NDT WORKS (ID17100) & PIPING-MECHANICAL ERECTION WORKS (ID 17050) TRANS ADRIATIC PIPELINE PROJECT _ 7910 EPC COMPRESSOR STATION, KIPOI-GREECE

Client : J/V RENCO - TERNA
End User : Trans Adriatic Pipeline AG (TAP AG)
Year : 2019

Work Description :

Description of Compressor Station GCS00 - Greece

The Compressor Station GCS00 is part of Trans Adriatic Pipeline which will transport gas from the Turkish-Greek border via Greece and Albania across the Adriatic Sea to Italy. It is located approx. 3 km from the Turkish / Greek border. For the 10 BCMY phase (this Scope of Work) three gas turbine driven compressor units (GTCs), each with approximately 15 MW ISO power will be installed. Two of the GTCs will be in operation with the third one on standby.

The Station is designed in a modular design. Gas will be routed through common headers up- and downstream of each process unit. Generally a "n+1" sparing philosophy has been considered for the process units.

The Compressor Station mainly consists of the following:

- Three GTCs
- Gas Coolers, Filtering-, Metering- and Piping- Systems
- Utilities (e.g. fuel gas, instrument air)
- Electrical Equipment,
- I&C Equipment,
- Civil Structures,
- One vent stack for Station / piping depressurisation,

Detail Scope :

- Contract management and interface with COMPANY, CONTRACTOR and other Subcontractor(s) present at site during the execution of the SUBCONTRACTOR scope.
- Permit and licenses applications, obtainment and updating as per Contract requirements and/or Greek Laws and regulations.
- Care and custody of the site facilities and warehouse (SUBCONTRACTOR will provide set up and running operation of the warehouse facility, while warehouse management will be by CONTRACTOR).
- Installation and management of SUBCONTRACTOR temporary construction facilities which shall include as a minimum but not limited to warehouse, offices, workshops, canteen, dressing room, toilets (chemical) on site as well as any additional temporary facility should be necessary to execute the scope of work.
- HSE activities
- QC activities.
- ESMS activities.
- Planning and reporting activities.
- Handling of piping, fittings, equipment ,as well as all material should be necessary for the satisfactory execution of the scope of work, from CONTRACTOR warehouse up to SUBCONTRACTOR's workshop and/or to GCS00 construction site.

- Welders qualifications (WQP) based on CONTRACTOR's WPS and PQR shall be under SUBCONTRACTOR's care and cost (including assembly, welding, NDT, consumables, equipment, etc / except the supply of test pipes).
- Piping
  - Piping prefabrication in SUBCONTRACTOR's workshop in accordance with CONTRACTOR's Isometric Drawings, Welding repairs (if necessary) and Non destructive tests of welded joints, according to technical specification and piping classes (or coordination with NDE SUBCONTRACTOR in case this option should not be selected by CONTRACTOR.

- Piping Installation in accordance with CONTRACTOR's Isometric Drawings and Mechanical Areas, including but not limited to handling and installation of prefabricated spools, valves, accessories, flanges, branch reinforcement, temporary filters, flow measuring instruments, thermal pits, and all the materials shown on relevant drawings; welding repairs (if necessary) and Non destructive tests of welded joints, according to technical specification and piping classes (or coordination with NDE SUBCONTRACTOR in case this option should not be selected by CONTRACTOR). The scope of the work also includes the verification of the parallelism of the connections to the equipment, the skids and connection terminations, welds' position, the installation of topped valves; of flanged and non-flanged accessories; the connection of flanges to terminations and equipment to the full satisfaction of COMPANY's Supervisors All the changes needed and agreed between the parties will have to be marked up on isometric drawings. Any eventual temporary support or steel structure should be necessary for the installation shall be considered at SUBCONTRACTOR charge.
- Pipe cleaning shall be executed in accordance with CONTRACTOR relevant procedures and shall include but not be limited to the following activities:
  - Mechanical cleaning upon completion of piping prefabrication to remove all residuals and injecting jets of air (dried air) and finally sealing the ends that may have remained open at the end of daily activities.
  - Before starting the piping installation, the CONTRACTOR will ensure that all piping is kept clean and free of all dirt, debris and foreign materials. The cleanness of the piping must be maintained also during and after the piping erection activities. The ends of all piping shall be securely closed at the end of each day's work (and/or whenever it is necessary) and not re-opened until work on the piping is resumed.
  - After field installation and prior to execute field welds which prevent accessibility to a given piping section, this will be cleaned through Hydro-jet cleaning method;
  - Final pipe cleaning and verification (acceptability criteria 300um) through continuous blowing of air and/or quick decompression (through rupture membrane) methods;
- Testing works in accordance with relevant technical specification (hydro-test materials including but not limited to water supply and disposal, dummy spool - where applicable - , instrumentation, pumps, caps, blind flanges, gaskets, plug, bolts and nuts, temporary insulation for above ground piping, etc. shall be at SUBCONTRACTOR care and cost).
- Piping painting, coating and insulation works (optional).

Total Piping Length:	5.200 m
Total Piping Welding:	54.000 inches
Piping Diameter Range :	2" ÷ 48"
Piping Thickness Range :	4,55 ÷ 40mm
Piping Material Grade :	A 106 Gr B

- Equipment, Tanks and vessels Installation (including installation of internals as applicable).
- Rotating machineries installation and fit-up as per VENDOR instruction or assistance (if at site), mechanical pre-alignment, alignment, etc..
- Supply (optional), fabrication and installation of above and underground pipe supports.
- Mechanical completion activities as per Inspection and Test Plans in Annex 05.
- Pre-commissioning activities.
- Assistance to commissioning, start-up and performance test performed by CONTRACTOR,
- Warranty activities.
- Daily works if and when requested in writing by CONTRACTOR.