INSTITUTE FOR PLASMA RESEARCH

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MINOR FABRICATION WORKS
ENQUIRY

Office Copy

ENQUIRY NO :IPR/MFW/21-22/115
Date : 25-10-2021
Due Date : 08-11-2021 13:00 IST

Please send your offer in sealed envelope specifying Inquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to **vipul@ipr.res.in**

Please Ensure that your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following document properly before Quoting which are available on the IPR web portal i.e., http://www.ipr.res.in/documents/tenders.html/ attached here with.

1. Technical specification as enclosed.
2. Instruction to the bidders & terms and Condition (refer Form NO:**IPR-MFW-01-V1**)
3. Bidding format(refer Biddingformat MFW-Bid.pdf)

GST fro Goods and Services (IGST/CGST/SGST TAX BENEFITS): PLEASE REFER clause no:8 of Form No:**IPR-MFW-01-V1**

QUOTATION SHOULD BE ADDRESSED TO **V. L. TANNA** ONLY.

Sr.No.	Description	Quantity	Rate
1	Welding of piping to pressure test coupler and blank flanges of high pressure (HP) and Medium pressure vessels (MP) [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 8 weld joints	16	No.
2	Dye Penetrant test (As per ASME SEC V, Article-6, ASME Sec VIII, Div.1 Appendix-8 with along Test Certificate of pipe sizes [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm,	8	No.

	SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints		
3	Radiography test (As per ASME SEC V EDITION 2013, ASME Sec VIII, Div I, Edition 2013 along with Test certificate of pipe sizes [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints	8	No.

Free Issue Material

Sr.No.	Description	Quantity	Unit	Value

Note : Please quote with complete technical details (Technical Compliance sheet and product data sheet)

Encl:As per attachment

Sd/-
V. L. TANNA
Scientific Officer-G

Technical Specification

Introduction

As a part of Chief Controller of Explosive (CCOE), Nagpur it is mandatory to have Non-Destructive Tests with Hydrostatic Pressurization Test and Inspection of Medium Pressure and High Pressure Helium gas vessels at IPR site under the rule 19 of SMPV (U). In order to get the License approval and renewal of the operation of these vessels at IPR, every 5-years periodic hydrostatic test and other Inspection tests shall be conducted. The hydro test of pressure vessels will be carried out in coming time. To do the hydrostatic test, isolation of all each vessels is required to connection pressure system. It demands to cut and weld the feed pipe of vessels to coupler, blank flanges etc. during testing. A skilled experience TIG welder required to do the define work of welding and other associated miscellaneous tasks. As per PESO requirement, welded joints needs to be Radiographic and inspected with certification by Govt approved inspection party. All the activities will be carried out at high pressure vessels area at IPR premises.

Type of Work

There are types of work to carried out by the vendor at IPR WGM (Warm Gas Management) site

[1] Job1: Welding of piping to pressure test coupler and blank flanges of high pressure (HP) and Medium pressure vessels (MP)

[a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints
[b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints
[c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 8 weld joints

[2] Job 2: Dye Penetrant test (As per ASME SEC V, Article-6, ASME Sec VIII, Div.1 Appendix-8 with along Test Certificate of pipe sizes

[a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints
[b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints
[c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints

[3] Job 3: Radiography test (As per ASME SEC V EDITION 2013, ASME Sec VIII, Div I, Edition 2013 along with Test certificate of pipe sizes

[a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints
[b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints
[c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints

Technical details of Task, terms & conditions and scope of work

(i) The welder has to assembly of all SS plugs, SS bush, connectors, threaded couplings etc. as and when required for the hydrostatic test of pressure vessels.
(ii) All the pipes shall be thoroughly cleaned using Iso propyl alcohol / petroleum ether before welding. After cleaning, the pipes must be purged thoroughly to remove all the vapour.
(iii) Proper edge preparation shall be done as per the welding procedure. The edge shall be free from depressions, grooves, ridges, tears or swarf. Prepared edge shall be dressed properly using light grinding.
(iv) Prior to welding, all joints are to be properly aligned using line up clamps / jigs or devices.
(v) The vendors must specify the methods to maintain the alignment and leveling during welding. It must be taken care that such clamps / jigs should not impose undue external load on the joint.
(vi) The vendor will bring all consumable as Argon gas, Filler rods, tools and tackles and TIG welding machine, the filler and electrode material shall be of reputed make.
(viii) All the weld joints should be full penetrated TIG welding.
(viii) The weld joints will be acceptable of helium tightness of order of $<1x10^{-05}$ mbar l /sec (in sniffer mode) at operating pressure condition of helium pressure vessels, the leaked weld joints have to be repaired by vendor without any cost implication.
(ix) For Stainless Steel welding, all the welding shall be done as per the approved welding procedure in accordance with ASME section IX.
(x) The job of fitting, V-groove making, cleaning, cutting and 4" Auto valve disassembly and assembly is under vendor scope, no extra payment will be consider.
(xi) The job no. 2 & Job 3 it to be done by Government approved ANST Level-II inspection agency, the arrangement of inspection party, NDT and Radiography testing and certification is under vendor scope.
(xii) The welder experience of welding in SS pipe of heavy thickness (> 5 mm) TIG welding will be preferred.
(xiii) The welder must be available at site for welding and fitting task as per the schedule of hydrostatic test or by work In-charge instruction.
(xiv) The Fitter and welder shall work from 8.00 AM to 6.00 PM every day. On including Saturday, Sunday or IPR Holiday with prior permission form IPR Admin.
[xv] IPR will not provide any accommodation; lodging boarding and traveling facility to any persons of the vendor, only the working space will be provided to carry out the fitting/welding task.
[xvi] Only the storage space to keep welding machine and associated things will be provided by IPR.
[xvii] No extra time labour charges will be considered after routine timing of the fitting and welding tasks.

Technical Compliance Form

Sr. No.	Particulars	IPR Requirements	Vendor's Specification
1.	job No.1 : Welding	Welding of piping to pressure test coupler and blank flanges of high pressure (HP) and Medium pressure vessels (MP) at WGM area IPR [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L, Qty: 4 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 8 weld joints	
2.	Job No. 2 : Dye Penetrant test	(As per ASME SEC V, Article-6, ASME Sec VIII, Div.1 Appendix-8 with along with Test Certificate of pipe sizes [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L Qty: 2 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints	
3.	Job No. 3: Radiography X-Ray testing	As per ASME SEC V EDITION 2013, ASME Sec VIII, Div I, Edition 2013 along with Test certificate of pipe sizes [a] Pipe size: DN15 1/2"NB OD: 21.3 mm, Thickness: 4.8 mm, SCH 160), Material: SA 312 TP 304L, Qty: 2 weld joints [b] Pipe size: Pipe size: DN 40 1 ½" NB OD: 48.3 mm, Thickness: 7.1 mm, SCH 160), Material: SA 312 TP 304L Qty: 2 weld joints [c] Pipe size: DN100 4 "NB OD: 114.3 mm, Thickness: 11.3 mm, SCH 120), Material: SA 312 TP 304 L, Qty: 4 weld joints	
4.	Technical details of Task, term, conditions and scope of work	The welder has to carry out the assembly of all SS plugs, SS bush, connectors, threaded couplings etc. as and when required for the hydrostatic test of pressure vessels.	
		The vendor should bring all consumable as Argon gas, Filler rods, tools and tackles and TIG welding machine, the filler and electrode material shall be of reputed make.	

		All the weld joints should be full penetrated TIG welding.	
		The weld joints will be acceptable of helium tightness of order of $<1x10^{-05}$ mbar l /sec (in sniffer mode) at operating pressure condition of helium pressure vessels, the leaked weld joints have to be repaired by the vendor without any cost implication	
		For Stainless Steel welding, all the welding shall be done as per the approved welding procedure in accordance with ASME section IX.	
		The job of fitting, V-groove making, cleaning, cutting and 4" Auto valve disassembly and assembly (4 numbers) is under vendor scope, no extra charges will be consider.	
		The job no. 2 & Job 3, this test is to be done by Government approved ANST Level-II inspection agency, the arrangement of inspection party, NDT, adiography testing and certification is under vendor scope	
		The past experience of TIG welding in SS pipe of heavy thickness (> 5 mm) of welder	
		The welder must be available at site for welding and fitting task as per the schedule of hydrostatic test or by the work In-charge instruction.	
		No extra time labour charges will be considered after routine timing of the fitting and welding tasks.	

(Bidder's Sign with Official Stamp)