Arun LNG Receiving Hub & Regasification Terminal - The First Conversion of LNG Plant Become LNG Regasification Terminal

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Arun LNG Plant Overview

- 6 LNG Trains, Total Capacity 12.5 MTPA
- LPG Extraction, Capacity 1.4 MTPA
- Condensate Treating, Max. Capacity 120,000 barrel/day
- 11 Power Generators, output capacity 220 MW
- 5 LNG Tank, total capacity 636,000 m³
- 4 LPG Tank, total capacity 302,000 m³
- 4 Condensate tank, total capacity 2.12 million barrel
- 2 LNG Jetty @80,000 DWT
- 1 LPG Jetty @65,000 DWT

- Operated by PT ARUN NGL, since 1977
- Location: Lhokseumawe, Aceh
- Last Cargo: October 15th, 2014
Project Background

- Existing gas resources was declined without potential gas reserves.
- LNG Sales contract ended in 2014; plant operator should be terminated.
- Lead to decommissioned of industries in Aceh area.

LNG Production Plant
- Export terminal
- Liquefaction plant
- LNG Production

LNG Receiving Hub & Regasification Terminal
- Import/Export Terminal
- Regasification plant
- LNG trading
### Pra-Project Assessment

1. **FEED (Front End Engineering Designed) Study**
   - 2 LNG Loading Dock Berth
   - 3
   - Unloading/loading arm overhaul
   - Fenders repair
   - Motor capstan repair
   - Bypass installation (loading mode and unloading mode)

2. **Remaining Life Assessment (RLA)**
   - 2 LNG Boil-off Gas Compressors
   - Control system retrofit
   - Dry Gas Seal installation

3. **Risk Assessment to the existing facility**
   - 1 LNG Booster Compressor
   - Compressor Re-wheeling
   - Gear box replacement
   - Dry Gas Seal installation

4. **LNG Tank Assessment**
   - 4 LNG Storage Tanks
   - Bottom filling modifications

   - LNG Circulation Lines
   - LNG Regas and LNG Hub Segregation

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Main Equipment List:

Existing Equipments:
- 1 set of LNG loading Berth jetty #3
- 4 ea LNG Storage Tanks
- 5 ea LNG Circulation Pumps
- 4 ea BOG Compressor
- BOG Booster Compressor
- 6 ea LNG Loading Pump
- Utilities (Nitrogen, Plant Air, Seawater facilities, water treatment, and fire water station)

Additional Equipments:
- HP LNG Transfer Pump
- LNG Open Rack Vaporizer
- LNG Back-Up Vaporizer
- LNG Back-Up Pump
- Fuel Gas Electric Heater
- LNG Vapor Return Blower
- Piping & control system modification
Regasification Facilities

Open Rack Vaporizer E-2302 (A/B/C)
Capacity: 3x135 MMSCFD (LNG)
LNG Filling Truck

- LNG ISO Tank filling for 20ft and 40ft
- Since November 2015
Project Lesson Learn

- Identify existing equipment condition (including equipment obsolescence)
- Identify and evaluate existing equipment efficiency refer to new proven technology
- Assess existing equipment condition
- Ensure existing equipment are well maintained after assessment until project execution
- Identify all LNG ship specification when design vapour return blower
- Provide scenarios for difference project execution regarding existing plant condition
- Review sea water quality
- Provide good FEED
What Next?

1. LNG HUB Facility
2. Breakbulk to Small Vessel LNG
3. LNG Bunkering Business
4. Cooldown Business
Conclusion

- There was possibility to re-use the 37 years old of longstanding equipment in the LNG Terminal with several assessments.
- The key point to prolong the life time of equipment was based on maintenance & reliability program during the previous operation. Good maintenance program would result a good condition and could last longer.
- Several assessments need to be performed such inspections and reconditions/overhaul, etc.
- Every LNG Producing Plant in the end would facing the declining of the feed gas and the conversion of the LNG producing plant to become LNG receiving and regasification terminal would be the option to get the added value and maintain the gas supply to the customers.
Thank You