

ภาคผนวก ก

อักษรย่อของบริษัทต่าง ๆ

วัสดุอุปกรณ์ต่าง ๆ ที่อยู่ในแต่ละMetering



อักษรย่อของบริษัทต่าง ๆ



ATC	= Aromatics (Thailand) Public Company Limited
BHP	= BlueScope Steel (Thailand) Limited
TPT	= Tuntex (Thailand) Public Co., Ltd.
SCSC	= The Siam Construction Steel Co., Ltd.
SYS	= The Siam Yamoto Steel Co., Ltd.
SSMC	= Siam Styrene Monomer Co., Ltd.
TPP	= Thai Polypropylene (1994) Co., Ltd.
PTT CHEM	= PTT Chemical Public Company Limited (PTT Chem)
TSIC	= ไทยชินกิง อินดัสตรี คอร์ปอเรชั่น จำกัด
ROC	= Rayong Olefins Co., Ltd.
MTT	= Map Ta Phut Tank Terminal Co., Ltd.,
TMMA	= Thai MMA Co., Ltd.
SMPC	= Siam Mitsui PTA Co., Ltd.
TPRC	= Thai Pet Resin Co., Ltd.
TOWA	= MC-TOWA International Sweeteners Co., Ltd.
ARC	= Abroad Recruitment Co., Ltd.
SUS	= Siam Styrene Monomer Co., Ltd.
Thas co	= Thasco Chemical Co., Ltd.
TPCC	= Thai Polycarbonate Co., Ltd.
PT	= PEROXY-THAI CO., LTD.
VNT	= VinyThai Public Co., Ltd.

วัสดุอุปกรณ์ต่าง ๆ ที่อยู่ใน Metering แต่ละ Metering มีดังนี้



Equipment	Sub-Equipn	Sub-Sub-Eq	Sub-Sub-Sub-Equipment	DIAMETER (IN.)	EQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	SET/MODE	Remarks
ARC H2 Pipeline Customer Station Safety Device		Relief valve								
			Pressure safety valve							
		Manul valve				FVS520				
		V-401								
		V-402								
		V-403								
		V-405								
		V-406								
		V-407								
		V-408								
		V-409								
		V-411								
		V-412								
		V-413								
		V-414								
		V-415								
		V-416								
		V-428								
		V-431								
		D-417								
		D-418								
		D-419								
		D-420								
		D-422								
		D-423								
		D-430								
		Check valve				N-406				
		Pressure control valve				FCV520				
INSTRUMENTATION										
Billing meter										
Indicator			Flow computer (Invoice)			FQI-	RS403445	OMNI		
			Pressure gauge		Pressure inlet indicator from TIG	PI583 (0-50 barg)				
			Pressure gauge		Pressure outlet indicator to customer	PI584				
			Pressure difference gauge		Pressure diff across filter	PDI579				
Transmitter										
			Pressure transmitter			PT598	RS0977291	Rosemount	3051CD2A02A1A1IS5Q4	
			Diff pressure transmitter			FT-520	RS09B5018	Rosemount	3051CD2AO2A1AIIS5Q4	
			Temp transmitter			TT543	978934	Rosemount	3144PD1A11TQ4	
			Temp element			TE-543				
Switch										
			Pressure switch			PS-599		ASHCROFT		
Pipe line										
			PGH-402-31070X							
			PGH-403-31070X							
ELECTRICAL CONTROLS AND PROTECTIVE DEVICES										
			Ups		Back up power supply 220 VAC					
FILTERS										
			Body							
			Filter element							

Equipment	Sub-Equipri	Sub-Sub-E	Sub-Sub-Equipment	DIAMETER	EQ DESCRIPTION	TAG NO	SERIAL #	Manufacturer	ASSET/Model #	Remarks
BHP H2 Pipeline Customer Station										
Safety Device										
			Relief valve							
			Manul valve							
			V-201							
			V-202							
			V-203							
			V-204							
			V-205							
			V-206							
			V-210							
			V-211							
			V-212							
			V-214							
			V-215							
			D-201							
			D-202							
			D-203							
			D-204							
			D-205							
			Check valve							
			Pressure control valve			N-201				
			Pressure safety valve			PCV-201(200 Kpa)				
						PSV-201				
INSTRUMENTATION										
			Billing meter							
			Flow computer(Invoice)			FQI-6504-2A		OMNI	3000-2A-1D-1S	
			Indicator							
			Pressure gauge		Pressure inlet indicator from TIG	PI-201(0-6000 Kpa)				
			Pressure gauge		Pressure outlet indicator to customer	PI-202(0-400 Kpa)				
			Difference Pressure indicator		Pressure inlet indicator from TIG	DPI-201				
			Transmitter							
			Pressure transmitter			PT-6504-1	F576FD394715	YOGOGAWA	EJA430	
			Pressure transmitter			PT-6504-2	F576FD394715	YOGOGAWA	EJA430	
			Diff pressure transmitter			FT-6504-1	RS0675594	Rosemount	3051CD1A22A1AB415Q4	
			Temp transmitter			TT-6504-1		ADALET		
			Temp element			TE-6504-1				
			Pneumatic Control Valve			PIC-201				
			Solenoid valve			PYV-201				
			Positioner			PY-201				
			Pipe line							
			PGH-200-3M31-1"							
			PGH-201-3C21-1"							
			PGH-202-1M31-2"							
ELECTRICAL CONTROLS AND PROTECTIVE DEVICES										
			Ups		Back up power supply 220 VAC					
FILTERS										
			Air filter							

Equipment	Sub-Equipn	Sub-Sub-Eq	Sub-Sub-Equipment	Diameter (In.)	EQ Description	Tag No	Serial #	Manufacturer	Asset/Model #	Remarks
BHP N2 Pipeline Customer Station										
	Safety Device									
		Relief valve								
		Manul valve								
			V-101							
			V-102							
			V-103							
			V-104							
			V-105							
			V-106							
			V-107							
			V-108							
			V-109							
			V-110							
			V-111							
			V-112							
			V-113							
			V-113-1							
			V-113-2							
			V-113-3							
			V-113-6							
			V-113-7							
			V-113-8							
			V-113-9							
			V-113-10							
			V-113-11							
			V-113-12							
			V-113-13							
			V-113-14							
			V-113-15							
			V-113-16							
			V-113-17							
			V-113-18							
			V-113-19							
			V-113-20							
			V-113-21							
			V-113-22							
			V-113-23							
			V-113-24							
			V-113-25							
			V-114							
			V-115							
			V-116							
			V-117							
			V-118							
			V-119							
			V-120							
			D-101							
			D-102							
			D-103							
			D-104							
			D-105							
			D-106							
			D-107							

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Equipment	Sub-Equip	Sub-Sub-Eq	Sub-Sub-Equipment	DIAM/ EQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	ASSET/Model #	Remarks
ROC MAIN O2 Pipeline Customer Station									
	Safety Device								
	Relief valve								
	Manul valve								
	V01			6					
	V02			6					
	V03			6					
	V04			6					
	V05			6					
	V06			6					
	V07			6					
	V08			6					
	V09			3/4					
	V10			3/4					
	V11			3/4					
	V12			3/4					
	V13			3/4					
	V14			1/2					
	V15			1/2					
	V16			1/2					
	V17			1/2					
	V18			1/2					
	V19			1/2					
	V20			1/2					
	Check valve			6	N01				
	Pressure control valve			3	PCV01				
	Pressure control valve			3	PCV02				
	Pressure control valve				PCV03				
	Pressure safety valve				PSV01				
INSTRUMENTATION									
	Billing meter								
	Flow computer				FQI-5316-2A	31888	OMNI	3000-1D-25-2A	
	Gas turbine				FT-5316-1	63296	1997 INSTROMET	G-650 TYPE SM-RI-X-L	
	Indicator								
	Pressure gauge				PI01 (0-25 barg)				
	Pressure gauge				PI02 (0-25 barg)				
	Pressure gauge				PI03 (0-50 barg)				
	Pressure gauge				PI04 (0-25 barg)				
	Difference Pressure indicator				DPI01 (0-700 mbarg)				
	Transmitter								
	Pressure Transmitter				PT-5316-1	ZZYO/228	ENDRESS	PMC371-G11S1E21N1	
	Temp Transmitter				TT-5316-1			TST280-AYY33EA60	
	Temp Element				TE-5316-1				
	Pneumatic Control Valve				PIC-01				
	Pipe line								
	PGN-100-1C1-2"								
	PGN-100-1C1-2"								
ELECTRICAL CONTROLS AND PROTECTIVE DEVICES									
	Ups								
	Back up power supply 220 VAC								
FILTERS									
	Body								
	Filter element								

Equipment	Sub-Equipment	Sub-Sub-Eq	Sub-Sub-Sub-Equipment	Sub-Sub-Sub-EQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	SET/Model	Remarks
PT 02 Pipeline Customer Station									
Safety Device	Relief valve								
	Manul valve								
		V001							
		V002							
		V003							
		V004							
		V005							
		V006							
		V008							
		V009							
		V010							
		V011							
		V012							
		V013							
		V014							
		V015							
		V016							
		V017							
		V018							
		V019							
		V020							
		D001							
		D002							
		D003							
		D005							
	Check valve				N001				
	Pressure control valve(REGULATOR)				PCV001				
	Pressure control valve(REGULATOR)				PCV002				
	Pressure safety valve				PSV001				
INSTRUMENTATION									
Billing meter					FQI-5004-2A	31596	OMNI	3000-2A-1D-1S	
Indicator									
	Pressure gauge			Pressure outlet indicator to customer	PI1(0-40 barg)				
	Pressure gauge			Pressure outlet indicator to customer	PI1(0-10 barg)				
	Pressure difference gauge			Pressure diff across filter	PDI				
Transmitter									
	Pressure transmitter				PT-5004-1	RS0314656	ROSEMOUN	1551-GP7S2AB111P2Q4	
	Diff pressure transmitter				FT-5004-1	RS0314655	ROSEMOUN	1551GP5S2AB111P2Q4	
	Temp transmitter				TT-5004-1	660293	ROSEMOUN	3144D1E5B4Q4	
Pipe line									
	PGO-001-3C21-2"								
	PGO-002*1C21-2"								
	PGO-003-1C21-2"								

Equipment	Sub-Equip	Sub-Sub-Eq	Sub-Sub-Equipment	DIAME	EQ DESCRIPTION	TAG NO	SERIAL #	Manufacturer	ASSET/Model #	Remarks
ROC6907 N2 Pipeline Customer Station										
	Safety Device									
		Relief valve								
		Manul valve								
		V1(Inlet metering)								
		V2(In. filter1)								
		V3(Out filter1)								
		V4(In. filter2)								
		V5(Out filter2)								
		V6(Out Gas turbine(GT1))								
		V7(Out GT2)								
		V8(In. GT3)								
		V9(Out GT3)								
		V10								
		V11(Out metering)								
		Pressure control valve				FV-6907				
		Pressure safety valve				PSV01				
	INSTRUMENTATION									
		Billing meter								
		Flow computer (Invoice)				FQI-5312-2A				
		Gas turbine				FT-5312A-01	62780	OMNI	3000-2A-1D-1S	
						FT-5312A-02		INSTROMET	SM-RI-G400-150-18.8-X-L	
		Gas turbine				FT-5312B-01	62781	INSTROMET	SM-RI-G400-150-18.8-X-L	
						FT-5312B-02				
		Gas turbine				FT-5312C-01	62782	INSTROMET	SM-RI-G400-150-18.8-X-L	
						FT-5312C-02				
		Indicator								
		Pressure gauge			Pressure inlet indicator from TIG	PI01 (0-25 barg)				
		Pressure gauge			Pressure outlet indicator to customer	PI02 (0-25 barg)				
		Pressure gauge			Pressure inlet indicator from TIG	PI03 (0-50 barg)				
		Pressure gauge			Pressure inlet indicator from TIG	PI04 (0-25 barg)				
		Difference Pressure indicator			Pressure inlet indicator from TIG	DPI01 (0-700 mbarg)				
		Transmitter								
		Pressure Transmitter				PT-5312-1A	503491	ROSEMOUNT	3051PG5A02A1AH2B11104M5	
		Pressure Transmitter				PT-5312-1B	503492	ROSEMOUNT	3051PG5A02A1AH2B11104M5	
		Pressure Transmitter				PT-5312-1C	503493	ROSEMOUNT	3051PG5A02A1AH2B11104M5	
		Temp Transmitter				TT-5315-1A		ROSEMOUNT		
		Temp Transmitter				TT-5315-1B		ROSEMOUNT		
		Temp Transmitter				TT-5315-1C		ROSEMOUNT		
		Temp Element				TE-6907A				
		Temp Element				TE-6907B				
		Temp Element				TE-6907C				
	ELECTRICAL CONTROLS AND PROTECTIVE DEVICES									
		Ups			Back up power supply 220 VAC					
	FILTERS									
		Body								
		Filter element								

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Equipment	Sub-Equipment	Sub-Sub-Equipment	DIAMETER (In.)	EQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	ASSET/Model #	Remarks
SUS H2 Pipeline Customer Station									
	Safety Device								
	Relief valve								
	Manul valve								
		V-001B							
		V-002B							
		V-003B							
		V-004B							
		V-005B							
		V-006B							
		V-007B							
		V-008B							
		V-009B							
		V-010B							
		V-011B							
		V-012B							
		V-013B							
		V-014B							
		V-015B							
		V-016B							
		V-017B							
		V-018B							
		V-019B							
		V-020B							
		V-021B							
		V-022B							
		D-001B							
		D-002B							
		D-003B							
		Check valve			N001B				
		Pressure control valve			PCV1B				
		Pressure safety valve			PSV1B				
	INSTRUMENTATION								
	Billing meter								
	Flow computer (Invoicing)				FQI-6505-2A		OMNI	3000-2A-1D-1S	
	Flow computer (Checking)				FQI-6505-2B		OMNI	3000-2A-1D-1S	
	Indicator								
	Pressure gauge			Pressure inlet indicator from TIG	PI1B (0-60 barg)				
	Pressure gauge			Pressure outlet indicator to customer	PI2B (0-6 barg)				
	Transmitter								
	Pressure transmitter				PT-6505-1		Endress&Hauser	PM731-061S7M21N1	
	Pressure transmitter				PT-6505-2		Endress&Hauser	PM731-061S9M21N1	
	Diff pressure transmitter				FT-6505-1		Rosemount	3051CD1A22A1AB415Q4	
	Diff pressure transmitter				FT-6505-2		Rosemount	3051CD1A22A1AB415Q4	
	Temp element				TE-6505-1				
	Temp element				TE-6505-2				
	Pipe line								
		PGH-001-3C21-3"							
		PGH-002-3C21-1"							
		PGH-003-1C21-1"							
		PGH-004-1C21-1"							
		PGH-005-1C21-1"							

Equipment	Sub-Equip	Sub-Sub-E	Sub-Sub-Sub-Equipment	DIAMETER (In.)	EQ DESCRIPTION	TAG NO	SERIAL #	Manufacturer	ASSET/Model #	Remarks
SUS N2 Pipeline Customer Station										
Safety Device	Relief valve									
	Manul valve									
			V001A	6						
			V002A	6						
			V003A	6						
			V004A	6						
			V005A	6						
			V006A	6						
			V007A	6						
			V008A	6						
			V009A	2						
			V010A	2						
			V011A	4						
			V012A	4						
			V013A	1/2						
			V014A	1/2						
			V015A	1/2						
			V016A	1/2						
			V017A	1/2						
			V018A	1/2						
			V019A	1/2						
			V020A	1/2						
			V021A	1/2						
			V022A	1/2						
			V023A	1/2						
			V024A	2						
			V025A	1						
			D001A	1/2						
			D002A	1/2						
			D003A	1/2						
			Check valve			N001A				
			Pressure control valve			PCV1A				
			Pressure control valve			PCV2A				
			Pressure safety valve			PSV1A				
INSTRUMENTATION										
	Billing meter									
			Flow computer (Invoicing)			FQI-5310-2A		OMNI	3000-2A-1D-1S	
			Flow computer (Checking)			FQI-5310-2B		OMNI	3000-2A-1D-1S	
Indicator			Pressure gauge		Pressure inlet indicator from TIG	PI1A (0-30 barg)				
			Pressure gauge		Pressure outlet indicator to customer	PI2A (0-6 barg)				
Transmitter			Pressure transmitter			PT-5310-1	06Y0202	ENDRESS	PM731-061S9M21N1	
			Pressure transmitter			PT-5310-2	06Y0201	ENDRESS	PM731-061S9M21N1	
			Diff pressure transmitter			FT-5310-1	06Y0203	ENDRESS	PMID230-CB2D9EM1A	
			Diff pressure transmitter			FT-5310-2	600074	ENDRESS	PMID230-CB2D9EM1E	
			Temp element			TT-5310-1	600076	ROSEMOUNT		
			Temp element			TT-5310-2		ROSEMOUNT		

Equipment	Sub-Equipn	Sub-Sub-Eq	Sub-Sub-Sub-Equipment	DIAMETER (in.)	EQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	ASSET/Model #	Remarks
TMMMA N2 Pipeline Customer Station										
	Safety Device									
	Relief valve									
	Manul valve									
	V1			2						
	V2			2						
	V3			2						
	V4			2						
	V5			1						
	V6			1						
	V7			1						
	V8			1						
	V9			2						
	V10			2						
	V11			1 1/2						
	V12			2						
	V13			1/2						
	V14			1/2						
	V15			3/4						
	V16			1/2						
	V17			1/2						
	D1									
	D2									
	D3			1/2						
	D4			1/2						
	D5			1/2						
	D6			1/2						
	D7			1/2						
	D8			1/2						
	D9			1/2						
	D10			1/2						
	D11									
	D12									
	D13									
	D14									
	D15									
	D16									
	D17			1/2						
	D18			1/2						
	D19			3/4						
	D20			1/2						
	D21			1/2						
	Check valve			1 1/2						
	Pressure control valve					PCV- 8665				
	Pressure control valve					PCV- 8666				
	Pressure control valve					PCV-8692-1				
	Pressure control valve					PCV- 8692-2				
	Pressure safety valve					PSV- 8691				
	Shutoff valve					CV-8692-1				
	Shutoff valve					CV-8692-2				
INSTRUMENTATION										
Billing meter										
	Flow computer					FQI-5314-2A	64016	OMNI	6000-2A1D-1S	
	Gas turbine					FT-5314-1	313068	INSTROMET	IRM-A G16	

		Gas turbine			FI-5314-2	313069	INSTROMET	IRM-A G40	
	Indicator								
		Pressure gauge			PI- 8662				
		Pressure gauge			PI- 8663				
		Difference Pressure indicator			DPI- 8664				
	Transmitter								
		Pressure Transmitter			PT-5314-1	RS0493959	ROSEMOUNT	3051CG4A02A1AM511S5Q4	
		Pressure Transmitter			PT-5314-2	RS0493958	ROSEMOUNT	3051CG4A02A1AM511S5Q4	
		Temp Transmitter			TT-5314-1	01254687	ROSEMOUNT	3144PD1A111Q4	
		Temp Transmitter			TT-5314-2	493961	ROSEMOUNT	3144D111B4M5Q4	
		Temp Element			TE-5314-1	0644456	ROSEMOUNT	68R21N00A020T32	
		Temp Element			TE-5314-2	0644497	ROSEMOUNT	68R21N00A020T32	
		Pneumatic Control Valve							
	Pipe line								
		PGN-100-1C1-2"							
		PGN-100-1C1-2"							
	ELECTRICAL CONTROLS AND PROTECTIVE DEVICES								
		Ups			Back up power supply 220 VAC				
	FILTERS								
		Body							
		Filter element							



Equipment	Sub-Equipment	Sub-Sub-Eq	Sub-Sub-Sub-Equipment	DIAMETER (In EQ DESCRIPTION	TAG NO	SERIAL #	Manufacturer	ASSET/Model #	Remarks
TPPP N2 Pipeline Customer Station									
	Safety Device								
	Relief valve								
	Manul valve								
	V01								
	V02								
	V03								
	V04								
	V05								
	V06								
	V07								
	Check valve								
	INSTRUMENTATION								
	Billing meter								
	Flow computer				FQI-5301-2A	3874372	DANIEL	2500	
	Transmitter								
	Pressure transmitter				PT-5301-1	1265883	ROSEMOUNT	3051CG4A52A1AB4E5	
	Diff pressure transmitter				FT-5301-1	126234	ROSEMOUNT	3051CD2A52A1AB4E5	
	Diff pressure transmitter				FT-5301-2	RS0630311	ROSEMOUNT	3051CD2A22A1AB4E5P2 12/99	
	Temp transmitter				TT-5301-1	184529	ROSEMOUNT	3044CA1B4	
	Temp element				TE-5301-1	8502865	ROSEMOUNT	68N1100A040T20	
	Pneumatic control valve								
	ELECTRICAL CONTROLS AND PROTECTIVE DEVICES								
	Ups				Back up power supply 220 VAC				

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Equipment	Sub-Equipri	Sub-Sub-Eq	Sub-Sub-Sub-Equipment	DIAMEQ DESCRIPTION	TAG NO	SERIAL#	Manufacturer	ASSET/Model #	Remarks
TPT O2 Pipeline Customer Station									
Safety Device									
		Relief valve							
		Manul valve							
		V-101-1							
		V-101-2							
		V-101-3							
		V-101-4							
		V-101-5							
		V-101-6							
		V-101-7							
		V-101-8							
		V-101-9							
		V-101-10							
		V-101-11							
		V-101-12							
		V-101-13							
		V-101-14							
		V-101-15							
		V-101-16							
		V-101-17							
		V-101-18							
		D-101-1							
		D-101-2							
		D-101-3							
		D-101-4							
		D-101-5							
		Check valve			N-101-1				
		Pressure control valve			PCV-101-1				
		Pressure safety valve			PSV-101-1				
INSTRUMENTATION									
		Billing meter							
		Flow computer			FQY-5003-AB	31562	OMNI	3000-2A-ID-1S	
		Indicator							
		Pressure gauge		Pressure inlet indicator from TIG	PI-101-1 (0-100 barg)				
		Pressure gauge		Pressure outlet indicator to customer	PI-101-2 (0-50 barg)				
		Transmitter							
		Pressure transmitter			PT-5003-1	RS0266031	ROSEMOUNT	3051G5A22A2AB4I5P2	
		Pressure transmitter			PT-5003-2	RS0266032 4R	ROSEMOUNT	3051G5A22A2AB4I5P2	
		Diff pressure transmitter			FT-5003-1	RS0266034	ROSEMOUNT	3051CD2A22A2AB	
		Diff pressure transmitter			FT-5003-2	RS0266033	ROSEMOUNT	3051CD2A22A2AB	
		Temp transmitter			TT-5003-1	560478	ROSEMOUNT	3144DIE5B4C4Q4	
		Temp transmitter			TT5003-2	169192	ROSEMOUNT	3044CA1B4I5	
		Temp element			TE-5003-1				
		Temp element			TE-5003-2				
		Pneumatic control valve			PIC-101-1	94290492	FOXBORO	43AP-F442CIPB-AA	
		Pipe line							
		PGO-1011-3M22-3"							
		PGO-1013-3M22-3"							
		PGO-1011-3M22-3"							
ELECTRICAL CONTROL AND PROTECTIVE DEVICES									

[illegible]

ภาคผนวก ข

ตัวอย่างตารางการ Check list



ESTIMATION COST FOR METERING STATION

PROJECT TITLE IMPROVEMENT O2 METERING STATION

LOCATION

PROJECT DATE 12-Nov-05

ITEM	COST CODE	DESCRIPTION	BUDJET	COST/SET
1		INSTRUMENT INSTALLATION AT ROOM		
		FLOW COMPUTER PANEL		
		CB 10A. Main supply		
		CB 6A. 24Vdc. supply		
		CB 6A. Earth leak For portable plug		
		Power supply 24Vdc.		
		Surge protection		
		power plug with earth		
		lighting panel		
		Teminal		
		wire instrument		
		Accessories		
		Install Totalizer counter		
		INSTRUMENT FIELD INSTALLATION		
		Diff.Pressure Transmitter		
		Copper tube 3/8"*0.035 in blass		
		Male connector 1"NPT*3/8" tube blass		
		Tee way 3/8"*3/8" blass		
		Ball valve fiting 3/8" for Inlet DP,PT		
		Flexible hose 1/2"		
		Cable grand		
		Cable tray for wire and copper tube		
		Instrument wire for new install both PT		
		Instrument air line		
		Copper tube 3/8"*0.035 in.blass		
		Male connector 1"NPT*3/8" tube blass		
		Union 3/8"*3/8" tube		
		DP filter		

2		ELECTRICAL INSTALLATION AND MATERIAL				
		Aircondition 13000 BTU				
		Installation				
		Lighting room				
		power plug for portable work				
		Lighting for metering station				
		Ventilating fan				
3		Civil work				
		Flow computer Room station				
		Roof				
		Floor room				
		Roof and stantion for DPT,PT				
		Fench				
		Foudation for N2 storage tank				
4		Piping protection				
		O2 pipeline				
		Spark gap				
		N2 pipeline				
5		Mechanical work				
		Stud bolt change				
		Pipework fabrication				
6		Other				
		Tag number				
		Key lock				
7		Man power				

Total cost

0

•

0

Prepare by K.Ekachai T.

Inspect by K.Therdsak B.

Approve by

K.Sutat T.

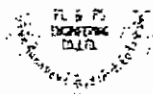
K.Amnaj J.

ภาคผนวก ค

ตัวอย่างราคาของวัสดุอุปกรณ์

ตัวอย่างราคาลำก่อสร้าง





PL & PS ENGINEERING CO. LTD

135/107 1100.2 TRANSLATIONS A - ANGLAIS - FRENCH

TEL: (038) 505422 FAX: (038) 505422

PRICE SCHEDULE

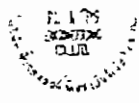
Project : การออกแบบและประยุกต์ AROMATIC

122v. : 2

Date : DEC 15, 2004

Report No. : 91

[illegible]



PL & PS ENGINEERING CO., LTD.

135.07 MOG 2 - BANJOPAK - A BANJOANG - HAYUNG.

REF ID: A6422

PRICE SCHEDULE

352

Report No. : 31

Page 2 DEC 14, 1961

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บริษัท วี เอ็น เอ็น ปีชนิซ จำกัด

VNN BUSINESS COMPANY LIMITED

VNN

122 หมู่ 7 ซ.โพธิ์ชัย 4 (เลข 15) ต.กลางพริก (ส3)

แขวงกลางพริก เขตกลางพริก กรุงเทพฯ 10230

โทร : 02-9314256 โทรสาร : 02-7444592

สาขาซอย 297/192 ถนนสุขุมวิท ตำบลนาบพูน

จังหวัดเชียงใหม่

โทร : 038 609304 โทรสาร : 038 609305

QUOTATION

To : ITIG

Fax : 038683221

Attn : MR. AKACHAI

Subj. : CONSTRUCTION STEEL

Date : MAR., 12, 2004

Ref.No : VN.002/2004

CC :

Thank you very much for your inquiry , please see our proposal as your requisition below.

Item	Description	Qty	Price(Baht)	
			Unit	Total
1	งานบรรจุ 102 เมตร 17 เมตร ทาสีรอบซี่เหล็ก	1	21,000.00	31,000.00
2	งานทาสี 30 เซนติเมตร / 137.30 เมตร ทาสีรอบซี่เหล็ก	1	129,260.00	100,000.00
3	งานทาสีกันดกและบันได 107.3 เมตร ทาสี JOTON Polyurethane สีเนยสี	1	101,000.00	98,000.00
4	งานบันได 1.83 / 2.6 เมตร พร้อมทาสีเนยสีและสีน้ำตาล	1	14,150.00	13,000.00
5	งานหล่อค้ำเหล็ก 2 เมตร support Hydraulic test พร้อมทาสี	1	28,614.00	28,100.00
6	งานทำปัลลadium	1	41,000.00	47,000.00
Total Excluding of VAT Baht				317,100.00

Delivery Time : 60 Days after confirm PO.

Delivery to : At site

Validity : 15 days

Payment Term : 30 days

We hope our proposal shall meet your requirement and looking forward to hearing from you.

Best Regards,

นายบรรจ สุวรรณากาล

Happaruj Suwannakal

Sales Engineer * 01-9093978*

Eastern
Engineer
Enterprise

บริษัท อีสต์เอ็นจิเนียร์ เอนเตอร์ไพรส์ จำกัด
267/63 ถนนพหลโยธิน แขวงลาดยาว เขตจตุจักร กรุงเทพฯ 10110
โทร: 0-2660-8087 แฟกซ์: 0-2660-8088
เลขประจำตัวเสียภาษี: 207135383

Eastern Engineer Enterprise Co., Ltd.
267/63 Mahaphut District - Muang Bangkok 10110
Tel: 0-2660-8087 Fax: 0-2660-8088
Tax ID No: 300135383

Quotation

EE-ENG-QC-2004-33

To: Thai Industrial Gases Public Company Limited.
Attention: Khun Charadsak
CO
Reference:
Project: PIC-1000
Subject: Change New Cabinet Of Flow Comp

Date: December 13, 2004
Fax No.: 0-2668-3221
Tel. No.: 0-2668-3219
Mobile No.: 0-946-11754
Revision: 0

We are pleased to submit our quotation for Change New Cabinet Of Flow Comp. following details:

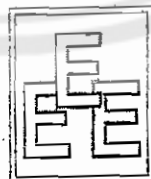
Item No.	Description	Work Volume		Material Cost		Labour Cost		Total Cost	Remark
		Qty	Unit	Unit Price	Amount	Unit Price	Amount		
1	Flow Comp Cabinet (4" x 30" x 18")	1	Set	24,000.00	24,000.00	4,000.00	4,000.00	28,000.00	
2	Wiring Working	1	Lot	2,000.00	2,000.00	5,000.00	5,000.00	7,000.00	
3	Terminal & Marking Terminal	1	Lot	2,500.00	2,500.00	1,200.00	1,200.00	3,700.00	
4	Installation Flow Comp	1	Lot			1,000.00	1,000.00	1,000.00	
5	Installation Recorder	1	Lot			1,000.00	1,000.00	1,000.00	
6	Support and Accessories	1	Lot	2,000.00	2,000.00	500.00	500.00	2,500.00	
7	Load Test & Commissioning	1	Lot			3,000.00	3,000.00	3,000.00	
8	Document & Drawing	1	Lot	3,500.00	3,500.00			3,500.00	
9	Mobility By Hlab	1	Lot	4,500.00	4,500.00			4,500.00	
10	Transportation	1	Lot	800.00	800.00			800.00	
11	Tools and Consumable	1	Lot	1,800.00	1,800.00			1,800.00	
12	Overhead & Profit	1	Lot					13,035.00	
Grand Total Exclude VAT								99,935.00	Baht.

Remarks

This price exclude Vat 7%.
Term of payment 30 days after invoice approval.

Person In charge
นาย วัฒนพงษ์

Mr. Thanong Wongphakdee
(Project Manager)



EASTERN ENGINEER
ENTERPRISE CO., LTD.

Best Regards
Eastern Engineer Enterprise Co., Ltd.

Mr. Pracha Wattanasomvong
(Managing Director)



บริษัท วิศวกรรมการอัดอากาศ จำกัด
Master Com Engineering Co., Ltd.



2010 09 08 บริษัท วิศวกรรมการอัดอากาศ จำกัด เลขที่ 1050 55/10 หมู่ 6, อำเภอบางบาล, จังหวัดพระนครศรีอยุธยา
Tel : 08-0-896-0030-6 Fax : 08-0-896-0636 Email : masecom@as.com.th

ใบเสนอราคา/QUOTATION

THAI INDUSTRIAL GASES PUBLIC CO., LTD.

8 SEPTEMBER 2008

KHUN AKEKACHAI

MCE 0509025

TEL/FAX : 0-3868-3219-20 / 0-3868-3221

Thank you for enquiry, we are pleased to quoted as follows:

Item	Description	Price	Qty.	Discount	Total Price
1	ORIGINAL SPARE PART FOR KAESER ENS-295				
1	OIL SEPARATOR CARTRIDGE (#6.3015.0)	57,000.00	1	25%	42,750.00
2	OIL FILTER CARTRIDGE (#6.1979.2)	15,000.00	1	"	11,250.00
3	OIL KAESER S-460 (#9.5409.00020) 200 L.	99,500.00	1	"	74,625.00
4	AIR FILTER CARTRIDGE (#6.1995.0)	20,000.00	1	"	15,000.00
5	DIAPHRAGM FOR VENT VALVE (#5.1007.0)	680.00	1	"	510.00
6	DIAPHRAGM FOR VENT VALVE (#4.6714.0)	1,800.00	1	"	1,350.00
7	SET OF V-BELT (#6.2561.0)	43,080.00	1	"	32,310.00
					177,795.00

NOTE:

Price : Price quoted 30 days validity, Exclude VAT 7%
Term of Payment : 30 Days
Term of Delivery : Approximate 7 days after received your P/O

Thank you for this opportunity to quote for your requirements and if we can be of any further assistance please do not hesitate to contact us.

Sincerely Yours

(Sunart Somwong)
Service Manager

QUOTATION

ATLAS COPCO SERVICE (THAILAND)

Quotation No.: 0001315846-0

Date.....: 04/10/05

Page.....: 1

Delivery Address

Customer

มมจ.ไทยอินดัสเตรียลแก๊ส

2/3 ม.14 ต.บางนา-ตราด ด.บางแก้ว อ.บางพลี

จ.สมุทรปราการ 10541

Customer No.

279277

Customer Reference

วางมือ&10ของเดือน

Salesman

120 - Kasein Morya

Dear Sirs,

We have pleasure in submitting our offer as follows :

Line	Stock Code	Description	Qty	Price	Dis%	Total
		ATLAS COPCO PART for ZR6				
010	1621054799	AIRFILTER(1030097999	3	6,565.00		19,695.00
QUOTATION TOTAL						19,695.00
QUOTATION DISC 15.00%						2,954.25-
NET AMOUNT						16,740.75
VAT 7.00%						1,171.85
GRAND TOTAL THB						17,912.60

Remark : delivery 30 days fax 038-682018

T01-3716281

We hope that our quotation will meet with your requirements and would be pleased to be favoured with your valuable order soon.

Yours faithfully,

ATLAS COPCO - SERVICE (THAILAND) LIMITED

KASEIN MORYA

Company Stamp & Signature

Hot Line 24 Hrs Please Call 01-8184236

TechnoHub

www.technohub.co.th
 e.mail:info@technohub.co.th

บริษัท เทคโนโลยีสยาม จำกัด
Technohub Co.,Ltd.

54/69 Moo5 Sukhumvit 103 Rd. (Hikunruak), Nongbon, Pravei.

Bangkok 10250 Thailand

Tel: 662-747-3642 Fax: 662-747-3741

QUOTATION

COMPANY : Thai Industrial Gases Public Co.,Ltd.

ADDRESS : 10 ถนนอุตสาหกรรมบางนาเขต คลอง-4

อ.เมือง จ.ระยอง 21150

TEL : 038-683219-20

FAX : 038-683221

ATTENTION : คุณเอกศักดิ์

QUOTATION NO. TH-22-037-05

DATE OF QUOTE. 2 Aug 05

PAGE NO. 1/1

Ref.

We are pleased to quote price for " BEKO " products for you consideration as follows:-

ITEM	CODE	DESCRIPTION	QTY	UNIT PRICE (BAHT)	TOTAL PRICE (BAHT)
1	XV KT08 AF 2	Filter Set for Owanmat 8	1	35,230.00	35,230.00
Total					35,230.00

ORIGIN : Germany

PRICING : Exclusive VAT 7%

PAYMENT : Credit 30 days.

DELIVERY : Within 7 day.

VALIDITY : 30 days after quotation date.

If the above quotation meets your requirements, please acknowledge your P/O and reply by return fax. Delivery time is from the receipt of your order, subject to the goods being unsold.

Yours sincerely



Mr. Adul Kongchanphet
 Sales Manager

Mobile Phone : 01-884-9081

