

Annexure 6

SPORADIC WORK OUTSOURCING PACKAGE (SWOP) FOR 2 YEARS FOR CARRYING OUT VARIOUS ACTIVITIES AT CTE ENTITY (SST,TPT,CST,SET,SET-Hat,CTPT,TCT,TCT-HAT, ICET& MET facilities)

The details of various activities to be executed by the vendor for Sporadic work outsourcing package at CTE entity are as follows

Sl. No.	Description of work	Unit of measure	Quantity
1	Mounting & dismantling of flange joints: Mounting refers to aligning of the pipe flanges (2nos) and positioning of gasket properly and tightening the flanges with proper torque with the given bolts & studs. Dismantling refers to loosening of stud bolts & nuts provided in the pipe flange assembly and removal of gasket and stud & bolts. The size of the stud bolt may vary from M12 to M70 -20nos. max. Unit charge per flange joint assembly shall be quoted for the following sizes. 1a.Mounting & dismantling of flange joints: DN15 & DN 20, ≤ 900 Class	Nos.	30000
2	1b. Mounting & dismantling of flange joints:DN15 & DN 20, Class1500 & Class 2500	Nos.	20000
3	1c. Mounting & dismantling of flange joints:DN25 , DN 32 & DN40, ≤ Class 900	Nos.	9998
4	1d. Mounting & dismantling of flange joints:DN25 , DN 32 & DN40, Class 1500 & Class 2500	Nos.	2000
5	1e. Mounting & dismantling of flange joints:DN50, DN65 & DN80, ≤ Class 900	Nos.	6000
6	1f. Mounting & dismantling of flange joints:DN50, DN65 & DN80, Class 1500 & Class 2500	Nos.	1000
7	1g. Mounting & dismantling of flange joints:DN100, ≤ Class 900	Nos.	4000
8	1h. Mounting & dismantling of flange joints:DN100, >=Class 1500	Nos.	2000
9	1i. Mounting & dismantling of flange joints:DN150, ≤ Class 900	Nos.	2000
10	1j. Mounting & dismantling of flange joints:DN150, >=Class 1500	Nos.	2000
11	Assembly & removal of Flexible Hoses : Hoses shall be taken to the required location within the facility and connection shall be established between the required points. The size of flexible hoses may vary from DN8 to DN400. Flexible hoses connected with the lines shall be removed by loosening swivel nuts/flanges. Flanges shall have max. 20 nos. of stud bolts of max M70 size. Prior to dismantling of the hoses, the clamps provided over them shall be removed by loosening screws. After removing the hoses, the open ends of the lines and flexible hoses shall be covered with polythene sheet/ closures and they shall be taken safely to a location identified within the facility. Unit charge for assembly & removal of per meter of flexible hose of following size shall be quoted. 2a.Assembly & removal of Flexible Hoses : ≤DN25	metre	25000
12	2b.Assembly & removal of Flexible Hoses : DN32 & DN40	metre	6000
13	2c. Assembly & removal of Flexible Hoses: DN50 to DN100	metre	4000
14	Pneumatic Leak Testing over Flexible Hoses: The hoses shall be taken to the facility and they shall be thoroughly cleaned/purged using GN2. After establishing the connection, leak test shall be carried-out for the entire length of flexible hoses with snoop solution. If leak is noticed at the connection, the end's may be disconnected & after carrying-out minor rectification works in the same hose, leak test shall be repeated. If leak still exists, due to inherent flow with the hose, the same shall be replaced by a fresh one. Till achieving leak-proof with the same hose, the no. of times leak test carried-out shall be considered as one. Pneumatic Leak Testing over rigid pipe line: Leak test shall be carried-out over weldments, joints & over the parent pipe for the entire length with snoop solution. If leak is noticed at the screwed/flanged joints, the connection shall be removed and necessary gaskets, teflon tape shall be replaced/introduced and leak test shall be repeated. Till achieving leak-tightness over screwed/flanged joints the no. of times leak test carried-out shall be considered as one. The charge for leak testing per meter shall be quoted for the following sizes. 3a.Pneumatic Leak Testing over Flexible Hoses & Rigid pipe line: ≤DN25	metre	40001

Sl. No.	Description of work	Unit of measure	Quantity
15	3b. Pneumatic Leak Testing over Flexible Hoses & Rigid pipe line:DN40 & DN50	metre	6000
16	3c. Pneumatic Leak Testing over Flexible Hoses & Rigid pipe line:DN65 & DN80	metre	3000
17	3d. Pneumatic Leak Testing over Flexible Hoses & Rigid pipe line:DN100 & DN125	metre	3000
18	Assembly & Removal of safety relief valves: Safety valve mounted over the line shall be removed by loosening stud bolts & nuts (max 8nos & max size M32). The open ends of the valves and line shall be mounted with proper alignment over the flange in rigid pipeline with proper gasket. After mounting the valve, leak test shall be carried-out to ensure the leak-tightness. Unit charge for the following categories shall be quoted. 4a. Assembly & Removal of safety relief valves: Valves weighing \leq 05 kg	Nos	2489
19	4b. Assembly & Removal of safety relief valves:Valves weighing $>$ 5 kg & \leq 10 kg	Nos	1460
20	4c. Assembly & Removal of safety relief valves:Valves weighing $>$ 10 kg & \leq 20 kg	Nos	1000
21	4d. Assembly & Removal of safety relief valves:Valves weighing $>$ 20 kg & \leq 100 kg	Nos	1900
22	5.Assembly & Removal of Burst disc assy: Burst disc: Burst disc assembly mounted between the pipe flanges provided in the line (weighing $<$ 2 kg) shall be removed by loosening 4nos of M18 max stud bolts. Further, the disc assembly shall be dismantled by unscrewing 4 nos of M8 screws and the disc shall be mounted properly in the assembly by 4 nos of M8 screws. The burst disc and the gasket location are to be thoroughly cleaned before assembly. Further the assembly has to be mounted between the pipe flanges provided in the line by tightening 4nos of M18 stud bolts-with proper alignment. Leak test to ensure leak tightness at the subject joints shall be carried-out. Unit charge for the subject work shall be quoted.	Nos	4000
23	6.Assembly & Removal of Pressure Gauges: Bourdon type pressure gauge of dial size 100 to 150mm, each weighing approximately 0.25kg having end connection 1/2" NPT(M) thread shall be removed from the line by unscrewing the thread. The open end of the line interface shall be thoroughly cleaned/purged. The given fresh gauge of similar type shall be provided with thread seal/teflon tape winding and shall be mounted over the line with proper torque and alignment. Leak test shall be carried-out to ensure leak-tightness when checked with the snoop solution. Unit rate for removal & assembly of pressure gauge shall be quoted.	Nos	5000
24	7.Gas filling into sampling cylinder: Sampling cylinder of 50 liters water capacity shall be taken from a place within the facility to the required location and connections shall be established between cylinder and sampling port of rigid pipe line by 6mm OD/ 8mm OD SS tube with compression fittings. It will be required to charge the gas upto 150 bar,g. After completion of charging, the cylinder shall be taken safely to a location identified within the facility. Knowledge in handling of high pressure cylinder is essential. Charge for one time gas filling shall be quoted.	Nos	15000
25	8.Medium substitution of pipe line circuits: Medium substitution of pipe line circuits shall be carried-out by compression & decompression method with required cycles and moisture shall be measured with portable moisture meter as instructed by site-engineer. The charge for carrying out medium substitution for one circuit/meter of pipeline shall be quoted.	metre	15000
26	9.MSLD leak tests: Assisting the department staff in Mobilizing the Mass spectrometer leak detector to the desired location for helium leak testing. The leak testing shall be in sniffer mode where the location of the joint shall be covered with a hood using bubble sheets and sniffer probe connected to the MSLD shall be inserted into the hood for accessing the leakage rate. The leak testing can also be in vacuum mode where the vacuum jacket is connected to the MSLD using a flexible hose and the jacket and the hose shall be connected with vacuum fittings. The MSLD shall be again moved to its storage location after about 30 minutes after switching off the MSLD after leak testing. Price shall be quoted for leak check of one joint.	Nos.	20000
27	10.Transportation of steel materials: The structural materials and other SS plates, sheets shall be shifted from the storage yard to the site location using the material handling devices like pallet truck, scissor lift. The price for mobilizing one kg of steel material through a distance of 400 metre	kg	15000

Sl. No.	Description of work	Unit of measure	Quantity
28	<p>Servicing of non return valves: The non return valves consist of a plunger assembly which inturn consists of a plunger and a spring. The plunger assembly has to be dismantled by loosening bolts provided in the top cover. The seat material if damaged shall be replaced with a new seat and the whole assembly has to be assembled again. The charge for servicing the non return valve has to be quoted. The sizes of the non return valves are:</p> <p>11a. Servicing of non return valves : ≤DN50</p>	Nos.	3000
29	11b. Servicing of non return valves: DN65 to DN200	Nos.	2002
30	Data entry operation for the following works: 12a. Typing of technical documents (A4 page)	Nos	255000
31	12b. Photo copying of technical documents (A4 page)	Nos	300000
32	12c. Filing and Document arrangements (A4 page)	Nos	303134
33	12d. Scanning of technical documents (A4 page)	Nos	319988
34	<p>13. Preparation of inventory records /documents This work involves preparation of inventory records such as ISO documentation, stock of materials , pipes & pipe fittings etc., each such a record is contained in a set of 2 pages of A4 size using computer operations in word/excel/PowerPoint.</p>	No of set	3001
35	<p>14. Preparation of drawings This work involves taking measurements at facility site and preparation of schematic drawings, isometric drawings, etc, in any drafting software like Autocad. A Drawing contained in a set of 2 pages of A4 size</p>	No of set	1474
36	<p>15. Interfacing of flexible hoses/ spool piece/ tubes with a test article This work involves supervisions/taking responsibilities of flexible hoses/rigid tubes of a set of 5 numbers whose diameters vary from DN15 to DN150 and length in 5 m with the test article to be tested (i.e. one hose/tube is connected to the test article and the other side is connected to the test facility) with proper torque by engaging labours to be supplied by the purchaser.</p>	No of set	3875
37	<p>16. Leak checking of flexible hoses /tubes/ spool piece interfaced with a article This work involves supervision/taking responsibilities of leak checking in set of 5 interfaces with GHe at 125 bar max to the leak tightness to a required level, with MSLD by engaging labours to be supplied by the purchaser. The diameters of interface vary from DN 15 to DN 150.</p>	No of set	3707
38	<p>17. Dismantling and mounting of safety devices This work involves supervision/taking responsibilities of dismantling safety devices (Safety relief valve , Rupture disc, etc) a set of 5 numbers from the existing facility circuits for their calibration / replacement and mounting them back in their respective locations and leak testing at required pressure with GN2/GHe to ensure leak tightness to a required level by engaging labours to be supplied by the purchaser.</p>	No of set	1520
39	<p>18. Ultrasonic cleaning of filter elements: This work invloves supervision/taking responsibilities of ultrasonic cleaning of filter elements in container with Iso Propyl Alcohol (IPA) bath for a set of 5 filters whose sizes vary from DN 15 to DN 200 by engaging labours to be supplied by the purchaser.</p>	No of set	1401