



OIL PALM INDIA LIMITED

(A JOINT VENTURE OF THE GOVT. OF KERALA AND THE GOVT. OF INDIA)

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OP/SME/POM/2024-25/2061

21.11.2024

TENDER INVITATION

Sub: **Annual Cleaning & Shutdown Maintenance of Boiler K-798-reg.**

We invite you to submit your quotation for the Annual Cleaning, maintenance, testing and offering inspection for open and hydraulic pressure test by the Joint Director/Boiler Inspector for our Boiler No. K-798 (Make: Thermax Ltd.) of capacity 12TPH @ 22 Kg/cm² Bi-drum type boiler (at Palm Oil Mill, Yeroor Estate, Bhartheepuram P. O, Kollam Dist., Kerala-691330) by email in PDF format (indicating our enquiry number and due date) to tendersopil@gmail.com on or before the due date on 30.11.2024 up to 02:30 pm and bids shall be opened on same day 03.00 pm.

A brief scope of work is enclosed herewith as **Annexure-1**. The work shall be done to the satisfaction of the Engineer in charge and the Joint Director/Boiler Inspector from Factories & Boiler Department. The bidders are advised to visit the site to assess the work involved before submitting your offer. The bidder shall submit the valid Class-I Boiler Repairer/ Erector under IBR License to carry out the cleaning, repair and testing of IBR equipment from the Factories & Boiler Department along with quotation.

The parties are requested to quote the rate for the following items of work in lump-sum/unit.

❖ Rate of Cleaning, offer for Open Inspection and Hydraulic Testing approved by Joint Director/ Boiler Inspector from Factories & Boilers Department.

The Boiler will be handed over for starting the work tentatively on 26.12.2024 and the entire work shall be completed on or before 14.01.2024. The contractor shall obtain necessary clearance from the boiler inspector in Form VI for operating the boiler for another period of one year.

For Oil Palm India Limited

Sd/-
Sr.Manager(Engineering)

ANNUAL MAINTENANCE OF THERMAX MAKE BOILER

Boiler Details:

- | | | |
|------------------------------|---|-----------------------------------|
| 1. Boiler Reg. No | : | K-798 |
| 2. Type of Boiler | : | Bi-Drum Water Tube |
| 3. Make | : | Thermax Ltd |
| 4. Type of Water Circulation | : | Natural |
| 5. Ratings | : | 12 TPH |
| 6. Other Details | : | Inclusive of Super Heater and APH |
| 7. Water Holding Capacity | : | 18 Ton (Approx.) |
| 8. No.of Super Heater Coils | : | 12 |

SCOPE OF WORK

Water side:

a) Alkali Boil Out:

- (1) Empty the boiler completely after opening all the vents on the boiler steam drum and super heater outlet.
- (2) Isolate all transmitters connected to steam piping and steam drum.
- (3) Fill the boiler with D.M water such that water is seen in first part of the of the direct gauge glasses from the bottom. Adding ½ ppm of hydrazine in the hot water tank will be an added advantage.
- (4) Carry exact quality of chemicals as specified on the boiler platform and dissolve the chemicals with D.M water externally in a container in the drum manhole in batches.
- (5) Open the manhole door.
- (6) Pour the entire quantity of dissolved and concentrated chemical solution into the steam drum through the manhole.
- (7) Close the manhole.
- (8) Raise the boiler water level into NWL.
- (9) Tight up the boiler, raise the boiler pressure slowly, follow strictly the cold start up curve with respect to the pressure.
- (10) Maintain NWL throughout the operation.
- (11) Raise the steam pressure to 10.5 kg/cm² and maintain it for 12hours by controlling firing and modulating start-up vent.
- (12) Carry out blow down as follows:
 - (a) Operate ISD for 10 seconds.
 - (b) Leave CBD slightly open.
 - (c) Operate IBD for 10 seconds thereafter every hour (Restore NWL immediately after every blow down.
 - (d) Operate header drains every hour for 30 seconds each.
- (13) On completion of the boiling out operation drain the boiler completely.
- (14) Open the steam and water drum manholes.
- (15) Remove and clear all the internal fittings.
- (16) Wash through the boiler with jets of D.M water.
- (17) Carry out all super heater back flashing as follows:

- (a) Remove the Chevrom filters.
 - (b) Plug all the coil mouths.
 - (c) Remove plug from first coil.
 - (d) Rig up pumps and lines to the outlet of super heaters in such a way that the pump takes suction from tank filled with D.M water.
 - (e) Pump D.M water at a pressure of 5 kg/cm² till the TDS of the coil inlet and outlet become same.
 - (f) Repeat the operation in all the coils.
 - (g) Remove all the plugs on completion of back flashing.
 - (h) Dry the coils internal by blowing high-pressure air.
- (18) Dismantle all the mountings, reground/reset all the valves, renew packing, clean all faces and replace with new gasket joints. The mounting shall include gauge glass and associated fittings, main steam stop valve, main feed check valve, turbine inlet valve, all safety valves, all blow down valves and 3 Nos. of Pneumatic control valves.
- (19) Also overhaul all the soot blowers and make it fully operational by dismantling, carryout maintenance and re-fixing and commissioning.

Smoke side:

1. Clean the furnace completely.
2. Clean the ash pit.
3. Blow through and clean all tubes nests including super heater coils.
4. Open inspection doors of Boiler bank, Economizer, APH & MDC, clear and clean the interior.
5. Clean the external surface of the Boiler.
6. Clean the inlet filters of FD fan and SA fan.

On the completion of the above job, present the boiler to the boiler inspection for open test. There after prepare the boiler for hydraulic test as follows:

1. Replace all the internal fittings of steam and water drum
2. Replace the manhole door joints of steam and water drum and secure the manhole doors.
3. Blind all necessary mountings such as safety valves, gauge glasses, tapping for instruments etc.
4. Connect up the hydraulic test pump and fittings.
5. Fill up the boiler with all the air vents open.

Present the Boiler to the Boiler Inspector for hydraulic test. On the completion, prepare the boiler for Post boil out passivation as follows:

- a) Minor repairs/ patch up the refractory lining if needed.
- b) Clean and repair the travelling grate if required and box-up inspection door of Boiler bank, Economizer, APH and MDC.
- c) Remove all the blanks/ blinds.
- d) Run down the Boiler to NWL.
- e) Put all transmitters and instruments on line.
- f) Tight up the boiler and raise the pressure slowly as per the cold start up curve to 20 Kg/cm².
- g) Maintain the pressure for 12 hours.
- h) Allow the boiler to cool down naturally with all the vents closed to 2 Kg/cm².
- i) Open the vents, empty the boiler completely.
- j) Refill the boiler with DM water to NWL

Note: Hot tight can be carried out as the steam pressure raises in the boiler during the operation.

6. Now the boiler can be prepared for steam test as follows:
- Tight up the boiler as per the cold start up procedure.
 - Raise the steam pressure to working pressure slowly.
 - Raise the pressure and float at safety valve as specified.

CHEMICALS NEEDED FOR BOILING OUT IS AS FOLLOWS:

Sl. No.	Description	Qty. required per ton of water	Approx. Qty. required
01	Hydrous Trisodium Phosphate $\text{NO}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$	4.6 Kgs	73.6 Kgs. (4.6×16)
02	Anti-hydrous Di-sodium Phosphate Na_2HPO_4	1.0 Kgs	16.0 Kgs
03	Welting Agent (Surfactant/ Detergent)	$\frac{1}{4}$ Kg	4.0 Kgs

Also needed Hydrazine Approx. 5 Liters.

OPIL's Scope and Supply:

- Chemicals needed for boiling out.
- All bolts & nuts, washers, gasket sheet, gland packing, etc.
- IBR approved pipe material for replacing of boiler tubes, if required.
- Conveyance to the boiler inspector and boiler inspection fee.
- Water and electricity at site.

Contractor's Scope of Supply:

- All tools and tackles, skilled, semi-skilled and un-skilled man power and supervisors needed for completing the work to the satisfaction of the Engineer in charge and the Inspector of Factories & Boilers shall be arranged by the contractor.
- Welding equipments, appropriate size of welding rods shall be arranged by contractor.

Work Place: At our Palm Oil Mill, Yeroor Estate, Bhartheepuram P. O, Kollam Dist., Kerala-691330.

Terms of Payment: Within 15 days after Completion of Work.

Your offer should be specific with following break up

- Basis of Price.
- Basic Price.
- GST.
- Discount Offered %.
- Other charges % (Like P&F, Freight etc.).
- Delivery Time.

For Oil Palm India Limited

Sd/-
Sr.Manager (Engineering)

CONDITIONS OF THE TENDER

1. Price:

Rate quoted for Annexure 1 (Cleaning, offer for Open Inspection and Hydraulic Testing approved by Joint Director/ Boiler Inspector from Factories & Boilers Department) should be in lump-sum/unit.

2. Cess & GST:

- a) Taxes should be shown separately, wherever applicable
- b) Rates of taxes should be clearly indicated
- c) Cess payable should be indicated separately
- d) Other taxes if any should also be separately indicated

Notes:

If duty/cess and taxes are not shown specifically, it will be assumed that the rates quoted are inclusive of the same for all purpose. However, in the event of an order arising out of the offer, breakup of taxes and duties (which all mentioned while quoting) be shown separately in the invoice.

3. Validity of offer:

The rates quoted should be valid for a minimum period of 60 days from the due date.

4. Delivery period:

A firm delivery date/period should be indicated. Delivery period reckoned shall be treated from the date of release of work order or as per intimation from OPIL.

5. Firm Price:

In the event of order price shall be firm till complete execution of the work.

6. Payment terms:

Our payment term is within 15 days after completion of work and certification by In-Charge (Palm Oil Mill).

7. Correction and errors:

Quotation should be free of corrections and errors.

8. Penalty for delay:

Penalty shall be imposed in the form of Liquidated damages at the rate of 0.5% per week or part thereof of the value of the goods for the delayed period beyond the stipulated delivery date in the order duly accepted by contractor. This recovery will be limited to 10% of Work Order value.

9. Rights of acceptance or rejection of tenders:

OPIL does not bind itself to accept the lowest or any tenders or assign any reason for non acceptance. It further reserves the right to accept any tenders wholly or in part at its option. It also reserves the right to take 25% more/less of material on any orders placed against this enquiry.

10. Submission of offers:

The offers should be submitted by email in PDF format indicating our inquiry number and due date to tendersopil@gmail.com on or before the due date.

For Oil Palm India Limited

Sd/-

Sr. Manager(Engineering)