TSEC

Thai Sumiden Engineering and Construction Co., Ltd.

ISO 9001 SGS

UKAS QUALITY MANAGEMENT 005

General Information

Thai Sumiden Engineering and Construction Co., Ltd. (TSEC) is a joint venture among Engineering Development Co., Ltd. (EDC), a Thai construction company, a group of local partners and J-Power Systems Corporation (JPS) of Japan.

Starting its business 27 years ago in 1980, TSEC has successfully executed its work in the area of power transmission lines, substations and outside-plant telephone network. Due to its excellent workmanship, professionalism, unwavering commitment to fulfil contractual obligations and highly motivated workforce, TSEC has earned goodwill from its clients at home and overseas alike. With these efforts, TSEC has proven itself a reliable contractor of both government and private organizations in its relentless effort to fulfil public demand of electricity to cope with economic growth of the nation.

Historical Background

Chamnan Wichitchanya, a former goverment official, established EDC in 1972 and has carved a niche in the power utilities business. With an extensive experience in the field, his complete devotion helped the company achieve recognition in the area of high voltage transmission line construction from the clients, particularly the Elecricity Generating Authority of Thailand (EGAT), in a very short time.

Through the period of 1970's, EDC joined Sumitomo Electric Inductries (SEI) and other companies in the execution of power transmission projects for EGAT including Lam Dom Noi Tranmission line. The success of such cooperation between SEI and EDC led to the joint establishment of TSEC in 1980.

Significant Achievement

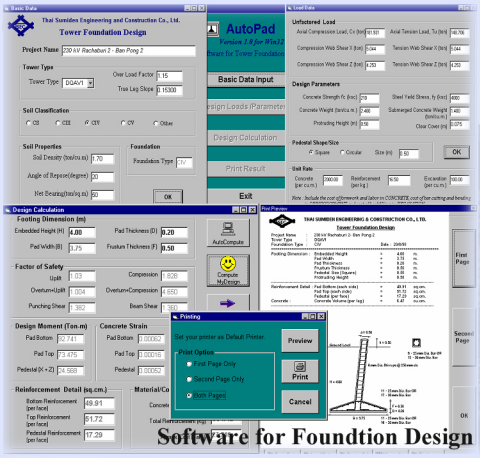
In the field of overhead power transmission lines in Thailand, TSEC has proudly made the record by being the first to acheive the following installations:

- 500-kV single-circuit line.
- 500-double-circuit line.
- The fiber optic overhead wire for a 500-kV line.
- Gapped-type conductors for a 230-kV line.
- An underground 230-kV cable in a serviceable tunnel.
- 500-kV double-circuit overhead transmission line in the neighbor country, Lao People's Democratic Republic.

Added to the above accomplishment, TSEC has acquired, in the last 27 years, higher volume of work than all other local companies combined. Tabulated below are the significant achievements of the company.

Work Description	500-kV	230-kV	115-kV	Total
OVERHEAD TRANSMISSION LINE				
Number of Projects	8	12	9	29
Foundation Work				
Pile Length (meters)	359,440	206,878	13,672	579,990
Concrete Volumes (cu.m.)	156,886	57,683	8,184	222,752
Tower Erection				
Number of Towers	3,997	2,758	1,409	8,164
Tower Weight (tons)	122,841	34,753	4,763	162,357
Conductor Stringing				
Line Length (km.)	1,703	1,034	471	3,208
Strung Conductor (km.)	3,997	2,758	1,409	8,164
OTHERS				
230-kV Underground Laying of Conductor		8		8
Substations				
115- and 230-k Expansion and newly built		2	10	12

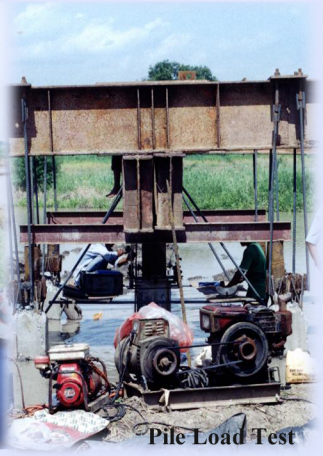
Foundation Design and Construction



Software for Foundtion Design


Check Survey


Subsoil Test


Pile Load Test


Concrete Delivery


Pile Driving


Piled Foundation

In-house computer software for foundation design is developed to facilitate the engineering work for accuracy and efficiency. Additionally, despite of rough terrain conditions, high grade materials are chosen together with ISO standard of workmanship to ensure that high quality products are delivered to clients.

Erection and Stringing


Tower Erection by Crane


Tower Erection by Ginpole


Tower Erection Near Live Line


Stringing Equipment


Stringing Across Live Lines


Conductor Replacement

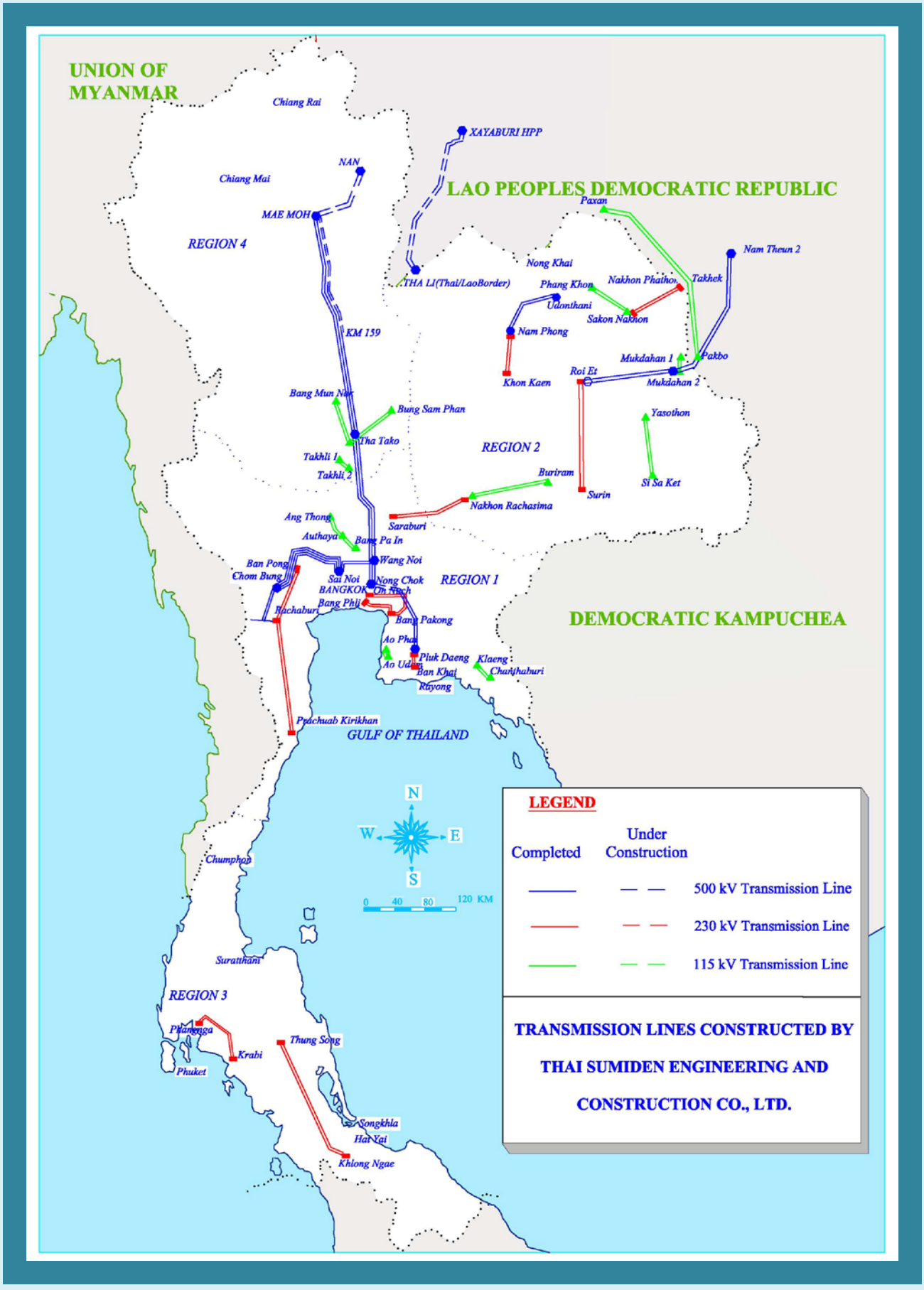
Due to this very special nature of work, various methods of steel tower erection are employed to achieve safety standards during construction. Furthermore, not only the stringing of large-size conductors for high voltage lines requires unconventional tools and equipment, also the company utilizes experienced groups of well-trained personnel to ensure timely completion.

LIST OF EXECUTED AND CURRENT TRANSMISSION LINE CONTRACTS

Project	Year	Line Length (km)	Tower Quantity	Tower Weight (ton)	Volume of concrete	Length of Pile	No. of Circuit	No. of Conductor per phase	Strung Conductor (km)
500 kV Transmission Line									
Xayaburi HPP - Thai Lao Border at Thali	2014-Present	200	427	21,000	27,700		2	4	4,800
HSA-L3-.1 Mae Moh 3 - Tha Tako	2012-2015	159	374	15,600	19,700		2	4	3,816
HSA-L2 Nan - Mae Moh	2012-2015	150	374	16,800	21,000		2	4	3,600
TS11-06-L1: Nam Phong2 - Udhon Thani 3	2009 -2012	85	207	8,800	20,000	5,500	2	4	2,040
IPPE-L2: Pluak Daeng - Nong Chowk	2008-2012	163	396	18,800	30,060	82,000	2	4	3,912
NTN2-L1: Roi Et - Mukdahan	2006-2009	160	400	17,600	30,800	3,720	2	4	3,840
NT2: Nam Theun 2 - Mekhong Crossing	2005-2009	140	294	9,950	21,000		2	4	3,360
RB-EHVL3: Chom Bung - Sai Noi - Wang Noi	1997- 2002	198	541	19,750	21,625	183,840	2	4	4,752
RB-EHVL2: Ratchaburi -Chom Bung-Sai Noi	1996 - 2001	127	332	12,900	14,700	40,730	2	4	3,048
MM-EHVL4: Tha Tako - Nong Chok	1992-1996	217	543	17,000	19,500	76,500	2	4	5,196
MM-EHVL3: Mae Moh - Tha Tako	1990-1992	328	774	26,000	23,000		2	4	7,862
MM-EHVL2: Tha Tako - Nong Chok	1988-1990	181	448	8,783	12,360	52,200	1	4	2,176
		26					2	4	629
MM-EHVL1: Mae Moh - Tha Tako	1984-1986	326	665	10,858	13,900	2,450	1	4	3,912
Sub Total		**2,460**	**5,775**	**203,841**	**275,345**	**446,940**			**52,943**
230 kV Transmission Line									
SPPC-L-04 Bankhai- Chanthaburi	2015 - Present	13.3	41	1,155	3,906		2	1	80
TS11-11-L1-L6: Krabi - Phang Nga 2	2009 - 2011	98	438	5,085	15,200	13,000	2	2	1,176
GBAS2-O1-L1: Bang Pakong - Bang Phli	2007- 2011	44	384	3,700	9,000	111,000	4	2	1,056
NTN2-L2: Roi Et 2 - Roi Et	2007-2009	20	51	1,300	3,400	8,372	2	4	480
LTK2-L1**: Lamtakong - Nakhon Rachasima	2004-2005	133	31	250	782		2	1	796
TS10-07-L1: Roi Et2 – Surin2	2004-2005	144	358	3,771	6,535		2	1	866
L0202-L1: Ban Preng Junction - Nong Chok	2003-2004	19	46	1,600	2,100	26,504	4	2	444
IPP-L3: Pluak Daeng -Ban Khai	2001-2002	37	98	2,500	7,000	1,800	2	4	876
IPP-EPEC-L1: Bang Bo – Khlong Mai	1999-2002	23	71	770	1,340	25,000	2	1	138
HVDC-L3: Thung Song - Khlong Ngae	1996-1999	210	527	8,750	13,500	24,360	2	2	2,520
THHL1: Nakhon Phanom - Sakon Nakhon	1996-1997	74	177	1,850	2,650	13,550	2	1	445
BPKTPL2: Bang Pakong - Onnut	1990-1993	53	281	3,400	8,650	56,500	2	2	636
NPCCL2: Nam Pong 2 – Khon Kaen	1990-1991	34	82	1,035	2,100	1,600	2	2	408
BPKCCL: Bang Pakong – Bang Phli	1989-1990	44	121	1,230	3,540	31,830	2	2	528
TL757 : Sara Buri 2 – Nakhon Rachasima	1988-1990	115	284	2,370	4,250	2,100	2	1	689
BPKL2: Bangpakong - Minburi	1983-1984	42	108	2,257	1,608	22,632	2	2	504
L2313/2314: Ban Pong - Prachuab Khiri Khan	1981-1983	239	605	5,220	4,410	1,002	2	1	1,436
Sub Total		**1,342**	**3,703**	**46,243**	**89,971**	**339,250**			**13,079**
115 kV Transmission Line									
SPRB-01-L1: Bang Pa-In - Ayutthaya 1	2010-2013	21	73	565	1,050	13,400	2	2	252
TS11-17-L7: Ang Thong 1 - Ayutthaya 1	2010-2013	27	102	465	880	672	1	1	80
IPP-GHO-L3: Klaeng - Chanthaburi	2010-2013	56	209	1,100	1,660	1,080	1	1	168
THPPE-L3: Phang Khon - Sakon Nakhon 1	2009-2012	52	153	580	1,100	2,860	2	1	313
Pakxan- Pakbo	2008-2011	285	790	5,800	7,000		2	1	1,710
NT2: Nam Theun 2 - Mahaxai	2005- 2009	30	85	457	1,050		2	1	180
TS921-L1: Chian Mai Mae Taeng	2003-04	43	138			1,148	2	1	255
L3901: Takhli1-Takhli2	1996-1997	10	33	165	250		2	1	60
TL-824/825: Tha Tako-Bung Sam Phan	1995-1997	115	387	1,450	2,280	7,450	2	1	690
EDL-L1: Mukdahan 1 - Mukdahan 2	1995-1996	12	38	150	200		2	1	70
APTL5: Nakhon Ratchasima 2 –Buri Ram	1990-1991	134	389	1,450	2,310	1,710	2	1	804
L2610: Ao Phai - Ao Udom	1987-1988	5	21	141	204		2	1	28
		15					1	1	44
TL402: Kalasin - Yasothon	1980-1981	109	318	950	1,890	3,364	2	1	654
Sub Total		**912**	**2,736**	**13,273**	**19,874**	**31,684**			**5,308**
Underground Cable Work									
NBC2-01-L1: 230 kV Underground Cable	2013-2015	0.50					1	2	3.00
NBCC-01-L1:230 kV Underground Cable	2008-2011	0.71					1	2	4.26
Total		**4,714**	**12,214**	**263,357**	**385,190**	**817,874**			**71,333**

**** GAP Type Conductor**

TSEC – A Leading Transmission System Contractor in Thailand



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