

MAHAVIR CANCER SANSTHAN , PHULWARISHARIF, PATNA

TENDER DOCUMENT

Name of Work: Electrical and Allied Works for PET-CT Machine Installed at Ground Floor, B-Block, Mahavir Cancer Sansthan, Patna.

Tender Reference No.: MCS/Engg./2026-27/ 951

Date of Issue: 12.10.2026

Last Date and Time for Submission: 21.10.2026

Date and Time of Opening: _____

Completion Period: 30 Days from the date of issue of Work Order / site handover, whichever is later.

✓1. SCOPE OF WORK

The work comprises the design verification, supply, fabrication, installation, laying, wiring, termination, testing and commissioning of electrical panels, power cables, electrical power points, UPS power points, lighting points, emergency power-off systems, networking and telephone points, and dedicated chemical earthing for the PET-CT Machine installed at the Ground Floor, B-Block, Mahavir Cancer Sansthan, Patna.

The entire work shall be carried out in accordance with the approved drawings, technical specifications, applicable Indian Standards, relevant electrical safety regulations, the requirements of the PET-CT equipment manufacturer and the directions of the Engineer-in-Charge.

The contractor shall visit the site before submitting the quotation and shall verify the actual site conditions, cable routes, panel locations, equipment interface requirements and installation constraints.

✓2. DETAILED TECHNICAL SPECIFICATIONS AND SCHEDULE OF WORKS

A. ELECTRICAL LT PANELS

A.1 Panel A — 400 Amp LT Panel

Supply, fabrication, installation, testing and commissioning of one indoor-type LT electrical panel complete with the following components and accessories:

1. Incomer: 400 Amp, 4-pole, 36 kA MCCB, complete with multifunction meter (MFM), indicating lamps and rotary operating handle.
2. Busbar: Four-pole copper-alloy busbar of 400 Amp current-carrying capacity, complete with suitable supports, insulation, shrouding and connections.
3. Outgoing feeders:
 - 3 Nos. 250 Amp, 4-pole, 36 kA MCCBs, each complete with rotary operating handle, multifunction meter and indicating lamps.
 - 5 Nos. 63 Amp TPN MCBs.

4. The panel shall be complete with suitable enclosure, internal wiring, terminal blocks, cable glands, lugs, ferrules, earthing terminals, identification labels and all necessary accessories for safe and reliable operation.

Quantity: 1 No.

A.2 Panel B — 200 Amp LT Panel

Supply, fabrication, installation, testing and commissioning of one indoor-type LT electrical panel complete with the following components and accessories:

1. Incomer: 200 Amp, 4-pole, 36 kA MCCB, complete with multifunction meter, indicating lamps and rotary operating handle. The MCCB shall be compatible with a Lockout/Tagout (LOTO) arrangement.
2. Busbar: Four-pole copper-alloy busbar of 200 Amp current-carrying capacity, complete with suitable supports, insulation, shrouding and connections.
3. Outgoing feeders and controls:
 - 1 No. 160 Amp, 3-pole, 36 kA MCCB, complete with rotary operating handle, multifunction meter and indicating lamps.
 - 1 No. 160 Amp, 3-pole contactor, complete with start/stop push buttons mounted on the panel.
 - 2 Nos. 20 Amp SP MCBs.
4. The panel shall include suitable internal control wiring, terminals, cable glands, lugs, ferrules, earthing terminals, identification labels and all necessary accessories.

Quantity: 1 No.

A.3 Panel Construction and Manufacturing Requirements

Both panels shall comply with the following requirements:

1. Panels shall be manufactured using CNC laser-cut sheet metal components, with accurate fabrication and proper finishing.
2. Surface preparation and painting shall be carried out using a controlled spray-painting process to achieve a uniform, durable and corrosion-resistant finish.
3. The enclosure, sheet thickness, degree of protection (IP rating), busbar supports and short-circuit withstand capacity shall be suitable for the intended installation environment and shall be approved by the Engineer-in-Charge.
4. Each panel shall be provided with a proper earthing arrangement, internal component identification, circuit labels, danger plates and an updated circuit schedule.
5. A suitable Lockout/Tagout (LOTO) provision shall be provided wherever required for safe electrical isolation and maintenance.
6. All electrical components shall be of following make, conform to applicable standards and be supported by relevant technical datasheets.
 - **MCCB:** L&K/Seimens/Havells/ABB.
 - **MFM Meter :** L&K/Seimens/Havells/ABB/Secure
 - **Controlling Wire(Flexible copper wire minimum 2.5sqmm) :** Havells/KEI/Polycab
 - **Power Wiring (Flexible copper wire with suitable capacity as per respective MCCBs):** Havells/KEI/Polycab
 - **CT &PT (Class 1 Ring type) :** Kappa,L&K,ABB,Seimens.
 - **R,Y,B Indicating Lamp :** TEKNIK,ESBEE ETC
7. The contractor shall submit the panel general arrangement drawing, single-line diagram, component schedule and technical datasheets for approval before commencing panel fabrication.

B. ELECTRICAL POWER CABLE WORK

Supply, laying, installation, dressing, glanding, termination, testing and commissioning of the following power cables, including all necessary accessories and consumables.

S.N.	Description of Work	Quantity
1.	Supply and laying of 3.5-core, 185 sq. mm aluminium conductor, XLPE-insulated, armoured power cable from the MCS main panel to Panel A in the PET-CT UPS room. Cable Make: (HAVELLS/KEI/POLYCAB)	150Meter
2.	Supply, laying and termination of 4-core, 95 sq. mm flexible copper power cable from Panel A to the 100 kVA UPS. Make: (HAVELLS/KEI/POLYCAB)	5 meter
3.	Supply, laying and termination of 4-core, 95 sq. mm flexible copper power cable from the 100 kVA UPS to Panel B. Make: (HAVELLS/KEI/POLYCAB)	10 meter
4.	Supply, laying and termination of 4-core, 95 sq. mm flexible copper power cable from Panel B to the PDU. Make: (HAVELLS/KEI/POLYCAB)	5 meter

C. ELECTRICAL WIRING, POWER POINTS AND CONTROL/COMMUNICATION WORK

Supply, installation, wiring, termination, testing and commissioning of the following points, including FR-PVC insulated copper conductors, medium-class PVC conduits, junction boxes, modular accessories, switches, sockets, faceplates and all associated materials as applicable.

S.N.	Description of Work	Quantity
1.	Raw power point with 16 Amp socket outlet, wired with 3-core, 4 sq. mm copper conductor from the designated raw-power DB. Make: (HAVELLS/KEI/POLYCAB)	10 Nos.
2.	UPS power point with 16 Amp socket outlet, wired with 3-core, 4 sq. mm copper conductor from the designated UPS DB. Make: (HAVELLS/KEI/POLYCAB)	10 Nos.
3.	One UPS power point and one light point in the console room, wired from Panel B using 3-core, 4.0sqmm & 2.5 sq. mm copper conductor respectively. Make: (HAVELLS/KEI/POLYCAB)	1 Set
4.	One UPS power point and one light point in the gantry room, wired from Panel B using 3-core, 4.0sqmm & 2.5 sq. mm copper	1 Set

	conductor respectively. (HAVELLS/KEI/POLYCAB) Make:	
5.	Emergency system OFF arrangement in the scan room for controlling the 200 Amp, 4-pole incomer MCCB of Panel B, complete with control wiring, interface components and necessary accessories. Make: (HAVELLS/KEI/POLYCAB)	1 No.
6.	Emergency system OFF arrangement in the console room for controlling the 200 Amp, 4-pole incomer MCCB of Panel B, complete with control wiring, interface components and necessary accessories. Make: (HAVELLS/KEI/POLYCAB)	1 No.
7.	RJ45 network points for the main PET-CT system in the console room, including CAT-6 or equipment-approved network cable, termination, faceplate and testing.	2 Points
8.	Telephone line point in the console room, including cable, termination and necessary accessories.	1 Point
9.	24 Volt X-ray ON indicator lamp, including 3-core, 2.5 sq. mm copper wiring and suitable interface accessories. Make: (HAVELLS/KEI/POLYCAB)	1 Point
10.	Lighting connections from the switchboard to ceiling light fixtures using 3-core, 1.5 sq. mm copper conductor. Make: (HAVELLS/KEI/POLYCAB)	15 Points

D. EARTHING WORK

D.1 Chemical Earthing Electrodes

Supply, installation, testing and commissioning of chemical earthing electrodes with copper electrodes of 80 mm diameter, complete with suitable inspection chambers, earth enhancement compound, connection terminals, protective covers and all required accessories.

Quantity: 4 Nos.

D.2 Dedicated Copper Earthing Conductor

Supply, laying, installation, termination and testing of 95 sq. mm copper earthing conductor from the earthing electrode terminals to the dedicated earth busbar and from the busbar to the UPS, Panel B and PET-CT machine, complete with suitable lugs, connectors, clamps, supports, identification and protective arrangements.

Approximate quantity: 80 meter.

Earthing requirements:

1. Earthing electrodes and conductors shall conform to applicable standards and the equipment manufacturer's requirements.
2. The earthing arrangement shall provide effective protective earthing and equipotential bonding for the UPS, panels, PDU and PET-CT equipment, as applicable.
3. The dedicated earthing arrangement shall be coordinated with the Sansthan's existing earthing and bonding system. No isolated or independent earth arrangement shall be left unbonded where bonding is required by the approved design.
4. Earth resistance, continuity and bonding tests shall be conducted and recorded. Acceptance values shall be as prescribed by the applicable standards, approved design and PET-CT equipment manufacturer.
5. All earth connections shall be mechanically secure, corrosion-resistant and accessible for inspection wherever required.

3. BILL OF QUANTITIES (BOQ)

The bidder shall quote item-wise rates against the detailed schedule of works and submit the total amount, applicable taxes and grand total.

Sl. No.	Item Description	Unit	Qty.	Rate (₹)	Amount (₹)
1.	Panel A — 400 Amp LT panel complete as specified	No.	1.		
2.	Panel B — 200 Amp LT panel complete as specified	No.	1.		
3.	3.5-core, 185 sq. mm aluminium armoured XLPE cable	Meter	150		
4.	4-core, 95 sq. mm flexible copper cable, Panel A to UPS	Meter	5		
5.	4-core, 95 sq. mm flexible copper cable, UPS to Panel B	Meter	10		
6.	4-core, 95 sq. mm flexible copper cable, Panel B to PDU	Meter	5		
7.	16 Amp raw power points with 3-core, 4 sq. mm wiring	Point	10		
8.	16 Amp UPS power points with 3-core, 4 sq. mm wiring	Point	10		
9.	Console room UPS point and light point	Set	1		
10.	Gantry room UPS point and light point	Set	1		
11.	Emergency OFF arrangement in scan room	No.	1		
12.	Emergency OFF arrangement in console room	No.	1		
13.	RJ45 network points	Point	1		
14.	Telephone line point	Point	1		
15.	24 Volt X-ray ON lamp point	Point	1		
16.	Ceiling light connection points	Point	15		
17.	80 mm diameter copper chemical earthing electrodes complete	No.	4		
18.	95 sq. mm copper earthing conductor complete	Meter	80		
Sub-total					
GST, as applicable					
Grand Total					

Note: The BOQ above is a summary. The complete technical specifications in Section 2 shall form an integral part of the tender. The bidder shall include all incidental materials, labour, transportation, tools, testing equipment, installation, termination and commissioning necessary for completion of the work. Any exclusions must be expressly declared in the bid.

4. ELIGIBILITY CRITERIA FOR BIDDERS

Only firms/contractors having proven experience in the execution of electrical and allied works of a similar nature shall be eligible to participate in the tender.

The following documents shall be submitted along with the technical bid:

1. Similar Work Experience: The bidder must have successfully executed works involving LT electrical panels, high-capacity power cables, UPS power distribution, electrical wiring and/or dedicated earthing for hospitals, diagnostic imaging centres, medical equipment installations or other comparable critical electrical installations.

2. Work Orders and Completion Certificates: The bidder shall submit copies of relevant work orders and completion certificates issued by the concerned client, hospital, institution, government department or reputed organisation.

3. Minimum Experience Threshold: During the last five financial years, the bidder should have completed at least one similar work of a value not less than 80% of the estimated tender cost, or two similar works each of a value not less than 50%, or three similar works each of a value not less than 40% of the estimated tender cost. The Sansthan may specify a different threshold in the Notice Inviting Tender (NIT), as appropriate to the estimated value and procurement policy.

4. GST Registration: A valid GST registration certificate, wherever applicable, shall be submitted.

5. PAN: A copy of the firm's/proprietor's PAN card shall be submitted.

6. Technical Capability: The bidder shall submit the technical details and datasheets of the proposed panels, MCCBs, MCBs, contactors, cables, earthing electrodes and other major components, wherever applicable.

7. Manufacturer Authorisation/Support: The bidder shall provide manufacturer authorisation or technical support documentation wherever specifically required for the proposed equipment or components.

8. Undertaking: The bidder shall submit an undertaking confirming that the work shall be carried out in accordance with the approved specifications, applicable safety regulations and instructions of the Engineer-in-Charge.

9. Site Inspection: The bidder shall inspect the site and satisfy itself regarding the scope, cable routes, access, working conditions and coordination requirements before quoting.

Important eligibility condition: Submission of a general electrical work order without supporting evidence of similar technical scope shall not, by itself, establish eligibility. The Sansthan reserves the right to verify the submitted work orders and completion certificates and to reject bids that fail to meet the prescribed technical eligibility requirements.

5. DOCUMENTS TO BE SUBMITTED WITH THE BID

The technical bid shall contain:

- Firm registration and PAN documents.

- GST registration certificate, wherever applicable.
- Similar work orders
- Site inspection undertaking.
- Signed copy of the tender document, confirming acceptance of the terms and conditions.
- Any additional documents specified in the NIT.

The financial bid shall contain the duly completed BOQ, quoted rates, taxes and the total quoted amount.

6. GENERAL TERMS AND CONDITIONS

1. **Completion Period:** The work shall be completed within the stipulated period from the date of issue of the work order or handover of the site, as specified in the NIT.
2. **Approval of Materials:** No major material shall be procured or installed without approval of the Engineer-in-Charge wherever such approval is required. The Sansthan may reject any material that does not conform to the approved specifications.
3. **Quality of Materials:** All materials shall be new, unused, of approved make and compliant with the relevant IS/IEC standards. Substandard, refurbished or counterfeit components shall not be accepted.
4. **Drawings and Coordination:** The contractor shall coordinate with the PET-CT equipment supplier, UPS/PDU supplier, civil department and other agencies before executing the work. Panel drawings, cable routes and equipment interface arrangements shall be approved before execution.
5. **Working in a Hospital:** The contractor shall take all necessary precautions to avoid disruption to hospital operations. Work shall be planned in consultation with the Engineering Department, and any shutdown shall be undertaken only after prior written approval.
6. **Safety:** The contractor shall provide appropriate personal protective equipment, warning signs, barricades, insulated tools and safe working arrangements. Lockout/Tagout procedures shall be followed during electrical isolation and maintenance.
7. **Testing and Commissioning:** All panels, cables, circuits, emergency OFF arrangements, network points and earthing systems shall be tested before commissioning. Test reports and commissioning records shall be submitted to the Sansthan.
8. **Equipment Interface:** The contractor shall ensure that electrical connections and emergency shutdown interfaces comply with the PET-CT manufacturer's approved drawings and requirements. The contractor shall not energise the system without the necessary approvals.
9. **Rates:** The quoted rates shall include supply, transportation, loading and unloading, installation, labour, consumables, tools and tackles, cable accessories, termination, testing, commissioning and other incidental expenses required to complete the specified work. GST shall be indicated separately in the financial bid.

10. Warranty: The contractor shall provide a minimum 12-month warranty for workmanship and supplied components from the date of successful commissioning, or the longer manufacturer's warranty where applicable.

11. Rejection of Bids: The Sansthan reserves the right to reject any or all bids, cancel the tender or accept a bid in accordance with its applicable procurement policy, without being bound to accept the lowest quotation.

12. Dispute Resolution: Any dispute arising out of the contract shall be dealt with in accordance with the terms of the work order and applicable law.

The work shall be considered complete only after inspection, testing and written acceptance by the Engineer-in-Charge/authorised representative of the Sansthan.

7. Submission of Quotation

Interested bidders shall submit their sealed quotations in a properly sealed envelope within 7 (Seven) days from the date of issue of this NIT.

The sealed envelope shall be superscribed with the following details:

- Tender Name: **Electrical and Allied Works for PET-CT Machine Installed at Ground Floor, B-Block, Mahavir Cancer Sansthan, Patna.**
- Tender/NIT No.: MCS/Engg./2026-27/ 351

The sealed quotation shall be dropped in the **Tender Box** kept at **Room No. 03, Ground Floor, A-Block, Mahavir Cancer Sansthan & Research Centre, Phulwarisharif, Patna – 801505**, on or before the due date and time.

Quotations received after the prescribed deadline or submitted in an unsealed envelope shall be liable to be rejected

8. Employer's Rights

- Mahavir Cancer Sansthan reserves the right to accept or reject any or all bids without assigning any reason.


12-10-26
Director(Admin.)
Mahavir Cancer Sansthan