (Thailand) Co., Ltd.	1506/1 Soi Senanikom 2, Paholyothin Rd. Lardyao, Chatuchak Bangkok 10900	Tel: 561-0888~90 Fax: 561-1331	Wooden furniture	J. Hayashi
Bright Design International Co., Ltd.	49/24 Soi Banlangsuan, Langsuan Rd., Lumpinee, Phatunwan, Bangkok 10330	Tel: 252-6960 Fax: 652-0191	Wooden furniture for bedroom and office	Mr. Thanapakom Puengboon, Manaing Director
Flexiplan Design Co., Ltd.	141/4 Moo 14 sukhapibal2 onnuch Rd., Prawet, Bangkok 10250 (Saensuk Estate)	Tel: 329-1336~9 Fax: 726-4255	Wooden furniture for business office	Bovornsakdi Krisaduphong
Argentine Company Limited	23 moo 9, Soi Pinnakorn 1, Baromrachachonnanee Rd., Talingchan, Bangkok	Tel: 433-8478 Fax: 433-6913	Jewelry	Mr. Boonchai Jitngamplang, Production Manager

List of companies visited

2. Enterprises, Factories and Industrial Associations

Name	Address	Tel/Fax	Products	Persons Contacted
Pranda Jewelry Public Co., Ltd.	333 Soi Rungsaeng Bangnatrad Km 2.3 Rd. Prakanong Bangkok 10200	Tel: 361-3331, 393-8779 Fax: 398-2143	Jewelry & Custom jewelry	Pramote, Ticasuwan
Beauty Gem Factory Co., Ltd.	99 Soi Poonsapstair Ramkamhaeno 24 Rd. Bangkapi Bangkok	Tel: 679-3226~7 Fax: 287-1140	Jewelry	Pichait, Palanugool
Creative Gems & Jewelry Co., Ltd.	126/1 krungthonburi Rd. Thonburi Sie, Bang Lampoo Lang, Klongsam, Bangkok 10600	Tel: 439-4621 Fax: 437-8814	Jewelry	Voravut Juijenrob
Victor Jewel Co., Ltd.	84 Akharn Songkhron, Soi 5 Sathorn Road, Thungmahamek, Sathorn, Bangkok	Tel: 676-3316 Fax: 286-1857	Jewelry	Mr. Suthud Ungchaitum, President
Olan-Kemed Co., Ltd.	176/1 Ladprao Rd., Laoyao, Jatujak, Bangkok, 10900	Tel: 511-0137 Fax: 511-0952	Pharmacy	Mr. Somkit Charnchalco, General Manager
Quality Lab Co., Ltd.	17/4 Soi Krungtepkritar B 5 Srinakarin Rd., Pravate, Bangkok 10250	Tel: 368-2050 Fax: 368-1352	Cosmetics	Ms. Tasaneebul Hoontrakool, Managing Director
Thai Ambica Chemicals Co., Ltd.	8th Floor, Diwanchand Bldg., 219/2 Rajawongse Road, Bangkok 10100	Tel: 622-7367 Fax: 622-7372	Dyestuffs	Mr. Pravat Suphavadeprasit, President