

PROFILE

DR. SONGKRIT TRERUTPICHARN

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Date of birth : August 5th, 1973 - Bangkok

Engineer License : Senior Professional Thai License No.957 Level III (วฟก. 957)

PROFESSIONAL EXPERIENCE

- **Witness of Test:**

- Function Test of Generator at TURBOMACH Switzerland, July 16 - 22, 2008.
- Distribution and Power transformer, Eakarai Daihen, Tirathai.
- Low Voltage and Medium Voltage Switchgear, ABB, Siemens, Schneider.
- Power Cable, Phelps Dodge, Thai Yazaki.

- **Study & Calculations:**

- Electrical Power System Study used ETAP Program : Load flow Study, Short Circuit Study, Motor Starting Study
- Power transformer sizing calculation
- Grounding system calculation
- MV/LV power cable sizing calculation
- DC and UPS sizing calculation
- CT sizing calculation
- Neutral Grounding Resistance(NGR) of Generator sizing calculation

- **Design:**

- Key Single Line Diagram, Low Voltage and Medium Voltage Single Line Diagram
- DC/UPS detailed single line, Relaying and metering diagram
- Equipment arrangement and Transformer arrangement

- Lightning protection system and Grounding system
- Cable routing layout
- Utility System such as Telephone, Fire Alarm and CCTV System.

- **Equipment Experiences:**

- Generator
- Distribution and Power Transformer
- Low Voltage and Medium Voltage Switchgear
- DC and UPS System
- Low Voltage and Medium Voltage Motor
- Power and Control Cables
- Cathodic Protection
- Neutral Grounding Resistor/Transformer
- Utility System such as Telephone, Fire Alarm and CCTV System.

- **Management Experience:**

- Control schedule for electrical work
- Manage delivery time and budget of equipment
- Contract reviews
- Bid reviews and evaluations
- Construction management
- Financial reviews
- Manage and advise electrical team

International Standards Knowledge: IEC, IEEE/ANSI, NEC, NFPA



PROFESSIONAL EXPERIENCE

April 2015- Present

JOB RESPONSIBILITY:

- Electrical Engineering Review and approve for Bang Phli 500 kV GIS Substation Project, Samut Prakarn Province. THAILAND
- Electrical Engineering Review and approve for Battery Energy Storage System 115 kV Chai Badan and 115 kV Bamnet Narong Substation Project, Lop buri and Chaiya phum Province. THAILAND
- Review and approve 230/115 kV Ao Phai Substation (GIS) Transmission System Expansion and Renovation Project Phase 2 Fire Protection System Phase 3, at Si Racha, Chon Buri Province. THAILAND
- Review and approve New 230 kV GIS Substation, KHLONG DAN Substation, at Samut Prakan Province. THAILAND
- Consultant for Solar Energy for Company that do the solar energy business. THAILAND
- Project Manager of Consultant for 800 Tons, Waste to Energy Power Plant for selling electrical power 3 MW, Onnut, BANGKOK, THAILAND
- Review and approve New 500 kV GIS Substation, 500/230 kV Power Transformer at Chachoengsao Province.
- Review and approve New 230 kV GIS Substation and new 115kV conventional substation, 230/115kV Power transformer at Chachoengsao Province. THAILAND
- Review and approve 500kV new additional and modifies existing control & protection at Rayong Province
- Project Manager for TPK Absolute starch 115/22kV 20/25MVA Power Transformer, Main and Transfer Bus Substation 2017. THAILAND
- Study and Recommendation for 230 and 500 kV TRANSMISSION LINE, from LAOS to THAILAND.
- EPC Contractor for 5 MW Energy Landfill Gas Project of Crane Renewable Ltd. at Nakhorn Pathom Province, THAILAND
- Consultant for 16.47 MW Solar Farm for Agricultural Co Operative in Trat, Prachuap Khiri khan and Sa kaeo province, THAILAND

- Electrical System Design for Nong Sarai police tactical training center at Nakhon Ratchasima Province, THAILAND
- Review and Approve Electrical System for Permit of 115 kV Substation and 10MW, The Municipal Solid Waste Disposal Plant with Capacity of 300 Tons per day at NONG KHAEM SOLID WASTE STATION, C&G Power Plant, Bangkok, THAILAND
- Review and Approve Electrical System for Permit of 115 kV Substation and 50MW Bio Mass Power Plant, RUAMPHOL BIOPOWER CO., LTD. Nakhon Sawan Province, THAILAND
- Review and Approve Electrical System for Permit of 115 kV Substation and 50MW Bio Mass Power Plant, THAI EKALUCK POWER CO., LTD. Uttaradit Province, THAILAND
- Electrical System Design and Approve for 9.9 MW, GLOBAL GREEN HOLDING CO.,LTD. At Songkhla Province, THAILAND
- Electrical System Design for 8 Floors Building at Bang Wang, BANGKOK, THAILAND
- Consultant and Review design of 115 kV Substation for Solar Farm at Saraburi Province, THAILAND
- Consultant and Review design of 22.5 MW Solar Farm at Saraburi Province, THAILAND
- Consultant and Review design of 8 MW Solar Farm as Sakeaw Province, THAILAND
- EPC contractor for 130 kW, Solar Farm of Thai Army at Chiang Rai Province, THAILAND
- EPC contractor for 130 kW, Solar Farm of Thai Army at Mae Hong Son, THAILAND
- EPC contractor for 130 kW, Solar Farm of Thai Army at Kanchanaburi, THAILAND
- ITB for 115 kV and 22 kV Transmission Line.
- Technical Pricing Support for 100 MW, Coal Fire Power Plant in Cambodian.
- Engineering Design for 8 MW Energy Landfill Gas Project of Crane Renewable Ltd. at Nakhorn Pathom Province, THAILAND.

November 2013 -March 2015

DP CLEANTECH CO., LTD BANGKOK, THAILAND

(www.dpcleantech.com)

ENGINEERING TEAM LEADER

Site reference:

PROJECT: 9.9 MW BIOMASS FIRED POWER PLANT

OWNER:

MAHACHAI GREEN POWER CO., LTD.

CONSULTANT:

TRIANGLE ENGINEERS (THAILAND) CO., LTD.

JOB RESPONSIBILITY:

- Engineering Design and Equipment Installation for Biomass Power Plant Project.
- Test and Commissioning for Biomass Power Plant Project.
- Schedule Controller for Engineering Work.
- Contract reviews.
- Construction management.
- Evaluate and control subcontractor

August - Oct.2013

AURECON CONSULTING (THAILAND) CO., LTD.

(www.aurecongroup.com)

SENIOR ELECTRICAL DESIGN ENGINEER

Site reference:

PROJECT: NEW JETTY 7,8, THAI OIL

OWNER:

THAI OIL CO., LTD.

JOB RESPONSIBILITY:

Front End Engineering Design and Detailed Design for JETTY.

PROJECT: ALLEGRO MICROSYSTEM

OWNER:

ALLEGRO MICROSYSTEM (THAILAND) CO., LTD.

JOB RESPONSIBILITY:

Detail Design for Electrical Power System.

April 2011 – July 2013

POYRY ENERGY Ltd., Bangkok, THAILAND

(www.poyry.com)

SENIOR ELECTRICAL DESIGN ENGINEER

Site reference:

2012-2013

**PROJECT: 2 X 400 MW NORTH BANGKOK COMBINED CYCLE
POWER PLANT BLOCK-2**

OWNER:

ELECTRICITY GENERATING AUTHORITY OF THAILAND

CONSULTANT: ELECTRICITY GENERATING AUTHORITY OF THAILAND
JOB RESPONSIBILITY: Detail Design for Electrical System, Advise electrical engineer and Review documents and drawings

2012-2013 **PROJECT: 500 kV Substation for 1,600 MW COMBINED CYCLE POWER PLANTS**

OWNER: GULF JP COMPANY LIMITED

CONSULTANT: BURNS AND ROE ASIA LIMITED

JOB RESPONSIBILITY: Review drawings and documents of 500kV switchyard, equipment, utility system in the 500 kV Substation.

2011–2012 **PROJECT: 115 kV, 7 SUBSTATIONS AND 7 COMBINED CYCLE POWER PLANTS**

OWNER: GULF JP COMPANY LIMITED

CONSULTANT: BURNS AND ROE ASIA LIMITED

- **GKP1: 110MW Gulf JP KP1 , Saraburi Province, Thailand .**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (56.25 MVA) One Steam Turbine Generator (48.75MVA)

- **GKP2: 110MW Gulf JP KP2, Saraburi Province, Thailand.**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (56.25 MVA) One Steam Turbine Generator (48.75MVA)

- **GTLC: 110MW Gulf JP TLC, Saraburi Province, Thailand.**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (56.25 MVA) One Steam Turbine Generator (48.75MVA)

- **GNNK: 110MW Gulf JP NNK, Chachoengsao Province, Thailand.**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (56.25 MVA) One Steam Turbine Generator (48.75MVA)

- **GNULL: 120MW Gulf JP NLL, Rayong Province, Thailand.**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (58.415 MVA)One Steam Turbine Generator(48.75MVA)

- **GCRN: 120MW Gulf JP CRN, Patumthani Province, Thailand.**

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (56.25 MVA) One Steam Turbine Generator (48.75MVA)

- **GNK2: 120MW Combine Heat and Power, Saraburi** Province, Thailand.

Main Equipment: **115 kV SUBSTATIONS**, Two Gas Turbine Generators (58.415 MVA)One Steam Turbine Generator(48.75MVA)

JOB RESPONSIBILITY

- Electrical Power System Study used ETAP program. : Load flow Study, Short Circuit Study, Motor Starting Study.
- Electrical Equipment Specification
 - 115 kV Substation
 - Distribution and Power Transformer
 - Low Voltage and Medium Voltage Switchgear
 - DC and UPS System
 - Low Voltage and Medium Voltage Motor
 - Power and Control Cables
 - Neutral Grounding Resistor/Transformer
 - Utility System such as Telephone, Lighting, Fire Alarm and CCTV System.
- Grounding system calculation
- MV/LV power cable sizing calculation
- DC and UPS sizing calculation
- Key Single Line Diagram, Low Voltage and Medium Voltage Single Line Diagram
- DC/UPS detailed single line.

December 2009 – March 2011

OWL ENERGY LTD., Bangkok, THAILAND

(www.owlenergy.biz)

SENIOR ELECTRICAL ENGINEER

Site reference:

- Chiang Rai and Nakhon Ratchasima Solar - Lenders Engineer OWL has been awarded Lenders Engineer role for two solar projects with a combined capacity of 17MW. The Lender for Krung Thai Bank.
- GLOW INSURANCE REVIEW, Rayong, Thailand, review the insurance claim raised by Glow in regards to the incident.
- GASIFICATION TECHNOLOGY - , Gasification development of 1MW project in West Thailand.

- BANGPA-IN PHASE 2, Ayuttayah, Thailand, technical advise to the Environmental Consultant in order to prepare the EIA Report for the expansion project.
- BIOGAS TECHNOLOGY - MSW, Biogas development of 3x1MW MSW project in Eastern Thailand.
- Rinergy 50MW Wind Turbine Project, Nakhon Ratchasima, Thailand: Develop wind turbine tender documents for the balance of plant equipment and to review the bids.
- Performed a Gas Turbine Study Selection Study for Bang Pa-In 120MW CCGT power plant project being developed in Bang Pa-In industrial estate at Ayutthaya Province.
- Electrical Advisor of China CAMC Engineering Co., Ltd which is shareholder with Navanakorn Electric Co., Ltd., invests in a combined cycle power plant 117 MW. The project name is Navanakorn CCGT SPP Power Project.

JOB RESPONSIBILITY:

- Development of Pre-Feasibility and Feasibility Studies
- Technology selection reviews
- Technical assistance to EIA consultants
- Contract reviews, Detailed design and Design review
- Provision of tendering documents, bid reviews and evaluations
- Construction management and Quality Services
- Financial reviews and technical inputs to financial models

2007-2009 THAI SHINRYO LTD., Bangkok, THAILAND. (Japanese Company)
EPC Contractor for CO-Generation Power Plant
CHIEF ELECTRICAL ENGINEER

Site reference:

2008 – 2009 PROJECT: BANGCHAK UTILITY PROJECT (BUP)
 OWNER: PTT PUBLIC COMPANY LIMITED
 CONSULTANT: POYRY ENERGY LIMITED
 CONTRACTOR: THAI SHINRYO LTD.
 POSITION: ELECTRICAL MANAGER
 Main Equipment: Two Gas Turbine Generators (17 MVA), One Power Transformer (6.6/3.3 kV, 12 MVA), Two Auxiliary Transformers (6.6/0.415 kV, 2500 kVA), 6.6kV, 3.3kV Switchgear, and Low Voltage Switchgear.

JOB RESPONSIBILITY:

- Control schedule for electrical work, Manage delivery time and control budget of equipment, Contract reviews, Construction management, Manage and advise electrical team. Evaluate and control electrical subcontractor. Bid evaluation for electrical portion.
- Power transformer sizing calculation, basic conceptual design hot spot and temperature rise follow IEC std.76, and check the impedance percentage with load flow and short circuit calculation.
- Power consumption calculation; summarize all AC and DC load of the power with another department.
- Prepare key single line diagram, Relaying diagram and Electrical Logic Diagram.
- 3.3kV and 6.9kV Medium voltage switchgear, Prepare and summarized specification, requirement and condition from ITB doc. Prepare 3.3 and 6.9 kV single line diagram and schematic design. Development and also includes necessary & related document with suppliers. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Low voltage switchgear, Prepare and summarized specification, requirement and condition from ITB document. Prepare single line diagram and schematic design. Development and also includes necessary & related document with suppliers. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- 24 VDC, 110VDC and UPS system, sizing calculation follow IEEE std. 485 to verify number of battery cell, final voltage per cell and life time of battery. Prepare 24 VDC, 110 VDC and UPS single line diagram. Check installation drawing. Evaluate and scheduling of material on site.
- Grounding system study, basic conceptual design in according IEEE Std.80, 665,142, check ground grid, equipment grounding conductor sizing, step voltage, touch voltage, Ground Potential Rise (GPR). Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Lightning protection system study, basic conceptual design in according IEC 61024, 62305. Check the lightning protection level (LPL), down conductor sizing and Air terminal system. Prepare typical installation drawing and Position arrangement. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Insulation Co-ordination study, basic conceptual design in according IEC 71, IEEE 1313. To verify both the selection of insulation strength to archive the desired level of probability failure and determination of conventional BIL as recommended. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Current Limiting Reactor (CLR), basic conceptual design in according IEC 865, IEEE 605. Prepare rigid-bus and Flexible conductor sizing and clearance. Prepare typical installation drawing and to verify technical data support installation for CLR arranges. Evaluate and scheduling of material on site.
- Power system study, Prepare the ETAP model. Check short circuit studies and Load Flow studies.
- Prepare document report before submit to consult
- Prepare the conceptual design and installation drawing of lighting system, receptacle, fire alarm system, CCTV and paging. Evaluate and scheduling of material on site.

- Prepare and check electrical document of the test procedure, factory acceptance test, and site acceptance test and method statement of installation. Include prepare job safety analysis.

2007-2009	PROJECT:	PTTUT CENTRAL UTILITY PROJECT II (CUP2)
	OWNER:	PTT PUBLIC COMPANY LIMITED
	CONSULTANT:	EGAT PUBLIC COMPANY LIMITED
	CONTRACTOR:	THAI SHINRYO LTD.
	POSITION:	CHIEF ELECTRICAL ENGINEER

Main Equipment: Two Gas Turbine Generators (48 MVA), One Steam Turbine Generator (48MVA), Two GTG Transformers, One STG Transformer (117/11kV, 44/55 MVA, ONAN/ONAF), Two Unit Auxiliary Transformers (11/7 kV, 8.8 MVA), Four Auxiliary Transformers (6.9/0.4 kV, 2 MVA), 6.9 kV Switchgear, and Low Voltage Switchgear.

JOB RESPONSIBILITY:

- Control schedule for electrical work, Manage delivery time and control budget of equipment, Contract reviews, Construction management, Manage and advise electrical team.
- Power transformer sizing calculation, basic conceptual design hot spot and temperature rise follow IEC std.76, and check the impedance percentage with load flow and short circuit calculation.
- Power consumption calculation; summarize all AC and DC load of the power with another department.
- Prepare key single line diagram, Relaying diagram and Electrical Logic Diagram.
- 6.9kV and 11kV Medium voltage switchgear, Prepare and summarized specification, requirement and condition from ITB doc. Prepare 6.9 and 11 kV single line diagram and schematic design. Development and also includes necessary & related document with suppliers. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Low voltage switchgear, Prepare and summarized specification, requirement and condition from ITB document. Prepare single line diagram and schematic design. Development and also includes necessary & related document with suppliers.
- Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- 24VDC, 125VDC and UPS system, sizing calculation follow IEEE std. 485 to verify number of battery cell, final voltage per cell and life time of battery. Prepare 24 VDC, 125 VDC and UPS single line diagram. Check installation drawing. Evaluate and scheduling of material on site.
- Grounding system study, basic conceptual design in according IEEE Std.80, 665,142, check ground grid, equipment grounding conductor sizing, step voltage, touch voltage, Ground Potential Rise (GPR). Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.

- Lightning protection system study, basic conceptual design in according IEC 61024, 62305. Check the lightning protection level (LPL), down conductor sizing and Air terminal system. Prepare typical installation drawing and Position arrangement. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Insulation Co-ordination study, basic conceptual design in according IEC 71, IEEE 1313. To verify both the selection of insulation strength to archive the desired level of probability failure and determination of conventional BIL as recommended. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Low Voltage and Medium Voltage Power cable system, cable ampacity calculation in according IEC 60287, 364. Permissible current rating of free-air cable, buried cable calculation. Low Voltage and Medium Voltage Power cable sizing and selection. Prepare typical installation drawing and verify technical support to installation. Evaluate and scheduling of material on site.
- Prepare the conceptual design and installation drawing of lighting system, receptacle, fire alarm system, CCTV and paging. Evaluate and scheduling of material on site.

2005-2007

MITR TECHNICAL CONSULTANT CO., LTD., Bangkok, THAILAND.

PROJECT ENGINEER

Site reference:

January - March 2007	Position: Project Engineer
Project Name:	Utility for EMTC-1&2 Project, Essilor Manufacturing(Thailand) Ltd.
Location:	Latkabang, Bangkok, THAILAND, (French Company)
January- March 2007	Position: Project Engineer
Project Name:	AE-RX Project for Essilor Manufacturing (Thailand) Ltd.
Location:	Latkabang, Bangkok, THAILAND, (French Company)
January- March 2007	Position: Site Engineer
Project Name:	Central World Plaza Zone B&C Project
Location:	Patumwan Bangkok, THAILAND
August – December 2006	Position: Site Engineer
Project Name:	Robinson Ayuttaya Project
Location:	Pranakornsriayuttaya ,THAILAND
May- August 2006	Position: Site Engineer
Project Name:	Central World Plaza Zone A.
Location:	Patumwan Bangkok, THAILAND
November 2005 – May 2006	Position: Site Engineer
Project Name:	EMTC-3 Building Essilor Manufacturing (Thailand) Ltd.
Location:	Latkabang, Bangkok, THAILAND, (French Company)

August - November 2005	Position: Site Engineer
Project Name:	Eye Lasik Room Payathai Hospital 2,
Location:	Bangkok, THAILAND
August - November 2005	Position: Site Engineer
Project Name:	Canteen Room Payathai Hospital 2,
Location:	Bangkok, THAILAND
May - August 2005	Position: Site Engineer
Project Name:	Facial Surgery Room Payathai Hospital 2,
Location:	Bangkok, THAILAND

JOB RESPONSIBILITY:

- Coordinate between owner and contractor
- Quality control of Electrical and Mechanical work
- Cost and schedule control of project
- Control, follow up and solve problem which may happen on every project
- Project advisor for construction

1996-2005 MAHANAKORN UNIVERSITY OF TECHNOLOGY, Bangkok, THAILAND.

LECTURE OF ELECTRICAL POWER ENGINEERING**JOB RESPONSIBILITY:**

- The Head of High Voltage Engineering Laboratory, Electrical Power Engineering Department.
- The Head of Power System Protection Engineering Laboratory, Electrical Power Engineering Department.
- Lecturer of High Voltage Engineering and Electrical Power Generation, Transmission and Distribution and Electrical Power System.
- Research and developing the new technology.

PUBLICATIONS:

- S.Trerutpicharn, S.Potivejkul "A Prototype for High Voltage and High Frequency Testing" LADKRABANG ENGINEERING JOURNAL, year 18,Vol.2, June 2001,Thailand.
- S.Trerutpicharn, S.Potivejkul, V.Kinnaree "HIGH VOLTAGE AND HIGH FREQUENCY SWITCHING POWER SUPPLY FOR HIGH FREQUENCY SOLID INSULATOR TESTING"POWERCON 2000, 4-7 December 2000, The University of Western Australia, Perth, Australia.
- S.Trerutpicharn, S.Deeon, S.Potivejkul "Automatic High Current Source Controlled by Microcontroller" Electrical Engineering Conference 23rd, 23-24 November 2000 Thailand.

- S.Trerutpicharn, S.Deeon, S.Potivejkul “High voltage high frequency transformer for testing insulator” Electrical Engineering Conference 19th, 1996, Thailand.
- T.Pison, S.Trerutpicharn, S.Potivejkul “Computer Aided Design for Underground System” Electrical Engineering Conference 19th, 1996, Thailand.

TRAINING & EDUCATION

- 2020** **Western University, THAILAND**
Doctor of Business Administration
- 2019** **Ramkhamhaeng University, THAILAND**
PhD. Candidate, Engineering Law and Inspection
- 2018** **International University of Morality, USA**
Honorary Doctoral of Philosophy in Morality Business Administration
- 2003-2004** **University of New South Wale, AUSTRALIA**
Certificate of English for Academic Purpose
- 1997-2001** **King Mongkut's Institute of Technology Ladkrabang, THAILAND,**
Master Degree of Electrical Engineering 3.66GPA
- 1992-1996** **Mahanakorn University of Technology, THAILAND**
Bachelor Degree of Electrical Engineering 2.86 GPA

CERTIFICATION:

- Safety and health for leader level by Safety and Health, Thailand, July 21-22, 2007.
- Protection Relay for Industrial Power System by IEEE Thailand, Thailand, August 29-31, 2007.
- Relay Setting and Relay Coordination by IEEE Thailand, Thailand, November 21-23, 2007.
- 115/22kV Industrial Substation Design & Service Maintenance by CEPT, Thailand June 26-28 & July 3-5, 2008.
- 1995 BETA CLOUGH, Chonburi, THAILAND. *Trainee Engineer,*

TECHNICAL SKILLS

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|--------------------------|----------------------|
| ➤ Computer package: | ➤ Microsoft Project, |
| ➤ Microsoft word, | ➤ AUTO CAD, |
| ➤ Microsoft Excel, | ➤ MATHLAB, |
| ➤ Microsoft Visio, | ➤ ETAP |
| ➤ Microsoft Power Point, | |