

IRESC Key Project Experience in Thailand

- **Thai Oil Sriracha Refinery Clean Fuel Project, Sriracha, Thailand**, in support of EPC activities by Saipem. Safety studies included HAZOP, SIL Classification, SIL Verification and SRS for the Integrated Residue Hydrocracker Unit (LC-Max), HCU, Solvent Deasphalting (SDA) Unit etc, as part of the expansion of the Sriracha Refinery. *Licensors: Chevron Lummus Global Tech. Shell SIFPro* was used for SIL Classification & Verification.
- **Star Petroleum Refining Public Company (SPRC) - Phase 2B/3 and Phase 3 Expansion Project, Thailand**, in support of FEED & EPC activities by Technip. Safety Studies included HAZOP-LOPA for modifications in various units such as CDU, DHTU, WCN, RFCCU, NHTU, PLF, HVGO, and VDU. Chevron's PHA-SOA procedure was followed.
- **PTTGC Olefin Reconfiguration Project (ORP) Project Train 4, Thailand**, in support of EPC by Samsung Engineering and TTCL Public Company Limited. Safety Studies included HAZID, ENVID, HAZOP, SIL Classification, SRS, QRA, BRA, Layout Assessment, FSA, F&G Mapping and SIL Verification for the Ethane Cracker Unit based on Lummus Technology.
- **PTTGC Oxirane Propylene Oxide (PO) Project, Thailand**, in support of EPC by Samsung Engineering. Plant is owned/operated by GC Oxirane Co. Ltd. (a subsidiary of PTTGC & Toyota Tsusho Corporation (TTC)). Safety Studies included HAZID, ENVID, HAZOP, SIL Classification, SRS, QRA, BRA, Layout Assessment, FSA, F&G Mapping, Hazardous Area Classification and SIL Verification. *Licensors-Sumitomo Chemical Company Limited.*
- **PTT Gas Separation Plants (GSP) Project, Rayong, Thailand**, in support of revalidation/modification HAZOP and SIL Studies (SIL Classification and Verification) for various Gas Separation Plants (GSP- 1/2/3/5/6), Ethane Separation Plant (ESP) and Gas Pipeline Processing Plant (GPPP).
- **Gulf Map Ta Phut LNG terminal Project, Thailand**, in support of Tokyo Gas Engineering Solutions (TGES) (FEED). Safety Studies included HAZOP, SIL Classification, RAM, HAZID, QRA for the new LNG Terminal.
- **TEIPL SCG Acetylene Recovery Unit Project, Thailand**, in support of Toyo Engineering India Private Limited for FEED and EPC Services. Safety Studies performed included HAZID, LOPA, HAZOP, SIL Classification, SIL Verification and F&G Mapping Study.
- **PTTLNG Map Ta Phut LNG Receiving Terminal Expansion Project, Thailand**, in support of FEED by Tokyo Gas Engineering and EPC by POSCO for P-2 Expansion. Safety Studies included HAZOP, SIL Study, SRS, QRA, Noise, SIMOPS, Blast Study, FHA, F&G, Corrosion Protection and Material Selection. IRESC was also involved in subsequent expansion/modification works (including Cold Energy utilization Project).
- **PTTLNG Nong Fab LNG Receiving Terminal Project, Thailand** in support of FEED by Tokyo Gas Engineering Solutions Corporation (TGES) and EPC activities by CTCL-Saipem JV. Safety studies included HAZID, HAZOP, SIL Classification, HIPPS, SRS, QRA, RAM, Alarm Rationalization and F&G Mapping for the LNG Terminal Facilities. IRESC is also supporting on Cold Energy project involving interface with PTTGC Train 3 Olefin Plant.
- **Nong Yao Field Development Project, Thailand**, in support of Thai Nippon Steel & Sumikin Engineering & Construction Corp. Ltd. Safety studies included Noise Analysis for the Wellhead Processing Platform (WPP-A) and Wellhead Platform (WHP-B).
- **Yetagun-C AGRU Project, Myanmar**, in support of FEED by Thai Nippon Steel & Sumikin Engineering & Construction Corp. Ltd. Studies included HAZID, ENVID, FERA, Thermal Dispersion, EERA, ESSA, EIA for the AGRU package on Yetagun-C Booster Compressor Platform in Myanmar.
- **PTT Myanmar Ph-I FSRU/FSU and Ph-II Onshore Terminal Project, Kanbauk, Myanmar**, in support of Tokyo Gas Engineering Solutions Corporation (TGES - SMC Consortium). Safety studies included HAZID for FSRU site selection for Myanmar-Thailand LNG Receiving Terminal Project.

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