OFFICE OF THE DIRECTOR
RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI & 834009, JHARKHAND

Tender Notice No. 7297 /RIMS, Ranchi, Dated : 27.10.2015.

Notice regarding expression of Interest for Handling, Transportation & disposal of Bio Medical Wastes Generated by the Clinics, Hospitals, Laboratories etc. under Ranchi Municipal Area & establishment of State of Art Common Biomedical Waste Disposal facility Plant at Jhiri, Ranchi

Expression of interest is being invited by the competent authorities / agencies, by Speed or Registered post only (Not by hand or any other means), for preparation of Detailed Project Reports (DPR) for handling, safe transportation and disposal of Bio Medical Wastes generated by the Medical Centres i.e. Clinics, Hospitals, Private Nursing Homes, Investigation Laboratories, Diagnostic Centres, Medical Institutes etc. situated under Ranchi Municipal Corporation area at Ranchi.

For preparation of DPR the works to be done by the agencies shall be as under :-

(i) The intended agencies have to survey all the above mentioned places under Ranchi Municipal Corporation on their own for assessment or calculation of average medical waste generated under the jurisdiction

(ii) After assessment of average waste generated, agencies have to assess the size, quantity, quality and names of all the equipments & machinaries required for proper disposal of the wastes as per norms of, Central / State Pollution Control Board / Government of India. They also have to provide approximate estimates for the same

(iii) The agencies also have to assess the requirement of man power and space for installation and handling the complete project on turnkey basis.

A.	**Important dates for Tenders**	
1.	Pre bid meeting for discussion on various technical issues	On 07.11.2015 at 12:30 P.M in the RIMS administrative conference hall. All the intended bidders must have to attend the pre bid with their technical experts and their own proposed programmes or plans for the said works with soft copy of their preparation for representation on LCD projector.
2.	Date of issue of Tender documents	From : 23.11.2015 to 23.12.2015 in all working days in working hours. The bidders may purchase Tender paper after payment of Rs. 5000/- (Five Thousand non refundable) by cash to RIMS cashier or they may download the Tender paper from RIMS Website : www.rimsranchi.org and enclose DD of Rs. 5000/- (Five thousand only) in favour of Director, Rajendra Institute of Medical Sciences, Ranchi.
3.	Last date of submission of sealed Tender documents (Only by speed post / Registered post)	On 28.12.2015 latest by 04.30 P.M at RIMS, Ranchi only.
4.	Opening of Technical bid & discussion on technical issues.	On 29.12.2015 at 12:30 P.M in RIMS administrative conference hall. All the bidders have to attend the bid opening.

Note : (1) Rest terms and conditions of tender will be made available from 03.11.2015 On RIMS website. The bidders have to quote in accordance to the final tender paper which will be uploaded (after pre bid discussion) on 23.11.2015.

(2) Final Tender paper will be uploaded on 23.11.2015, All the bidders have to submit their tender as per final tender paper.

(3) Before participating the meetings the bidders may physically visit the site. (i.e. Area under Ranchi Municipal Corporation (RMC), Ranchi

In case of lack of any essential required documents the tenders will be rejected - The list of essential required documents which must be submitted with technical bid of the bidders :

i. Photocopy of JVAT (Sales tax) Registration certificate in Jharkhand State.

ii. Photocopy of JVAT/Sates tax clearance certificate of Jharkhand State, valid at the time of opening of technical bid.

OR

If the bidding agency is not registered under Jharkhand sales tax department, then they must give an undertaking through notary affidavit that “They will supply the equipment/items at RIMS, Ranchi after

payment of JVAT/Jharkhand Sales tax on their own & they will make their own arrangements for custom clearance in case of imported equipments. They shall not demand any document from RIMS for JVAT/custom clearance/duty exemption/waiver/relief in this regard".

iii. I.T. PAN no. of the bidder.

iv. Earnest money in form of Demand Draft Amounting Rs. 2,00,000..00 (Two Lakhs) issued by any nationalized bank only in faviour of **Director, Rajendra Institute of Medical Sciences, Ranchi –**

v. Affidavits through first class magistrate / Notary Public, mentioning that –

(a) "Our company / Firm / Organization has not been black listed or convicted in the past by any Hospital Organization or by any Government / Semi government organization / P.S.Us / C.B.I / C.C.I & free from all kind of litigation/allegations,

(b) That the firm has no vigilance case / CBI / FEMA / CCI case pending against him (Principal)

(c) That the firm is not supplying or doing the same item or work at lower rate quoted in the tender to any government organization or any other institute".

vi. The bidders have to provide complete layout plan of the works required and to be done within their offer for installation & functioning of the complete system.

vii. I.T. return certificate & balance sheet (duly signed & stamped by the Chartered Accountant) of the bidders for last three financial year. Showing minimum turnover of Rs. 2,00,00,000.00 (Rupees Two Crores) in every financial year.

viii. The bidders have to give the undertaking / acceptance letter in their bid that they shall submit the DPR within 90 days (Ninety Days) from the date of issue of work order.

Ix The bidders have to enclosed the experience certificate in form of work orders and completion certificates for similar nature of work done with work value (i.e. Amount) issued by the competent authority awarding the work.

C. Other terms & conditions of tender :

1. Technical part should contain the documents & request for proposal and all such details as mentioned in the term of reference or tender paper.
2. Financial part should contain the financial part only.
3. Details with respect to terms and conditions & list of items and submission of such proposal can be obtained from "Term of Reference" i.e. tender document/paper & on RIMS **website - www.rimsranchi.org**
4. If required by the technical committee, all the tenderers have to organize representation of their DPR on LCD Projector by providing soft copy of their offer before finalization of technical evaluation report.
5. The undersigned reserves the right to accept or reject in part or as a whole any of the proposal received without assigning any reason thereof.
6. Any legal matter related to this tender shall be under jurisdiction of Hon'ble Jharkhand High Court, Ranchi.
7. Before participating the bid, the bidders may visit Ranchi Municipal Corporation (RMC) area and may have discussion with the senior officials of RMC & State Pollution Control Board, Ranchi regarding their requirements & queries.
8. Price Bid of only those bidders will be considered/opened who will qualify the technical documents parts as well as technical specification parts.
9. No payment shall be made in advance, whatever circumstances may be.
10. The bidding prices will be valid at least for two years or the next tender which ever is earlier. If there will be government holiday on any last day of the above schedule, the tender process will continue on the just next working day.
11. The successful bidders have to submit security deposit in the form of Bank guarantee in the name of Director, Rajendra Institute of Medical Sciences, Ranchi amounting 10% of the total work value and the guarantee must be valid for a period of one year from the date of issue.

Sd/-
Director
Rajendra Institute of Medical Sciences
Ranchi.

RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI

Final Tender paper for Preparation of DRP for Handling, Transportation & disposal of Bio Medical Wastes Generated by the Clinics, Hospitals, Laboratories etc. under Ranchi Municipal Area & establishment of State of Art Common Biomedical Waste Disposal facility Plant at Jhiri, Ranchi

Tender Notice No. 7297 dated : 27.10.2015

Issued to

M/s _____

_____

_____

_____

Against money receipt number ……/RIMS, dated : ……

Cashier
RIMS, Ranchi

Invitation of tender notice for Preparation of DRP for Handling, Transportation & disposal of Bio Medical Wastes Generated by the Clinics, Hospitals, Laboratories etc. under Ranchi Municipal Area & establishment of State of Art Common Biomedical Waste Disposal facility Plant at Jhiri, Ranchi

To,

M/s _____

_____

_____

_____

Dear Sir,

Director, Rajendra Institute of Medical Sciences, Ranchi invites you to tender for Preparation of DRP for Handling, Transportation & disposal of Bio Medical Wastes Generated by the Clinics, Hospitals, Laboratories etc. under Ranchi Municipal Area & establishment of State of Art Common Biomedical Waste Disposal facility Plant at Jhiri, Ranchi.

If you are in a position to quote for supply & installation in accordance with requirements stated in short tender notice & tender form, you must also furnish all the information, called for, along with your tender.

This tender is non transferable.

All legal matter in respect to this tender will be subjected to jurisdiction of Hon'ble Jharkhand High Court, Ranchi.

The last date of submission of tender by registered posts / speed post only, -- 28.12.2015 (upto 4:30 p.m).

Date for opening technical bid – 29.12.2015 at 12:30 p.m.

Yours faithfully

Sd/-
Director
Rajendra Institute of Medical Sciences
Ranchi

Technical compliance report duly filled and signed with seal of the bidder.

The bidders must fill all the rows/columns of this compliance report. This report will be inspected & evaluated by purchase committee and accordingly documents will be verified on the concerned page numbers.

Sl. No.	Enclosures required	Have you enclosed it? write clearly Yes or No	If yes then on page no. of this bid.
	In case of lack of any essential required documents the tenders will be rejected - The list of essential required documents which must be submitted with technical bid of the bidders :		
1.	Photocopy of JVAT (Sales tax) Registration certificate in Jharkhand State.	Yes/No	Page No. ……
2.	Photocopy of JVAT/Sates tax clearance certificate of Jharkhand State, valid at the time of opening of technical bid. **OR** If the bidding agency is not registered under Jharkhand sales tax department, then they must give an undertaking through notary affidavit that "They will supply the equipment/items at RIMS, Ranchi after payment of JVAT/Jharkhand Sales tax on their own & they will make their own arrangements for custom clearance in case of imported equipments. They shall not demand any document from RIMS for JVAT/custom clearance/duty exemption/waiver/relief in this regard".	Yes/No	Page No. ……
3.	I.T. PAN no. of the bidder.	Yes or No	On Page No. ….
4.	Earnest money in form of Demand Draft amounting to Rs. 2,00,000.00 issued by any nationalized bank only in faviour of **Director, Rajendra Institute of Medical Sciences, Ranchi –**	Yes or No	On Page No. …….
.5.	Affidavits through first class magistrate / Notary Public, mentioning that – (d) "Our company / Firm / Organization has not been black listed or convicted in the past by any Hospital Organization or by any Government / Semi government organization / P.S.Us / C.B.I / C.C.I & free from all kind of litigation/allegations, (e) That the firm has no vigilance case / CBI / FEMA / CCI case pending against him (Principal) (f) That the firm is not supplying or doing the same item or work at lower rate quoted in the tender to any government organization or any other institute".	Yes or No	On Page No. ….
6.	The bidders have to provide complete layout plan of the works required and to be done within their offer for installation & functioning of the complete system.	Yes or No	On Page No. ….
7.	I.T. return certificate & balance sheet (duly signed & stamped by the Chartered Accountant) of the bidders for last three financial year. Showing minimum turnover of Rs. 2,00,00,000.00 (Rupees Two Crores) in every financial year.	Yes or No	On Page No. ….

8.	The bidders have to give the undertaking / acceptance letter in their bid that they shall submit the DPR within 90 days (Ninety Days) from the date of issue of work order.		
9.	The bidders have to enclosed the experience certificate in form of work orders and completion certificates for similar nature of work done with work value (i.e. Amount) issued by the competent authority awarding the work.	Yes or No	On Page No. …

Note :

1. For payment of JVAT / Sales tax form JVAT-504 G / Road permit / Entry tax / Service Tax etc. of Government of Jharkhand or Central Government no format will be issued by R.I.M.S. authority. It will be responsibility of the bidders to arrange JVAT form 504-G or any other documents related to sales tax / entry tax / service tax etc. on their own.
2. If any of the above enclosures are of more than one page then in the page number columns write clearly on page no. …….…. to page no. ……..
3. Without filling the compliance report the offer will be rejected directly at the time of technical evaluation.

Certificate of Compliance

I Mr. / Mrs. / Miss ……..……. on behalf of M/s (Name of firm / company) ……..……. do hereby confirm that I have verified the above compliance report, it is duly filled. Our technical bid consists of total (No. of pages) ……. (in words ……..…….……)

Signature of the Bidder
with date & seal of the firm / company

OFFICE OF THE DIRECTOR
RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI
Bariatu, Ranchi – 834009 (Jharkhand)

General Terms & Conditions

1. The terms and conditions mentioned in tender notice no. 7297. dated 27.10.2015 of RIMS, Ranchi.
2. The tender should be submitted complete with all documents as per demand of NIT & with specification, literature, leaflet along with catalogues etc. leaving no room for back references.
3. Bids are to be submitted in two parts viz. (A) Technical Bid containing complete technical aspects including original EMD & Affidavit (B) Price Bid containing price elements only.
4. Technical offer of the bidders should be in the proforma / format given below :

Technical Offer Proforma : To be filled after survey by the bidders (no manipulation should be entered). If found fake entry or shortage or missing of the medical centres then penalty will be implemented on the bidders. It may be in the form of monetary deduction of payments or in the worst case the order may get cancelled and EMD will be forfeited.

Proforma

Ward No	Name of Mohalla or Village	Name of Gali or Street	Sl. No	Name and address of Medical Centre	In case of Institute or Hospital or Nursing Homes no of indoor patients bed	Cetegory (As per govt. norms) wise average calculation of approx. Bio Medical waste generated per day in Kg / Ltrs.					Remarks of the Surveyor if any
						Yellow bags cat. 1,2,3 & 6	Red bag cat. 3,6 & 7	Blue bag cat. 4 & 7	Black bag cat. 5,9 & 10	Liquid / Chemicals cat. 8	
e.g. RMC Ward No. 6	e.g. Morabadi Harihar Singh Road	e.g. Jatra Maidan Gali	1	e.g. M/s Krishnan Lab, 1st Fl. No.6 Tripti Mension	e.g. 50 Beds	e.g. 2 Kg	e.g. 5 Kg	e.g. 8 Kg	e.g. 10 Kg	In Ltrs.	e.g. It is a pathological & radiological centre

Note : The bidders have to fill the format as per examples given above.

Full signature of the
tenderer with seal
Designation : ……
Dated : ……

CATEGORIES OF BIO-MEDICAL WASTE AS PER CPCB RULES 1998

Option	Waste Category	Treatment & Disposal
Category No. I	Human Anatomical Waste (human tissues, organs, body parts)	Incineration @/deep burial*
Category No. 2	**Animal Waste** (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal)	Incineration @ / deep burial*
Category No 3	**Microbiology & Biotechnology Waste** (wastes from laboratory cultures, stocks or specimens of micro-organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures)	local autoclaving / micro-waving / incineration@
Category No 4	**Waste sharps** (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	disinfection (chemical treatment @ 01/auto claving / micro- waving and mutilation/ shredding"
Category No 5	**Discarded Medicines and Cytotoxic drugs** (wastes comprising of outdated, contaminated and discarded medicines)	Incineration @/destruct ion and drugs disposal in secured landfills drugs disposal in secured landfills.
Category No 6	**Solid Waste** (Items contaminated with blood, and body fluids including cotton dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)	Incineration @ autoclaving / micro-waving
Category No. 7	**Solid Waste** (wastes generated from disposable items other than the waste shaprs such as tubings, catheters, intravenous sets etc).	disinfection by chemical treatment @ @ autoclaving/micro-waving and mutilation/ shredding##
Category No. 8	**Liquid Waste** (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)	disinfection by chemical treatment@@ and discharge into drains.
Category No. 9	**Incineration Ash** (ash from incineration of any bio-medical waste)	disposal in municipal landfill
Category No. 10	Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)	chemical treatment @@ and discharge into drains for liquids and secured landfill for solids

@@ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

Multilation/shredding must be such so as to prevent unauthorised reuse.

@ There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

- Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.

+ Options given above are based on available technologies. Occupier/operator wishing to use other State-of-the-art technologies shall approach the Central Pollution Control Board to get the standards laid down to enable the prescribed authority to consider grant of authorization.

COLOUR CODING AND TYPE OF CONTAINER FOR DISPOSAL OF BIO-MEDICAL WASTES AS PER CBCB RULES 1998

Colour Conding	Type of Container -I	Waste Category	Treatment options as per Schedule I
Yellow	Plastic bag	Cat. 1, Cat. 2, and Cat. 3, Cat. 6.	Incineration/deep burial
Red	Disinfected container/plastic bag	Cat. 3, Cat. 6, Cat.7.	Autoclaving/Microwaving/ Chemical Treatment
Blue/White translucent	Plastic bag/puncture proof Container	Cat. 4, Cat. 7.	Autoclaving/Microwaving/ Chemical Treatment and destruction/shredding
Black	Plastic bag	Cat. 5 and Cat. 9 and Cat. 10. (solid)	Disposal in secured landfill

Notes:

1. Colour coding of waste categories with multiple treatment options as defined in Schedule I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule I.
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.

GUIDELINES FOR DESIGN AND CONSTRUCTION OF BIO-MEDICAL WASTE INCINERATOR

1. General

1. These guidelines shall be applicable only to the new installation of incinerators. However, the existing incinerator shall be retrofitted with Air Pollution Control Device as mentioned in these guidelines.
2. Incinerator shall be allowed only at Common Bio-medical Waste Treatment Facility (CBWTF).
3. Installation of individual incineration facility by a healthcare unit shall be discouraged as far as possible but approval may be granted only in certain inevitable situations where no other option is available.

2. Incinerator

Following design criteria may be adopted for better performance:

I. The incinerator shall be designed for capacity more than 50 kg/hr. For 50 kg/hr capacity, the minimum hearth area shall be 0.75 sq. m (8 sq. feet) and the minimum flow of the flue gas in the secondary chamber shall be 0.6 m3/sec at 1050°C. Each incinerator must be installed with an air pollution control system (as specified in the section 3).

II. The size of the opening through which the waste is charged shall be larger than the size of the waste bag to be fed. The volume of the primary chamber shall be atleast five times the volume of one batch.

III. The double chamber incinerator shall preferably be designed on "controlled-air" incineration principle, as particulate matter emission is low in such incinerator. Minimum 100% excess air shall be used for overall design. Air supply in the primary and secondary chamber shall be regulated between 30%-80% and 170%- 120% of stoichiometric amount respectively. Primary air shall be admitted near / at the hearth for better contact. Flow meter / suitable flow measurement device shall be provided on the primary & secondary air ducting. The combustion air shall be supplied through a separate forced draft fan after accounting for the air supplied through burners.

Optional: For higher capacity incinerators, typically above 250 kg/hr, other design e.g. Rotary Kiln shall be preferred.

IV. A minimum negative draft of 1.27 to 2.54 mm of WC (Water Column) shall be maintained in the primary chamber to avoid leakage of gaseous emissions from the chamber and for safety reasons. Provision shall be made in the primary chamber to measure the Water Column pressure.

V. The waste shall be fed into the incinerator in small batches after the fixed interval of time in case of fixed hearth incinerator and continuous charging using appropriate feeding mechanism incase of rotary kiln incinerator or as recommended by the manufacturer. The size of the hearth i.e. primary chamber shall be designed properly.

VI. The sides and the top portion of the primary and secondary chambers shall preferably have rounded corner from inside to avoid possibility of formation of black pockets/dead zones.

VII. The size of the secondary chamber shall be properly designed so as to facilitate a minimum of one second of residence time to gas flow. For the estimation of residence time in the secondary chamber its volume shall be calculated starting from the secondary burner tip to the thermocouple.

VIII. The refractory lining of the chamber shall be strong enough to sustain minimum temperature of 1000° C in the primary chamber and 1200° C in the secondary chamber. The refractory & insulation bricks shall have minimum 115 mm thickness each & conform to IS:8-1983 & IS:2042-1972 respectively.

IX. The Incinerator shell shall be made of mild steel plate of adequate thickness (minimum 5 mm thick) & painted externally with heat resistant aluminum paint suitable to withstand temperature of 250°C with proper surface preparation. Refractory lining of the hot duct shall be done with refractory castable (minimum 45 mm thick) & insulating castable (minimum 80 mm thick). Ceramic wool shall be used at hot duct flanges & expansion joints.

X. The thermocouple location shall be as follows:

In Primary chamber - Before admission of secondary air
In Secondary chamber - At the end of secondary chamber or before admission of dilution medium to cool the gas

XI. There shall be a separate burner each for the Primary & Secondary chamber. The heat input capacity of each burner shall be sufficient to raise the temperature in the primary and secondary chambers as 800±50°C and 1050±50°C respectively within maximum of 60 minutes prior to waste charging. The burners shall have automatic switching "off/on" control to avoid the fluctuations of temperatures beyond the required temperature range.

a) Each burner shall be equipped with spark igniter and main burner.
b) Proper flame safeguard of the burner shall be installed.
c) Provide view ports to observe flame of the burner.
d) Flame of the primary burner
e) shall be pointing towards the centre of the hearth.
f) shall be having a length such that it touches the waste but does not impinge directly on the refractory floor or wall.
g) The secondary burner shall be positioned in such a way that the flue gas passes through the flame.

XII. There shall not be any manual handling during charging of waste in to the primary chamber of the incinerator. The waste shall be charged in bags through automatic feeding device at the manufacturer's recommended intervals ensuring no direct exposure of furnace atmosphere to the operator. The device shall prevent leakage of the hot flue gas & any backfire. The waste shall be introduced on the hearth in such a way so as to prevent the heap formation. Suitable raking arrangement shall be provided for uniform spreading of waste on the hearth.

XIII. A tamper-proof PLC(Programmable Logic Control) based control system shall be installed to prevent:

- Waste charging until the required temperature in the chambers are attained during beginning of the operation of the incinerator.
- Waste charging unless primary & secondary chambers are maintained at the specified temperature range.
- Waste charging in case of any unsafe conditions such as - very high temperature in the primary & secondary chambers; failure of the combustion air fan, ID fan, recirculation pump; low water pressure & high temperature of the flue gas at the outlet of air pollution control device.

XIV. The incineration system must have an emergency vent. The emergency vent shall remain closed i.e it shall not emit flue gases during normal operation of the incinerator.

XV. Each incineration system shall have graphic or computer recording devices, which shall automatically and continuously monitor and record dates, time of day, batch sequential

number and operating parameters such as temperatures in both the chambers. CO, CO2 , and O2 in gaseous emission shall also be measured daily (atleast ½ hour at one minute interval).

XVI. The possibility of providing heat recovery system/heat exchanger with the incinerator shall also be considered wherever possible.

XVII. Structural design of the chimney / stack shall be as per IS:6533-1989. The chimney/stack shall be lined from inside with minimum of 3 mm thick natural hard rubber suitable for the duty conditions and shall also conform to IS:4682 Part I-1968 to avoid corrosion due to oxygen and acids in the flue gas.

XVIII. The location and specification of porthole, platform ladder etc. shall be as per the Emission Regulations, Part-3 (COINDS/20/1984-85), published by CPCB.

3. Air Pollution Control Device:

It is not possible to comply with the emission limit of 150 mg/Nm3 (corrected to 12% CO2) for Particulate Matter, without Air Pollution Control Device (APCD). Therefore, a bio-medical waste incinerator shall always be equipped with APCD.

i) No incinerator shall be allowed to operate unless equipped with APCD.

ii) The incinerator shall be equipped with High Pressure Venturi Scrubber System as ordinary APCD such as wet scrubber or cyclonic separator cannot achieve the prescribed emission limit. For the facilities operating for 24 hrs a day, APCD in terms of dry lime injection followed by bag filter can be considered. The details of High Pressure Venturi Scrubber System are given in ANNEXURE-I.

4. Incinerator room and waste storage room :

i) The incinerator structure shall be built in a room with proper roofing and cross ventilation. There shall be minimum of 1.5 m clear distance in all the directions from the incinerator structure to the wall of the incinerator room.

ii) Adjacent to the incinerator room, there shall be a waste storage area. It shall be properly ventilated and so designed that waste can be stored in racks and washing can be done very easily. The waste storage room shall be washed and chemically disinfected daily.

iii) The floor and inner wall of the incinerator and storage rooms shall have outer covering of impervious and glazed material so as to avoid retention of moisture and for easy cleaning.

iv) The incineration ash shall be stored in a closed sturdy container in a masonry room to avoid any pilferage. Finally, the ash shall be disposed in a secured landfill.

5. Operator of the incinerator :

i) A skilled person shall be designated to operate and maintain the incinerator. The operator shall have adequate qualification in relevant subject and shall be trained and certified by the incinerator supplier in operation & maintenance of the incinerator.

ii) There shall be at least one assistant designated at the incinerator plant to keep track of the wastes, records of incinerator operation, cleanliness of the surrounding area and incinerator & waste storage room. They shall also take care of waste charging and incineration ash disposal.

iii) All the staff at the incinerator plant shall put on protective gears such as gumboots, gloves, eye glasses, etc. for safety reasons.

iv) Any accident occurred shall immediately be reported to the facility operator. The facility operator shall have well defined strategies to deal with such accident/emergency.

[*The guidelines will help in selection/installation of better incinerator system. However, it shall be ensured that the incinerator shall comply with the standards stipulated in the Bio-medical Waste (Management & Handling) Rules, 1998.*]

ANNEXURE-I

Details of High Pressure Venturi Scrubber System

1. The venturi scrubber shall have minimum pressure drop of 350 mm WC to achieve the prescribed emission limit. The temperature of the flue gas at the outlet of the venturi scrubber shall be approx 70-80° C to ensure the saturation of the flue gas.
2. The venturi scrubber shall preferably be made of stainless steel - 316L grade or better material or mild steel lined with acid resistant bricks to avoid corrosion.
3. The water to be used in venturi scrubber shall be added with caustic soda solution to maintain the pH of the scrubbing liquid above 6.5.
4. The scrubbing medium shall be circulated @ 2-2.5 ltrs/m3 of saturated flue gas at venturi outlet. This shall be done using a pump & piping made of stainless steel - 316 grades or better material. The scrubbing medium shall be recirculated as far as possible.
5. Venturi scrubber shall be followed by centrifugal type droplet separator to remove water droplets from flue gas.
6. The material of construction of the droplet separator and interconnecting ducting from venturi scrubber to droplet separator, droplet separator to ID fan & ID fan to stack, shall be mild steel lined from inside with minimum 3 mm thick natural hard rubber suitable for the duty conditions and shall also conform to IS: 4682 Part I-1968 to avoid corrosion due to oxygen and acids in the wet flue gas.
7. The wastewater generated from the air pollution control device shall be properly handled so as to avoid any non-compliance of the regulatory requirements.
8. Stack emission monitoring and ash analysis as per the requirement of the Bio-medical Waste (Management & Handling) Rules, 1998, shall be done quarterly i.e. once in every three months and record shall be maintained by the facility operator.

Note :

1. For filling the above format the bidders have to fill according to the categories fixed by CPCB Rules for handling the Biomedical Waste as mentioned above.
2. Since incinerator is a technology for buring of biomedical wastes but “PLASTICS” which is one of major part of hospital waste can not be treated in the incinerators. Plastics need to be sterilized and then either crushed or shredded through various procedures; similarly needles need to be destroyed. So the bidders have to mention all the equipments in their DPR in such a manner that all types of generated waste must get treated as per norms/rules of CPCB Government of India.

3. The work area of survey for preparation of DPR is within radius of 30 Km (Thirty Kilometers) from Ranchi. The bidders must have to give their approx. estimate for equipments in such of manner, that it could meet the demand for further at least 10 years in anticipation with respect to increase of beds, clinics etc.

CATEGORIES OF BIOMEDICAL WASTE & ITS RECOMMENDED TREATEMENT METHODOLOGY

Category No.	Type of wastes	Container / Bags	Treatment methods
1	Human Anatomical waste	Yellow	Incineration / deep burial
2	Animal waste	Yellow	Incineration / deep burial
3.	Microbiology & Biotechnology waste	Yellow, Red	Autoclaving / Microwaving / Incineration / deep burial (As per schedule-II of CPCB
4.	Waste sharps	Blue, white	First disinfection by chemical treatment then autoclaving / microwaving the shredding then deep burial.
5.	Discarded Medicines & cytotoxic drugs	Black	Dry medicine to be incinerated or secured landfill and liquids to be disinfected/neutralized then landfill.
6.	Soiled waste	Yellow, Red	Incineration / Autoclaving / Micro-waving & landfill.
7.	Solid waste	Red, Blue, White	First disinfection by chemical treatment then autoclaving / microwaving then shredding then landfill.
8.	Liquid waste	Containers	Chemical treatment for disinfection / neutralization then discharge into drains.
9.	Incineration Ash	Black	Disposal in municipal landfill.
10.	Chemical waste	Black	First chemical treatment for neutralization then liquid into drains & solids into secured landfill.

RECOMMENDED ON SPOT SEGREGATION METHODOLOGY

Yellow Bags	(1) Infectious waste (2) Used Bandages, gauge, cotton or (3) any other objects in contact with body fluids, human body parts placenta etc. (4) Microbial and pathological wastes.

Red Bags	Plastic waste such as catheters, injections syringes, I.V. Tubings, I.V. bottles, blood bags, urine bags, all other type of infectious plastics
Black	All types of glass, bottles, broken glass articles, outdated / expired / discarded and used medicines, pesticides etc.
Blue	Needles (without syringes) blades, sharps, scalpels and all metal waste articles

5. **Price Bid Proforma :**

The bidders have to quote their prices in their own format for complete job of preparation and submission of DPR within stipulated time frame.

Total price offer for job completion Rs. ……. (in words Rs. ……..……)

Full signature of the
tenderer with seal& date

6. The full EMD shall be forfeited in case of backing out of the offer after acceptance.
7. The bidders have to provide Ward wise, Mohalla wise and Street wise (Gali wise) list of all the private & government dispensaries, clinics, hospitals, Medical Laboratories, Blood Bank, Health Centres, Nursing Homes, Medical Institute etc.
8. As proof of the actual survey done for submitting the bids, the bidders have to enclose or submit soft copy in which the photographs of the situated medical centres (as mentioned in para(i) must be present with their name so that it may be uploaded on the government website for public information
9. The name and address of the centres under surveyed works must be written firstly gali wise (i.e. all the centres situated in the particular gali or street must be at one place), then all the street or galies of a particular mohalla must be shown at one place in such a manner that if any one wants to click a particular medical shop or centre in a particular gali of mohalla or ward, it must be present nthe list of that very areas report in one click.
10. The bidders have to complete the full job and have to submit the DPR within 90 days from the date of issue of the confirmed work order failing which i.e. in case of late submission of the DPR, penalty will be charged on the bidder as per norms mentioned hereunder :-
    i. After 07 days (one week) from stipulated date of DPR submission - @0.5% (point five percent) per week of total contract value uptoto 04 weeks
    ii. After 04 weeks @1% (One percent) of contract value per week upto 08 weeks
    iii. After 08 weeks @2.0% (Two percent) of contract value per week upto 12 weeks.
    iv. After 12 weeks the security money & EMD will be forfeited by RIMS and the bidder will be debarred / black listed for further participations.
11. After survey for calculation of waste generation, the bidders also have to calculate the means & mode of on spot segregation, medical waste collection and safe transportation from site to the disposal plant yard.

12. Simultaneously they have to calculate the average number & models of vehicle (such as covered three wheelers or four wheelers or heavy vehicles) in a sequence so that the medical waste may be transported from narrow streets to the disposal yard at Jhiri, Ranchi.

13. The bidders also have to calculate or provide the names, specification, number, capacity etc. of equipment (such as Diesel incinerators, Shredders, heavy duty autoclaves, covered trolley etc.) required for disposal of the whole generated medical wastes. During calculation & estimation of the required equipments, it must be considered that if incase there occurs any break down in any of the required listed equipment then an alternate arrangement for disposal of the medical wastes must be there. The assessment of equipments must be as per need of pollution Control Board norms. Simultaneously they have to provide the average / approximate estimates of each of the equipment.

14. They also have to assess or estimate the approximate annual running cost required (such as fuel, manpower, consumables like - carry bags, dust bins, collection bins, gloves shoes etc. for labourers, other handling small equipments for the working etc.) for the complete job.

15. The bidders also have to provider or suggest the line of action plan for successful implementation of the complete disposal process.

16. The bidders have to collect the documents related to ward wise area from Ranchi Municipal Corporation office by their own or they may download it from government web site.

Sd/-
Director
Rajendra Institute of Medical Sciences
Ranchi