

## Annex A.

### INSTALLATION WORKS FOR THE SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET WITH TRAILER HOUSE

#### 1. GENERAL

1.1 Supply of labor, materials, tools, equipment, and project management/technical supervision necessary for the complete execution of the works as specified hereunder or as shown in the plans or both and testing and commissioning of 1 unit 800kw, 240V, 3 phase, 3 wires and 60Hz genset. This scope of works shall include but not limited to the following:

#### 2. MECHANICAL

2.1 Hauling, rigging, positioning, mounting and alignment of the generator sets and its accessories (muffler and other attachments) from drop off point to designated location. This shall include the supply and installation of dyna bolts and installation of vibration isolators. Genset room is located at the ground floor level.

2.2 Supply and installation of 10" schedule 40 B.I. pipe and 10" residential muffler for genset's exhaust system. Contractor shall include the supply and installation of complete accessories such as elbows, flanges, 4" test port with flange and cover, flexible fittings, hangers/spring type supports, gaskets, drain pipes with valves and wall thimble. Muffler and pipes inside the powerhouse should be insulated with 2" Rockwool insulation and wrapped with gauge #26 aluminum cladding. Length of pipe is approximately 6 meters.

2.3 Supply and installation of Gauge # 20 Radiator Ducting complete with canvass cloth, supports, braces and stiffener. Length of duct from radiator to wall is approximately 1 meter.

2.4 Supply and installation of 1" schedule 40 seamless B.I. piping complete with flexible hoses, fittings, elbows, gate valves, check valves, wye strainer, and support for fuel supply & return lines between the genset and the FDT. This shall include the supply and installation of fuel and water separator with bypass line. Length of each run shall not exceed 15 meters within the genset room only.

2.5 Mounting, positioning and installation of 500 gallons fuel day tank complete with standard accessories.

2.6 Supply and installation of one (1) unit breather box complete with necessary valves, fittings, and supports required to complete the installation. This will be installed within genset's 3 meter radius.

### 3. ELECTRICAL

- 3.1 Installation of battery charger. This shall include the supply and installation of 6 x 3.5sq.mm. wires in IMC from 240VAC customer provided electrical outlet to battery charger and from battery charger's 24VDC output to genset's DC terminal. This shall also include the supply and installation of circuit breaker for the protection of the battery charger for the genset. Length of wire per run is within 3 meter radius.
- 3.2 Supply and installation of 1 x 100 sq.mm bare copper wire from the genset to customer provided ground tapping point within the generator room. Length of bare wire is approximately 5 meter radius.
- 3.3 Supply and installation of 7 sets of (3 x 250 sq. mm THHN + 1 x 50 sq. mm THHN (G)) CT rated power cables from the genset going to the ATS. Length of power cable is 15 meter per run. Include termination to genset and ATS.
- 3.4 Supply and installation of ladder type cable tray complete with hangers, supports, bonding wires, and other necessary accessories. Length of cable tray is approximately 12 meters.
- 3.5 Supply and installation of long barrel, crimp type terminal lugs at each end of each run of power cables.
- 3.6 Supply and installation of 2 x 2.0 sq.mm. THW wires in EMT from the genset control panel to ATS including necessary fittings, hangers and supports. Length of control wires is 15 meters per run.

### 4. MISCELLANEOUS

- 4.1 Mobilization and demobilization
- 4.2 Temporary facilities
- 4.3 Acquisition of DENR permit (temporary permit for 3 months, renewal on the account of PhilRice), mechanical permit, permit to operate and all necessary government permits for project hand over
- 4.4 Preparation and submission of shop drawings and as built plans
- 4.5 Supply and delivery of diesel fuel for testing using building load, 8 hours testing