Advertised Tender Enquiry
For
High Dose Rate Brachytherapy Unit (Cobalt Source)
at
Department of Radiotherapy,
Jawaharlal Nehru Medical College, AMU, Aligarh.

NIT Issue Date : 20-11-2019
NIT No. : DRT/xx /2019
Pre-Bid Meeting : 10-12-2019 at 2:30PM
Last Date of Submission : 21-12-2019 at 12:00 Noon
Bid opening : 23-12-2019 at 2:30 PM

Tender documents may be downloaded from university website www.amu.ac.in and www.eprocure.gov.in

Aligarh Muslim University Aligarh
Department of Radiotherapy,
JN Medical College,
AMU Aligarh 202002
email: radiotherapyoffice@gmail.com
Department of Radiotherapy, Jawaharlal Nehru Medical College, AMU, Aligarh invites bids (Technical & Financial) from reputed, experienced and financially sound Companies/Firms/Agencies for the supply & installation of the High Dose Rate Brachytherapy Unit (Cobalt source). Those who are in the similar business for the last five years and providing the same service to Central/State Govt./Reputed Private Hospitals or Autonomous Bodies may send their bids both Technical &Commercial in sealed envelopes. The interested Companies/Firms/Agencies may send their bid complete in all respect along with Earnest Money Deposit (EMD) as mentioned below for each item separately in the form of Demand Draft/Bank Guarantee issued in favour of Finance Officer, AMU, Aligarh, drawn on any scheduled bank payable at AMU, Aligarh and other requisite documents to Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh-U.P. through registered/speed post. The bids in sealed cover –I containing “Technical Bid” and sealed cover –II containing “Financial Bids” should be placed in a third sealed cover super scribed “Tender for High Dose Rate Brachytherapy Unit (Cobalt source) separately mentioning Tender No. DRT/xx/2019 on or before 12:00 Noon on 21.12.2019. The bids received after this deadline shall not be entertained under any circumstances whatsoever. In case of postal delay this Institute will not be responsible. The offers submitted by Telegram/Fax/email shall not be considered and no correspondence will be entertained in this matter. The EMD, in case of unsuccessful bidders shall be retained by AMU Aligarh till the finalization of the tender. No interest will be paid by AMU, Aligarh on the EMD.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Item Description</th>
<th>Qty</th>
<th>EMD (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>High Dose Rate Brachytherapy Unit (Cobalt source)</td>
<td>01No.</td>
<td>2 % of the quoted value in INR</td>
</tr>
</tbody>
</table>

The following documents are to be furnished by the Supplier along with Technical Bid as per the tender document:

i) Signed and scanned copy of valid registration certificate (registration of the Firm with AMU), registration with any govt. Agency, experience certificate as per the tender notice, PAN, GST registration certificate and Tender Acceptance Letter.

ii) Signed and Scanned copy of documents like (Earnest Money Deposit)

iii) Signed and Scanned Copy of Make and model with HSN code of all systems, sub system send additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups.

Bids will be opened on 23.12.2019 at 2:30 PM in the presence of bidders or their authorized representatives who wish to participate in the bidding process. If the opening date happens to be a closed day/holiday, the tender will be opened on the next working day.

Any future clarification(s) and / or corrigendum(s) shall be communicated by the Chairman, Department of Radiotherapy, JNMCH, AMU through the website www.amu.ac.in

Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh reserves the right to amend or withdraw any of the terms and conditions contained in the Tender Document or to reject any or all tenders without giving any notice or assigning any reason. The decision of the Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh in this regard shall be final.

(Prof. Shahid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
JNMCH, AMU, Aligarh
Technical Specifications : Refer to Annexure - I

Terms & Conditions:

1. The quoted rates must be valid for a period for 180 days from the date of closing of the tender. The overall offer for the assignment and bidder(s) quoted price shall remain unchanged during the period of validity. If the bidder quoted the validity shorter than the required period, he same will be treated as unresponsive and it may be rejected. In case the tenderer withdraws, modifies or change his offer during the validity period, bid is liable to be rejected and the earnest money deposit shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required, without changing any terms, conditions etc. of their original tender.

2. No overwriting or cutting is permitted in the rates. If found, quotation shall be summarily rejected.

3. The Equipment/System should be US-FDA/CE European approved and AERB Type approved product.

4. PRE-BID meeting with the intending bidders shall be held on 10.12.2019 from 2:30PM onwards in the Office of the Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh. All the prospective bidders are requested to send comments/representations on or before pre-bid meeting. Intending bidder will be allowed to seek clarification on specification, Conditions of Contract/Tender, etc. in writing to Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh, within 48 hours after the pre-bid meeting.

5. The goods ordered shall be delivered and installed at the Department of Radiotherapy, JN Medical College Hospital, AMU, Aligarh, within 90 days from the date of issue of supply order.

6. All the aspects of safe delivery, Insurance, Customs Clearance, Local transportation, installation and commissioning shall be the exclusive responsibility of the supplier. If the supplier fails to deliver, install and commission the goods on or before the stipulated date, then a penalty at the rate of 0.5% per week of the total order value shall be levied subject to maximum of 10% of the total order value.

7. In the case of package supply where the delayed portion of supply materially hampers installation and commissioning of the systems, liquidated damages charge shall be levied as above on the total value of the concerned package of the purchase order. Quantum of liquidated damages assessed and levied by the purchaser shall be final and not challengeable by the supplier.

8. The supplier shall be required to perform the following services:
   a) Installation & Commissioning, Supervision and Demonstration of the goods.
   b) Providing required jigs and tools for assembly, minor civil works required for the completion of the installation,
   c) On Site Training to Radiation Oncologists, Medical Physicists and Radiotherapy Radiographers is to be provided by Supplier for operation and maintenance of the
Tender for HDRBT-Cobalt equipment after successful installation of the machine.
d) Supplying required number of operation & maintenance manual for the goods.

9. The separate price list of all optional items, accessories and consumables, if any, must be attached/enclosed along with the Financial Bid.

10. After sales service should be available on 24hrs. X 7 (days) X 365 (days) basis. Complaints should be attended properly, maximum within 24hrs to ensure an uptime of minimum 95%, wherever applicable, failing which the necessary penalty measures shall be enforced.

11. The Department of Radiotherapy, J.N. Medical College, AMU, Aligarh shall have the right to inspect and/or to test the goods to confirm their conformity to the NIT Specifications at no extra cost to the Purchaser. Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh, shall be the final authority to reject full or any part of the supply which is not confirming to the specification and other terms and conditions. No payment shall be made for rejected Stores. Rejected items must be removed by the Bidders within two weeks of the date of rejection at their own cost and replaced immediately. In case these are not removed, the same will be auctioned at the risk and responsibility of the suppliers without any further notice.

12. The bidder shall provide a list of major Government and Private Institutions where its relevant bid item has been supplied during last two years.

13. The bidder (if not original equipment manufacturer) must submit Original Equipment Manufacturer authorization certificate that the tenderer is authorized for selling and maintain the equipment quoted for.

14. The bidders are required to submit user certificate for the relevant equipment on the letter head of the institution (Government/ Private).

15. The successful bidder will be required to submit order copies of the supply of the equipment in Government Institutions in last 24 months for rate reasonability purpose.

16. The supplier shall make arrangements for insuring the goods against loss or damage incidental of manufacture or acquisition, transportation, storage and delivery. If the equipment is not commission and handed over to Department of Radiotherapy, J.N. Medical College, AMU, Aligarh, within specified period, the insurance will have to be extended by the supplier at their cost till the successful installation, testing, commissioning and handing over of the goods to the Department of Radiotherapy, J.N. Medical College, AMU, Aligarh.

17. The goods should be quoted on F.O.R Department of Radiotherapy, J.N. Medical College, AMU.

18. Please mention Customs Duty, CGST/SGST or other taxes clearly & separately which will be payable on the goods in India.

19. The price of Annual CMC Financial Bid after warranty period must be mentioned clearly.

(Prof. Shahid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
20. 100% payment of the total order value shall be released only after the successful installation/Commissioning of the ordered goods/equipment against the submission of the installation and commissioning report. No advance payment is possible.

21. The Tenderers must quote for **05 years** comprehensive warranty including all Spares, Accessories and Labour) from the date of completion of the satisfactory installation. The warranty charges shall not be quoted separately. Also the bidders are requested to submit their quote (Rates) for subsequent **05 years** Comprehensive Maintenance Contract (CMC) (Including All Spares, Accessories and Labour). **Warranty must be clearly defined to the points, about what will be covered during 05 years of warranty.**

22. During the comprehensive warranty period, the guarantee up time of 95% of 365 days will be ensured. In case the down time exceeds the 5% limit penalty of extension of guaranty period by two days for each additional day of down time will been forced. The vendor must undertake to supply all spares for optimal up keep of the equipment for at least **FIVE YEARS** after handing over the unit to the Institute. If accessories / other attachment of the system are procured from the third party, then the vendor must produce cost of accessory/other attachment and the CMC from the third party separately along with the main offer and the third party will have to sign the CMC with the Institute if required.

23. The principal or their authorized service providers are required to submit a certificate that they have satisfactory service arrangements and fully trained staff available to support the uptime guarantee.

24. **Arbitration:** If any difference arises concerning this agreement, its interpretation on payment to the made there-under, the same shall be settled out by mutual consultation and negotiation. If attempts for conciliation don’t yield any result within a period of 30 days, either of the parties may make a request to the other party for submission of the dispute for decision to the sole arbitrator i.e. Vice-Chancellor, AMU, Aligarh, or his nominee. The decision of the sole arbitrator shall be binding on parties. The venue of arbitrator will be at Aligarh.

25. **Subletting of Work:** The firm shall not assign or sublet the work/ job or any part of it to any other person or party without having first obtained permission in writing of Department of Radiotherapy, J.N. Medical College, AMU, Aligarh, which will be at liberty to refuse if thinks fit. The tender is not transferable. Only one tender shall be submitted by one tenderer.

26. **Breach of Terms and Conditions:** In case of breach of any terms and conditions as mentioned above, the Competent Authority will have the right to cancel the Purchase order/work order/ job without assigning any reason thereof and nothing will be payable by Department of Radiotherapy, J.N. Medical College, AMU, Aligarh, in that event the security deposit shall also stands forfeited.

27. **In solvency etc:** In the event of the firm being adjudged insolvent or having a receiver appointed for it by a court or any other order under the Insolvency Act made against them or in the case of a company the passing any resolution or making of any order for winding up, whether voluntary or otherwise, or in the event of the firm failing to
Tender for HDRBT-Cobalt

comply with any of the conditions here in specified, the Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh shall have the power to terminate the contract without any prior notice.

28. Bidder shall submit a copy of the tender document and addenda thereto, if any, with each page of this document should be signed and stamped to confirm the acceptance of the entire terms & conditions as mentioned in the tender enquiry document.

29. The quantity of item given in the tender is tentative, which may be increased or decreased as per the Requirement of the Radiotherapy Department.

30. Signed & stamped compliance sheet of the technical specification of the goods with technical printed literature must be enclosed with the bid.

31. Conditional bid will be treated as unresponsive and it may be rejected.

32. **Demonstration:** The Chairman, Department of Radiotherapy, J.N. Medical College, AMU, Aligarh reserves the right to ask the tenderer for arranging demonstration of their equipment for which rates have been quoted to the concerned committee, if required.

33. AMU, Aligarh reserves the right to accept in part or in full or reject any or more tender(s) without assigning any reasons or cancel the tendering process and reject all tender(s) at any time prior to award of contract, without incurring any liability, whatsoever to the affected bidder or bidder(s).

34. **Applicable Law:**

The contract shall be governed by the laws and procedures established by Govt. of India within the framework of applicable legislation and enactment made from time to time concerning such Commercial dealings/processing.

Any disputes are subject to exclusive jurisdiction of Competent Court and Forum in Aligarh Uttar Pradesh, India only.

The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Aligarh. The decision of the Arbitrator shall be final and binding on both the partied.

[Signature]

Chairman,
Department of Radiotherapy,
JN Medical College Hospital
A.M.U. Aligarh
## TECHNICAL BID

<table>
<thead>
<tr>
<th>Name of Firm/Contractor/Supplier</th>
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<tbody>
<tr>
<td>Complete Address &amp; Telephone No.</td>
<td></td>
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<tr>
<td>Name of Proprietor/Partner/Managing Director/Director</td>
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<tr>
<td>Phone No:-</td>
<td></td>
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<tr>
<td>Mobile</td>
<td></td>
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<tr>
<td>No:-</td>
<td></td>
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<tr>
<td>Name and address of service centre nearby J.N. Medical College Hospital, AMU, Aligarh</td>
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<tr>
<td>Whether the firm is a registered firm Yes/No (attached copy of certificate)</td>
<td></td>
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<tr>
<td>PAN No. (enclose the attested copy of PAN Card)</td>
<td></td>
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<tr>
<td>Service Tax No. (enclose the attested copy of Service Tax Certificate)</td>
<td></td>
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<tr>
<td>GST No. (enclose the attested copy of CGST/SGST Certificate)</td>
<td></td>
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<tr>
<td>Whether the firm has enclosed the Bank Draft/Pay Order/Banker’s cheque of Earnest Money Deposit</td>
<td></td>
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<tr>
<td>Whether the Firm/Agency has signed each and Every page of Tender/NIT</td>
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<tr>
<td>Please provide full list of consumables.</td>
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<tr>
<td>Any other information, if necessary</td>
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Authorized signatory of the bidder with seal.

(Prof. Shahid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
INMC, AMU, Aligarh
Annexure –II

MANUFACTURER’S / PRINCIPAL’S AUTHORIZATION FORM

TO
Chairman,
Department of Radiotherapy,
JN Medical College,
A.M.U. Aligarh.

Sir,

TENDER: ............................................................................................................................

We, ........................................................................................................................................, who are
Established and reputable manufacturer of ..............................................................................,
having Factories at ..................................................................and ............................................hereby
Authorize M/s ..............................................................................................................(name and address of agents)
to bid, negotiate and conclude the contract with you against TenderNo .................................
for the above goods manufactured by us. No Company or firms or individual other than
M/s .............................................................................are authorized to bid, negotiate and conclude the
contract in regard to this business against this specific tender.

We hereby extend our full guarantee and warranty as per the conditions of tender for the
goods offered for supply against this tender by the above firm.

The authorization is valid up to .........................................................................................

Yours faithfully,

For and behalf of M/s ............................
(Name of manufacturers)/Principal

(Prof. Shahid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
Annexure – I Technical Specifications
High Dose rate Brachytherapy remote afterloading system.

<table>
<thead>
<tr>
<th>GENERAL SPECIFICATIONS FOR BRACHYTHERAPY UNIT:</th>
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<tbody>
<tr>
<td>1.1 A high dose rate remote after loading Brachytherapy system capable of Intracavitary, Intraluminal, Interstitial, intraoperative, surface/mould radiation therapy.</td>
</tr>
<tr>
<td>1.2 The HDR system should be microprocessor based with PC control.</td>
</tr>
<tr>
<td>1.3 The HDR system must be from a well established company with a Documented History of Reliability.</td>
</tr>
<tr>
<td>1.4 The HDR system should have ISO / FDA / CE certification. The copy of certificates should be enclosed.</td>
</tr>
<tr>
<td>1.5 The HDR system must have symmetrical source &amp; check cable drive.</td>
</tr>
<tr>
<td>1.6 The HDR system must have a “check cable” that automatically checks the operation of the complete system prior to treatment. The check cable must also be possible to use as a “Dummy” source to allow simulation of particular source locations.</td>
</tr>
<tr>
<td>1.7 The system needs to be flexible for use in thinner implants.</td>
</tr>
<tr>
<td>1.8 The source must be certified for maximum source transfers. The number of transfers certified must be clearly mentioned. The transfers allowed for the dummy should also be mentioned.</td>
</tr>
<tr>
<td>1.9 The system should be in use in recognized centers in India. Mention the total number of installations and enclose the list of current users. The tender offer must be accompanied with letters of reference with performance certificate from existing users.</td>
</tr>
<tr>
<td>1.10 The system must be Type approval by AERB, Govt. of India. Attach the certificate of Type Approval.</td>
</tr>
<tr>
<td>1.11 Any other specific advantage of the equipment may be mentioned.</td>
</tr>
</tbody>
</table>

2 DETAILED SPECIFICATIONS - HDR

<table>
<thead>
<tr>
<th>2.1 TREATMENT UNIT - HDR</th>
</tr>
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<tbody>
<tr>
<td>2.1.1 Treatment unit should be on wheels for easy mobility within the room.</td>
</tr>
<tr>
<td>2.1.2 The height of the treatment unit should be easily adjustable.</td>
</tr>
<tr>
<td>2.1.3 Separate stepper motors to control the dummy check cable and Radiation Source cable</td>
</tr>
<tr>
<td>2.1.4 A safe to contain the Radiation Source which complies with international safety regulations.</td>
</tr>
<tr>
<td>2.1.5 Additional Transport/Emergency Container should be provided for emergency source storage and transportation.</td>
</tr>
<tr>
<td>2.1.6 Treatment unit should have a (built-in) integrated radiation detector (GM Tube type)</td>
</tr>
<tr>
<td>2.1.7 Multichannel indexer with a minimum of 18 channels having an automatic / optical verification of channel number and applicator connection should be offered.</td>
</tr>
<tr>
<td>2.1.8 The source must be retractable in the event of an emergency / power failure by following methods:</td>
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<tr>
<td>- By an independent DC motor</td>
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<tr>
<td>- Manual source retraction through hand crank.</td>
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<tr>
<td>2.1.9 Battery back up and a detailed circuit for checking the battery charge level and condition</td>
</tr>
<tr>
<td>2.1.10 Mention the safety features incorporated in the system and also measures to be taken during source failures/struck or in case of emergencies.</td>
</tr>
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</table>

(Prof. Shohid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
NMC, AMU, Aligarh
2.2 CONTROL UNIT:

2.2.1 Stand alone and independent PC based control Unit with colour monitor, keyboard, mouse, printer (for hardcopy) built in audio card, network card and a back up media.(External HDD)

2.2.2 Control unit should have user friendly console and a graphical user interface and should contain an extensive reporting facility.

2.2.3 Control Unit Software Should Run On Windows Application.

2.2.4 Control Unit should have a self testing including battery, Indexer / RAM.

2.2.5 Control unit must allow storage of multiple standards and keep track of patients fractionated treatment.

2.2.6 Control console must allow for creating and maintaining standard plan templates

2.2.7 Access must be limited to authorized users with password protection.

2.2.8 The treatment times must be automatically corrected for the decay of the Radioactive source.

2.2.9 Treatment window for defining possible steps and dwell positions should have variable step size of 2.5 / 5 / 10 mm with Treatment length of 12/24/48cm

2.2.10 There should be at least 48 dwell positions for the source in each channel. And Dwell time for each source steps to be from 1.0 sec to 999 sec with the dwell time resolution of 0.1sec

2.2.11 Display of Total reference Air Kerma and dose.

2.2.12 The HDR should have daily Q. A. assist to support automatic check, Customer Q.A test plans, individual checklists and automatic documentation, reminder function

2.2.13 The HDR should have integrated solution for source and dummy calibration.

2.2.14 HDR should have digital source position verification and adjustment system

2.2.15 The HDR Should have Automatic length measurement

2.2.16 The control Unit should contain:
- An inbuilt protection circuit to prevent treatment without proper applicator, connection and proper indexer locking
- Online extensive display of status codes with an indication of the action required.
- Large patient database should be provided with a backup option to an external storage device.
- Control unit should contain a built-in log book and all events should be recorded

3 TREATMENT PLANNING SYSTEM:

The HDR Brachytherapy system should have a separate 3D Treatment planning system compatible to it so that the planning can be transferred directly through network for execution to the independent HDR machine control computer linked to it.

The Radiotherapy treatment planning system should be fully computerized, integrated system having hardware and software to perform all kinds of Brachytherapy planning calculations, isodose plotting and display of patient files, display and other related programs.

3.1 HARDWARE:

3.1.1 WORK STATION / SERVER:

The treatment planning system should have a separate computer (in addition to the control of the HDR...)

(Signature)
Prof. Shaukat Ali Siddiqui
Chairman
Dept. of Radiotherapy
Brachytherapy machine) and should have:
- a most modern graphics workstation working at 2Ghz speed or higher speed with CPU, (Intel i5 or i7)
- min 6GB of RAM memory
- Hard disk with large storing capacity of min 500 GB
- external mass storage unit of 1TB
- CD R&W, internal
- 3 x USB ports, 1 x serial
- keyboard and mouse
The hardware should be upgradable.

3.1.2 Display / Monitor:
The system should have display at least 22" (LED screen with high resolution for good Visualization) for display and contouring in different terminals.

3.2 NETWORKING
Networking with the treatment machine for treatment execution should be possible. Networking with CT, MRI, PET CT for image acquisition should be provided.

It should be DICOM 3.0, DICOM-RT and HL7 compliant with import and export and print facility

3.3 PRINTER:
The system should have a fast multi - colour laser printer to print out various data and Isodose curves.

3.4 OPERATING SYSTEM:
The system should have a latest enhanced operating system which offers multitasking, multiuser facilities. (Windows OS - Licensed)

Total Security / Internet security software for protection against virus, malware and network attacks (Licensed for 5 years)

3.5 BRACHYTHERAPY SOFTWARE:
3.5.1 3D TPS for Brachytherapy should have software for generating and calculating the treatment modalities including
- Intracavitary
- Interstitial
--Intraluminal
- surface / Mould applications

And should be capable of generating advanced DVH, inverse planning and different methods of optimization of the treatment plan for higher channels. The offered system should have facility for the DICOM link with X-ray Simulator, CT/MR, fusion and auto contouring of the organs etc. Indicate all software licenses and additional optional licenses available and quote for them separately.

3.5.2 The following reconstruction techniques are preferred:
- Orthogonal
- Semi – orthogonal with reconstruction box
- Variable angle

(Prof. Shahnid Ali Siddiqui)
Chairman
Dept. of Radiotherapy
JNMC, AMU, Aligarh
- Isocenteric
- CT/MR Image based reconstruction
- 3D Dose Calculation based on TG43 standard protocol
- Image fusion of US/CT/MRI is required.

3.5.4 Automatic Dose Point placements

3.5.5 Advanced optimization using dose points like graphical, geometry based, manual dwell time/weight, full or polynomial optimization for irregular, regular large volume implants should be available in order to give dose conformity on implant volume and dose points.

3.5.6 Optimization on dose points on target should be available.

3.5.7 Fast and accurate dose calculation should take into account for tissue absorption and scatter factor, source anisotropy and shielding must be available.

3.5.8 Rapid reconstruction of catheter using Applicator database manager on reconstructed images and indication of corresponding lines on the images should be present.

3.5.9 For outpatient treatment, extremely accurate dwell time optimization and dose calculation must be available.

3.5.10 A standard library of treatment applicator must be present for easy and fast accurate planning. Data base must be present for easy planning and retrieval for protocol patients.

3.5.11 Wide range of Dose Volume Histogram methods, Point dose option and different planes view must be available.

3.5.12 Tool for real volume based inverse optimization taking into account Multiple targets

3.5.13 The software should support multiple targets

3.5.14 Automatic optimization of active dwell positions and dwell times in the target

3.5.15 Software should support Class solutions which is a set of clinical objectives (dose and weighting factors) that offers an optimal solution for similar implants for a wide range of patients

3.5.16 Complete DVH and plan evaluation of the radiotherapy planning should be possible.

3.5.17 (synchronized) Multiple plan comparison

4 RADIATION SOURCE AND TRANSFER MECHANISM:

4.1 The system should have Co-60 Radioactive source of 2Ci activity. Specify the no, of sources that can be accommodated in the system.

4.2 Mention the source parameters (half-life and clinical working life of Co-60 source, Air Kerma Rate, etc)

4.3 Mention the Physical characteristics (active length, total length, diameter, etc), transfer guarantee and usability of the radioactive source.

4.4 Mention the physical characteristics of the source cable (No. of strands, dia, length).

4.5 The source cable connection must be tested to withstand maximum no of transfers per source, The source transfer guarantee must be high to ensure optimal usage of each individual source

4.6 The source cable must be a multi strand type and must be able to negotiate treatment curvature of 1 cm radius.

4.7 The source cable should move forward/backward with an accuracy of ±1 mm and must be controlled by
stepper motors.

4.8 The source transfer guarantee must be enhanced in such a way that each source – must be utilized for an extended period of time (higher is preferred).

4.9 One number of Co-60 Source should be offered including all the charges, disposal and import charges. Specify that Insurance, Freight and Cost of the Sources for both onward and return of used source should be borne by the company, The Clearance and transport of the source and the re-export / disposal of the decayed sources for a period of 10 Years must also be included in the offer with Guarantee letter from the company to take back the decayed source.

4.10 Quote for additional source (after decay of first source) should be offered separately including all the charges for import and disposal. The source should be dispatched as and when required by the hospital and all paper work relating to the source import has to be provided to the hospital for necessary approval.

5 APPLICATORS:

5.1 The following set of applicators should be included along with the HDR system. All Applicators must be supplied with transfer tube and X-ray catheters

- CT/MR compatible Cervix for Intracavitary Fletcher Type – 1 set
- CT/MR Vaginal Cylinders with variable length & Diameter – 1 Set
- CT/MR Ring /Split Ring Applicator set-1 Set
- Esophageal Applicator set – 1 set

5.2 The following applicators should be quoted as optional. All Applicators must be supplied with transfer tube and X-ray catheters

- CT/MR compatible Cervix for Intracavitary Fletcher Type – 1 set (additional)
- CT/MR Vaginal Cylinders with variable length & Diameter – 1 Set (additional)
- CT/MR Ring /Split Ring Applicator set-1 Set (additional)
- Esophageal Applicator – 1 set (additional)
- Bronchial Applicator - 1set
- Head & Neck (1 set each)
- Nasopharynx (1 set each)
- Rigid Needle Implant complete set with at least 40 numbers of needles with variable length
- Flexible Implant needle set with at least 500 number of flexible tubes (single tapered & double tapered)
- Surface / Mould Applicator

All Standard Templates
- Breast (1 set each)
- CT/MR Prostate Template-1 set
- CT/MR Interstitial Gynaec Template -1 set

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### QUALITY ASSURANCE TOOLS:

- Source position check device
- Necessary Source calibration devices (Calibrated Well chamber / Electrometer)
- Digital Barometer & Thermometer
- Contamination monitor
- Area Gamma Zone Monitor
- CCTV Monitoring system with Two way communication system
- UPS with min. 30min backup for both TPS & HDR System each
- Specify any other necessary quality assurance tools & supply.
- Last Man Out Switch (LMOS) Integrated or External

### Training To Staff

Necessary training for optimal usage of equipment should be provided at factory site/existing setup and on site for Radiation Oncologist / medical Physicist and Therapy Radiographers.

User manual in English , Service manual in English should be included along with the system.

List of Important spare parts and consumable and accessories with their part number and costing fixed for a period of 5 years should be quoted.

Compliance report to be submitted in a tabulated and point wise manner clearly mentioning the page/Para Number/manual will not be considered.

### APPROVALS

The planning system software should have necessary international approval.

### FUTURE UPGRADES:

- Whatever the up gradation / newer developments made in unit, applicators, templates or planning software that happen during the next two years from the date of installation should be provided free of cost by the company.

### WARRANTY

The complete system along with the applicators should be guaranteed for 5 years. During this period all the service and spare parts required should be done free of cost.

Quote for 5 years of CAMC contract following 5 Years of warranty period. Recommend the list of spares for smooth running of quoted unit for 5 years (To be quoted separately)

Guarantee for the service and availability of spares for minimum of 10 Years.

### SERVICE FACILITIES:

Factory trained Service Engineers / Application specialists should be available in India to look after the installation and maintenance of the systems without patient treatment interruption.

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