स0 न0: भाविप्रा/एसएपी/इंजी॰(वि॰)/ओल्ड एरिया/पी.एस./डब्ल्यू ओ–192/2024–25/5607-15 दिनाँक:06.12.2024
Ref. No. AAI/SAP/ENGG (E)/ Old Area/PS/W.O-192/2024-25/ Date 06.12.2024

सेवा में,

**मेसर्स हिमालय जेनरेटर, हिमालय हाउस, डी-248, सेक्टर-10, नोएडा, जिला जी.बी. नगर, यू.पी- 201301**

**M/s Himalaya Generators, Himalaya House, D-248, Sector-10, Noida, Dist. G.B. Nagar, U.P- 201301**

विषयः– ओल्ड एरिया सफदरजंग हवाई अड्डे पर बिजली आपूर्ति का विस्तार।
**Subject:- Augmentation of Power Supply at Old Area Safdarjung Airport.**

संदर्भ i) आपकी खोली गई ई–निविदा दिनांक 12.09.2024. (Bid Invitation No: 2024_AAI_201536_1).
Ref: Your e-bid opened on 12.09.2024.
Your Reverse Auction opened on 20.09.2024

महोदय,

1. उपरोक्त कार्य हेतू आपका टेंडर अध्यक्ष, भारतीय विमानपत्तन प्राधिकरण की ओर से स्वीकृत किया जाता है, आपके द्वारा रिवर्स नीलामी के बाद बताए आइटम मूल्यों पर आपका टेंडर कुल **रु0 2,10,02,414/-** (मात्र दो करोड़ दस लाख दो हजार चार सौ चौदह रुपये) है जो कि अनुमानित/उचित लागत राशि **रु0 3,18,70,656/-** से **34.10%** कम है (जी.एस.टी. को छोड़कर)।
Your tender for the work mentioned above is hereby accepted on behalf of Chairman, Airports Authority of India at the item rates quoted by you after reverse auction totaling to **Rs. 2,10,02,414/-** (Rupees Two Crore Ten Lakhs Two Thousand Four Hundred & Fourteen Only) which is **34.10%** below from the estimated/Justified cost of **Rs. 3,18,70,656/- (excluding GST).**

2. वरिष्ठ प्रबंधक अभियांत्रिकी (विद्युत),भारतीय विमानपत्तन प्राधिकरण, सफदरजंग हवाई अडडा, नई दिल्ली 110003, इस कार्य के इंजीनियरिंग प्रभारी होंगे। आपसे अनुरोध है कि आप संविदा करार पर हस्ताक्षर करने एवं उसे पूरा करने हेतु **20.12.2024** तक वरिष्ठ प्रबंधक (अभि.–वि.), भारतीय विमानपत्तन प्राधिकरण, सफदरजंग हवाई अड्डा, नई दिल्ली–110003 के कार्यालय में उपस्थित हों। संविदा करार रु0 100/–(मात्र सौ रुपये) के गैर न्यायिक (नॉन–जूडिशॅयल) स्टांप पेपर पर बनाया जाएगा तथा स्टांप पेपर की लागत आपके द्वारा वहन की जाएगी।
Sr. Manager Engg (Electrical), Safdarjung Airport, New Delhi, shall be the Engineer-in-charge of the work. You are requested to attend the office of the Sr. Manager Engg (Elect), AAI, Safdarjung Airport, New Delhi by **20.12.2024** to sign and complete the contract agreement. The contract agreement shall be executed on a non-judicial stamp paper of value of Rs.100/- (Rupees one hundred only) and the cost of the stamp paper shall be borne by you.

3. आपकी निविदा के साथ प्राप्त Rs. 6,37,413/- (मात्र छह लाख सैंतीस हजार चार सौ तेरह रूपये) की अग्रिम धन राशि को संविदा दस्तावेज के पृष्ठ ई एन आई टी निविदा –3 पर एन.आई.टी. के खण्ड–16 के अनुसार प्रतिभूति जमा के रुप में प्रयुक्त तथा संपरिवर्तित किया जाएगा। कृपया इस पत्र के जारी होने की तिथि से 30 दिनों के भीतर शेष प्रतिभूति जमा के रूप में Rs. 14,62,828/- (मात्र चौदह लाख बासठ हजार आठ सौ अट्ठाईस रूपये) जमा करें अन्यथा इस राशि की कटौती संविदा कागजात के पृष्ठ जी सी सी– 16 पर जी सी सी के खण्ड–1A के अनुसार आपके चालू बिलों से कर ली जाएगी।

The earnest money amount **Rs. 6,37,413/-** (Rupees Six Lakh Thirty Seven Thousand Four Hundred and Thirteen Only) received along with your tender will be treated and converted as part of security deposit as per conditions at clause no. 16 on page no. E-NIT Tender - 3 of contract document. Please deposit Rs. **14,62,828**/- (Rupees Fourteen Lakhs Sixty Two Thousand Eight Hundred and Twenty Eight Only) towards security deposit within 30 days from the date of issue of this letter failing which, the same will be deducted from your running bill as per condition of clause no.- 1A at page no. GCC- 16 of the contract document.

4. आप से अनुरोध है कि आप संविदा श्रम (विनियम एवं उन्मूलन) अधिनियम 1970 तथा संविदा श्रम (विनियम एवं उन्मूलन) केन्द्रीय नियम 1971 एवं न्यूनतम मजदूरी अधिनियम के प्रावधानों और केन्द्रीय व राज्य सरकारों के तद्संबंधी नियमों का अनुपालन करें।

You are requested to comply with the provision of contract labour (Regulation & abolition) Act of 1970 and contract labour (Regulation & Abolition) Central Rules 1971 and minimum wages Act and Rules there of Central and state Govt.

5. आपको प्रबंधक (विधुत) भारतीय विमानपत्तन प्राधिकरण, सफदरजंग हवाई अडडा, नई दिल्ली से तत्काल संपर्क करने का भी निर्देश दिया जाता है। आपको कार्यस्थल (साइट) सौंपने का कार्य उनके द्वारा ही किया जाएगा।

You are also directed to contact Manager (Engg.-E), Airports Authority of India, Safdarjung Airport, New Delhi, immediately who will arrange to hand over the site to you.

6. कृपया नोट करें कि कार्य पूरा करने के लिए आपको **08 (आठ)** महीने, का समय प्रदान किया जाता है। जोकि दिनांक **16-12-2024** से प्रारम्भ माना जाएगा।

Please note that the time allowed for carrying out the work shall be **08 (Eight)** months and same shall be reckoned from **16.12.2024.**

7. ई–निविदा में उठाए गए सभी प्रश्न, स्पष्टीकरण इत्यादि तथा उनका भा.वि.प्रा द्वारा दिया गया उत्तर भी अनुबंध का भाग होगा।

All queries, clarifications etc. raised during e-tendering process and replies there of shall also form part of the agreement.

8. संविदा के सम्बन्ध में भविष्य में किसी भी प्रकार का पत्र व्यवहार इंजीनियर–प्रभारी के नाम से किया जाएगा।

Any further correspondence in connection with the contract should be addressed to the Engineer In-Charge.

9. कृपया पत्र की पावती भेजें तथा साथ में संलग्न इस पत्र की दूसरी प्रति पर स्वीकारोक्ति के रूप विधिवत् हस्ताक्षर करके हमें वापस भेजें।
Please acknowledge the receipt and return the duplicate copy of this letter enclosed herewith after duly signing it to the undersigned as a token of acceptance.

10. ठेके की दोष दायित्व अवधि **12 (बारह) महीने** है जोकि कार्य समाप्ति की तिथि से गिना जाएगा ।
The defect liability period is **12 (Twelve) Months** after actual date of completion.

11. जीएसटी प्रावधानों का अनुपालन न करने और किसी इनपुट क्रेडिट के अवरुद्ध होने की स्थिति में एएआई की क्षतिपूर्ति करना आपकी जिम्मेदारी होगी।
In case of non- compliance of GST provisions and blockage of any input credit, it shall be your responsibility to indemnify AAI.

12. जीएसटी को छोड़कर दरों में सभी कर शामिल हैं। हालांकि, जीएसटी, जैसा लागू हो, अनुबंध के नियमों और शर्तों के अनुसार वैध जीएसटी चालान के खिलाफ एजेंसी द्वारा एएआई को प्रदान की गई किसी भी कर योग्य आपूर्ति/सेवाओं/निर्माण के लिए ठेकेदार को भुगतान किया जाएगा।
The rates are inclusive of all taxes but excluding of GST. However, GST, as applicable, shall be paid to the contractor for any taxable supply/ services/ construction rendered by the agency to AAI against a valid GST invoices as per terms and conditions of the contract.

13. सभी इनपुट क्रेडिट आपके द्वारा एएआई को दिए जाएंगे।
All input credits will be passed on to AAI by you.

14. यदि कोई विसंगति पाई जाती है तो अंग्रेजी भाषा ही मान्य होगी।
In case of any discrepancy, English version will be taken as correct.

भवदीय
Yours faithfully

Narender 09/12/2024

(नरेन्द्र कुमार) / (Narender Kumar)
वरिष्ठ प्रबन्धक अभि॰(वि॰) Sr. Mgr. Engg (E)
अध्यक्ष, भारतीय विमानपत्तन प्राधिकरण की ओर एवं तरफ से
For & on behalf of Chairman, Airports Authority of India

संलग्नः शडयूल ऑफ कुंएन्टिटीज
Encl: Schedule of Quantities

## Schedule of Work

**Name of Work:- Augmentation of Power Supply at Old Area Safdarjung Airport.**

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 1.00 | SH-I:- SITC of DG Set & LT Panels | | | | |
| 2.00 | Supplying, Installing, Testing and Commissioning of Silent Type diesel generating set alongwith having prime power rating of 625 KVA, 415 Volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 Hz., 3-Phase system and for 0.85 Load factor and as per latest (CPCB-IV+ compliant norms) and consisting of the followings :<br>(a) Diesel Engine : Diesel Engine 4 Stroke water cooled, electric start, of suitable BHP at 1500 RPM suitable for above output of alternator at NTP conditions and conforming to latest IS / BS Version covering BS 5514, BS 649, IS 10000, capable of taking 10% over loading for one hour after 12 hours of continuous operation. The engine will be fitted completed with all the required accessories.<br>(b) Engine mounted Instrument Panel fitted with and having digital display for following :<br>(i) Start-Sop switch with key.<br>(ii) Water temperature indication<br>(iii) Lubrication oil pressure indication.<br>(iv) Lubrication oil temperature indication.<br>(v) Battery charging indication.<br>(vi) RPM indication.<br>(vii) Over speed indication.<br>(viii) Low Lub.oil trip indication.<br>(ix) Engine Hours indication.<br>(Note:- Above indications may be incorporated multifunction units mounted on DG Set)<br>(c) Alternator : Synchronous, alternator rated at 625 KVA, 415 Volts at 1500 RPM, 3-Phase 50 Hz., AC Supply with 0.8 lagging power factor at NTP condition. The alternator shall be having SPDP enclosure, brushless, continuous duty, self-excited and self-regulated through AVR conforming to IS: 4722/BS 2613 suitable for tropical conditions and with class-H insulation.<br>(d) Base Frame & Foundation : Both the engine and alternator shall be mounted on suitable base frame made of MS channel with necessary reinforcement which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendation of OEM, etc. complete as required at site (Including making of foundation as per OEM specification). | 2.00 | Each | **5417344.069** | **10834688.139** |
| | (e) Fuel Tank : Separate Daily Service Fuel tank of 990 liters capacity fabricated out of 3 mm thick M.S. sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class 'C' pipes of suitable dia. Complete with valves, level indications and accessories as required as per specifications.<br>(f) Exhaust System : Dry exhaust mainfold with hospital exhaust silencer and catalytic convertor.<br>(g) Starting System :<br>(h) 12V/24V DC starting system comprising of starter motors: Voltage regulator and arrangement for initial excitation complete with suitable nos. of batteries as per OEM standard as required as per specifications.<br>(e) Accoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine and alternator, extraction, discharging hot air into the atmosphere as per specifications. | | | | |
| 3.00 | Supplying and fixing of exhaust gas piping of suitable dia. for 625 KVA D.G. Set welded black MS, B (medium) Class pipe conforming to IS: 3589 cut to required lengths and installed with necessary bends, clamps, anti-vibration mountings, insulation of exhaust system with 50 mm thick Loosely bound resin (LBR) mattress/ mineral wool / Rockwool having density not less than 120 Kg / Cucm, wiremesh & cladding with 0.6 mm thick aluminum sheet etc. as required as per specifications. | 30.00 | Mtr | **6269.128** | **188073.832** |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 4.00 | STRUCTURE FOR EXHAUST PIPING: Providing & fixing for MS support structure including civil foundation for exhaust fume pipes of DG Sets (Exhaust pipe to be measured and paid for separately) along horizontal and vertical runs and monkey ladder upto the height (as per CPCB norms) including cutting, welding etc and applying two coats of red oxide and two coats of synthetic enameled paint of colour and shade as directed by AAI. The design of the support structure shall be done by the contractor and shall be as per CPCB norms. Design and drawings shall be got vetted from IIT / REC before execution as per specifications as required. | 4500.00 | Kg | **112.435** | **505959.493** |
| 5.00 | Supplying & fixing Stainless Steel Expansion Joints, Corrugated bellows for 625 KVA DG Sets to fit in exhaust pipe. | 10.00 | Nos | **9880.690** | **98806.904** |
| 6.00 | ESSENTIAL PANEL (CRSD)<br>Supply, Installation, Testing and Commissioning of cubicle type LT panel (TTA) indoor type , IP54 protection , 50 KA suitable for 415V, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 4P Aluminium alloy bus bars of high conductivity, SMC bus bar supports,with short circuit withstand capacity of 50 KA for 1 sec, bottom base channel of MS section not less than 100 mm x 50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25 mm x 5 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with suitable size of PVC insulated copper conductor , cable alleys, cable gland plates in two half, i/c providing following switch gears :- | 1.00 | Nos | **1925031.069** | **1925031.069** |
| 6.01 | (A) INCOMER<br>i) 2 Nos 1000A, 4 Pole, 50KA, EDO, Microprocessor based release having short circuit, overload & Earth Fault protection ACB as Incomer for City Supply<br>ii) 2 Nos 1000A, 4 Pole, 50KA, EDO, Microprocessor based release having short circuit, overload & Earth Fault protection ACB as Incomer for DG Supply<br>Each ACB above shall be provided with<br>i) 1-No, 96 mm sq. Flush pattern Digital Voltmeter( 0-500V) with SS for 3-Phase 4-Wire System with 2A HRC Fuses for Protection<br>ii) 1-No, 96 mm sq. Flush pattern Digital Type Ammeter ( 0-800A) with CTs & SS for 3-Phase 4-Wire System with 2A SP MCB for Protection.<br>iii) Breaker Control Switch 25A, 1P, Spring Return 1-T 2-CL 0-N<br>iv) 1-Set of ON/OFF/Trip Indicating Lights with 2A SP MCB for Protection<br>v) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection.<br>vi) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port | | | | |
| 6.02 | (B) Bus Bars<br>4 Nos 1500A Electrolytic Aluminium Bus-Bars of equal cross-section.<br>(C) BUS COUPLER<br>i) 1 Nos 1000A, 4 Pole, 50KA, EDO, Thermal magnetic release ACB as Bus Coupler with LSIG Trip.<br>ii) Breaker Control Switch 25A, 1P, Spring Return 1-T 2-CL 0-N<br>iii) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection. | | | | |
| 6.03 | (D) ACCESSORIES FOR ELECTRICAL INTERLOCKING.<br>i) Electrical interlocking arrangement as per drawing and specifications among 2 nos. Incomers from City Supply, 02 nos. incomers from DG Supply and 1 nos. Bus coupler including interconnections etc. as required.<br>(E) OUTGOINGS<br>I: 4 Nos. MCCB, 400A, 35/36 kA, Four Pole , with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>I: 2 Nos. MCCB, 250A, 35/36 kA, Four Pole , with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>II: 01 Nos. MCCB, 100A, 35/36 kA, Four Pole, with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>III: 01 Nos. MCCB, 63A, 35/36 kA, Four Pole, with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>Each Outgoing MCCB above shall be provided with:<br>i) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port.<br>ii) OFF/ON/Trip indicating LED lights with 2A SP MCB<br>iii) 1 Set Extended Rotary operating mechanism and terminal extension spreaders for all the MCCBs. | | | | |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 6.04 | (F) DG AMF LOGIC<br>AMF ENGINE CONTROL RELAY AUX 8-36VDC,<br>ANNUNCIATOR 04 WINDOWS 24V DC WITH P.B.<br>HOOTER 220V AC DELCON 1<br>BATT CHR 230V AC 24V DC 10A W 3 INDICATION & 1 PROTECTION<br>AMMETER ANALOG 15A DC DIRECT 96 SQMM<br>VOLTMETER 30V DC DIRECT 96 SQMM<br>04 nos. AUX RELAY 220/240VAC 4C/O<br>PUSH BUTTON RED WITH 1NC<br>PUSH BUTTON GREEN WITH 1NO<br>EM STOP PUSH BUTTON RED TURN TO RELEASE<br>INDICATING LIGHT RED 220V AC 22.5MM DIA<br>INDICATING LIGHT GREEN 220V AC 22.5MM DIA<br>AUX CONTROL RELAY WITH 2NO+2NC 220V AC<br>TIMER MULTIFUNCTION 2C/O 0.1SEC-10HR 24-240VAC/DC GIC 1<br>04 no.s MCB SP 2A 10KA C-CURVE | | | | |
| 7.00 | NON- ESSENTIAL PANEL (CRSD SUB-STATION)<br>Supply, Installation, Testing and Commissioning of cubicle type LT panel (TTA) indoor type , IP54 protection , 50 KA suitable for 415V, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 4P Aluminium alloy bus bars of high conductivity, SMC bus bar supports,with short circuit withstand capacity of 50 KA for 1 sec, bottom base channel of MS section not less than 100 mm x 50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25 mm x 5 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with suitable size of PVC insulated copper conductor , cable alleys, cable gland plates in two half, i/c providing following switch gears :- | 1.00 | Nos | **1873924.049** | **1873924.049** |
| 7.01 | (A) INCOMER<br>i) 2 Nos 1250A, 4 Pole, 50KA, EDO,Microprocessor based release having short circuit, overload & Earth Fault protection ACB as Incomer for City Supply<br>Each ACB above shall be provided with<br>i) 1-No, 96 mm sq. Flush pattern Digital Voltmeter( 0-500V) with SS for 3-Phase 4-Wire System with 2A HRC Fuses for Protection<br>ii) 1-No, 96 mm sq. Flush pattern Digital Type Ammeter ( 0-800A) with CTs & SS for 3-Phase 4-Wire System with 2A SP MCB for Protection.<br>iii) Breaker Control Switch 25A, 1P, Spring Return 1-T 2-CL 0-N<br>iv) 1-Set of ON/OFF/Trip Indicating Lights with 2A SP MCB for Protection<br>v) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection.<br>vi) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port | | | | |
| 7.02 | (B) Bus Bars<br>4 Nos 1500A Electrolytic Aluminium Bus-Bars of equal cross-section.<br>(C) BUS COUPLER<br>i) 1 Nos 1250A, 4 Pole, 50KA, EDO, Thermal magnetic release ACB as Bus Coupler with LSIG Trip.<br>ii) Breaker Control Switch 25A, 1P, Spring Return 1-T 2-CL 0-N<br>iii) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection.<br>(D) ACCESSORIES FOR ELECTRICAL INTERLOCKING.<br>i) Electrical interlocking arrangement as per drawing and specifications among 2 nos. Incomers from City Supply and 1 nos. Bus coupler including interconnections etc. as required. | | | | |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 7.03 | (E) OUTGOINGS<br>i) 2 Nos 1000A, 4 Pole, 50KA, EDO, Microprocessor based release having short circuit, overload & Earth Fault protection ACB,<br>ii) 3 Nos. MCCB, 400A, 35/36 kA, Four Pole , with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>iii) 04 Nos. MCCB, 100A, 35/36 kA, Four Pole, with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>iv) 01 Nos. MCCB, 63A, 35/36 kA, Four Pole, with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>Each Outgoing MCCB above shall be provided with:<br>i) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port<br>ii) OFF/ON/Trip indicating LED lights with 2A SP MCB<br>iii) Breaker Control Switch 25A, 1P, Spring Return (1-T 2-CL 0-N) for ACB only<br>iv) 1 Set Extended Rotary operating mechanism and terminal extension spreaders for all the MCCBs. | | | | |
| 8.00 | Supply, Installation, Testing and Commissioning of cubicle type LT panel indoor type , IP54 protection , 35/36 KA suitable for 415V, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 4P Aluminium alloy bus bars of high conductivity, SMC bus bar supports, with short circuit withstand capacity of 35/36 KA for 1 sec, bottom base channel of MS section not less than 100 mm x 50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25 mm x 5 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with suitable size of PVC insulated copper conductor , cable alleys, cable gland plates in two half, i/c providing following switch gears :-<br>(A) INCOMER<br>i) 1 Nos. MCCB, 100A, 35/36 kA, Four Pole , with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>Each incomer above shall be provided with<br>i) 1-No, 96 mm sq. Flush pattern Digital Voltmeter ( 0-500V) with SS for 3-Phase 4-Wire System with 2A HRC Fuses for Protection<br>ii)1-No, 96 mm sq. Flush pattern Digital Type Ammeter ( 0-100A) with CTs & SS for 3-Phase 4-Wire System with 2A SP MCB for Protection.<br>iii) 1-Set of ON/OFF/Trip Indicating Lights with 2A SP MCB for Protection<br>iv) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection.<br>v) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port<br>(B) Bus Bars<br>4 Nos 100A Electrolytic Aluminium Bus-Bars of equal cross-section.<br>(C) OUTGOINGS<br>i) 5 Nos. 63A, 4 Pole, MCCB having Thermal Magnetic release<br>Each Outgoing MCCB above shall be provided with:<br>i) OFF/ON/Trip indicating LED lights with 2A SP MCB<br>ii) 1 Set Extended Rotary operating mechanism and terminal extension spreaders for all the MCCBs. | 2.00 | Nos | **221463.751** | **442927.503** |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 9.00 | Supply, Installation, Testing and Commissioning of cubicle type LT panel indoor type , IP54 protection , 35/36 KA suitable for 415V, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 4P Aluminium alloy bus bars of high conductivity, SMC bus bar supports,with short circuit withstand capacity of 35/36 KA for 1 sec, bottom base channel of MS section not less than 100 mm x 50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25 mm x 5 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with suitable size of PVC insulated copper conductor , cable alleys, cable gland plates in two half, i/c providing following switch gears :-<br>(A) INCOMER<br>i) 1 Nos. MCCB, 160A, 35/36 kA, Four Pole , with microprocessor based (LSING) release having Over Current, Short Circuit, Earth Fault Protection (Ics=Icu).<br>Each incomer above shall be provided with<br>i) 1-No. 96 mm sq. Flush pattern Digital Voltmeter( 0-500V) with SS for 3-Phase 4-Wire System with 2A HRC Fuses for Protection<br>ii) 1-No. 96 mm sq. Flush pattern Digital Type Ammeter ( 0-100A) with CTs & SS for 3-Phase 4-Wire System with 2A SP MCB for Protection.<br>iii) 1-Set of ON/OFF/Trip Indicating Lights with 2A SP MCB for Protection<br>iv) 1-Set of LED Phase Indicating Lights R,Y,B with 2A SP MCB for protection.<br>v) 16 Parameter Multifunction digital meter to read A,V,KVA,KW,KVAR,KVAH,HZ,P.F & THD etc. The MFM to be duly equipped with RS-485 Port<br>(B) Bus Bars<br>4 Nos 200A Electrolytic Aluminium Bus-Bars of equal cross-section.<br>(C) OUTGOINGS<br>i) 8 Nos. 63, 4 Pole, MCCB having Thermal Magnetic release<br>Each Outgoing MCCB above shall be provided with;<br>i) OFF/ON/Trip indicating LED lights with 2A SP MCB<br>ii) 1 Set Extended Rotary operating mechanism and terminal extension spreaders for all the MCCBs. | 1.00 | Nos | 187392.405 | 187392.405 |
| **10.00** | **SH-II: Supply Cables & Laying** | | | | |
| 11.00 | Supply of following sizes of Copper Power Cables,multi stranded conductor, XLPE Insulated, cores laid up, PVC tape Inner sheathed for Multicore cables, Armoured, ,650/1100V grade as per IS 7098(Part 1) 1988. | | | | |
| 11.01 | 4C x 10 sqmm armoured | 150.00 | Mtr | 408.856 | 61328.423 |
| 11.02 | 12C x 2.5 sqmm Armoured | 350.00 | Mtr | 415.670 | 145484.649 |
| 12.00 | Supply of following size of 1.1 kv grade multicore aluminium conductor, XLPE insulated and PVC sheathed armoured cable as per IS: 7098:1988 (Part-I) with upto date amendments. | | | | |
| 12.01 | 4 core, 10 Sq.mm. | 50.00 | Mtr | 119.250 | 5962.486 |
| 12.02 | 4 core, 16 Sq.mm. | 100.00 | Mtr | 126.064 | 12606.398 |
| 12.03 | 3½ core, 25 Sq.mm. | 50.00 | Mtr | 180.578 | 9028.907 |
| 12.04 | 3½ core, 35 Sq.mm. | 100.00 | Mtr | 211.242 | 21124.235 |
| 12.05 | 3½ core, 50 Sq.mm. | 100.00 | Mtr | 262.349 | 26234.937 |
| 12.06 | 3½ core x 70 Sq.mm | 10.00 | Mtr | 337.306 | 3373.063 |
| 12.07 | 3½ core x 95 Sq.mm | 10.00 | Mtr | 425.892 | 4258.918 |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 12.08 | 3½ core X 120 Sq.mm. | 100.00 | Mtr | **511.070** | **51107.020** |
| 12.09 | 3½ core X 300 Sq.mm. | 900.00 | Mtr | **1328.783** | **1195904.257** |
| 13.00 | Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. | | | | |
| 13.01 | 300 mm width X 50 mm depth X 1.6 mm thickness | 10.00 | Mtr | **817.712** | **8177.123** |
| 13.02 | 450 mm width X 50 mm depth X 2.0 mm thickness | 10.00 | Mtr | **1022.140** | **10221.404** |
| 13.03 | 900 mm width X 62.5 mm depth X 2.0 mm thickness | 30.00 | Mtr | **1873.924** | **56217.721** |
| 14.00 | Earthing | | | | |
| 15.00 | Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required. | 2.00 | Set | **5315.130** | **10630.260** |
| 16.00 | Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required. | 4.00 | Set | **9403.692** | **37614.766** |
| 17.00 | Supply, Installation, Testing and Commissioning of Copper bonded rod with Low carbon steel, high tensile strength copper bonded rod with min 250 microns of copper plating, UL listed. Diameter- 17.2 mm, Length- 3 meters, Material- Copper Bonded, Coating thickness- 250 microns, min, Approvals- Tested acc. IEC / EN 62561-2, UL 467, 20 kg backfilled compound, - Material Carbon based backfill/earthing compound, Resistivity- < 0.12 ΩM, Complying Standard- IEC 62561-7 , Testing Approvals Certified from- NABL accredited Laboratories, StSt 316 grade clamp to terminate the load on earth electrode, Poly plastic pit cover of material- Polymer Body & Cover. | 6.00 | Nos | **5451.415** | **32708.492** |
| 18.00 | Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm). | 20.00 | Mtr | **885.855** | **17717.100** |
| 19.00 | Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm). | 20.00 | Mtr | **81.771** | **1635.425** |
| 20.00 | Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required. | 10.00 | Mtr | **1158.426** | **11584.258** |
| 21.00 | Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required. | 10.00 | Mtr | **272.571** | **2725.708** |
| 22.00 | Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required. | 5.00 | Mtr | **885.855** | **4429.275** |
| 23.00 | Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required. | 5.00 | Mtr | **81.771** | **408.856** |
| 24.00 | Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required. | | | | |
| 24.01 | Upto 35 sq. mm | 15.00 | Mtr | **136.285** | **2044.281** |
| 24.02 | Above 185 sq. mm and upto 400 sq. mm | 30.00 | Mtr | **170.357** | **5110.702** |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 25.00 | Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL/PVC pipe as required | | | | |
| 25.01 | Upto 35 sq. mm | 200.00 | Mtr | 34.071 | 6814.269 |
| 25.02 | Above 185 sq. mm and upto 400 sq. mm | 600.00 | Mtr | 40.886 | 24531.369 |
| 26.00 | Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required. | | | | |
| 26.01 | Upto 35 sq. mm | 50.00 | Mtr | 27.257 | 1362.854 |
| 26.02 | Above 35 sq. mm and upto 95 sq. mm | 10.00 | Mtr | 30.664 | 306.642 |
| 26.03 | Above 95 sq. mm and upto 185 sq. mm | 10.00 | Mtr | 34.071 | 340.713 |
| 26.04 | Above 185 sq. mm and upto 400 sq. mm | 30.00 | Mtr | 40.886 | 1226.568 |
| 27.00 | Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required. | | | | |
| 27.01 | Upto 35 sq. mm (clamped with 1mm thick saddle) | 120.00 | Mtr | 27.257 | 3270.849 |
| 27.02 | Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp) | 10.00 | Mtr | 30.664 | 306.642 |
| 27.03 | Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp) | 10.00 | Mtr | 34.071 | 340.713 |
| 27.04 | Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp) | 60.00 | Mtr | 40.886 | 2453.137 |
| 28.00 | Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required. | | | | |
| 28.01 | Upto 35 sq. mm (clamped with 1mm thick saddle) | 85.00 | Mtr | 27.257 | 2316.852 |
| 28.02 | Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp) | 15.00 | Mtr | 30.664 | 459.963 |
| 28.03 | Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp) | 153.00 | Mtr | 34.071 | 5212.916 |
| 28.04 | Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp) | 60.00 | Mtr | 40.886 | 2453.137 |
| 29.00 | Supplying and fixing cable route marker with 10cmx10cmx 5 mm thick GI Plate with inscription thereon , bolted/ welded to 35x35x6 mm angle iron of 60 cm long and fixing the same in ground as required. | 4.00 | Each | 306.642 | 1226.568 |
| 30.00 | Supplying and making indoor end termination with brass single compression gland (Heavy duty type) and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor armoured cable of 1.1 KV grade as required. | | | | |
| 30.01 | 4 core, 10 Sq. mm | 11.00 | Each | 204.428 | 2248.709 |
| 30.02 | 4 core, 16 Sq. mm | 1.00 | Each | 204.428 | 204.428 |
| 30.03 | 3½ core, 25 Sq.mm. | 14.00 | Each | 245.314 | 3434.392 |
| 30.04 | 3½ core, 35 Sq.mm. | 21.00 | Each | 245.314 | 5151.588 |
| 30.05 | 3½ core, 50 Sq.mm. | 2.00 | Each | 286.881 | 573.761 |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 30.06 | 3½ core x 70 Sq.mm | 2.00 | Each | **327.085** | **654.170** |
| 30.07 | 3½ core x 95 Sq.mm | 9.00 | Each | **327.085** | **2943.764** |
| 30.08 | 3½ core X 120 Sq.mm. | 2.00 | Each | **367.971** | **735.941** |
| 30.09 | 3½ core X 150 Sq.mm. | 2.00 | Each | **408.856** | **817.712** |
| 30.10 | 3½ core X 300 Sq.mm. | 3.00 | Each | **613.284** | **1839.853** |
| 31.00 | Supplying and making straight through joint with cast resin compound including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required. | | | | |
| 31.01 | 4 core, 16 Sq. mm | 2.00 | Each | **1022.140** | **2044.281** |
| 31.02 | 3½ core, 25 Sq.mm. | 1.00 | Each | **2044.281** | **2044.281** |
| 31.03 | 3½ core, 35 Sq.mm. | 1.00 | Each | **2453.137** | **2453.137** |
| 31.04 | 3½ core, 50 Sq.mm. | 1.00 | Each | **2861.993** | **2861.993** |
| 31.05 | 3½ core x 70 Sq.mm | 1.00 | Each | **2861.993** | **2861.993** |
| 31.06 | 3½ core x 95 Sq.mm | 1.00 | Each | **2861.993** | **2861.993** |
| 31.07 | 3½ core X 120 Sq.mm. | 1.00 | Each | **3270.849** | **3270.849** |
| 31.08 | 3½ core X 150 Sq.mm. | 1.00 | Each | **3270.849** | **3270.849** |
| 32.00 | Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required. | | | | |
| 32.01 | 3½ core X 300 Sq.mm. | 2.00 | Each | **5315.130** | **10630.260** |
| 33.00 | Providing brick work (in width 225 mm or more) with F.P.S. bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) at all levels. | 1.50 | Cum | **4088.562** | **6132.842** |
| 34.00 | Providing 15mm thick cement plaster of mix 1:4 (1 cement : 4 fine sand) at all levels. | 5.00 | Sqm | **245.314** | **1226.568** |
| 35.00 | Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc. as required | | | | |
| 35.01 | 100 mm dia | 30.00 | Mtr | **613.284** | **18398.527** |
| 36.00 | Supply & Laying of following sizes DWC HDPE pipe ISI marked conforming to IS 14930, Part-II along with all acessories like socket, bend, couplers etc complete with fitting and cutting, jointing etc direct in ground (75 cm below ground level) including excavation & refilling the trench with same excavated earth but excluding sand cushioning and protective covering etc. , complete as required. | | | | |
| 36.01 | 63 mm dia (OD-63 mm & ID-51 mm nominal) | 300.00 | Mtr | **170.357** | **51107.020** |
| 36.02 | 90 mm dia (OD-90 mm & ID-76 mm nominal) | 600.00 | Mtr | **238.499** | **143099.655** |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 37.00 | Providing & fixing in position 1000 mm wide , Electrical Insulating Mats as per IS 15652:2006, 2mm thick, suitable upto 3.3 KV, fire retardant,no effect of acids, alkalies and transformer oils, moisture proof, high tensile strength and texture finish / cloth impression (Anti slip , marking on top) . | 10.00 | Mtr | **545.142** | **5451.415** |
| **38.00** | **SH-III APFC PANEL & OTHER EQUIPMENTS** | | | | |
| 39.00 | Design, supply, installation, testing & commissioning of cubicle type semi compartementalized floor mounted free standing type with configration of Static Var Generator and Active harmonic filter (300Kvar+150Amp), 415V, 50HZ, 3 phase 4 wire supply, moisture, dust and vermin proof IP-42 with cooling intrinsic design of voltage sourced IGBT based technology with multi modular design for parallel operation, intelligent 3-Level topology with 12 IGBT Hybrid PFC panel with Programmable Microprocessor controller to maintain Power Factor, Harmonics & Unbalancing duly housed in epoxy powder coated 2mm thick CRCA sheet steel compatmentalised enclosure free standing type with all supports, accessories, switch gears, control gears, protections, wiring, interconnections, control MCBs and maintain PF,I-THD,V-THD as per IEEE 519-2014 etc. as required. Also Certification Standard having surge test IEC61000-4-5, conducted suseptiablity IEC 61000-4-6 and fast transient test IEC61000-4-4 and IEC50178:1997, IEC 61000-6-2/ CISPR11 Group 1,Class A , IGBT based modules series performance comply EN 50091-3/IEC 62040-3/AS 62040 -3 (VFISS111), EN 61000-6-4 main components as below along with all other standard components, circuitry & specifications as required. | 1.00 | Job | **1873924.049** | **1873924.049** |
| 39.01 | INCOMMER<br>1 No. of 630 Amps. 415 Volts 4P. Type ACB. of 36KA with overload, S/C, O/C and earth fault protection.<br>1 No. of Display meter with compatible RS 485 ports.<br>3 No.of Phase Indicating & ON-OFF LED Lights 230 V.<br>1 Set. of Ammeter - digital 3 Phase.<br>3 No. of MCB 6A-SP-10kA-C-Curve.<br>BUS BARS<br>800-Amps (neutral equal size) 3 phase 4 wire 415 volts 50 HZ aluminium bus bars with colour coded PVC heat shrinkable sleeves.<br>OUTGOING<br>(a) Active Harmonic Filter 150Amp - 1 Nos. (IGBT based active technology with gate driver, interfacing, voltage sensing & control cards, heat sinks, cooling fan, current tranducers, SMPS, SSR etc.) having following.<br>1 No of 100 Amp AHF module and 1 no of 50 Amps (3 -Level Topology, 12 IGBT Circuit) with proper rating of Surge protection devices.<br>1 No. of Programmable HMI With 7inches LED Display.<br>Space future provision for 50 Amps module in the Panel.<br>Configuration -3phase 4 wire<br>Negative Sequence load current cancellation - It should work 1phase and 2 phase as well and Harmonics mitigation upto 51 th Level. | | | | |
| 39.02 | (b) Static Var Generator 300 Kvar-1Nos. The Static Var Generator (SVG), 300 Kvar with 100/50 kVAr modular IGBT based design should be a power electronic device to be connected in parallel with the loads that require inductive and/or capacitive reactive powers, for their operation having following.<br>3 Nos of 100 Kvar SVG module (3 -Level Topology, 12 IGBT Circuit) with Proper Surge protection meeting<br>The SVG should mitigate the Harmonics level upto 15th order<br>The SVG should maintain power factor >=0.99.<br>A 300 kVAR Static VAR Generator, in modular configuration, strictly as per attached specifications, as a complete system in all respect. The Static VAR Generator modules should consist of 3-Level IGBT inverter, housed in casing, with dedicated cooling, and necessary protections. The Static VAR Generator should perform inductive/capacitive reactive power correction, and capable to receive feedback from LT as well HT sides. Power losses shall be less than 3% per 100 KVAR module, This shall be designed for 50°C without derating. This shall have HMI displaying 3 phase active power, 3 phase apparent power, 3 phase displacement power factor, 3 line RMS voltage, 3 line current, 3 phase SVG current. Each module shall have separate protection MCCB. For easy repairability the IGBT driver cards shall be separate for different phases, separate common control cards and these should be fitted on main PCB. DC capacitors shall not be mounted on PCB. SVG shall used powder iron core instead of CRGO and LCL circuit to reduce noises created by switching frequency. The SVG shall also be suitable for unbalanced load usage. The Hybrid PQ Solution described as above complete in all respect as per specification enclosed, up to the entire satisfaction of engineer In Charge. To ensure safety, reliability and accountability of component co ordination, the SVG and AHF modules shall be of same OEM. | | | | |

| Sl.No | Description of Work / Item(s) | Qty | Units | Rate | Amount |
|---|---|---|---|---|---|
| 40.00 | Supply, Installation, Testing and Commissioning of smart energy management cloud server complete with Gateway, Data Base, Reporting tool, License Key and capable of integrating 50 number of devices including developing of the graphical screen, reporting formats etc. The cloud server shall also having capability to integrate with the existing EMS system and remote monitoring system through Web and LAN. The cloud server shall be compatible with windows based operating system and shall have the following minimum features complete as required:<br>1. Continuous Monitoring & Control of devices<br>2. View instantaneous parameters like voltage, current, power factor, temperature, humidity and all type of harmonics, parameters, e.g. power, kWh, KVAHr current, voltage, frequency, temperature etc.<br>3. Historical Trend patterns for any logged parameters such as electrical energy usage, power demand and any other logged parameter. Leverage these values In Excel to create detailed reports data storage 2 yrs.<br>4. Energies by day, energies by hour – analyses measured kilowatt-hours for cost allocation or comparison purpose.<br>5. Generation and transmission of alerts / notifications through e-mails and SMS. Included 2 yrs cloud service. Approved by CE/UL/NABL<br>Make:- Schnieder/ Siemens/ Dehn/ Selec | 1.00 | Nos | **357749.137** | **357749.137** |
| 41.00 | SITC of 3 Phase / Type1+2 (KEMA/VDE Certified) Lightning current & Surge Protection Device at mains LT panel (3 phase, 415 V) for (L-N) Single-pole combined lightning current and surge arrester, Type 1 SPD The device shall be non-exhausting metal encapsulated, spark gap based technology and tested as per latest and valid IEC 61643-11:2011 or EN 61643-11:2012 standards. It shall be capable to discharge Lightning current (10/350µs) of 25kA (L-N) and 100kA(N-E) and voltage protection level of device shall be ≤ 1.5 KV, Follow current extinguishing capability [L-N]/[N-PE] : 100kArms / 100Arms. The device shall have built in fuse and operation of SPD shall be independent of Line current for L?N SPD. The short circuit with stand capability of the device shall be 100 KArms for L-N SPD. The device shall have mechanical indication for both the states (green for 'healthy' and red for failure) on L-N and N-PE. The device shall be certified by KEMA /VDE or NABL lab as per IEC 61643-11:2011 or or EN 61643-11:2012 for testing of all parameter at 10/350 µs and 8/20 µs. with transparent enclosure IP65 | 2.00 | Set | **323677.790** | **647355.581** |
| | | | | **Rs.** | **21002414.000** |

***(Rupees Two Crore Ten Lakhs Two Thousand Four Hundred & Fourteen Only)***

Narender 09/12/2024

**(Narender Kumar)**
**SM Engg.(E), SAP**

Signature Not Verified

Digitally signed by NARENDER KUMAR
Date: 2025.08.12 16:53:39 IST
Location: eProcurement System for Central PSUs