



Ref: TDD/ DSS/2018/customized-tools/OPA/128756

02/07/2018

NIT for Minor Fabrication Due date: 13/07/2018

Sealed quotations are invited for and on behalf of the President of India for the work as described below. The last date of submission of sealed quotation is **13/07/2018 up to 15:00 hrs** at 315, CDCFT Building, Near WIP, Trombay, Mumbai 400085, of Technology Development Division. Please mention the reference number on the front cover of the sealed quotation. Sealed quotation shall only be sent through Postal Speed Post/Normal Post only. Hand delivery of the quotations is strictly not allowed. The sealed quotation will be opened on the same day at 15:30 hrs. in the office of authorized tender opening officer, TDD, NRG, BARC.

Description of work	Duration
1. Procurement, modification, fabrication, testing and supply of various special customized mechanical tools and tackles.	90 Days
2. Miscellaneous site fabrication works.	

Important Notes:-

- Vendor Evaluation Criteria:** Vendors meeting the following evaluation criteria should only participate in bidding: The firm should have previous experience of successful completion of similar works such as fabrication of special tools, tackles, and grapplers, etc. Copies of relevant work order should be attached along with the bids.
- The work shall be completed within **90 Days** from the date of issue of the work order.
- Any deviation from specification shall be clearly mentioned in your offer.
- The quotation shall be printed only on letter head and GST number should be mentioned on it. Quotations that are received in computer generated form are to be construed as invalid and will be rejected.
- Income tax @ prevailing rate at the time of execution of work and applicable surcharge on Income Tax as applicable & education cess on IT & SC as applicable will be deducted from the bill.
- The enquiries should be sent only by speed post/Normal Post through Indian Postal Service and should be addressed to:
**Devendra Sandhanshive, Scientific Officer-F
Room No. 315, CDCFT Building, Near WIP,
Technology Development Division, Nuclear Recycle Group
Bhabha Atomic Research Centre, Trombay, Mumbai-400085
Ph no 022-25591279/6721/5502 Email: sdev@barc.gov.in/shashirk@barc.gov.in**
- The following information should be written on the sealed offer:**
 - Our Enquiry no.
 - Subject
 - Due Date
 - Sender's full address.
- The bids sent by any other mode (e.g. manual, courier etc) shall be rejected without assigning any reasons as per terms and conditions of Accounts, BARC.**
- The offer shall be kept valid for a period of 45 days from the date of opening.
- Quotation shall clearly mention basic cost, rate of GST and any other taxes/levies applicable separately. It may please be noted that BARC has been declared as R&D organization and concessional rate of GST is applicable. Necessary exemption certificate will be made available to successful vendor.
- Offers will be evaluated on overall **total cost basis**.
- Full payment shall be made only after successful completion and acceptance of the work. In general after submission of all the papers mentioned in work order, it takes about a month period for releasing the payment, as per standard practice followed in BARC.

Devendra Sandhanshive,
SO/F, TDD, NRG, BARC

Technical Specification

1. Title of Work:-

1.1 Procurement, modification, fabrication, testing and supply of various special customized mechanical tools and tackles.

1.2 Miscellaneous site fabrication works.

2. Detailed Scope of Work:- Detailed item wise scope of work is given below :-

2.1	<u>Torque Wrenches (Qty:- 3 sets):-</u> The scope of work involves Procurement, Modification, Testing & Supply of <u>ratcheting type</u> of Hand Torque Wrenches along with customized M20 size adapters. Torque Range Medium :- 20-200N-m.
2.2	<u>Ratchets(Qty:- 3 Numbers):-</u> The scope of work involves procurement, Modification, Testing & Supply of <u>Extendable type, rotating (flexible) head type</u> of Ratchets along with customized M20 size adapters
2.3	<u>Springs (5 meter Long) (Qty:- 4 Numbers):-</u> The scope of work involves procurement, Fabrication & Supply of 6mm diameter and 5 meter long one piece spring with handle on one side required for choke removal in drain pipes.
2.4	<u>Crow bars (5 meter Long) (Qty: - 2 Numbers):-</u> The scope of work involves procurement, Fabrication and supply of 3 meter long wedge point crow bars.
2.5	<u>Tree Pruners (Qty: - 2 Numbers):-</u> The scope of work involves procurement, Modification & Supply of extendable type tree pruners having minimum length 3- 4 feet and extended length 12 feet.
2.6	<u>Stone Carrier Clamps (Qty: - 2 Number):-</u> Procurement of manually handled stone carrier clamps, modification for long reach (2.5 meters) application, testing & Supply of the same. Grip range should be 0-50mm. Load lifting capacity should be 50 kg.
2.7	<u>Lifting grappler (Qty: - 1 Number):-</u> Procurement, Fabrication, testing & Supply of lifting and handling grappler. The grappler should be open when rested and close when lifted. Grip range should be 0-100mm. Load lifting capacity should be 750 kg.
2.8	<u>Long reach trowels & forks (gardening Tools) (Qty: - 1 Set):-</u> Procurement of gardening tools such as hand digging trowels and forks two numbers each, modification for long reach upto 3 meters and supply of the same.

2.9	<u>Manually lifted two-man clamp</u> : - Procurement, Fabrication, testing & Supply of manually lifted two-man clamp as per the scope drawing. Grip range should be 0-260mm. Load lifting capacity should be Minimum 100kg & maximum 200 kg. The manually lifted clamp should also provision for lifting using crane hook.
2.10	<u>Three Leg Slings(Qty:- 2 Nos):-</u> Supply of three leg slings with master & intermediate links on one side & latch type hooks on other side. Each Wire rope should be 2 meters long. Rope should be 6mm diameter & steel core in construction.
2.11	<u>Supply & Carbon Steel site fabrication Works</u> : - Supply of carbon steel raw materials (qty:- 1500 Kg) in the form of plates, angles, channel, Pipes etc & site fabrication of miscellaneous jobs as per technical specification given below. The firm should bring his own consumables and tools and tackles required for site fabrication works. Water and electricity will be provided free for site works.
2.12	<u>Carbon Steel site fabrication Works using Free Issue Materials</u> : - Site fabrication of miscellaneous jobs using free issue materials provided by department. Fabrication work shall be as per following technical specification. The free issue materials will be carbon steel in the form of angles, channels, plates, pipes etc. The free issue materials will be issued at BARC site. The firm should bring his own consumables and tools and tackles required for site fabrication works. Water and electricity will be provided free for site works.

3. Technical Specification for Carbon Steel fabrication Works:-

3.1 Procurement of raw materials:

Materials, processes and workmanship which are not specifically designated here in and which are necessary for the fulfillment of this specification shall be of good quality. All material shall be new. All components shall be machined true to a standard acceptable to the purchaser and shall be free from objectionable flaws / imperfection like cracks etc. All structural steel shall be accurately fabricated, true to line and free from warp or twist. All similar parts shall be made to gauge wherever possible. No patching, plugging, shimming, or other such means of overcoming defects, discrepancies or errors shall be restored to without permission of the purchaser. Unless otherwise stated material shall be in accordance with the following specifications. If manufacturer uses materials other than those indicated below such deviation should be indicated / approved item wise.

Steel plates and Bars	IS 2062 with P&S contents not exceeding 0.05% each.
High tensile bolts	IS 1367.
Wire Ropes	IS 2266
Lifting hooks	Forge steel as per IS 15560
Eye Hooks of Mild steel	IS 2758
Pipes	ASTM-A-106 grade B

Shafting, pins & screws	Under 4” dia. cold rolled steel: EN-8 of BS: 970 having BHN 175 to 241 Over 4” dia. forgings: EN-8 of BS: 970
Miscellaneous forging	Plain carbon steel

3.2 NDT Raw Materials:-

Identification and testing of the materials:

Mill TC:- Supplier shall maintain the identification marks on the each piece of the material to be used and make available to the purchaser mill test report for proper correlation of the material with reference to the identification marks.

Physical & chemical Testing:- Inspection and testing of the material such as Beams and Plates shall be carried out as per IS 2062 E250 Grade Br from Government approved laboratories. To access the physical and chemical properties of material, the test coupon will be taken out by departmental person and supplier will arrange for testing of material from the approved test laboratories at his own cost. Material that is approved/ stamped by the purchaser will be used for the fabrication of the components.

3.3 Fabrication:

Before starting the fabrication, contractor shall get all the raw material, consumables, bought out equipments etc inspected / approved by purchaser and shall also submit the following documents for approval.

- i) Fabrication procedure
- ii) Inspection procedure
- iii) Cutting plan
- iv) Welding procedure

Fabrication shall be done in accordance with approved fabrication procedure and inspection will be carried out at various stages laid down on inspection procedure. Similarly electrodes, which are approved by purchaser, shall only be used. All work of fabrication shall be done in accordance with ASME section VIII division I. Workmanship and finish shall be in every respect subject to the close inspection / approval by the purchaser.

Straightening of material shall be done before being laid or worked out in any way by methods that will not injure it. Heating & hammering is not permissible unless the material is heated to a forging temperature. Marking of plates and other materials shall be done as per approved cutting plan.

Each piece shall be marked for identification. Cutting of plate can be done by shearing or by oxygen cutting. Cut edges of plates, sections shall be uniform, smooth and free from scale & slag. To achieve uniform edge of cut edge should be ground.

All the butt welds and the fillet welds in the external surface shall be ground flush with the surface. All the sharp corners shall be ground to radius of 3mm to avoid the injury to operational persons. Cleaning of edges: weld groove edge of the material will be cleaned as per the approved procedure.

Weld groove geometry, edge preparation, fit up, alignments etc shall be in accordance with ASME Section VIII Division-I.

Shapes rolled and welded shall maintain its geometry as per the limits specified in ASME Sec. VIII Div. I.

Plates to be joined by butt-welding shall be matched carefully so that misalignment, incomplete joints, shall not exceed the limits specified in ASME Sec. VIII Div. I.

Welding

Only approved procedure and qualified welders as per ASME section IX shall be permitted to carry out the welding. M.S to M.S welding should be carried out by SMAW with the welding electrodes approved by the purchaser. Weld reinforcement, distortion / warping of the welded structure will not exceed the limits prescribed in the ASME Section VIII Div I.

3.4 Inspection :

During the fabrication, purchaser's authorized inspector shall have free access at all reasonable time to inspect the materials and part under fabrication. Contractor shall offer all reasonable facilities for satisfying that the fabrication is being undertaken in accordance with the provision of codes. Defects, which may appear during fabrication, shall be repaired in a manner acceptable to the purchaser at the supplier's cost.

Following NDT on the welding shall be carried out during and after the welding.

- i) The weld groove surfaces and heat-affected zones shall be 10% tested by D.P. test.
- ii) Root run and final run of butt welds shall be 10% D.P. tested.
- iii) Root run and Final run of fillet welds shall be 10% D.P. tested.

Besides other non-destructive examination, visual examination will be carried out at various stages of inspection for checking the dimensions, tolerances, distortion fit ups, alignment, quality, workmanship etc. Supplier at his own cost shall rectify any defect noticed by purchaser.

3.5 Painting:

All the exposed carbon steel surfaces will be given two coats of epoxy primer of 3 mil (mili inch) each (i.e. 35 micron Dry Film Thickness per coat) and 2 coats of 3 mil each epoxy paint of yellow color.

DFT shall be measured and reported.

All the surfaces to be painted shall be cleaned by wire brushing and sand blasting as per relevant IS codes or as directed by purchaser's representative. Color coding and marking of numbers for the number of holes drilled on the Yoke-1 on both sides for ease of identification during operations.

4. Guarantee:

The supplier shall give the guarantee for satisfactory performance for a period of 18 months from the date of delivery or 12 months from the date of commissioning at the site whichever is earlier. Guarantee shall cover failure occurring to the units caused by defective workmanship or material and will be limited to replacement of parts recognized as being defective.

Bill of Quantities

Tender No:-TDD/ DSS/2018/customized-tools/OPA/128756 dated:- 29/06/2018

Sr	Name of items	Qty	Unit	Rate in Rs.	Total Cost (Rs)
1	Procurement, Modification, Testing & Supply of ratcheting type of Hand Torque Wrenches along with customized M20 size adapters. Max. Torque 200N-m.	3	Sets		
2	Procurement, Modification, Testing & Supply of Extendable type, rotating (flexible) head type of Ratchets along with customized M20 size adapters.	3	Nos		
3	Fabrication & Supply of 6mm diameter and 5 meter long one piece spring with handle on one side required for choke removal in drain pipes.	4	Nos		
4	Fabrication and supply of 3 meter long wedge point crow bars.	2	Nos		
5	Procurement, Modification, Testing & Supply 12 feet long extendable type tree pruners.	2	Nos		
6	Procurement of manually handled stone carrier clamps, modification for long reach (2.5 meters) application, testing & Supply of the same. Grip range should be 0-50mm. Load lifting capacity :-150 kg.	2	Nos		
7	Procurement, fabrication, testing & Supply of lifting grappler. Grip range 0-100mm. lifting cap.-750 kg	1	Nos		
8	Procurement of gardening tools such as hand digging trowels and forks two numbers each, modification for long reach upto 3 meters and supply of the same.	1	Set		
9	Procurement, modification, testing & Supply of manually lifted two-man clamps as per specification.	1	Nos		
10	Supply of three leg slings with master & intermediate links on one side & latch type hooks on other side. Each Wire rope should be 2 meters long. Rope should be 6mm diameter & steel core in construction.	2	Nos		
11	Supply of carbon steel raw materials in the form of angles, channels, plates etc, & site fabrication for structure, storage enclosure etc.	1500	Kg		
12	Miscellaneous Site fabrication works using free issue materials i.e. carbon steel in the form of angles, channels, plates, pipes etc.	750	Kg		
12	Basic Total Cost in Rupees				
13	GST				
15	Grand total Cost in Rupees				

Signature & Seal of the Vendor