



भारतीय विमानपत्तन प्राधिकरण

AIRPORTS AUTHORITY OF INDIA KADAPA AIRPORT

सं.सं.भाविप्रा/कडप्पा/इंजी-वि/ यू.पी.एस - जी. एल. एफ/ डब्ल्यू.सं/2023-24/4037 दि. 23.01.2024
Ref.No: AAI/KDP/Engg(E)/UPS-GLF/W.No./2023-24/4037 Dt. 23.01.2024

सेवामें / To

M/s.अवस्थी इलेक्ट्रिक वर्क्स/Awasthi Electric Works,
107/265, ब्रह्म नगर/107/265, Brahm Nagar,
कानपुर- 208012/Kanpur- 208012

Name of work: Augmentation of Power supply to GLF by Provision of UPS and associated electrical works at Kadapa Airport.

Ref:

- i) E-tender- 2023_AAI_176152_1 dated 01/12/2023

Dear Sir (s)

1. Your E-tender for the work mentioned above is hereby accepted on behalf of Chairman, Airports Authority of India, at the item rates/ ~~percentage rate~~ quoted by you totalling to Rs. **63,47,153/-** (Capital portion + AICMC) (**Rupees Sixty Three Lakhs Forty Seven Thousand One hundred and Fifty Three only**), **Excluding GST** which is 15.75% below the justified cost.
2. Deputy General Manager (Engg-Elect), AAI, Kadapa Airport, Kadapa, shall be the Engineer-in-Charge of the work. You are requested to attend the office of the **Deputy General Manager (Engg-Elect), AAI, Kadapa Airport, Kadapa**, within 10 days from the date of issue of this letter, to sign and complete the contract agreement. The contract agreement shall be executed on a non-judicial stamp paper of value **Rs.100.00 (Rupees Hundred only)** and the cost of the stamp paper shall be borne by you.
3. Please deposit **Rs.6,34,715.00/- (Rupees Six Lakhs Thirty Four Thousand Seven Hundred and Fifteen only)** as Security Deposit within 10 days from the date of issue of this letter failing which, the same will be deducted as per condition of Clause no.1A at page noGCC-22 of contract document.
4. You are requested to comply with the provision of contract labour (Regulation and Abolition) Act 1970 and contract labour (Regulation and Abolition) Central Rules 1971, Child Labour (Prohibition and Regulation) Act 1986, Construction Workers (Regulation of Employment and Condition of Service) Act 1996, Building



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and Other Construction Workers Welfare cess Act 1996 as specified in Clause 19 on Pg no. 72 of GCC of tender and rules of Central and State Government.

5. You are also directed to contact, **Manager (Engg-Elect)**, AAI, Kadapa Airport immediately who will arrange to hand over the site to you
6. Please note that the time allowed for carrying out the work shall be **03 (Three) Months** and same shall be reckoned from **01.02.2024**
7. Any further correspondence in connection with the contract should normally be addressed to the **Engineering In-Charge**.
8. Please acknowledge the receipt and return the duplicate copy of this letter enclosed herewith after signing it to the undersigned as a token of acceptance.

अनुलग्नक / Encl: अनुसूची

1. BoQ (Bill of Quantities)

भवदीय / Yours faithfully

वरिष्ठ प्रबंधक (अभि-वि) / Senior Manager (Engg-E)

भा वि प्रा, कडप्पा हवाईअड्डा /AAI, Kadapa Airport

अध्यक्षपद पर तथा की ओर से / For and on behalf of Chairman

भारतीय विमानपत्तन प्राधिकरण / Airports Authority of India

BILL OF QUANTITIES (BoQ)

Name of Work: Augmentation of Power supply to GLF by Provision of UPS and associated electrical works at Kadapa Airport, Kadapa (A.P) - 516003.

Tender ID - 2023 AAI 176152 1

S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
(SoQ) Part-I [Quoted through e-tender portal]					
1	Part - I (Capital Works) 2 X 80 KVA capacity, 3-phase input / 3 phase output online UPS Supply, Installation, Testing and Commissioning (SITC) of 2 X 80 KVA capacity, 3-phase input / 3 phase output online UPS with double conversion type advance IGBT technology with suitable rated (min. K-13) inbuilt isolation transformer to drive constant current regulators with 100% unbalanced load at various loads incl. full load condition. The UPS shall have built in 100% rated automatic static by pass, manual by pass facilities for maintenance, active input power factor correction, phase sequence corrector, pure sine wave output, input/output isolation, compatibility with generator supply, cold start capability, EMI/RFI noise filter, advanced communication- RS232/RS485 ports and user friendly LCD display and run in parallel redundant system configuration for equal sharing of load, battery management features integrated with main UPS controller, suitable to operate at 400V±15%, 50Hz, 3 phase AC supply, suitable IP rated enclosure and capable to take 2 phase & single phase loads on 3phase output of UPS with 100% unbalanced and necessary safety protections etc complete as required. The job also includes supply, Installation, Testing & Commissioning of battery bank sets of required/suitable size with required number of VRLA SMF batteries suitable to give a backup time of minimum 30 minutes per each UPS in all load conditions as stipulated for UPS, along with battery racks/enclosure, suitable rated battery circuit breaker, interconnections between batteries as well as battery bank to UPS with suitable insulated copper conductors, connectors, glanding & terminations etc., complete as required.	1	Job	3395000.00	3395000.00
2	UPS Input panel: Design, Fabrication, Assembling, Supply, Installation, Testing and Commissioning of self-standing, floor mounted indoor type LT cubicle panel made out of 14SWG CRCA sheet steel, totally enclosed, weather, dust, vermin proof; having IP class of not less than IP-42, fully compartmentalized, Form 4 b separation, with high conductivity aluminium bus bar having minimum current capacity of 400 A, suitable for operation at 415 V, 3 phase, 4 Wire, 50 Hz AC system complete with all accessories, making all necessary connections and interconnections, providing and fixing required set of metering and protection CTs of appropriate class and burden, cable alley for termination of cables with top/bottom entry as required as per site conditions, necessary locking arrangements, powder coated with approved shade etc. A bottom base channel of suitable size and thickness, shall be provided during installation. Two runs of GI earth bar shall run throughout the entire length and also pass through all compartments. The size of the GI earth bar shall be designed as per the SC fault current at the site. Overall, the LT panel shall comply with the relevant IS and the tender technical specifications in complete. If BIS specifications are not available, relevant IEC shall be applicable. INCOMERS: i) Thermal Magnetic MCCB, 250 A, 4 Pole, 415V, 36KA (ICu=ICs) with inbuilt adjustable overload & short circuit protection with Spreader link & Suitable Extended Rotary Handle - 02 Nos. ii) Digital Multi Function Meter, 3 Nos CTs of Suitable Amps ratio having Class 1 Accuracy - 02 Sets iii) R,Y ,B Phase Indication LED lamps for each phase with 3 Nos of 2A ,MCCBs & Breaker Indication Lamps (ON/OFF/TRIP) with 2A control MCCBs -02 Sets. iv) Two incomers shall be with suitable interlocking such that only one MCCB shall be operative at a time. OUTGOINGS: i) Thermal Magnetic MCCB, 250 A, 4 Pole, 415V, 36 KA (ICu=ICs) with inbuilt adjustable overload & Short Circuit protection with Spreader link & Suitable Extended Rotary Handle- 3 Nos ii) Thermal magnetic MCCB 63 A, 4 Pole, 415V, 36 KA (ICu=ICs) with input adjustable overload & Short Circuit protection with Spreader link & Suitable Extended Rotary Handle - 02 Nos. ii) Breaker Indication Lamps(ON/OFF/TRIP) with 2A control MCCBs - 5 Sets.	1	Job	395000.00	395000.00

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S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
3	UPS Output panel: Design, Fabrication, Assembling, Supply, Installation, Testing and Commissioning of self-standing, floor mounted indoor type LT cubicle panel made out of 14SWG CRCA sheet steel, totally enclosed, weather, dust, vermin proof; having IP class of not less than IP-42, fully compartmentalized, Form 4 b separation, with high conductivity aluminium bus bar having minimum current capacity of 400 A, suitable for operation at 415 V, 3 phase, 4 Wire, 50 Hz AC system complete with all accessories, making all necessary connections and interconnections, providing and fixing required set of metering and protection CTs of appropriate class and burden, cable alley for termination of cables with top/bottom entry as required as per site conditions, necessary locking arrangements, powder coated with approved shade etc. A bottom base channel of suitable size and thickness, shall be provided during installation. Two runs of GI earth bar shall run throughout the entire length and also pass through all compartments. The size of the GI earth bar shall be designed as per the SC fault current at the site. Overall, the LT panel shall comply with the relevant IS and the tender technical specifications in complete. If BIS specifications are not available, relevant IEC shall be applicable. INCOMER: i) Thermal Magnetic MCCB, 250 A, 4 Pole, 415V, 36KA (ICu=ICs) with inbuilt adjustable overload & short circuit protection with Spreader link & Suitable Extended Rotary Handle -02 Nos. ii) Digital Multi Function Meter, 3 Nos. CTs of Suitable Amps ratio having Class 1 Accuracy - 02 Sets iii) R,Y,B Phase Indication LED lamps for each phase with 3 Nos of 2A, MCBS & Breaker Indication Lamps (ON/OFF/TRIP) with 2A control MCBs -02 Sets. Outgoing : i) Thermal Magnetic MCCB, 250 A, 4 Pole, 415V, 36 KA (ICu=ICs) with inbuilt adjustable overload & Short Circuit protection with Spreader link & Suitable Extended Rotary Handle- 02 Nos ii) Thermal Magnetic MCCB, 32 A, 4 Pole, 415V, 36 KA (ICu=ICs) with inbuilt adjustable overload & Short Circuit protection with Spreader link & Suitable Extended Rotary Handle- 02 Nos iii) Breaker Indication Lamps (ON/OFF/TRIP) with 2A control MCBs - 04 Sets.	1	Job	355000.00	355000.00
4	Supplying and making Removal of end terminations along with brass gland and aluminium lugs for following size (3.5C X 240 sq.mm) of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.	2	Set	500.00	1000.00
5	Laying Rerouting (Retrieving and Re-laying) of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size (3.5C X 240 sq.mm) in the existing masonry open duct as required. (From Existing CCR Panels to UPS I/P panel) Above 185 sq. mm and upto 400sq. mm	15	Metre	125.00	1875.00
6	Supplying and making end terminations with brass gland and aluminium lugs for following size (3.5C X 240 sq.mm) of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.	2	Set	1150.00	2300.00
7	Supply of XLPE/PVC insulated PVC sheathed, armoured aluminium conductor power cable of 1.1kV grade of 3.5C X 185 sq.mm cable size etc., as per IS 7098 Part - 1 1988 with upto date amendments etc complete as required. (i) 3.5C x 185 Sq. mm	75	Metre	845.00	63375.00
8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size (3.5C X 185 sq.mm) on cable tray as required. Above 95 sq. mm and upto 185 sq.mm (clamped with 25/40 x 3mm MS flat clamp)	45	Metre	195.00	8775.00
9	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. Above 95 sq. mm and upto 185 sq. mm	18	Metre	90.00	1620.00
10	Supplying and making end termination with brass compression gland and aluminium lugs for following size (3.5C X 185 sq. mm) of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.	6	Set	975.00	5850.00
11	Supply of 1 Core, 95 Sq.mm, 1.1 KV grade, PVC insulated, unsheathed, Un-armoured, FRLS, Copper conductor power cable confirms to IS 694:1990 with up to date amendments etc. Complete as required.	340	Metre	955.00	324700.00

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S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
12	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. (b) Above 35 sq. mm and upto 95 sq.mm (clamped with 25 x 3mm MS flat clamp)	276	Metre	130.00	35880.00
13	Supplying and making end termination with PVC gland and Copper lugs for following size (1 C X 95 sq.mm) of PVC insulated and PVC sheathed / XLPE copper conductor cable of 1.1 KV grade as required.	16	Set	650.00	10400.00
14	Supply of following size XLPE insulated and PVC sheathed Aluminium conductor armoured power cable of 1.1 KV grade confirming to relevant IS 7098 (Part-1) with upto date amendments. (i) 3.5C x 25 Sq. mm	30	Metre	185.00	5550.00
15	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. (a) Upto 35 sq. mm (clamped with 1mm thick saddle)	16	Metre	50.00	800.00
16	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. (i) Upto 35 sq.mm	12	Metre	30.00	360.00
17	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium/copper conductor cable of 1.1 KV grade as required. 3.5C X 25 sq. mm	2	Set	350.00	700.00
18	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 etc. with charcoal/ coke and salt as required.	2	Set	16000.00	32000.00
19	Providing and fixing 25 mm X 5 mm Copper strip on surface / Cable tray or in recess for connections etc. as required.	130	Metre	1175.00	152750.00
20	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.	12	Metre	1450.00	17400.00
21	Earthing with G.I earth pipe 4.5 metre long, 40mm dia, including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	4	Set	9000.00	36000.00
22	Providing and fixing 25 mm X 6 mm G.I strip on surface/ Cable tray or in recess for connections etc. as required.	160	Metre	155.00	24800.00
23	Providing and fixing 25 mm X 6 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.	24	Metre	650.00	15600.00
24	Demolishing cement concrete manually / by mechanical means including disposal of material within 50 meters lead as per direction of Engineer-in-charge. – Nominal concrete 1:1.5:3 or richer mix (i/c equivalent design mix)	30	Cum	600.00	18000.00
25	Supplying and laying of following size DWV HDPE pipe ISI marked along with all accessories like socket, bend, Couplers etc confirming to IS 14930, Part - II complete with fitting and cutting, jointing etc in existing trench, complete as required - 200 mm dia (OD- 200 mm & ID 175 mm nominal)	350	Metre	425.00	148750.00
26	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays bends with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 375 mm width X 50 mm depth X 2.0 mm thickness	39	Metre	1050.00	40950.00

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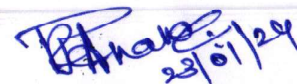
S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
27	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays bends with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 375 mm width X 50 mm depth X 2.0 mm thickness	7	Nos	2200.00	15400.00
28	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays TEE with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 375 mm width X 50 mm depth X 2.0 mm thickness	6	Nos	2450.00	14700.00
29	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays Reducer with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 375 mm width X 50 mm depth X 2.0 mm thickness	1	Nos	1650.00	1650.00
30	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 200 mm width X 50 mm depth X 1.6 mm thickness	18	Metre	550.00	9900.00
31	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays bends with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 200 mm width X 50 mm depth X 1.6 mm thickness	3	Nos	1050.00	3150.00
32	Supplying and installing following size of perforated, painted with powder coating M.S. cable trays TEE with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders supported on wall with 50 X 50 X 5 mm L angle brackets, Including bolts & nuts, painting of L angle brackets, fasteners for anchoring support on wall etc., as required. 200 mm width X 50 mm depth X 1.6 mm thickness	2	Nos	1190.00	2380.00
33	Supply of following size 5KV grade Airfield lighting cables with stranded annealed plain copper conductor un-armoured, un-screened PVC insulated and PVC sheathed cable etc. complete as required (a) 2 C X 6 sqmm	360	Metre	285.00	102600.00
34	Supply of following size 5KV grade Airfield lighting cables with stranded annealed plain copper conductor un-armoured, un-screened PVC insulated and PVC sheathed cable etc. complete as required (a) 1 C X 16 sqmm	700	Metre	245.00	171500.00
35	Supply of following size 5KV grade dry type plug and receptacle of Type - I class B Primary connector kit suitable for the following Size of Field attachments with 5 KV Grade PVC insulated PVC sheathed copper conductor cable confirming to relevant IS specification etc., complete as required. (a) 6 sqmm	10	Kits	1590.00	15900.00
36	Supply of following size 5KV grade dry type plug and receptacle of Type - I class B Primary connector kit suitable for the following Size of Field attachments with 5 KV Grade PVC insulated PVC sheathed copper conductor cable confirming to relevant IS specification etc., complete as required. (b) 16 sqmm	10	Kits	1690.00	16900.00

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S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
37	Making field connections by crimping of following sizes Plug & Receptable connectors with suitable existing size single core PVC / XLPE copper condutor cable of 5kv grade airfield cables including filling the gap with water sealant material applying HT insulation tape over which PVC tape etc as required. (a) 6 sqmm	10	Job	2500.00	25000.00
38	Making field connections by crimping of following sizes Plug & Receptable connectors with suitable existing size single core PVC / XLPE copper condutor cable of 5kv grade airfield cables including filling the gap with water sealant material applying HT insulation tape over which PVC tape etc as required. (a) 16 sqmm	10	Job	2500.00	25000.00
39	Construction of Chambers of inside size 1.2 mtrs X 1.2 Mtrs X 1.5 mtrs in brick work in CM 1: 4 (1 cement: 4 Coarse sand) for Cables along with cover, i/c necessary excavation, foundation concrete 1:3:6 and inside plastering with cement mortar 1:3, 12mm thick, finished with floating coat of neat cement as per standard design & providing 8 thick Chequer plate with stiffeners, lifting arrangement, angle iron edge, angle frame work etc, complete with providing anticorrosive paint on both sides. Cover size 1.2 mtrs x 1.2 mtrs. in all types of soil.	3	JOB	25000.00	75000.00
40	Providing and laying Pavement Quality Concrete (PQC) using 350 Kg of ordinary Portland cement of required grade, fine aggregate, graded stone aggregates of 40 mm nominal size in appropriate proportion as per specification and job mix formula, laid in panels using Slip form paver/Fixed form paver/Manual method including making necessary provision for expansion joint, curing, etc. complete as per site requirement. The item for execution shall also include the following operations (a) Mechanically vibrated by using needle and surface vibrators, including steel form work with sturdy M.S channels / sections including curing.	21	Cum	9500.00	199500.00
Sub Total of SOQ Part - I					5773015.00

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S. No.	Description of Item	Quantity	Unit	Rate (Ex. GST)	Amount (Ex. GST)
1	2	3	4	5	6
Schedule of Quantity (SoQ) Part-II (Worked out by AAI as per methodology spelt out in special conditions of contract)					
41	Part - II (AICMC) All Inclusive Comprehensive Maintenance Contract (AICMC) of 2 X 80 KVA UPS after completion of defects Liability period of 02 years for UPS System consisting of all accessories i/c periodical, preventive, break down maintenance as per the OEM recommendations & AAI requirements & attending emergency breakdowns as and when required on 24 hrs basis (on all days including holidays) and including all necessary spares and consumables to keep the whole UPS system in perfect working condition etc. Complete as required and as required and as specified (Battery replacements is excluded from the maintenance contract).				
41.1	1 st Year (After Defects liability Period) (3% of Sl.no. 01 which is Incl. Of LC & Ops Charges)	1	per year	101850.00	101850.00
41.2	2 nd Year (After Defects liability Period) (6% Escallation added on above)	1	per year	107961.00	107961.00
41.3	3 rd Year (After Defects liability Period) (6% Escallation added on above)	1	per year	114438.66	114438.66
41.4	4 th Year (After Defects liability Period) (6% Escallation added on above)	1	per year	121304.98	121304.98
41.5	5 th Year (After Defects liability Period) (6% Escallation added on above)	1	per year	128583.28	128583.28
Sub Total of SOQ Part - II					574138.00
Grand Total					6347153.00
A Total of Rupees Sixty Three Lakhs Forty Seven thousand One Hundred and Fifty Three Only (Excluding GST)					


 Senior Manager (Engg-E)
 AAI, Kadapa Airport

Signature Not Verified

Digitally signed by Ananthasubramanian P R
 Date: 2024.08.06 13:32:06 IST
 Location: eProcurement System for Central PSUs

