

**Indian Institute of Technology, Kanpur
Civil Engineering Department**

Request for Proposal

The Director, Indian Institute of Technology Kanpur (IITK) invites proposal in two bid (technical & financial) format from reputed firms as follows: -

Sl. No.	Name of Work	Bid Security	Last Date and Time for submission of tender	Date and Time for opening of Technical Bid
1.	Design, Engineering, manufacture, work testing, supply, transportation to site, off-loading, including all site handling, construction of required foundation, installation, commissioning, site acceptance test and hand over of Steam Generator (Boiler) package as per Technical Specification covered in Part-I and Terms and Conditions covered in Part-II of this tender document for National Aerosol Facility at IIT, Kanpur	Rs. 50,000/-	03.01.2018 upto 1700 Hrs Revised 10.01.2018 upto 1700 Hrs	04.01.2018 at 1500 Hrs Revised 11.01.2018 at 1500 Hrs

The firms with at least three years relevant experience in above said work are eligible to participate. The proposal duly completed in all respect should be submitted in sealed cover duly marked, so as to reach undersigned on or before 1700hrs on 03.01.18. The tender document with eligibility criteria and other details may be downloaded from www.iitk.ac.in. The Institute reserves the right to accept or reject any offer or all the offers without assigning any reasons thereto.

No. CE/NAF/2017-18/0241, dated: 13.12.2017

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TECHNICAL SPECIFICATION FOR BOILER PACKAGE
PART-I
NATIONAL AEROSOL FACILITY



INDIAN INSTITUTE OF TECHNOLOGY KANPUR



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

1.0 INTRODUCTION

This specification covers the minimum requirements governing the design, engineering, manufacture, works testing, packaging, transportation to site, off-loading (including all site handling), design of foundation and support structure, installation, commissioning, site acceptance testing, hand over and guarantee of a boiler package and associated accessories at Indian Institute of Technology Kanpur (IITK).

The supplier shall have designed, manufactured, tested and supplied similar packages. Contractor shall provide evidence of satisfactory operation of similar units.

The scope of equipment and services required by the steam generator's vendor shall be as described in subsequent clauses of the specification. Any additional items, not specifically mentioned, but required for the safe and efficient operation of the boiler, or to be in compliance with Local or National legislation, are deemed to be inclusive, should they lie within the defined termination points of the boiler vendor's contract.

The boiler shall be of a fully automatic, packaged type of design, suitable for unattended operation. This does not include daily/weekly/monthly maintenance, operation, or water treatment inspection and/or routine service attention.

Boiler Rating & Operation

Boiler data sheet shall state the required boiler capacity for the design steam flow at the boiler stop valve for given steam pressure and temperature conditions. The Boiler is expected to be operated continuously for approximately 4-5 hours at the rated conditions. **A non-IBR boiler is required.**

2.0 SCOPE

It is the boiler vendor's responsibility to include any item/system required to make the package complete and functional as per required process parameters and guarantee run. The scope of supply of the boiler package shall include, but not be limited to the following: Complete thermal and mechanical design of the equipment. The scope of the boiler package is as follows.

- i. Boiler with controls
- ii. Basic boiler comprising support frame completed with all internals, insulation, cladding and painting.
- iii. Fuel oil system, fuel oil pumps, burner, burner controls, valves, filter and on package fuel oil pipe work complete with spill/return line terminating with a non-return valve.
- iv. Boiler feed water pumps
- v. All piping and pipe supports within the battery limits
- vi. Support structure with lifting lugs - necessary arrangements for handling, supports, alignment, ladders and platforms etc.
 - Foundation drawing and details for the installation of the equipment **(The vendor shall submit these details well in advance to facilitate construction of the foundation before the installation of the equipment at site)**
- vii. Earthing provision.
- viii. Boiler control panel, burner management system, & instrumentation complete with cabling /tubing from the device to the on-package control panel. This electrical panel shall contain the electric motor starters for fans and feed pumps motors.
- ix. All the critical parameter sensor signals from the boiler package shall have electrical output to ensure local as well as remote indication through PLC in Main Control Room of the Facility.
- x. Accumulator
- xi. A pressure reducing station (PRS) on the steam header from the accumulator to reduce and maintain steam header pressure required by users.



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

- xii. Accessories and instrumentation within the package limits and other relevant details
- xiii. Inspection, Testing and reports as given in the specification
- xiv. Safe transport and delivery at site
- xv. Installation and commissioning of the entire package at site
- xvi. Spare parts necessary for start-up, commissioning along with priced list of spares for two year operation
- xvii. Any special tools required for maintenance
- xviii. Documentation requested in this specification
- xix. Guarantee and Servicing for the system as specified below.

Name Plate:

Heat exchanger shall be provided with a type 316 stainless steel nameplate securely attached and located on the equipment such that it is clearly visible after installation. Nameplate shall be riveted to a bracket welded onto the exchanger.

The following information shall be added to the name plate: Equipment Tag No. , Manufacturer, Manufacturer's Serial No., Date of Manufacture, Date Tested, Operating Pressure(kg/cm²), Test Pressure(kg/cm²), Max. design Flow (kg/hr), Erected Mass (kg).

3.0 EXTENT OF SUPPLY

3.1 Boiler

Compact Non IBR HSD fired once through, forced circulation plug & play boiler (**Capacity 300kg/hr of saturated steam with pressure rating of 17.5kg/cm²-g and steam quality above 90%**) with pressure part assembly (consisting of closely wound helical vertical membrane coil) and double jacketed air casing with an aluminum radiator to enclose the pressure parts with following safety features :

- Flame sensor for detecting flame.
- Temperature indicating controller for measuring steam temperature and tripping.
- Blowdown switch for ensuring closure of blowdown valve.
- Pressure switch for boiler on / off.
- Pressure switch for ensuring tripping of unit due to no water.
- Necessary relays for motor overloading.
- Mechanical safety valve for avoiding over pressure.

3.2 Water piping system

3.2.1 Feed Water tank

Feed water quality available at the locations is provided to the boiler vendor. The Boiler manufacturer shall design the system as per feed water quality. HDPE Tank of approximately 2000 liters capacity with fittings and accessories is desired. The tank shall be provided with necessary nozzles and level gauge. Tank shall be placed on a 4 m high MS structure from ground level.

3.2.2 Water piping

Piping for water system should include the following

- Inlet piping for raw water pump (Max. 6m)
- From outlet of raw water pump to inlet of water softener
- From outlet of softener to inlet of soft water service tank
- Chemical Dosing Piping from outlet of doser to soft water piping
- Soft water piping from outlet of soft water service tank to Optimizer inlet on boiler
- Drain, Air vent and overflow line for soft water service tank



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

3.2.3 Valves to be included are as follows (1No)

Isolation valve at inlet of Raw water pump (Ball), Strainer at inlet of Raw water pump (Y type), Isolation valve at inlet of softener (Globe), Pressure gauge at inlet of softener (Bourdon), Isolation valve for pressure gauge (Needle), Isolation valve at outlet of doser (Ball), Isolation valve at the inlet of the soft water tank (Ball), Float valve at the inlet of the soft water tank (Ball), Isolation valve at the outlet of the soft water tank (Ball), Isolation valve for drain of the soft water tank (Ball), Strainer at inlet of optimizer on boilers (Y type), Isolation valve at inlet of optimizer on boiler (Ball), Valve for sampling on supply header (Needle), Drain valve at inlet of optimizers (Ball).

3.2.4 Water Softening System

Suitable water softening kit/system along with necessary equipment and accessories to cater the feed water flow requirements of boiler.

The water quality available at site is

Hardness = 400	pH at 25°C = 7.99
Alkalinity as CaCO ₃ (mg/l) = 420 mg/l	Acidity as CaCO ₃ (mg/l) = 40 mg/l
Sulphate = 84 mg/l	Total Silica = * ppm
Chlorides = 179 mg/l	TDS = 678 mg/l

3.3 Fuel Oil System

3.3.1 Fuel Oil Tank

MS Tank fabricated out of minimum 5 mm thick MS sheet (suggested thickness) with a capacity of approximately 1000 ltrs. The tank shall be complete with inlet, outlet, drain, overflow, gauge glass nipples; manhole with cover with gaskets, nuts bolts etc. Tank shall be placed inside the boiler house near the boilers and shall be painted with suitable primer and paint from outside. The tank shall be provided with level gauge and level switch for boiler trip.

3.3.2 Fuel Oil Piping

- Supply and installation of fuel pipelines within boiler house with flanges, bends, valves, sockets, nuts, bolts, gaskets etc.
- Fuel Oil line from HSD service tank to boiler inlet. Size 15 NB. Approx. length 6m.
- Burner and fuel pump spill- over (return) line from boiler to tank. Size 15 NB approx. Lines shall be complete with check valves, flexible hose and nipples for connections up to the fuel oil filters of each boiler. Total Approx. length 8m (this length may be confirmed from the attached layout drawing).
- Drain, over flow, air vent lines for fuel oil service tank.
- Fuel supply pressure measurement by pressure gauge along with switching contact.

3.4 Steam System

3.4.1 Steam Piping

- Steam piping from the outlet of boiler to the inlet of Steam separator
- From outlet of steam separator to inlet of accumulator
- From outlet of accumulator to inlet of Pressure Reducing Station (PRS)

3.4.2 List of Valves

- Isolation valve at inlet of ACCUMULATOR (Globe),
- Isolation valve at outlet of ACCUMULATOR (Globe),
- Steam trap module (TD)
- Suitable valves and scheme for Reducing/Regulating steam pressure at the outlet of PRS (Modulating)



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

3.5 Accumulator

One accumulator (Material of construction SA 516 Gr.70) with capacity 2m³ shall be provided with safety valve and Pressure indicator. Accumulator design should be as per ASME sec VIII (BPVC).

The accumulator shall be provided with Inlet Nozzle, Outlet Nozzle, Air vent Nozzle, Drain Nozzle, Overflow nozzle, Manhole Nozzle and Safety valve Nozzle.

3.6 Pressure Reducing Station

Pressure reducing station (PRS) to reduce pressure from 17.5 kg/cm²(g) to 5.0 kg/cm²(g). The PRS consists of Inlet & Outlet Steel Valves, Bypass Cast Steel valve, Strainer, Moisture separator, Globe Control Valve, Gauge Pressure Transmitter, PID Controller, Safety Valve, Add-On Panel for Mounting Controller and Pressure Gauges.

3.7 Drain and Safety Valve Exhaust Lines

- From Auxiliary valve outlet on boiler to drain pit.
- From Blow down valve on boiler to blow down pit.
- From Safety valve exhaust on boiler to atmosphere outside boiler house
- Vent piping from Economizers to a maximum height of 0.5m above water tank top level in sections of 25 / 40 /80 NB.
- Drain piping for safety valves exhaust piping to common drain header.
- From Economizer drain valve on boiler to common drain header.
- Drain piping from the steam separator to common drain header.
- Common drain header to drain pit.

The blow-down pit is located at a distance of 2500mm from boiler house (Maximum) and safety valve exhaust to maximum distance of 2500mm from boiler house. Earthing pit is located approximately 3000mm from Boiler house.

3.8 Flue Gas System


3.8.1 Flue Gas Ducting from boiler outlet to Chimney

250 mm diameter flue gas ducting fabricated from ERW pipe (with thickness 4mm) from boiler outlet to the chimney. Ducts shall be complete with reducer, manually operated damper and flanges etc. (wherever required) and shall be applied with primer and suitable paint from outside. Approximate length is 6 meters.

3.8.2 Chimney self-supported

Self-supported chimney for top diameter of 250 mm x 15m height designed and fabricated as per IS 6533. Bottom conical portion of 5 m height & 8 mm thick, Middle portion of 350 mm dia & 6mm thick & top portion having length 5m & 5mm thick. The Chimney shall be complete with base plate, flanges, foundation bolts, chimney hood, sampling platform and ladder etc. Chimney will be duly painted with one coat with heat resistant aluminum paint from outside. The scope of supply includes:

- Chimney: Top \varnothing 250 mm / Min. Height 15m – MS (IS 2062). However, it should be ensured that chimney height shall comply with the statutory requirements of local authorities and smoke nuisance regulations. A cowl shall be provided on top of the chimney to prevent rain water from entering inside the chimney.
- Platforms – 2 Nos
- Ladder – 1 No ; MOC – IS 2062 MS
- Sampling Port – 1 No / Elevation – At First Landing
- Template – 1 No
- Foundation Bolts - Suitable
- Lightening Arrestor – 1 No

	<h2 style="margin: 0;">NATIONAL AEROSOL FACILITY</h2>
<h3 style="margin: 0;">TECHNICAL SPECIFICATION FOR BOILER</h3>	

- Insulators – Suitable
- Earthing Strip – 3 mm GI Strip / Suitable
- Necessary earthing provision and any associated cabling.
- Chimney will be painted with heat resistant aluminum paint from outside

3.9 Instrumentation and Control

For Boiler operation, a local control panel, Power cabling from local panels to Individual drives, Instrument cabling from local panel to individual drives, Cable trays, lugs, ties, etc. as required shall be considered.

The parameters given in following table shall have alarms and trips as a minimum requirement for the safe operation of boiler. The necessary signal initiating devices, relays, flashers and other accessories for the operation of equipment shall be provided for following conditions.

The boiler package shall have sufficient number of electrical signal outputs from sensors for information exchange with the central plant control system located in main control room.

Description	Instruments For	Alarm	Trip	Current output required for Remote Indication
Feed Water System :				
Feed Water Level	High / Low/ V. Low	Yes / Yes / Yes	-/-/Yes	Yes
Economizer Low water level	High / Low/ V. Low	Yes / Yes / Yes	-/-/Yes	Yes
Feed Water Flow	Low	Yes	Yes	Yes
Blow-Down Valve Open		Yes	Yes	Yes
Steam :				
Steam Temperature	High / Low	Yes / Yes	Yes/-	Yes
Steam Pressure	High / Low	Yes / Yes	Yes/-	Yes
Exhaust GAS :				
Exhaust Gas Temperature	High / Low	Yes / Yes	Yes / -	Yes
Fuel Supply Pressure to boiler				
	High / Low	Yes	Yes	Yes
Stack Temperature				
	High	Yes		Yes
Burner:				
Individual Burner Failure		Yes	Yes	Yes

The vendor shall provide a local control panel for the necessary Boiler control, alarm, trip, etc. for the above mentioned parameters. For remote indication of above parameters in the main control room of the facility, a 4-20 mA current output and potential free contact output for ON/OFF indication are required to be provided as per the table above. The vendor shall also provide current output/relay contacts for switching ON/OFF/Tripping the Boiler from the main control room. This will enable indication of various boiler parameters in control room and operation of boiler from Local control panel as well as from main control room.

The tentative list of various boiler parameters for indication / control which are required for communication between the boiler package and the main control room are given below.

a) Boiler Local control panel to Main Control Room:

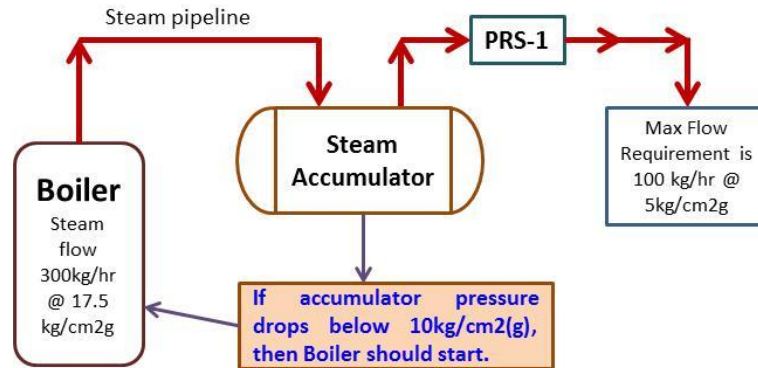
- Boiler ON/OFF status
- Fuel supply status (Contact output from pressure indicating switch)
- Temperature and pressure of steam at steam generator outlet
- Boiler failure or trip indication
- Feed water flow and level indication
- Blow-Down Valve Open indication
- Individual Burner Failure indication
- Stack Temperature indication
- Exhaust Gas Temperature indication

b) Main Control Room to boiler local control panel:

- Boiler ON/OFF command
- Emergency stop (Boiler trip contact)

The boiler control scheme shall also include the following:

Boiler should switch ON or OFF in auto mode to maintain the pressure in steam accumulator (for continuous operation of 4 hours) between 17.5kg/cm²(g) and 10.0kg/cm²(g).



The Vendor will be responsible ONLY for the provision of contact points on the boiler package as per the requirements mentioned in this section. Connection from the contact point to the main control room of the facility, including cabling etc. is NOT IN THE SCOPE of this tender.

3.10 Structure

Common Steel structure for installation of feed water tank, soft water service tank & fuel oil service tank shall be provided. Total elevation of **common steel structure shall be 4000mm (vendor may suggest minimum required height)** from ground level. Feed water tank and soft water service tank shall be accommodated at an elevation of 4000 mm. Fuel oil service tank shall be placed at 4000mm high from boiler house floor level in common steel structure.

Structure shall be fabricated out of 150x75mm MS channel and angles (minimum size). Suitable monkey ladder and small platform (with railing) shall be provided to facilitate climbing to the top of the tanks for inspection and cleaning purpose.

Piping & flue gas ducting supports as required shall be provided.



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

3.11 Insulation

Steam piping, ducting and accumulator will be insulated with various thicknesses of LRB mineral mattress having a density 100 kg/m³ with chicken mesh on one side. The mineral mattress will be protected from outside with AL cladding of 24 gauge.

4.0 TERMINATION POINTS

- Feed water supply: Feed Water Tank Outlet.
- Fuel oil supply.
- Steam discharge: outlet of PRS.
- Electrical supply: terminals within the boiler's control panel
- Boiler exhaust gas discharge: outlet of Stack.
- Blow down discharge: at the bottom of boiler package
- Excess water: steam trap outlet or steam separator water level control valve outlet

5.0 MATERIAL OF CONSTRUCTION / MAKE OF COMPONENTS

- All materials of construction used in the manufacture of the boiler should conform to the requirements of the appropriate Sections of the relevant Indian Standards.
- Seamless tubing shall be used for pressure parts in all cases, and where this is not available, seamed pressure welded tubing must be verified to be free of longitudinal weld defects before being formed into its final configuration. Copies of materials certificates and test certificates for all welded pressure parts must be included in the document file supplied with the boiler.
- Vendor to specify as per the relevant standards and material.

6.0 INSPECTION AND TESTING

- a) The works supplied under the contract shall be subject to inspection by purchaser or his authorized representative.
- b) Fourteen days' notice shall be given in writing of the readiness of boiler package for test or inspection. Every facility shall be provided by the boiler supplier and his Sub-Contractor(s) to enable the client to carry out the inspections and witness the tests.
- c) No equipment shall be packed, prepared for shipment, or dismantled for the purpose of packing for shipment, until it has been satisfactorily inspected and approved for shipment.
- d) As a minimum, following tests/inspection shall be carried out:-
 - Material test certificate review for pressure parts of boiler and major parts of all bought out components.
 - Visual inspection & dimensional check of all items in scope of supply.
 - Hydro testing of all pressure containing parts and water fill test of atmospheric tanks/vessels.
 - Radiography for the boiler components and the welded joints.
 - Review of NDT test reports for boilers.
 - Manufacturer's performance certificate review for items such as pumps, blowers, fans & burners.
 - Panels (Electrical and instrumentation) witness of sequence test, function test, high voltage test and identification of makes of components.
 - Type test certificate review for motors.
 - Check for alignment of chimney segments and DP test of welds for chimney.
 - Noise and vibration level test.
 - Calibration of instruments and pop-up test of pressure safety valve



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

7.0 PAINTING, PACKING, INSURANCE, TRANSPORT, DELIVERY

- Painting, protective coatings and the procedures used for preparation of surfaces shall comply with vendor's standard specifications.
- The contractor shall be responsible to see that there is no damage to the equipment during shipment and loading/ unloading.
- Packing and Forwarding, safe transportation, insurance, delivery, loading/unloading (of the package at works/site) and any other relevant requirements for the installation and commissioning at site are included in the scope of the vendor.

8.0 INSTALLATION / ERECTION / COMMISSIONING

The Boiler and its associated equipment, systems shall be installed, erected and commissioned by the supplier/vendor at IIT, Kanpur. The general installation, erection and commissioning sequence of Boiler and its associated equipment, systems etc. are as follows;

- Shifting of Boiler and its auxiliaries to boiler house.
- Placement and alignment of boiler.
- Placement and alignment of local control panel inside boiler house
- Erection of structure for fuel and soft water service tank
- Erection of soft water and oil service tank on structure
- Erection of softener and chemical doser
- Erection of pressure reducing station
- Erection of accumulator
- Fabrication & Erection of Boiler drain, safety, vent, exhaust, Steam piping
- Installation & erection of Valves
- Hydraulic testing of pipelines
- Insulation & aluminum cladding for flue gas ducting and steam piping
- Application of red oxide primer and suitable paint for structural items and tanks.
- Erection of Self-supported chimney
- Fabrication & erection of flue gas ducting
- All electric cabling, lighting etc
- Installation, Commissioning and operation of entire system (Water treatment plant, Boiler, steam accumulator, PRS etc)
- Completion of process for volumetric test.

The boiler supplier/vendor shall submit fully comprehensive schedules of pre-commissioning checks for each item of the boiler and equipment provided. After installation and commissioning, supplier/vendor shall extend all the necessary help in resolving various operation and maintenance problems faced by site. This includes visit to site by the manufacturer's engineer to resolve the problems as and when required.

9.0 DOCUMENTATION and TRAINING

9.1 Documents required with the offer

- The following information is minimum requirement:
 - Plan, Layout, and Installation (general arrangement) drawing of the package.
 - Foundation load / weight data
 - Feed water quality required



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

- Data sheets
 - A price schedule and guarantees.
 - A recommended list of spare parts for two years operation.
 - An extent of supply and termination points list.
 - Utilities requirement of electricity, water, compressed air, fuel etc. for the boiler.
 - All relevant catalogues for the products on offer
- Any deviations from this specification shall be clearly given in writing at the tendering stage. Absence of such comment, assumes full compliance. Any subsequently discovered short-falls will be rectified at no extra cost to the Purchaser.
- The bidder shall provide full details of technical specifications for all the items offered, along with product information catalogues showing model, make, type, constructional details, materials etc. to facilitate speedy evaluation of the quotation. Without this information the purchaser reserves full right to reject the offer for evaluation.

9.2 Post Order Documents

- Foundation details. Foundation drawing and details for the installation of all the equipment shall be submitted by the vendor well in advance to facilitate construction of the foundation before the installation of the equipment at site.
- The schematic, actual design and fabrication drawings (GA drawings) of the equipment, wherever applicable shall be prepared and submitted for approval of the purchaser's representative before the commencement of actual fabrication. (Tentative orientation and layout drawing of boiler room has been attached).
- Process and Instrument Diagram (PID).
- Control system specifications and control circuit drawings.
- Electrical Wiring Diagrams and Local Panel TB diagrams.
- An Installation and Erection manual.
- The supplier shall submit both soft (editable) and hard copies of these documents for approval before commencement of the work.
- Other submissions (e.g. materials and test certificates, electrical and burner details etc.) shall be submitted prior to inspection at shop.
- All relevant manufacturer's certificates in standard format and operation & maintenance manual should be forwarded along with the material.
- Operating and Maintenance manuals shall be provided in triplicate at least two weeks before the delivery of the boiler. These manuals shall contain operation and maintenance information on ALL items of equipment supplied with the boiler together with detailed drawings and spare part list sufficient to enable identification and ordering of spares.

9.3 Training

Vendor shall give training regarding operation and maintenance of the Boiler and associated equipment.

10.0 SPARE PARTS

- Necessary spare parts for operation and maintenance of Boiler and Water Softening Kit shall be specified.
- The list of spare products along with the unit cost shall be provided.
- A recommended spare parts list for two year's operation along with individual cost shall be submitted.
- List shall include part number, part description, serial number and delivery lead time.



NATIONAL AEROSOL FACILITY

TECHNICAL SPECIFICATION FOR BOILER

- All spare parts furnished by Contractor shall be wrapped and packaged.
- Spare parts shall be clearly marked "Spare Parts" and properly tagged and coded.
- "Spare Parts" shall be shipped along with the equipment.

11.0 QUOTATION

Quotation for the complete package shall include: basic cost of the equipment, packaging & freight, delivery and installation at site (IIT Kanpur), insurance, taxes (as applicable), etc. The vendor must provide a complete break-up of the various cost components as mentioned above.

12.0 DEVIATIONS / EXCLUSIONS

- Deviations (if any) from the specifications should be clearly specified.
- Any equipment / parts / system required to make the boiler package complete and safe and meet design parameters shall be supplied by the boiler supplier.
- Any exclusion needs to be specified separately. Vendor giving complete package (including installation, erection & commissioning of above mentioned items & equipment) shall be preferred.
- Vendor can quote optional price if required for certain items and shall supply the same if order is placed for the same.

13.0 GUARANTEE

- The supplier shall submit a certificate for guarantee of the material/service against any defects for **18 months from the date of supply or 12 months from the date of commissioning.**
- Vendor shall have total responsibility for the design and performance of all the equipment furnished.
- Vendor shall warrant that the equipment furnished and the performance of the said equipment is in accordance with this specification and general codes.
- Vendor shall warrant and guarantee that all the materials and equipment incorporated in the package shall be new, and all work shall be of good quality.
- Vendor shall also be responsible for all system and detailed designing, the aspects of which may not have been covered in this specification as regards the workmanship, performance etc., of the equipment supplied.
- The boiler shall be guaranteed for satisfactory performance at all operating conditions as mentioned above. Performance test on boiler shall be carried out in compliance with BS 845 part 1: 1987. Field check on performance when carried out by Purchaser shall be made within agreed time of initial operation.
- Vendor should provide **service for the complete package for a period of 2 years from the date of commissioning free of cost.**

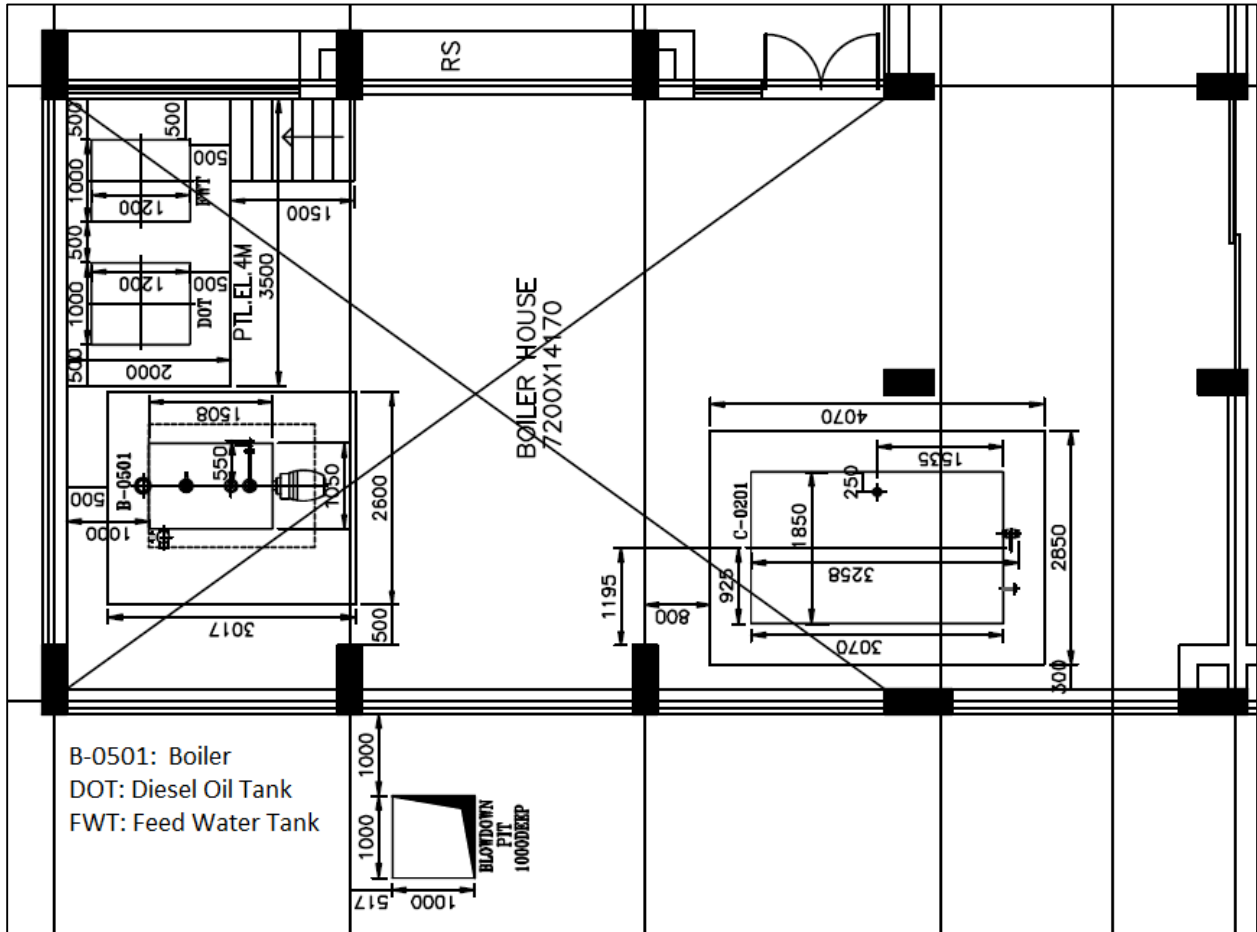
14.0 ELIGIBILITY FOR BIDDING

The bidding company or its authorized dealer should ensure that the following conditions are met

- i. Boiler manufacturer or their authorized dealer can only participate.
- ii. Preference will be given to boiler manufacturers having ISO 9001 14000 certification.
- iii. The boiler manufacturer should have minimum 10 years of experience in manufacturing, sales and service of this kind of boiler. The bidder should have at least 3 years of relevant experience for the purpose of this indent.



Layout of the proposed Boiler and Compressor Room



National Aerosol Facility

Terms & Conditions (General & Financial)

PART-II

General terms and conditions:

1. The Bidder shall bear all costs associated with the preparation and submission of its bid, and in any case IIT, Kanpur (IITK) will not be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.
2. It is in the bidder's interest to visit the site and understand the local conditions. IITK shall not be held responsible for any cost implications because of local conditions or for bidder not visiting site.
3. The bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the Bidder and IITK shall be written in English language.
4. Bidder is advised to submit the technical and price bid in a sealed envelope. Both the documents will be opened at the same time.
5. The bid and all attached documents should be signed by the bidder as a token of acceptance.
6. IITK has to finalize its purchase within a limited time schedule. Therefore, it may not be feasible for IITK to seek clarifications in respect of incomplete offers. Prospective bidders are advised to ensure that their bids are complete in all respects and fulfil IITK's terms, conditions and bid evaluation criteria of the tender. Bids not complying with IITK's requirement may be rejected without seeking any clarification.
7. Bidder has to sign a **Non-Disclosure Agreement** with IITK. Any technical document, drawings in the form of soft or hard copy shall not be disclosed to anybody outside the working team. All the hard copies shall be destroyed immediately after the use.
8. The bidder should **submit a declaration** to the effect that neither the bidder themselves, nor any of its allied concerns, partners or associates or directors or proprietors involved in any capacity, are currently serving any banning orders issued by IITK debaring them from carrying on business dealings with IITK.
9. Bidders should quote prices in Indian rupee only. Prices quoted in any other currency shall not be considered.
10. The **Bid shall be valid for acceptance for the period of 90 Days** and shall not be withdrawn on or after the opening of bids till the expiration of the validity period or any extension agreed thereof.
11. **The earliest period by which the job can be executed in total should be clearly stated in the quotation and such period should be strictly adhered to in the event of a work-order.**
12. Bids qualified by vague and indefinite expressions such as "Subject to availability" etc. will not be considered.
13. The bid along with all technical details, appendices and copies of documents should be submitted to IITK. The Technical bid shall contain all details required as per the specifications.
14. In case the bidder needs to clarify and/or understand the full scope of his work before submitting the quotation, he may do so by taking prior appointment or by writing email to **Prof. S. N. Tripathi, CE Dept., IIT Kanpur** (e-mail id snt@iitk.ac.in). The Client will respond by email to such requests and copies of the response (including an explanation of

query but without identifying the source of enquiry) will be sent to all invited bidders who intend to submit the proposal, and also posted at Tenders link of IITK website (if found necessary).

15. The successful bidder shall be responsible for the correctness and accuracy of the drawings, documents and reports prepared by him. Approval of the drawings and documents by IITK/their representative shall not relieve him of his responsibility for correctness and accuracy of such drawings and documents. No compensation or extra payment shall be made by IITK for any correction or changes made in the execution work.
16. Bidders should ensure that they qualify for all the items of the assignment. The bidders shall have experience and expertise in the scope of work as detailed in this tender.
17. Bidder must have at least three similar jobs executed, and the name of the organization for which the works were carried out should be furnished with the Bid. Copy of Completion Certificate may be furnished.
18. The acceptance of bids will rest with Director, IITK who does not bind himself to accept the lowest bid and reserves to himself the authority to reject any or all the bids received without assignment of any reason. Also, Director, IITK reserves to himself the right to accept the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.

Commercial terms & conditions:

1. The bids will be evaluated on the basis of technical suitability and financial quotation.
2. Technical and price bids should be submitted in a single sealed envelope along with all the relevant details and documents. The reference of our enquiry should be clearly written on the top of the envelope. The bid should be addressed to **Prof. S. N. Tripathi**, Department of Civil Engineering, IITKanpur, Kanpur-208016 and should reach IIT Kanpur on **or before the due date as mentioned in the cover page.**
3. Price bids should clearly mention the detailed price break-up of scope of work as given in Part-I of tender and taxes separately for supply and installation jobs. **If the tax value differs for different items, these shall be mentioned separately.**
4. Technical evaluation will be based on the criteria detailed in the General Terms and Conditions and the scope of work as given in Technical Specifications. If required, evaluation of the bidder's resources would be undertaken by the client by visiting the bidder's premises.
5. IITK is partially/fully exempted from payment of customs/excise duty, if applicable. As the above statutory provisions are frequently reviewed by the Govt., the bidders are advised to check the latest position in their own interest and IITK will not bear any responsibility for any incorrect assessment of the statutory levies by any bidder.

6. Government of India's guidelines on **GST** shall be complied.
7. The Bid Security is required to protect the IITK against the risk of Bidder's conduct which would warrant the security's forfeiture. **The value of bid security is mentioned in the cover page.**
8. Central Government Departments and Central Public Sector Undertakings are exempted from payment of Bid Security. MSEs units (and not their dealers/distributors) who are themselves manufacturer of the items/ provider of services, they intend to quote which are themselves registered with District Industry Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of MSME are also exempted from payment of Bid Security irrespective of monetary limit mentioned in their registration certificate provided they are registered for the Services they intend to quote.
9. The Bid Security shall be acceptable in the following form: Bank Draft in favour of '**REGISTRAR, IIT Kanpur**', payable at Kanpur.
10. The bidders shall submit Bank draft / Bank Guarantee from any scheduled bank incorporated in India.
11. The Bid Security shall be forfeited by IITK in the following events:
 - 11.1. If Bid is withdrawn during the validity period or any extension thereof duly agreed by the Bidder.
 - 11.2. If Bid is varied or modified in a manner not acceptable to IITK during the validity period or any extension of the validity duly agreed by the Bidder.
 - 11.3. If a Bidder, having been notified of the acceptance of its bid, fails to furnish **Performance Bank Guarantee (PBG)** within 30 days of notification of such acceptance.
 - 11.4. In case at any stage of tendering process, it is established that bidder has submitted forged documents/certificates/information towards fulfilment of any of the tender/contract conditions.
12. The Bid Security of unsuccessful Bidders will be returned after finalization of the bid.
13. The Bid Security of successful bidder will be returned on receipt of **Performance Bank Guarantee (PBG)**. **The validity of PBG would cover the period starting from the acceptance of the contract to the end of the warranty period.**
14. If the contract is awarded, the bidder shall furnish the **Performance Bank Guarantee (PBG) for the value of 10% of the overall cost (excluding taxes) to IIT, Kanpur**. This

PBG will be released after the guarantee period is over by IITK based on the satisfactory performance of supplied system/item.

15. **80% funds (installation and commissioning cost excluded) may be released** after delivery of items and balance **20% on completion of the scope of work**. All the payments for installation & commissioning will be paid **only at the completion of the job**.
16. IITK shall make payments only through Electronic Payment mechanism (viz. NEFT/RTGS/ECS). A successful Bidder should invariably provide the required bank details as and when required by IITK.

General Notes to Bidder/Supplier:

1. **Pre-dispatch inspection at supplier's factory is needed. Post supply inspection is not permitted.**
2. The facility for pre-dispatch inspection / testing for the indented item shall be available with the supplier. Inspection of all the items ordered shall be carried out in presence of purchaser's representative at the supplier's factory. The inspector shall approve the test results, after witnessing the test. This includes the tests for all the requirements mentioned in the indent specifications. Supplier shall provide all the inspection, testing facilities and test reports.
3. Shipping clearance will be issued only after the satisfactory test results.
4. All the relevant catalogues, manufacturer's test certificates in standard format and Operation & Maintenance Manual shall be submitted along with the material.
5. The material shall conform strictly to the relevant specifications and standards.
6. The supplier shall submit a certificate for guarantee of the material/service against any defects **for 18 months from the date of supply or 12 months from the date of installation.**
7. The material shall be properly packed to avoid damage of any kind during transit. IITK is not responsible for any damage during transit. The safe door delivery at IITK is in the scope of supplier.
8. All the work mentioned in the tender document shall be executed at **National Aerosol Facility (NAF), IIT-Kanpur, Kanpur-208016, UP.**