



PLUTO LNG TRAIN 2

SR Number : 26221-100-SR4-NW00-00004 (C160)

Title: WELDER CERTIFICATION SERVICE

Location: Perth Metropolitan Area

1.0 GENERAL

This scope of work is for Welder Certification services for CONTRACTOR'S personnel. SUBCONTRACTOR must be a recognized and accredited technical expert and trainer in the area of emergency response.

2.0 SCOPE OF WORK

2.1 Facility: SUBCONTRACTOR shall provide industrial building(s)/facilities, subject to CONTRACTOR's safety inspection, capable of facilitating the testing of special class welders to required Bechtel standards as detailed herein. The facilities will be appropriately ventilated for the stated conditions and regulatory requirements and supply sufficient power capacity to be able to support up to a maximum of 15 Weld test bays at any given time.

2.1.1 Facility would also include the following requirements:

- Ablution blocks capable of supporting the operation at peak of approximately 15 students plus supervisory personnel daily.
- Classroom facilities equipped and able to comfortably seat up to 15 students in any one sitting and include digital projector, screen (or widescreen smart TV), whiteboards and accessories.
- A designated lunch room facilities able to cater for up to 10 people at any given time.
- Designated material handling processes, equipment and on-site storage capability that is able to operationally support scope of work at all times.

2.1.2 As requested by CONTRACTOR, SUBCONTRACTOR shall provide core equipment required to undertake testing and training of special class Welders. This equipment can be grouped together as units and termed as individual "Weld—Bays." Each Weld Bay must be capable of testing each of the following processes to code (ASME IX): GTAW, SMAW, and FCAW.

2.1.3 Each "weld-bay" unit will be indicatively equipped with:

- Partition Screening consisting of a hard barrier nature and prevent materials passing between booths or booths and workshop area, as well as prohibiting visual access outside of individual booths. Photo is required.
- Individual electricity and gas supply for operation of Welding Machines,
- Adjustable material stands,



- Small tools and consumables (except those listed under schedule of rates) as required to support testing, and
- Welding Machine such as a Lincoln LV 350 — Pro, or comparable machine with same capacity to undertake all three processes outlined in 2.1.2.

2.2 Schedule: CONTRACTOR shall provide SUBCONTRACTOR a three-week forecast of required weld bays at the beginning of each work week.

2.3 STT Machine Bay: SUBCONTRACTOR shall provide a standalone single Weld-Bay equipped with a machine capable of delivering STT code compliant process.

The STT Weld-Bay should be available from no earlier than ten weeks after the Effective Date and workable through to completion of the Subcontract.

2.4 Incidentals: SUBCONTRACTOR shall provide the following incidentals in support of the operations and is included in the unit rates provided in Exhibit "C."

- Electricity (built into lease costs)
- Bottled Gas for Weld units
- Re-usable weld masks
- Gloves
- Other PPE (consisting of hearing protection, eye protection, protective head gear, breathing masks, and other items as approved by CONTRACTOR)
- Radiographic Examination (results returned next business day),
- Administrative Assistant,
- Material Handling consisting of storage area, store man, general hand, forklift with operator capable of performing electrical tagging, and
- Support for morning and afternoon breaks lunch (tea, coffee, biscuits, and lunch).

2.5 Cutting Plate: SUBCONTRACTOR shall provide the following services:

- Cut and bevel used test plates, size 200 mm. (8") x 150 mm. (6") x 16 mm. thick (0.625"), plates shall be beveled along 1 side of the long edge. Cutting and beveling by using Oxygen or Acetylene to eliminate the need for gas and prepping the bevels by welders.
- Cut unused beveled end off of 2 -3/4" OD x 0.625" pipe monster test coupons once the pipes have been returned from radiography to facilitate, the use of remaining beveled end of test coupon. Square cut next to completed weld using a band saw, remove sharp burrs (no new bevel is required). Coupons shall typically be cut only one time.

2.6 Verification of Competency (VOC): SUBCONTRACTOR shall provide the following services:

- Testing and provision of associated compliance documentation for the following classifications.



- Pipefitters will need to incorporate a single weld-test of 2-3 hours in duration
- Special Class Welder / Boilermaker / Welders (Weld test done separately)

2.7 Pipefitter Fillet Weld Qualification tests: SUBCONTRACTOR shall provide the following services:

- SUBCONTRACTOR to supply test booths, welding machines, grinders, tungsten, GTAW and / or SMAW equipment, etc. and all associated consumables as needed to support fillet weld qualification tests in accordance with ASME IX.

SUBCONTRACTOR to supply 2 each 75 mm wide x 150 mm long x 6 mm or 10 mm thick and 2 each 100 mm wide x 150 mm long x 6mm or 10 mm thick carbon steel ASTM A36 (P1, Group 1) or equal for each 2 position (3F&4F) fillet weld qualification test and requested welding process.

Generally, this will be the GTAW process using an ER 309/309L bare wire but may at times include the SMAW process using E7018-1 covered electrodes.

- SUBCONTRACTOR to provide the result for fillet weld test that FAIL / PASS Visual Examination and Acceptance and Fracture Tests / Macro-Examinations are performed/completed as detailed below.
- SUBCONTRACTOR to saw cut each completed and accepted fillet weld test coupon in 2 places 25 mm from each end.
- SUBCONTRACTOR to perform fracture test on the Center 100 mm segment for each fillet weld test.
- SUBCONTRACTOR shall prepare an acid etch one of the remaining end specimens for each fillet weld test.
- SUBCONTRACTOR shall provide completed Fracture tests and Macro-Examination specimens to CONTRACTOR Field Engineer for final disposition with-in 4 hours of fillet weld test completion.
- The administration of all qualification tests, visual examinations, RT interpretation, final disposition of all Fracture Tests and Macro-Examinations and complete all required paper work process will be managed by CONTRACTOR Level II or III.
- CONTRACTOR will supply all welding electrodes and bare wire for this work.

3.0 ESTIMATED DURATION OF WORK

The scope of services will initially involve twelve months of operation. Scheduling of all activities will be authorized by CONTRACTOR's designated representative. An option for an additional six- or twelve-months extension of the operations is available to CONTRACTOR and shall be exercised at its sole discretion. CONTRACTOR shall provide a written notice to SUBCONTRACTOR of its intention to exercise this option prior to the commencement of Month 11.