

**AMENDMENT – V**

Dated: - 29.04.2016

**Subject:** Amendment to the tender Enquiry Document.**Ref: Tender Enquiry No.:** HSCC/KCGMC/ Medical Equipment / 2015-06/03 Dated 03.03.2016**Bid sale, submission and opening date for all items has been extended as per details given in Table -1:****Table -1**

Sl. No.	Description	Revised Schedule
i.	Sale date of the tender	06.05.2016, 2.00 P.M.
ii.	Closing date & time for receipt of tender	06.05.2016, 2.30 P.M.
iii.	Time and date of Opening of Techno – Commercial Tenders	06.05.2016, 3.00 P.M.

**Bidders are also requested to note the following technical amendment:****Item No. 11: Digital Flat Panel Fluoroscopy & Radiography System**

S. No.	Technical specification	Amended by KCGMC/ HSCC
	<b>TECHNICAL SPECIFICATIONS OF DIRECT DIGITAL FLAT PANEL FLUOROSCOPY &amp; RADIOGRAPHY SYSTEM</b>	
	The Unit should be US FDA approved High powered X-Ray unit with Direct digital flat panel equipped with completely integrated high-frequency generator, digital detector and Digital Image processing system. It should be capable of performing all plain and contrast enhanced radiography and fluoroscopy along-with angiography along with facility for interventional procedures. The system should have the following essential features.	-
	Out of Fluoroscopy Table, X-ray tube, Generator & Flat panel detector at least 2 should be from the main manufacturer.	Out of X-ray tube, Generator & Flat panel detector at least 2 should be from the main manufacturer. In order to ensure the quality of the equipment
	1. Table :  1.5 Motor driven + 90/-150 or more table tilt along with Digital angle display.	1. Table :  1.5 Motor driven + 90 degree/-45 degree or more table tilt along with Digital angle display

S. No.	Technical specification	Amended by KCGMC/ HSCC
	<p><b>Vertical Bucky (Wall stand)</b></p> <p>3.1 Motorized, counter balanced adjustable height vertical Bucky with digital flat panel detector.</p> <p>3.2 Should be possible to tilt the Vertical detector system (-15<sup>0</sup> to + 90<sup>0</sup>) and should travel from 1foot to 6 ½ feet above floor level.</p> <p>3.3 Detector movement should be synchronized with movement of the X-Ray tube.</p> <p>3.4 Removable grid for SID of 180cms for vertical bucky applications</p>	Deleted
	<p><b>4. Monitors :</b></p> <p>Four number ultra-high resolution, high-definition monochrome monitors, medical grade 19" LCD or more for high-contrast (minimum 2mega pixel), distortion free image display – separately for the live and reference images. Two monitors to be ceiling suspended in exam room and two in control console.</p>	<p><b>4. Monitors :</b></p> <p>Four number ultra-high resolution, high-definition monochrome monitors, medical grade 19" LCD or more for high-contrast (minimum 1.3 mega pixel), distortion free image display – separately for the live and reference images. Two monitors to be ceiling suspended in exam room and two in control console.</p>
	<p><b>9. Essential Accessories</b></p> <p>9.5 Dual Head pressure injector with maximum pressure range of 300 psi having facility of injecting saline and contrast media with a variable flow rate along with set of 100 syringes (200 ml syringe) with tubings and additional 500 connecting tubings compatible with pressure injector. (to be supplied in 5 batches over a period of 2 years)</p>	Deleted
	<p><b>13.</b> The bidder to inspect the site. Turnkey work to be done as per site. Regular upkeep and maintenance of turnkey work will also be done by the successful bidder during the warranty and CMC period</p>	<p><b>13. Civil work:</b> In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor after approval by the Atomic Energy Regulatory Board (AERB) shall be executed as per approved makes specified in Annexure -A.</p> <p>The walls of whole Complex should be finished acrylic/plastic emulsion (for approved makes refer Annexure -A) and should be finished with vitrified tiles (for approved makes Annexure -A) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.</p>

S. No.	Technical specification	Amended by KCGMC/ HSCC
		<p>The flooring in the Fluoroscopy/DR complex should be as per AERB regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (for approved makes refer Annexure -A). Colour as approved by Purchaser/HSCC shall be provided.</p> <p>Whole area of Complex as in the layout plan approved by the AERB shall be finished with fire resistant false ceiling material (for approved makes refer Annexure -A).</p> <p>All the doors should be provided with necessary fittings with hydraulic type door closures (for approved makes refer Annexure -A) and with Mortised locks (for approved makes refer Annexure -A).</p> <p>Main door of the complex in the corridor shall be in glazed aluminum powder coated with adequate thickness of glass with etching work wherever required. Colour of aluminium powder coating shall be got approved from Purchaser/HSCC before execution of works.</p> <p>Lead Glass window of adequate size will be fixed as per AERB guidelines in the console room. Proper signage both external and internal to be done.</p> <p><b>Electrical work:</b> The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes mentioned in Annexure -A. The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.</p> <p>A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided &amp; fixed by the hospital. Vendor shall do cabling from distribution panel up to the equipment. The switch gears (MCBs / ACBs/ MCCBs), L.T. distribution board for MCBs etc. (for approved makes refer Annexure -A). Electrical wires should be of copper of different capacity as per the load (for</p>

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		<p>approved makes refer Annexure -A).</p> <p>For Telephone wiring cables (for approved makes refer Annexure -A). Telephones to be provided in all rooms with EPABX system having control in office.</p> <p>Modular range Switches / Sockets of approved makes as per Annexure -A should be provided and fixed as per requirement. LED lights of suitable illumination should be provided of Phillips/GE/ Crompton/Syska make.</p> <p><b>Air conditioning:</b></p> <p>Split Air conditioners of reputed make (for approved makes refer Annexure -A) to be provided by the vendor in whole complex as per requirements (to maintain appropriate temperature in the main equipment room &amp; other rooms) and as per regulations of AERB.</p> <p>Standby additional split air conditioners of appropriate strength/capacity (tonnage) to be fixed in the main equipment room.</p> <p>Hygrometer Nos.1 to be provided.</p> <p>In-built or External De Humidifier in Equipment, Console and Examination rooms to be provided as per room layout.</p> <p><b>Fire Protection</b></p> <p>Non water based fire protection is to be integrated as per requirement. Fire extinguishers of appropriate types (for approved makes refer Amendment no. XX dated 04.2.2016) should be fixed in different rooms as per requirement. Heat detectors/hooters/photoelectric/smoke detectors (for approved makes refer Amendment no. XX dt. 04.2.2016) shall be provided in all the rooms and corridors as per requirements. In case the expiry date of fire extinguishers is before the completion of comprehensive warranty period, extra set(s) of fire extinguishers will be supplied by the vendor till the completion of the comprehensive warranty period. Besides, any works required as per statutory/Delhi Fire Services norms shall be executed by the</p>

S. No.	Technical specification	Amended by KCGMC/ HSCC
		<p>vendor.</p> <p>The vendor to also install the following:</p> <p>Audio visual Music systems for patient waiting areas.</p> <p>Adequate Pest, insect and rodent control system to be provided and installed to ensure that area remains insect, pest and rodent free.</p> <p>Music and Public Address system for calling/ informing the patients in the waiting areas.</p> <p>Furniture:-</p> <p>Following furniture (Godrej/Debono/Delite) will be provided:</p> <ul style="list-style-type: none"> <li>• Chairs with castors and armrests <span style="float: right;">2 nos.</span></li> <li>• Overhead Storage (1.2x0.4x.6m) for CD storage <span style="float: right;">1 no.</span></li> <li>• Medicine Trolley <span style="float: right;">1 No.</span></li> </ul>
	<p><b>14</b> The equipment quoted should be latest (mention year of launch) and the main equipment of the principal manufacturer. At least two main components of the equipments like Generator, table and tube etc should be manufactured by quoting vendor themselves. The quoted model should find a place in the manufacturer's website. The copy of the webpage showing the same should be enclosed in the tender document. The bidder to mention its principal manufacturer's website address.</p>	<p>14. The equipment quoted should be latest (mention year of launch) and the main equipment of the principal manufacturer. The quoted model should find a place in the manufacturer's website. The copy of the webpage showing the same should be enclosed in the tender document. The bidder to mention its principal manufacturer's website address.</p>

Item no. 12 CT SCAN – 64 Slice

S. No.	Technical specification	Amended by KCGMC/ HSCC
	<p><b>i) Workstation client server architecture</b></p> <ol style="list-style-type: none"> <li>1. It should be a high speed (minimum post-processing frame rate of 16 frames/sec) CPU with a speed of 3.0 GHz or better and with an independent Hard disc storage capacity of 512 GB or more, with 19 inches or more high resolution medical grade colour LCD monitors capable of simultaneously viewing and performing all post processing functions and filming independently without the help of main console.</li> <li>2. Memory of the workstation should be independent of the console.</li> <li>3. Two way data transfer between the operator console &amp; the satellite workstation should be automatic and standard.</li> <li>4. Post Processing Soft-wares : The two client Server in addition to Operating Main Console workstations hardware should be latest with 8GB RAM, Quadcore CPU 3Ghz, 2GB graphic card and 19 inches or more monitor. Both client workstation should perform all post processing functions and filming independently without the help of main console             <ol style="list-style-type: none"> <li>(i) Perfusion CT for brain</li> <li>(ii) CT Angio, VRT, MIP, MPR, 3-D Shaded Surface display, Image Fusion, Vessel segmentation, luminal view.</li> <li>(iii) Virtual Endoscopy with facility for virtual dissection and computer aided detection of polyps.</li> <li>(iv) Advanced cardiac package including Coronary Artery Imaging, Calcium Scoring, Myocardial Viability software, Cardiac functional analysis and advanced Vessel. Analysis including stenosis assessment. Facility for <u>prospective</u> and retrospective ECG gating, facility for automatic selection of rotation speed according to heart beat and step and shoot for low dose acquisition should be available.</li> <li>(v) Automatic bone Removal facility.</li> <li>(vi) Dental CT.</li> <li>(vii) Lung nodule evaluation software. CAD for Lung nodule evaluation software should also be provided.</li> <li>(viii) Liver segmentation display software in different colours, volumetry and virtual surgical plane identification.</li> </ol> </li> </ol>	<p><b>i) Workstation client server architecture</b></p> <ol style="list-style-type: none"> <li>1.1. Architecture : A client server Architecture based solution (Intellispace Portal/Dexus/ Syngo Via etc.)</li> <li>1.2. Minimum no of slices: Software must support minimum 20,000 slices with data pre-processing.</li> <li>1.3. User licensing scheme : Concurrent</li> <li>1.4. Integration: Imaging processing server must be integrated with existing centrality RIS-PACS in the department.</li> <li>1.5. <b>Server Hardware:</b> Dell/HP/IBM dual CPU; RAM -64 GB minimum; data disc : Raid level; Graphical processing unit : NVIDIA GPU or equivalent ; image storage minimum 1 TB.</li> <li>1.6. <b>Client hardware</b> ( 2 units) specification for each client station :             <ol style="list-style-type: none"> <li>a. Monitors : minimum 6 Megapixel radiological grade monitor ( 6 MP), 1 MP clinical grade monitor, 3 MP color Radiological monitor, 5 button mouse, online continuous UPS of at least 2 KVA APC made.</li> <li>b. CPU Unit : Z820 or equivalent CPU unit with 2 six core processor, minimum 32 GB ( 8 GB x 4 ) RAM, NVIDIA 1 GB or equivalent, 1 TB Hard drive and 256 GB SSD</li> </ol> </li> </ol> <p>Server (S/W)</p> <ol style="list-style-type: none"> <li>1.7 Application for 2 or more concurrent users for all applications             <ol style="list-style-type: none"> <li>a. MPR: Real time multi-planar reconstruction ( MPR ) of secondary views, with viewing perspectives in all planes including curved &amp; orthogonal MPR,</li> <li>b. ROI evaluation: Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.</li> <li>c. Statistical Evaluation : Area/volume, standard deviation, mean value, image annotation and labelling, angle measurement, distance measurement, histogram, time – intensity curves, peak – enhancement images, time to peak images</li> <li>d. 2D : 2D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.</li> <li>e. 3D : MIP, Min IP, SSD, VRT and other advanced 3 D applications and color – coding for different tissues.</li> <li>f. MR reading : reading of brain, spine , neck MR scans</li> </ol> </li> </ol>

	<p>5. Interactive &amp; Automatic Cine display should be available.</p> <p>6. Image Evaluation Tools:</p> <p>(i) Parallel evaluation of multiple ROI in circle, irregular and Polygonal forms,</p> <p>(ii) Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.</p> <p>(iii) Distance &amp; angle measurement, freely selectable, positioning of co-ordinate system, grid and image annotation.</p> <p>7. One similar independent post processing stations (workstations, total no.2) with all the software as in the main console should be available. . The necessary connectivity etc. for proper functioning should be provided by the vendor with the supply of stand alone server of atleast 10 tera byte storage capacity with expansion slot of additional tera bytes. All post processing facility and data archiving should be available independently at both the workstations. Requires two independent Workstation in addition to Main Operating Console</p>	<p>a. CT Angio : Automatic table and bone subtraction in CT angiograph, single click bone removal, manual vessel tracking , ability for a bone free visualization of the ( 2 concurrent users), vessel tracking, stenosis measurement.</p> <p>b. CT segmentation : Automated segmentation of lung nodulkes and analysis</p> <p>c. Colonography : Non-invasive evaluation of the entire colon</p> <p>d. Fly Through : External and internal ( endoscopic) views using multiple – color surface shaded display blended with 3 D volume – rendered image.</p> <p>e. Liver analysis: 3 D mapping of vascular supply areas onto liver tissue, virtual dissection planes and subsequent volumetric calculation.</p> <p>f. Dental : Prepare dental images with CT imaging for implant planning</p> <p>g. Advanced cardiac functional analysis and advanced coronary Artery imaging, Calcium scorinmg, myocardial viability software, cardiac functional analysis and advanced vessel. Analysis including stenosis assessment. Facility for prospective and retrospective ECG gating, facility for automatic selection of rotation speed according to heart beat and step and shoot for dose acquisition should be available.</p> <p>Please provide additional archival server with 10 TB storage capacities. It should have additional expansion slots for further addition of storage.</p>
		<p>Note : Servo Voltage Stabiliser is not required as UPS has been asked for</p>

	<p><b>Turnkey Work ( CT Scan Machine )</b></p>	<p><b>Civil work:</b> In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor after approval by the Atomic Energy Regulatory Board (AERB) shall be executed as per approved makes specified in Annexure -A.</p> <p>The walls of whole Complex should be finished acrylic/plastic emulsion (for approved makes refer Annexure -A and should be finished with vitrified tiles (for approved makes refer Annexure -A) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.</p> <p>The flooring in the CT complex should be as per AERB regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (for approved makes refer v). Colour as approved by Purchaser/HSCC shall be provided.</p> <p>Whole area of CT Complex as in the layout plan approved by the AERB shall be finished with fire resistant false ceiling material (for approved makes refer Annexure -A).</p> <p>All the doors should be provided with necessary fittings with hydraulic type door closures (for approved makes refer Annexure -A) and with Mortised locks (for approved makes refer v).</p> <p>Main door of the CT complex in the corridor shall be in glazed aluminum powder coated with adequate thickness of glass with etching work wherever required. Colour of aluminium powder coating shall be got approved from Purchaser/HSCC before execution of works.</p> <p>Lead Glass window of adequate size will be fixed as per AERB guidelines in the console room. Proper signage both external and internal to be done.</p> <p><b>Electrical work:</b> The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes (for approved makes refer Annexure -A). The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.</p>
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		<p>A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided &amp; fixed by the hospital. Vendor shall do cabling from distribution panel up to the equipment. The switch gears (MCBs / ACBs/ MCCBs), L.T. distribution board for MCBs etc. (for approved makes refer Annexure -A). Electrical wires should be of copper of different capacity as per the load (for approved makes refer Annexure -A).</p> <p>For Telephone wiring cables (for approved makes Annexure -A). Telephones to be provided in all rooms with EPABX system having control in office.</p> <p>Modular range Switches / Sockets of approved makes as Annexure -A should be provided and fixed as per requirement. LED lights of suitable illumination should be provided of Phillips/GE/ Crompton/Syska make.</p> <p>Light dimmers (down lighters) should also be fixed in the equipment room.</p> <p>Ceiling fans/ wall fans to be provided in all rooms (for approved makes refer Annexure -A).</p> <p><b>Air conditioning:</b> Split Air conditioners of reputed make (for approved makes Annexure -A) to be provided by the vendor in whole complex as per requirements (to maintain appropriate temperature in the main equipment room &amp; other rooms) and as per regulations of AERB.</p> <p>Standby additional split air conditioners of appropriate strength/capacity (tonnage) to be fixed in the main equipment room</p> <p>Hygrometer Nos.1 to be provided.</p> <p>In-built or External De Humidifier in Equipment, Console and Examination rooms to be provided as per room layout.</p>
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		<p><b>Fire Protection</b>  Non water based fire protection is to be integrated as per requirement. Fire extinguishers of appropriate types (for approved makes refer Amendment no. XX dated 04.2.2016) should be fixed in different rooms as per requirement. Heat detectors/hooters/photoelectric/smoke detectors (for approved makes refer Amendment no. XX dated 04.2.2016) shall be provided in all the rooms and corridors as per requirements. In case the expiry date of fire extinguishers is before the completion of comprehensive warranty period, extra set(s) of fire extinguishers will be supplied by the vendor till the completion of the comprehensive warranty period. Besides, any works required as per statutory/Delhi Fire Services norms shall be executed by the vendor.</p> <p>The vendor to also install the following:</p> <p>Audio visual Music systems for patient waiting areas.</p> <p>Adequate Pest, insect and rodent control system to be provided and installed to ensure that area remains insect, pest and rodent free.</p> <p>Music and Public Address system for calling/ informing the patients in the waiting areas.</p>																		
		<p><b>Furniture:-</b>  Following furniture (Godrej/Debono/Delite) will be provided:</p> <table data-bbox="1299 798 1948 1069"> <tr> <td>Waiting Chairs in group of 3</td> <td>3 nos</td> </tr> <tr> <td>Chairs with castors and armrests</td> <td>4 nos.</td> </tr> <tr> <td>Phantom Rack for CT</td> <td>1 No.</td> </tr> <tr> <td>Overhead Storage(1.2x0.4x.6m) for CD storage</td> <td>1 no.</td> </tr> <tr> <td>Steel Storage Almirah</td> <td>2 nos.</td> </tr> <tr> <td>Medicine Trolley</td> <td>1 Nos.</td> </tr> <tr> <td>Ultrasonic pest repellent equipment</td> <td>1 nos.</td> </tr> <tr> <td>Insect killer equipment</td> <td>1nos.</td> </tr> <tr> <td>Dressing unit with mirror</td> <td>1 Nos.</td> </tr> </table>	Waiting Chairs in group of 3	3 nos	Chairs with castors and armrests	4 nos.	Phantom Rack for CT	1 No.	Overhead Storage(1.2x0.4x.6m) for CD storage	1 no.	Steel Storage Almirah	2 nos.	Medicine Trolley	1 Nos.	Ultrasonic pest repellent equipment	1 nos.	Insect killer equipment	1nos.	Dressing unit with mirror	1 Nos.
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Ultrasonic pest repellent equipment	1 nos.																			
Insect killer equipment	1nos.																			
Dressing unit with mirror	1 Nos.																			

**Item No. 13 : Full Field Digital Mammography System**

S. No.	Technical specification	Amended by KCGMC/ HSCC
	<p><b>Description of function</b>  <b>6.1</b>                      Digital Mammography System unit should be US FDA or CE approved</p>	<p><b>6.1</b>                      Digital Mammography System unit should be US FDA and European CE approved</p>
	<p><b>18</b> 2D CAD system (FDA / CE approved)</p>	<p><b>18</b> Should be quoted as optional</p>
	<p><b>19</b> Volumetric Breast Density</p>	<p><b>19</b> Should be quoted as optional</p>
	<p><b>28.6</b> The quoted Equipment should have AERB Type Approval of the Manufacturer for Radiological Equipments (AERB NOC will not be accepted). Vendors shall assist the Consignee in getting AERB Site Plan approval prior to installation, wherever applicable. QA Test to be performed by vendor on regular interval as per AERB norms during Warranty &amp; CMC. Cost to be borne by the vendor.</p>	<p><b>28.6</b> The quoted Equipment should have AERB Type Approval/NOC of the Manufacturer for Radiological Equipments. Vendors shall assist the Consignee in getting AERB Site Plan approval prior to installation, wherever applicable. QA Test to be performed by vendor on regular interval as per AERB norms during Warranty &amp; CMC. Cost to be borne by the vendor.</p>
	<p>The bidder should have at least one installation of same equipment in India in a reputed Hospital preferably in a Government Hospital. Please submit the Satisfactory Performance Certificate from the users and must be in the field for last at least 5 years on the date of opening of tender.</p>	<p>Bidders/ Manufacturer should have in the past 5 years from the date of Tender Opening, satisfactorily executed for the Item offered, at least one single order of like nature of item and quantity not less than 25% or two orders of 12.50% of quantity of the equipment as tendered against each items subject to a minimum of one quantity. The Bidders shall furnish End User Certificate/ Installation report indicating end users contact details i.e. name of hospital, doctor, phone/ fax/ mobile nos. etc.</p>
	<p>Turnkey:</p>	<p>Turnkey: Same as mentioned in the Amendment of Item no 11</p>

**Item No. 14 MRI – 1.5 Tesla**

**EMD of the equipment has been revised from Rs.14,00,000/- to Rs.20,00,000/-**

<b>Tender specification</b>	<b>Amended specification</b>
<b>1. Magnet</b>	
c. It should have at least <b>60 cm</b> patient bore with flared opening.	It should have at least <b>70 cm</b> patient bore with flared opening.
<b>3. Gradient System</b>	
b. The gradient should be actively shielded with each axis having independently a slew rate of <b>120 T/m/s</b> or better and a peak amplitude of 33 mT/m.	The gradient should be actively shielded with each axis having independently a slew rate of <b>200 T/m/s</b> or better and a peak amplitude of 40 mT/m.
<b>4. RF SYSTEM</b>	
It should also have at least 16 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array/Matrix coils. The highest receiver channels available with the vendor should be quoted	It should also have at least 32 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array/Matrix coils. The highest receiver channels available with the vendor should be quoted
<b>6. COMPUTER SYSTEM /IMAGE PROCESSOR / OPERATOR CONSOLE</b>	
The system should have image storage capacity of 100 GB for at least 2,00,000 images in 256x256 matrix.	The system should have image storage capacity of 200 GB .
<b>8. COIL SYSTEM</b>	
	<b>Point to be added :</b> Should be integrated coil technology, latest as available with the vendor to be quoted : Equivalent of TIM/GEM/Dstream
<ul style="list-style-type: none"> <li>• Multichannel Head coils with at least 8 channel for high resolution brain imaging. (16 channel coil should be supplier whenever available to the vendor with no additional cost.)</li> <li>• Neuro-vascular Coil with 16 or more channels or Head / Neck Coil combined, capable of high resolution neuro-vascular imaging</li> </ul>	<ul style="list-style-type: none"> <li>• Multichannel Head coils with at least 15 channel for high resolution brain imaging.</li> <li>• Neuro-vascular Coil with 20 or more channels or Head / Neck Coil combined, capable of high resolution neuro-vascular imaging</li> </ul>
h. Bilateral Breast Coil with at least 7 channels. The best available coil with vendor should be supplied.	h. Bilateral Breast Coil with at least 16 channels. The best available coil with vendor should be supplied.
<b>9. APPLICATION SEQUENCES</b>	
	<b>Point to be Added :</b> <b>w</b> .Prostaste imaging package with parametric cards ( Ktrons, Kep, Ve, Vp) <b>x</b> .Metallic artifact reduction sequences/ Techniques
<b>10. WORK STATION – 2 Nos.</b>	
iv. It should have at least 19 inch LCD TFT color monitor, with hard disk of at least 120 GB for at least 250,000 image storage in 256 matrix, and 4 GB RAM capacity or more, with self-playing OVO/CO archiving facility.	iv. It should have at least 19 inch LCD TFT color monitor, with hard disk of at least 500 GB and 16 GB RAM capacity or more, with self-playing OVO/CO archiving facility.
<b>15. ACCESSORIES</b>	
	<b>Point to be added :</b> X. Two Channels MR Compatible (minimum 1000 Gauss line ) Syringe/ Infusion Pump. XI. Two Quantity: MR Compatible non – magnetic IV Stand.
<b>Anaesthesia Machine</b>	
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	<p><b>Point to be added :</b></p> <p>5. 2 MR Compatible Oxygen Cylinders</p>
<p><b>NOTE :</b></p> <p>2. The quoted Equipment should have AERB Type Approval of the Manufacturer for Radiological Equipments (AERB NOC will not be accepted). The Equipments should have European CE <b>and</b> US FDA certification. Manufacturing firm should be ISO approved. Vendors shall assist the Consignee in getting AERB Site Plan approval prior to installation, wherever applicable, wherever applicable.</p>	<p>2. The Equipments should have European CE <b>and</b> US FDA certification. Manufacturing firm should be ISO approved. Vendors shall assist the Consignee in getting AERB Site Plan approval prior to installation, wherever applicable.</p>
<p><b>Turnkey</b></p>	<p><b>Turnkey</b></p> <p><b>Civil work:</b> In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor after approval by Purchaser/HSCC shall be executed as per approved makes specified in Annexure -A.</p> <p>The walls of MRI Complex should be finished acrylic/plastic emulsion (for approved makes refer Annexure -A) and should be finished with vitrified tiles (for approved makes refer Annexure -A) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.</p> <p>The flooring in the MRI complex should be as per regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (for approved makes refer Annexure -A). Colour as approved by Purchaser/HSCC shall be provided.</p> <p>Whole area of MRI Complex as in the layout plan shall be finished with fire resistant false ceiling material (for approved makes refer Annexure -A). MRI Room PVC roll flooring with mineral fiber panel false ceiling and Aluminium suspension.</p> <p>All the doors should be provided with necessary fittings with hydraulic type door closures (for approved makes refer Annexure -A) and with Mortised locks (for approved makes refer Annexure -A).</p> <p><b>Electrical work:</b> The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes mentioned in Annexure -A. The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.</p> <p>A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided &amp; fixed by the hospital. Vendor shall do cabling from distribution panel up to the equipment. The switch gears (MCBs / ACBs/</p>

	<p>MCCBs), L.T. distribution board for MCBs etc. (for approved makes refer Annexure -A). Electrical wires should be of copper of different capacity as per the load (for approved makes refer Annexure -A).</p> <p>For Telephone wiring cables (for approved makes refer Annexure -A). Telephones to be provided in all rooms with EPABX system having control in office.</p> <p>Modular range Switches / Sockets of approved makes as per Annexure -A should be provided and fixed as per requirement. LED lights of suitable illumination should be provided of Phillips/GE/ Crompton/Syska make.</p> <p>Light dimmers (down lighters) should also be fixed in the equipment room.</p> <p><b>Air conditioning:</b> Split Air conditioners of reputed make (for approved makes refer Annexure A) to be provided by the vendor in whole complex as per requirements (to maintain appropriate temperature in the main equipment room &amp; other rooms) and as per regulations of AERB.</p> <p>Standby additional split air conditioners of appropriate strength/capacity (tonnage) to be fixed in the main equipment room</p> <p>Hygrometer Nos.1 to be provided.</p> <p>In-built or External De Humidifier in Equipment, Console and Examination rooms to be provided as per room layout.</p> <p><b>Fire Protection</b> Non water based fire protection is to be integrated as per requirement. Fire extinguishers of appropriate types (for approved makes refer Annexure -A) should be fixed in different rooms as per requirement. Heat detectors/hooters/photoelectric/smoke detectors (for approved makes refer Annexure -A) shall be provided in all the rooms and corridors as per requirements. In case the expiry date of fire extinguishers is before the completion of comprehensive warranty period, extra set(s) of fire extinguishers will be supplied by the vendor till the completion of the comprehensive warranty period. Besides, any works required as per statutory/Delhi Fire Services norms shall be executed by the vendor.</p> <p>The vendor to also install the following:</p> <p>Audio visual Music systems for patient waiting areas.</p> <p>Adequate Pest, insect and rodent control system to be provided and installed to ensure that area remains insect, pest and rodent free.</p> <p>Music and Public Address system for calling/ informing the patients in the waiting areas.</p>
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	<p><b>Furniture:-</b> Following furniture (Godrej/Debono/Delite) will be provided:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Chairs with castors and armrests</td> <td style="text-align: right;">2 nos.</td> </tr> <tr> <td>Coil Rack for MRI</td> <td style="text-align: right;">1 No.</td> </tr> <tr> <td>Medicine Trolley</td> <td style="text-align: right;">1 No.</td> </tr> <tr> <td>Ultrasonic pest repellent equipment</td> <td style="text-align: right;">1 no.</td> </tr> <tr> <td>Insect killer equipment</td> <td></td> </tr> <tr> <td>1no.</td> <td></td> </tr> <tr> <td>Steel Storage Almirah</td> <td style="text-align: right;">2 nos.</td> </tr> <tr> <td>Overhead Storage(1.2x0.4x.6m) for CD storage</td> <td style="text-align: right;">1 no.</td> </tr> </table>	Chairs with castors and armrests	2 nos.	Coil Rack for MRI	1 No.	Medicine Trolley	1 No.	Ultrasonic pest repellent equipment	1 no.	Insect killer equipment		1no.		Steel Storage Almirah	2 nos.	Overhead Storage(1.2x0.4x.6m) for CD storage	1 no.
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**All other terms and conditions of the tender enquiry document shall remain unchanged.**

**Prospective bidders are advised to regularly visit HSCC website/ CPPP website for corrigendum /amendments etc. if any, as these will be notified on these portals only. No separate advertisement will published in the news papers in this regard.**

**s/d**  
**CGM, HSCC India Limited**  
**For and on behalf of DGMER, Panchkula**

## LIST OF APPROVED MAKES : CIVIL WORKS

S. No	Material	MANUFACTURERS
1	Doors & Windows fixtures/ Fittings	<i>Dorma, Godrej, Ozone, Austavision</i>
2	Door Closer / Floor spring	<i>Ozone, hettich, Dorma, Godrej,</i>
3	Aluminium Sections.	Hindalco, Jindal, <i>BALCO, Alom</i>
4	Clear Glass/ Clear Float Glass/ Toughened Glass	Saint Gobain(SG), Modi, <i>Asahi, Glaverbel</i>
5	Laminates	Formica, Decolam, Century, Marino, <i>Greenlam</i>
6	Synthetic Enamel Paints	Berger, Asian, ICI , Nerolac, Shalimar
7	Oil Bound Distemper	Berger, Asian, <i>ICI</i> , Nerolac, Shalimar
8	Cement Paint	Snowcem plus, Berger, Nerolac, <i>Asian, ICI</i>
9	Plastic Emulsion Paint	<i>Berger, Asian, ICI</i> , Nerolac, Shalimar
10	Other Paints/Primers	Berger, Asian, ICI , Nerolac, Shalimar
11	MS Pipe/ Sections	Jindal Hisar, Prakash-Surya, BST, Kalinga, Tata
12	Polycarbonate Sheets	GE, <i>Macrolux, Plastic, Vergola, Skyarch, Polytechno</i>
14	Wooden Fire Check Doors	Navair, Pacific Fire Control, Kutty Promat, Sukri
15	Metal Fire Check Doors	Navair, Shakti- Met, Godrej, Sukri, Pacific Fire Control
16	Ceramic Tiles	Johnson, Somany, Kajaria, Nitco, <i>Bell, Hindustan,</i>
17	Pre-Laminated Particle Board	Novopan, Greenlam, Kitlam, Marino, <i>Century, Archid ply</i>
18	Flush Door Shutters	Century, Kitply, Green Ply, <i>Duro</i>



19	Glazed Tiles	Bell, Somany, Johnson, Kajaria, <i>Nitco</i>
20	PVC Water Stops	<i>Prince/Supreme/Finolex//BASF</i>
21	White Cement	Birla White, J.K., <i>Grasim</i>
22	Dash Fasteners./Anchor bolts	Hilti, Fischer, Bosch,
23	Stainless Steel Bolts, Washers and nuts	Kundan , Puja , Atul
24	6mm thick Reflective Glass	Glaverbel, Glavermas, Saint Gobain, <i>Asahi</i>
25	Door Locks	ACME, Godrej, <i>Dorma</i>
26	Door Seal – Woolpile Weather Strip/ <i>Acoustic seal</i>	Anand -Reddiplex, <i>Enviroseal, Viper</i>
27	Aluminium Grill	Hindalco, Jindal
28	Vitrified Tiles	Naveen, Bell, Kajaria, Somani, <i>Nitco, Johnson, Euro</i>
29	Aluminium Cladding sheets	Alstrong , Alpolic, Alucobond, Alstone International, Aludecor Lamination
30	Stainless steel D-handles	D-line, Giesse, Dorma,Dorset, ozone
31	Stainless Steel Pipes/Flats	304 Grade (as approved by Engineer)
32	Structural Steel	TATA, SAIL, RINL, JINDAL
33	Epoxy Flooring/ wall coating	Fosrock, Beck, Famaflor, <i>Araldite, STP, Sika, BASF</i>
34	Ply board	Greenply, Kitply, Century, Archid, Marino, <i>Duro</i>
35	PVC Flooring	LG, Tarkett, Responsive , <i>Armstrong, Gerflor</i>
36	SS Railing	<i>Ozone, D-Line, Jindal,</i>
37	Fire rated door closer/Mortice Lock/ Door Co-ordinator	Dorma, Becker F.S. Australian or approved equivalent
38	Gypsum Board System	Gyproc (Saint Gobain),Lafarge, Boral, <i>Hilux,,Aerolite</i>
39	Adhesive for Door Work	<i>Fevicol/ Vamicol/ Dunlop/ Piditite/ Sika/ Thermoshield</i>
40	Epoxy Paint	<i>Nerolac/ Shalimar/ cico/ Fairmate/ sika/ BASF/ Berger/ Asian/ Pidilite</i>

41	Polysulphide sealant	Pidilite/ Fosroc/ Choksey/chematal rai/ cico/ sika, MC Bouchemie, BASF, STP
42	Glass Doors (Motorised)	<i>DORMA/ Hafle/ Ozone</i>
43	Calcium silicate boards	<i>Hilux/ Aerolite, Armstrong</i>
44	Calcium Silicate Tiles	<i>Hilux/ Aerolite, Armstrong</i>
45	Texture Paints	<i>Spectrum/Heritages/ICI Dulux/Asian</i>
46	Wall care putti	<i>J.K. White/Birla/Gyproc wall putty</i>
47	Frameless glass partition fixtures	<i>Dorma/Hafle/Ozone</i>
48	U-PVC Windows	<i>Fenesta, Window Magic, Aluplast</i>
49	Toilet Cubicles	<i>Greenlam, Marino or approved equivalent</i>
Note:	<p>If the makes given in the list are not available, other equivalent makes can be considered subject to approval by the Purchaser/HSCC based on credentials of the company and test certificates of the product, subject to price adjustment.</p> <p>Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.</p>	

LIST OF APPROVED MAKES: PLUMBING WORKS

Sl.No	Material	Relevant IS Code	MANUFACTURERS
1	Vitreous China Sanitary ware	2556	Kohler, Roca, American Standard, Toto
2	White Glazed Fire Clay Sink	771	Sanfire, Cera, Neycer, Hindware.
3	Stainless Steel Sink		Jayna, <i>Neelkanth</i> , Commander, Nirali
4	Plastic seat cover of W.C	2548	Kohler, Roca, American Standard, Toto
5	Geysers		Racold, Venus, Voltas, Usha Lexus, Jaguar, Havells

6	C.P. Fittings Mixer/Pillar taps Washers, C.P. brass accessories ,CP Angle Valve,Bibcocks,CP waste	1795/4291/4827	Kohler, Roca, American Standard, Toto
7	Centrifugally /Sand cast iron pipes & fittings	3989/1729	Neco, Hepco, <i>SKF</i>
8	G.I. Pipes	1239 Part I	Jindal-Hissar, Tata, Prakash-Surya
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto, R
10	Stoneware pipes & Gully Traps	651	IS Marked pipes
11	Mirror		Atul, Modi guard, <i>Asahi,Saint Gobain</i>
12	Hand drier		Kopal, Automat, Euronics, <i>Utech</i>
14	Insulation of Hot water pipes		Vidoflex insulation, Superlon, <i>Thermafex, Kaiflexkaimenn</i>
15	D.I pipes		Jindal, Tata, Electrosteel., <i>Kesoram</i>
16	PVC/UPVC pipes & fittings		Finolex , Prince,
17	Infrared Sensor operated Faucets/Urinals		Kohler, Roca, American Standard, Toto
18	Gratings, Strainers, Cleanouts etc		Neer Brand (Sage Metals), <i>ACO</i>
19	Decorative bath room fittings		Jaquar (Florentine range), Aquabaths, Kohler
20	HDPE pipes and fittings		Oriplast, So-Soon, Finolex, Gebreti, Nosil,
21	CPVC pipe,fittings and Solvent		Flowguard, Astral, Prince,
22	Copper Pipe		Raj Co., Maxflow, <i>Mehta Tubes</i>
23	Copper Fittings		Viega, IBP, <i>Yorkshire, Mehta Tubes, Rajco</i>
24	Lab drainage		Viega, Duraline, Rex
25	Lab Fittings		Vijay, Viega
26	SS pipe(EN-10312) & press type fitting		Viega, Jindal
27	Oxilyte (Mixed oxident)		Oxybee Solutions, I2M Technologies, Faith Innovations

Note:Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

LIST OF APPROVED MAKES : FIRE FIGHTING WORKS

Sl.No	Material	Relevant ISI Code	MANUFACTURERS
1	G.I./M.S. Heavy class pipe	1239/3589	Jindal-Hissar, Tata, Prakash -Surya,
2	Portable Fire Extinguisher	2171	Minimax, Safex, Ceasefire, Newage,
3	Sprinkler Heads		
4	Pendent type		Tyco, Viking,HD,Grinnel
5	Side wall type		Tyco, Viking,HD,Grinnel
6	Sprinkler Side wall extended through		Tyco, Viking,HD,Grinnel
7	Standby battery lead acid		Exide, Standard, Amco
8	Cables		As per Electrical Works
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto,R
10	DI pipes		Jindal,TATA,Electrosteel,Kesoram
11	Pipe coat material (Pipe protection)		<i>Pypkote Integrated water proofing co. Madras/ coaltek Rustech products (P) Ltd. Syndcate Enclave, Dabri/Makphall</i>
12	Fire Man's Axe		<i>Safeguard/safex/Newage/Gunnebo</i>

Note:Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

## LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM

Contractor shall use the materials of approved make as indicated below unless specified in BOQ or as approved by the HSCC electrical incharge. The contractor shall ensure the correct selection of the approved make meeting the specifications and application duties. Before placing order for procurement, the sample of approved make shall be got verified for its suitability to the specification and application duty. However, HSCC electrical engineer (approving authority) reserves the right to opt for the best preferred listed make. The contractor shall quote the rate for the material and equipment as per the list of approved makes and equipment as per the list of approved makes. In the event of the contractor wants to use alternate makes other than those stipulated for any reason , the contractor can send a proposal after ensuring that what he proposes at the least meets both the quality and safety standard of the stipulated makes, and the financial benefit that will occur to the client. He shall also stand full guarantee to his alternate proposal. The alternate makes can be used only after an approval accorded by the client/HSCC., whose decision will be final in this matter. Any financial implication incurred related with inspection will be borne by contractor.

S.No.	Item Description	Make list
1	Timers in Distribution board	Legrand/ Hager/ Siemens/ ABB/ GE
2	MCB distribution Boards	L & T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
3	MCB	L & T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
4	Rewirable porcelain wire	CPL, KEW
5	Data and Voice wire	Finolex, Delton, Skyton, Anchor, L&T, AT&T, Avaya
6	RCCB	L & T Hager/ Legrand/ Siemens , GE/Schenider (Merlin –Gerin)
7	ELCB/ELMCB	Merlin Gerin-multi 9, Legrand, Hager, Siemens
8	11 KV LT XLPE cables	RPG/ Polycab/ NICCO/ UNIVERSAL/Rallison/KEI/Skytone/ Havells

9	Copper Control cable	Finolex/ Polycab/ NICCO/ Universal/ National/ Rallision/RR Cable
10	Cable Joints (Heat Shrinkable)	Raychem/3M/Cabseal
11	Cable Trays	Steelways/ Bharti/ Unitech /Maheshwari/or approved by HSCC
12	Galvanized/PVC Raceways and raceways accessories	Steelways/ Bharti/ Schneider(MG)/Legrand
13	Light fitting	Philips/ GE/ Crompton Greaves
14	fancy LIGHT FITTING	Anchor(Panasonic )/ Twinkle/Decon/Ankur
15	Lamps	Philips/ Osram/ GE/Anchor (Panasonic)/Perlite
16	GI / MS conduit ISI marked	BEC/ AKG/ Steel Kraft
17	PVC conduit	BEC/ AKG
18	Steel conduit accessories (ISI as approved sample)	Sharma sales corporation, super sales corporation or equivalent.
19	Modular Metal box for switch /socket	Havells/ MK/MDS/Anchor Roma/Northwest
20	Copper conductor FRLS PVC insulated wires ISI marked	National/ Finolex / R R cable/Rallison/Skytone/lap/Bonton

21	Modular Switches & sockets Outlets	Havell's ( Crabtree)/ MK-Wraparound/Hagger/Wipro Legrand (Myrius/ Anchor- Roma(Tersa,woods,viola)/ Northwest
22	Metal clad Socket outlets With boxes	L & T Hager/ Siemens/ Merlin Gerin/ ABB MDS / BCH /Havells
23	UPS system	PCI LTD/ Siemens/ Etone powerware/Emerson/APC (Schneider)
24	Electronic Ballast	Philips/ Wipro/Osram / Bajaj
25	Ceiling fans	Crompton Greaves/ Bajaj/ Orient/ Alastom/ Usha
26	Main PC with CPU monitor	HP/ Compaq/Del
27	PVC Tape	Steel Grip
28	Batton Holder,Angle holder, Ceiling Rose	Anchor
29	Exhaust Fan with Gravity Louvers	Usha Lexus/Orient/ Crompton/Industriel-Almonard/ GEC
30	TV Cable- Co axial	Finolex, airtech, bhansali
31	Chemical Earthing	Ashlok, Erico, Pioneer, Nimbus,JK Earthing
32	LCD/LED Monitor	Sony, Panasonic, Samsung

LIST OF APPROVED MAKES AND MANUFACTURERS

The subcontractors/makes/brands of equipment listed below are approved for installation.

All items to be used in the works samples, catalogues and specifications are to be submitted by the contractor for approval of the Purchaser/HSCC. Only approved makes shall be used in the works. The approved samples shall be kept in the custody of the Purchaser/HSCC for comparison.

S.No	Material/Item	Approved Makes
1	Precision AC units	Emerson/Blue box/Stulz/Hiross
2	Window/split AC	Carrier /Hitachi/Voltas/Bluestar/Daikin/Ogeneral
3	VRV/VRF	Carrier /Hitachi/Daikin/Ogeneral
	Ducting & Grilles	
4	Factory fabricated duct	Zeco/ Ductofab/Rolastar/Technofab
5	G.I. Sheet Metal Duct	Jindal /National/ Tata/Sail
6	Spiral duct	Atco/Seven Star
7	Grilles/Diffusers/Volume Controller	Ravistar/Caryaire/ Mapro/Dynacraft/Airmaster
8	Fire Dampers UL listed	Caryaire/Dynacraft / Ravistar/Ruskin
9	Sound Attenuator	Caryaire/Dynacraft/Ravistar/Trox
10	G.I. Sheets	TATA/SAIL/Jindal/Bhushan Steel
11	Aluminium Sheets	Balco/Nalco/Hindalco
12	Stick Pins	Prima Seal/Air flow
	Pipes	
13	G.I.	ITC/ Jindal Hissar/Tata/SAIL/HSL
14	M.S. upto 150 mm	ITC/ Jindal Hissar/Tata/SAIL/HSL
15	M.S. 200 mm and above dia factory rolled	ITC/ Jindal Hissar/Tata/SAIL/HSL
	Valves	
16	Butterfly Valves	Advance/Audco
17	Motorised butterfly valve(actuator)	Belimo/Honeywell/Invensys/siemens
18	Non Return Valve	Advance/Kirloskar/Audco
19	Balancing Valves	Advance/Audco/Danfoss/Honeywell
20	Gate/Globe Valves	Leader/Divine/Sant/Bankim Sarkar /Zoloto
21	GM valve upto 40mm	Leader/Divine/Sant/Bankim Sarkar /Zoloto



22	Ball Valve with Y strainer	Rapid Control/Sant/Leader/Zoloto
23	Pressure independent Balancing valve	Danfoss/Flowcon/TA
	Accessories	
24	Y-strainer	Emerald/Sant/Rapid cool
25	Pressure Gauge	Fiebig/Emerald/H Guru/Japsin
26	Thermometer	Fiebig/Emerald/H Guru/Japsin
27	Flow Switch	Rapid Control/Anergy
28	Automatic Air Vent	Rapid Control/Anergy
29	Suction Guide	Anergy/ Rapid Control/Flowcon
30	Filters(pre,fine Hepa)	Thermadyne/Spectrum/Kirloskar /Anfilco/Johnflower/Dynafilter
	Insulation	
31	Expanded Polystyrene	Beardsell Ltd./ BASF/Styrene Packing/ Indian Packaging Industries/ Lloyd
32	Glass Wool	FGP Ltd./UP Twiga/Kimmco / Owens Corning
33	Polyurethane Foam	Malanpur /Superurethane
34	Crossed linked Polyethylene Foam	Trocellene / Aeroflex/Armacell/
35	Closed Cell Elastomeric Insulation	K-flex /Vedoflex/Armacell
36	Non woven fibre material	Mikron/ Du pont
37	Mineral wool	Rockwool India Pvt Ltd,
38	Pre-moulded PUF section for pipe & pipe supports	Malanpur/ Lloyd
39	Fibreglass rigid Board/Pipe section	FGP Ltd./UP Twiga/Kimmco / Owens Corning
40	Aluminium Tape	Johnson/Birla 3M/Garware
41	Thermostats	Honeywell/Johnson controls/Belimo/Danfoss/Siemens/Oventrop
42	Humidistat	Honeywell/Johnson control/ Belimo/Danfoss
	Miscellaneous	

43	V Belt	Dunlop/Fenner
44	Anchor fastners	Fischer/Hilti
45	Dash fastner	Fischer/Hilti
46	Welding rods	Advani/L&T
47	Wire Rope duct supporting arrangement	Gripple
48	Flexible pipe connection	Dunlop/Kanwal/resistoflex
49	Hessian Cloth (fire rated)	Navair/Pyrogaurd
50	Vibration isolator	Resistoflex, Dunlup, Kanwal
51	Copper Refrigerant Piping	Diamond/Star/Rajco