

URANIUM CORPORATION OF INDIA LIMITED
P.O. JADUGUDA MINES, JHARKHAND-832102

CORRIGENDUM

1. Technical Specification and Opening date of the following tender has been amended as under :

Sl. No.	Description	Qty.	Estimated Cost (Rs.)	Tender No	Tender Opening date
01	D.G SET (as per revised technical specification attached – Annex.1)	1 No.	1.62 crores	PUR/1/06/8941/726 Dated – 22.03.2017	FOR : 08.05.2017 READ : 22.05.2017

2. All parties interested in supply are advised to visit our website www.uraniumcorp.in or CPP Portal and submit their offer exactly as per our specification in the NIT. Rest of the terms and conditions of the tender will remain unaltered.

GENERAL MANAGER (S & P)

URANIUM CORPORATION OF INDIA LIMITED
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Item: D.G Set

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TECHNICAL SPECIFICATION OF D.G.SET

SCOPE OF WORK

(a) Design , Manufacturing ,Supply, Erection, testing , commissioning, statutory clearance and handing over of 1000 KVA, 6600 V, 3 Ph, 50 Hz D.G. Set complete with VCB panel, as per the specification attached . The D.G. Set shall comply with all relevant statutes and norms as applicable.

b) Transportation & unloading of D.G.Set at our Turamdih site shall be in bidders scope.

NOTE: The entire work shall be carried out in Turamdih plant premises and all the relevant rules pertaining to the Regulatory Authorities shall be applicable. Obtaining necessary clearance from statutory authorities lies in the bidder's scope for operation and of DG set and energizing of 6.6 KV breakers (which shall be installed and commissioned by the bidder). All documents required for obtaining statutory clearances shall be prepared by the bidder (Only statutory fees will be paid by UCIL). Price implication for this statutory clearance shall be included in the offer.

LOCATION OF TURAMDIH PLANT

Turamdih plant is located about 06 (six) Km. from Tatanagar railway station and is approachable by motorable road.

NOTE: Bidders in their own interest should familiarise themselves with the site, at their own cost prior to submitting the offer.

DESIGN

The entire design of the D.G. Set shall include Acoustic Housing, Control Panel, HT VCB panel, cooling system, exhaust system, etc. DG set shall be designed considering 50 degree Celsius ambient temperature.

NOTE: The building for the D.G. Set shall be in the scope of the purchaser. **For installation, If anti vibration pads are required that shall be within the bidders scope including supply and installation of anti vibration pads**

SUPPLY DETAILS OF THE D.G.SET

The D.G. Set shall comprise of diesel engine coupled to an alternator, mounted on a suitable base frame, and shall be complete with battery, battery charger (static plus engine operated), cooling system, 990L rated fuel tank, exhaust system, control panel, and all required accessories for smooth and trouble-free operation.

NOTE: The supply of pipes for the connections of the D.G. Set to the fuel tank is in the scope of the bidder. The D.G. Sets shall be rated for giving continuous output at rated capacity with minimum 10% overloading for at least one hour in every twelve to thirteen hours without any voltage and frequency droop or any detrimental effect to the equipment.

ENGINE

MAKE: CUMMINS / CATERPILLAR /MTU/ PERKINS

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BHP : Not Less Than 1450 BHP at 1500 RPM considering ambient temperature of 50 degree Celsius and normal pressure of our site.

STROKE : Four Strokes

NO. OF CYLINDERS: 16 (Sixteen) Cylinders.

METHOD OF COOLING: Water Cooling (with radiator)

METHOD OF STARTING: Electrically Self Starters at 24 Volts DC Powered From Suitably Rated Batteries

FUEL: High Speed Diesel

NOTE: Above shall be confirmed in offer and the bidder shall also furnish the manual of the engine offered.

ALTERNATOR

MAKE: STAMFORD / TOYODENKEI

TYPE: Brushless Type

KVA :1000 KVA

VOLTS: 6600 Volts

PHASES: 3 Phase

FREQUENCY:50 Hz.

RPM: 1500

P.F : Not Less Than 0.8

CLASS OF INSULATION : "F" and Temperature Rise Limited to Class F

DEGREE OF PROTECTION : IP 23

METHOD OF EXCITATION : Separately Excited and self regulated.

NOTE:

- i) The terminal box shall be self supporting type suitable for entry, termination and connection of PVC insulated, round wire armoured aluminium cables.
- ii) Any other items necessary for the Alternators shall be specified and included in the Scope of Supply.
- iii) The bidder should furnish with the offer the manual of the alternator offered.
- iv) Alternator shall be suitable for continuous operation at 1500 RPM generating 6600 volts 50Hz, 3 Phase system. Alternator shall be suitably equipped with protection system.

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STARTING CAPACITY OF THE D.G. Set

The D.G. Set should be capable of starting the following with less than 10 % voltage drop at the alternator terminals :

Two Nos. of 132 kw, 415 volts, 3 phase, 50 Hz, squirrel cage induction motors coupled to pumps will be started one by one, thereafter four Nos. of 75 KW, 3Ph, 415 Volts and two Nos. of 55 KW, 3 Ph, 415 Volts motors with pumps shall be started one by one (all through Star-Delta starter). Thereafter other loads shall be put in the circuit.

EXHAUST SYSTEM

The exhaust system shall be complete in all respects and comply with the latest Pollution Control norms as applicable.

The exhaust system shall be supported by using ground mounted structures; no supporting facility shall be available in the generator room from the roof. All the structures required for the exhaust system including the support structure shall be in the scope of the bidder.

BATTERY CHARGER

The battery charger shall be over and above any charging system provided with the engine; the purpose of this charger shall be to keep the batteries charged with the engine in idle condition and also to provide any control voltage requirement with the D.G. Set idle. Suitable interlocks for the two types of charging system shall be incorporated in the control system.

INTEGRATED CONTROL PANEL :

Integrated control panel of DG set shall provide minimum following protections

For Alternator :

- Over Current
- High Voltage
- Low Voltage
- Under / Over Frequency
- Reverse Power (KVA & KVAr)
- Phase Sequence

For Engine:

- Over Speed Shutdown
- Low Lube Oil Pressure Warning /Shutdown
- High Coolant Temperature Warning / Shutdown
- Low Coolant Temperature Warning
- Low Coolant Level Warning./ Shut Down
- Low Battery Voltage Warning
- Over Crank Shutdown
- Fail To Crank Shutdown

The DG set shall be designed for continuous operation and considering the ambient temperature of 50 degree Celsius.

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The DG set shall be of latest specification and technology available in the market. All spares of DG set shall be available for 10 years .

HT VCB PANEL

A HT (6.6 KV) panel consisting of three Vacuum Circuit Breakers (VCB) shall be also in the scope of DG supplier including supply erection and commissioning with required protections. This panel shall be shall be joined (Electrically and mechanically) with our existing 6600 Volts Power Distribution Board (PDB). This panel shall have 1 No. Incomer, 1 No. Outgoing feeder for transformer and 1 No. Bus coupler.

All the VCB breakers shall be draw out type and shall have motorised spring charging system however manual spring charging facility shall also be available.

The incomer of this panel shall be equipped with relays such that in the event of fault of the DG set ,the incomer shall trip. Out going breaker (for transformer 6600 /440 volts) of the panel shall also be equipped with relay for protection of Over current, Earth fault etc , such that this feeder shall trip in the event of fault of transformer. The out going feeder (i.e transformer feeder) shall also be provided with energy meter (in addition to the inbuilt meter of DG set), volt meter ,ammeter with selector switch to see phase voltage and currents. The bus coupler shall couple with our existing HT 6.6 KV PDB panel.

This panel shall conform to the relevant standards and specifications of the I.E. Rules. The panel shall be fully wired and ready for use once the input and output connections are made.

This panel must be equipped with the following protections for the D.G.Set :

Overload (Instantaneous & thermal for 3 ph.)
Earth Fault for stator and rotor
Phase Failure
Voltage Imbalance
Over Voltage & under voltage
Reverse Power

The above shall be over and above the other standard protections and controls that are normally provided.

The incomer of 6.6 KV VCB Panel shall be equipped with a set of annunciation windows with audio alarm for indicating faults, status etc. The VCB panel wiring shall be made with 2.5 sq. mm, 1100 V graded, PVC insulated, stranded copper wire. The sheet thickness of the breaker panel shall be minimum 2 mm. Load bearing member shall be minimum 3 mm thick.

All materials including adopter box with extended bus etc required for extension of our 6.6 KV PDB shall be supplied by the bidder.

The design of the HT VCB Panel is left to the bidder, however the VCB panel shall have the features listed above along with other necessary protections and controls. All the protections and controls shall be detailed in the offer.

Single Line Diagram (Drg. No. MILL/TMD/ELECT-119) of HT VCB panel is enclosed..

NGR: NGR and its accessories as per suppliers design.

Independent Free standing Control Panel (If required) : As per supplier design.

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Earthing : All required earthing system shall be in the scope of supplier including supply, laying and connection of GI / copper strip 50 x 6 mm (minimum size). No of earthing shall be indicated in offer.

Lighting arrester : Lighting arrester shall be in the scope of supplier including supply, laying and connection of GI / copper strip 50 x 6 mm (minimum size)

CABLES:

The purchaser shall supply the power and control cables as per as per requirement for installation and commissioning of DG set. The tentative cable schedule complete with specifications must be given at least 4 (four) months before the despatch of the DG Sets to enable the purchaser to procure the cables.

Any special cables e.g. data / communication / instrumentation cables required shall be in the scope of the bidder.

Provision to be kept for termination of 2 nos. 3C X 185 sq.mm **11000 V grade HRPVC** insulated armoured 'AI' conductor cable in the outgoing terminal of generator switchgear for drawing total 1000 KVA load.

ERECTION

The erection of the DG Set complete (electrically and mechanically) in all respects is in the scope of the bidder. This includes the laying and termination of inter connecting cables between the D.G.Set, the Control Panel and HT panel consisting of 03 Nos. of VCBs. This includes supply of hardwares i.e. glands, lugs . etc.

TESTING

The bidder subsequent to the erection shall carry out the Testing of the DG Set with HT VCB panel . This shall comprise of individually testing all the separate components, subassemblies. The testing shall be carried out as per the directions of the purchaser's representative. The bidder at his own cost shall rectify any discrepancies/ non-conformities observed during the testing of the DG Set. All testing equipments required for the testing shall be in the scope of the bidder.

COMMISSIONING

DG set along with HT breaker panel shall be commissioned
The commissioning shall be conducted as follows:

At first the DG Set shall be operated on no load to observe the various operating parameters. Subsequently they shall be operated on load.

The DG Set shall be run for 72 (seventy two) hours continuously at the discretion of the purchaser's representative with or without load.

HANDING OVER

Subsequent to the successful commissioning the DG Set and HT VCB panel shall be handed over to the purchaser. The handing over shall be deemed to be complete only after training of the purchaser's operators, handing over of 4 (four) sets of operating instructions, maintenance manuals, spare parts list and other relevant documentation to the purchaser.

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GENERAL:

All documents will have to be prepared by the supplier which are required for obtaining of statutory clearance for operation of DG set after installation. (Note: Only statutory fees will be paid by UCIL). Price implication for this shall be included in the offer

THE FOLLOWING DOCUMENTS AND INFORMATION SHOULD POSITIVELY BE FURNISHED IN THE OFFER TO AVOID REJECTION.

- 1) Details of the D.G.Set offered
- 2) Details of HT VCB panel offered.
- 3) Bill of materials for all, items under the Scope of Supply.
- 4) Proposed dimensioned layout of the D.G. Set along with the VCB panel, fuel tank, exhaust systems, control panel (If required) , cooling system, etc.

AFTER SALES SERVICE:

Free of cost for 12 months from the date of commissioning.

SUBMISSION OF DOCUMENTS:

- a) Operation and maintenance manuals: Four sets of operations and maintenance manuals are to be submitted along with supply.
- b) Test Certificates:
 - i) Test certificate of diesel engine
 - ii) Test certificate of Alternator
 - iii) Test certificate of DG set
- c) Statutory clearances.

INSPECTION

The bidder shall furnish a suitable Inspection Schedule to enable inspection of the various components as well as the D.G.Sets in totality.

All inspections shall be at the discretion of the purchaser, who shall give a waiver of inspection in writing in the event the inspection is not to be carried out.

LIST OF ACCEPTABLE MAKES OF COMPONENTS

AIR CIRCUIT BREAKERS / MCCB - SIEMENS/SCHNEIDER ELECTRIC
ROTARY SWITCHES - KAYCEE, SIEMENS
PUSH BUTTONS - BCH, L&T, SIEMENS
ANNUNCIATOR WINDOWS – MINILEC
VACCUUM CIRCUIT BREAKER (VCB) - ABB/SCHNEIDER ELECTRIC / SIEMENS
CONTACTORS - SIEMENS / SCHNEIDER ELECTRIC/ABB
TIMERS (SOLID STATE) - SIEMENS/BCH/L&T
CONNCETORS - ELMEX
METERS - AUTOMATIC ELECTRIC/ IMP
INDICATION LAMPS (CLUSTER LED TYPE ONLY) -- L&T, SIEMENS/TECNIK
RELAYS – ALSTOM/SCHNEIDER

Makes other than the above may be used in the system only with the prior approval of the purchaser.