# Section 6. Schedule of Requirements

**Supplying, installing, testing & commissioning of 500 KVA Emergency Generator (1 Set) including necessary L.T. Cable for Construction of 19-Storied Academic Building with 21-Storied Foundation including 2-Layer Basement for the Faculties of Earth & Environmental Science and Engineering & Technology at the place of Existing Science Cafeteria Building, University of Dhaka.**

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| --- | --- | --- | --- | --- |
| **Description of Items** | **Quantity** | **Unit** | **Rate in Tk.** | **Amount in Tk.** |
| **THREE PHASE GENERATOR:** Supply of 4O0V-415V, 3-phase, 4-wire, 50 Hz. air / water cooled, floormounted, indoor type following continuous capacity (prime power) electricgenerating set with ATS and sound attenuated acoustically treated canopy(Maximum sound level : 75 dBA at 7m distance in the generator room)suitable for tropicalized country complete with four stroke.l 500 rpm, diesel engine with all standard accessories viz l2l24 volt DC battery & auto battery charger with ammeter, radiator assembly. oil & fuel pumP, autospeed governor, air cleaner, fuel & oil tank, level & oil pressure gauge,RPM & hour meter, start & stop switch, exhaust silencer (to keep standardemission level), mounting spring and vibration isolator (to keep veryminimum vibration in the room), mounting steel base frame etc. including safety &protection device viz. auto shut off with indicators for overload' over &under voltage. high temperature, low oil pressure, over speed' low fuel leveletc. coupled with brush less, selfexcited altemator having control Panel withauto voltage regulator, voltmeter & ammeter with selector switch.fiequencymeter,compatible with standard building management system. TPMCCB of required rating for overload & instantaneous shon circuit release, auto stan and auto charge over to load within l0 sec during normal power failure and stop & auto change over to normal supply within 5 minutes after resolution of normal power supply, indicator for 3 phase indicator for ON-OFF-TRIP etc. including maintenance tools, 3 sets of detailed technical catalogues & maintenance manual. Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards along with relevant BDS IEC standard. |  |  |  |  |
| WITH ATS AND SOUND ATTENUATED ACOUSTICALLY TREATED CANOPY (maximum sound level : 75 dBA at 7m distance in the generator room).(USA / UK / JAPAN / EU COUNTRIES) The generating set shall be assembled & tested in USA / UK / JAPAN / EUcountries. The major components like engine shall be of Perkins / Deutz /Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and altemator shallbe of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand. The engine,alternator, A l'S, canopy shall also be manufactured and tested as per relevant standards in USA / UK / JAPAN / EU countries & accepted /approved by thc Engineer-in-charge. |  |  |  |  |
| 500 KVA | 1 | set |  |  |
| **INSTALLATION:** Installation, testing & commissioning of following electric generator on prepared CC pad with the help of necessary T & P, skilled labour, technician, Engineer including 2 hrs. / 5 day trial run operation by skilled operator with supply of necessary fuel & lubricant as per manufacturers instruction manual and in accordance with relevant IEC / NEMA / VDE / JIS standards so that vibration transfer rate to foundation shall be almost zero. |  |  |  |  |
| 400 KVA – 500 KVA manual/auto/auto with soundproof acoustically treated canopy generating set. | 1 | set |  |  |
| Providing & laying of the following PVC insulated & sheathed cable (NYY) / (XLPE) insulated & PVC sheathed cable (2XY) with PVC insulated Green / White colour ECC wire (BYA) connecting at both ends, through PVC pipe & accessories in the following manner. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC / BDS / BS / VDE standards and as per detailed specification mentioned in **Annexure-1**. The work shall be carried out as per direction & approval of the Engineer. |  |  |  |  |
| In kutcha ground by cutting 45.70 cm width x 91.40 cm depth trench with necessary brick or tile protection and mending the damages good by refilling trench with proper compaction; |  |  |  |  |
| In pucca floor through PVC pipe by cutting trench of necessary size and mending the damages good by brick soling, 75 mm (1:2:4) CC work with neat cement finishing etc. |  |  |  |  |
| **Cable manufacturer(s) must have valid test certificate from internationally accrediated laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer** |  |  |  |  |
| 1C-4x500 sqmm (NYY / 2XY) with 240 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 150 mm having wall thickness of 3 mm |  |  |  |  |
| In pucca floor | 32 | Rm |  |  |
| Supplying of 415V, 3 phase, 50Hz following capacity control circuit breaker feeder unit as per following specification with thermal overcurrent & instantaneous electromagnetic short-circuit release manufactured and tested as per NEMA / IEC / VDE / BS / JIS standards (adjustable type above 100A rating) for sub-station L.T panel. |  |  |  |  |
| Rated operating voltage : 220-690 V. Rated insulation voltage : 690 volt. Rated impulse withstand voltage : 6KV. Utilization category : A or B |  |  |  |  |
| AEG / DORMAN SMITH / MEM / SIEMENS / EATON / SCHNEIDER / ABB / HAGER / LEGRAND / MERLIN GERIN / VITZRO or equivalent accepted / approved by the Engineer. |  |  |  |  |
| 1000A (65KA )TPMCCB | 2 | each |  |  |
| Earthing the electrical installation with 40 mm (1.5") dia G.I. pipe (earth electrode) having 6.35 mm. dia hole across the pipe at 305 mm. interval securely bonded by soldering with 2 nos. of No-2 SWG HDBC earth leads (at the top of the electrode) with its protection by 20 mm. (3/4") dia G.I. pipe up-to plinth level run at a depth of 609.6 mm (2 ft.) below G.L up-to main board to be earthed including necessary connecting copper sockets, bolts, nuts, etc. complete for maintaining earth resistance within 1 ohm. |  |  |  |  |
| Depth of bottom of main electrode at 37338 mm. (122.5 ft) from GL & length of electrode 36576 mm. (120 ft). | 1 | set |  |  |
| Construction of earthing **inspection pit** inside measurement 600 mm x 600 mm with 250 mm thick brick in cement mortar (1:4) with 100mm thick RCC top slab (1:2:4) with 1% re-enforcement 450 mm dia water sealed CI man-hole cover with locking arrangement including necessary earth works, site filling and one brick flat soling 75 mm thick (1:3:6) base concrete for making inlet channel & 12mm thick (1:2) cement plaster with neat finishing etc. all complete up to a depth of .75 meter. | 1 | set |  |  |
| Providing & drawing **no-2 HDBC wire** through 12.7 mm. (½") dia G.I. pipe including fitting, fixing the G.I. pipe in wall or column complete as required. | 25 | rm |  |  |
| Supplying and fixing of almirah type 18 SWG metal board of depth 228mm (6”) duly painted with powder coating with epoxy polyester resin on all surfaces of board (gray / off-white) having built in push type / suitable locking arrangement including metal bridges of suitable size for fixing of all electrical control devices complete with suitable anchoring arrangement in wall / column and keeping provision for cable inlets and exits as required (only front surface of the board will be considered for measurement). (Manufactured by RECO / NASCO / C&S or equivalent product of any other manufacturer) |  |  |  |  |
| **Normal board (without water tight)** | 1 | sqm |  |  |
| Providing and fixing 500 V 3-phase bus-bar system assembled in prelaid board with porcelain insulators. There will be equal size holes on every bar at 0.5" interval and bar to bar gap shall be 2" - 3". |  |  |  |  |
| **900 - 1000 Amps.** |  |  |  |  |
| Copper flat bar (5 nos) : 4 nos 20"x2"x12mm and 1 no 4"x2"x12mm for earthing mounted on insulator at both ends individually. | 1 | each |  |  |
|  |  | **Total Taka=** | |  |

In Word:

Sd/-

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Signature of the Contractor Superintending Engineer-Elect (Zone-1Ka)

Address- University of Dhaka

This Schedule of Requirements contains [insert number] corrections duly initialled and signed by the.Tenderer

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Note

1. It is suggested that the Tenderer uses these sheets of the Schedule of Requirements in order to avoid any manipulation, distortion and inadvertent mistakes or omissions in course of preparing the Tender by the Tenderer

2. Tenderer’s profit, overheads, VAT and all other charges including corresponding incidental service charges for banking shall be deemed included in all the unit rates and prices in the Schedule of Requirements against each basic item or activity and, thus forth the total Tender Price quoted by the Tenderers.

3. Follow the Guidance notes under Section 6 in filling this Schedule