



URANIUM CORPORATION OF INDIA LTD



**INSTALLATION OF HORIZONTAL BELT
FILTER AT JADUGUDA**

**TECHNICAL SPECIFICATION OF
POWER DISTRIBUTION BOARD (PDB) & UTILITY DB**



MECON LIMITED

RANCHI-834002

	URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA	
---	---	---

1.0 PROJECT INFORMATION

a) General Information



Customer's Name	Uranium Corporation of India Limited (UCIL)
Consultant	MECON Limited
Project	Horizontal Belt Filter (HBF)
Location	Jaduguda, Jamshedpur

b) Ambient Condition

Ambient temperature	50 Deg. C
Humidity (Max.)	100% not occurring simultaneously with maximum temperature.
Altitude (with respect to MSL)	Below 1000 M

c) Standard Voltage Level



1	LT supply	415V, 50 Hz, 3 Phase, 4 wire, solidly earthed 50kA for 1 sec.
2	Voltage variation	+10%, -15% for LT system
3	Frequency variation	+3% & -5%
4	AC control voltage	240V AC

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---

2.0 APPLICABLE CODES & STANDARDS

All equipment and materials shall be designed, manufactured and tested in accordance with the latest applicable Indian Standards (IS) and IEC with specific conformity to the latest editions of the following standards, except where modified and/or supplemented by this specification.



IS:13118	General requirement for circuit breaker for voltage above 1000V
IS:3472	Metal enclosed switchgear and control gear for voltage above 1000V
IS:5082	Material for data for aluminium bus bar
IS:9920	Switches and switch isolator for valve above 1000V
IS:9046	AC contactors of voltage above 1000V upto and including 1100V
IS:13703	Low voltage fuses
IS:2705	Current transformers
IS:3156	Voltage transformers
IS:1248	Electrical indicating instruments
IS:3231	Electrical relays for power system protection
IS:6875	Control switches and push buttons
IS:2544	Porcelain post insulators for system with nominal voltage greater than 1.1kV
IS:11353	Guide for uniform system of making an identification of conductor and apparatus terminal
IS:5578	Guide for marking insulated conductors
IS:5	Color for ready mixed paints and enamel

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL)</p> <p style="text-align: center;">TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB</p> <p style="text-align: center;">INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	---	---



3.0 TECHNICAL SPECIFICATION

A. POWER DISTRIBUTION BOARD (PDB)/UTILITY DB


General		
1.	Type	<ul style="list-style-type: none"> - Metal clad. - Non-draw out type. - Type tested design.
2.	Construction	<ul style="list-style-type: none"> - Modular construction. - Fully compartmentalized with metal / insulating material partition.
3.	Enclosure class	IP52 with canopy.
4.	Type of execution	Single front.
5.	Mounting	<ul style="list-style-type: none"> - Floor mounting. Utility DB shall be floor/wall mounting type. - Free standing with ISMC 75.
6.	Installation	Indoor.
Constructional Features		
1.	Sheet steel	
	Thickness	<ul style="list-style-type: none"> - 2 mm for load bearing members. - 1.6 mm for non-load bearing members.
	Material	CRCA
2.	Cable entry	<ul style="list-style-type: none"> - Incomer :- Bottom cable entry. - Outgoing :- Bottom cable entry.
3.	Design	<ul style="list-style-type: none"> - Separate enclosed/isolated cable alley for each vertical. - All the components shall be accessible from front. - Rear access through removable rear hinged cover door - Each module to have covering at the bottom.

	<p style="text-align: center;"> URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA </p>	
---	--	---



		- Minimum 200mm shall be left blank at bottom through the length of panel
4.	Interlocking & protection	<ul style="list-style-type: none"> - Module door interlocked with main power isolating devices. - Power circuit isolation device to have pad locking in the OFF position with door closed.
5.	Operating height	<ul style="list-style-type: none"> - Minimum :- 300mm - Maximum :- 1800mm
6.	Gland plate	Undrilled removable bottom gland plates (3mm thick).
7.	Miscellaneous	<ul style="list-style-type: none"> - Neoprene rubber gasket shall be provided for all the doors, removable covers & between adjacent covers. - Lifting hooks for the panel. - Doors shall have concealed hinges.
8.	Labelling	<p>Clear legible identification labels (anodized aluminium with white letters engraved on black background) with letter sizes of :-</p> <ul style="list-style-type: none"> - 25-50 mm for panel. - 5 mm for components and module name plates. - Danger board on front and rear sides in English, Hindi and local language.
9.	Earthing	<ul style="list-style-type: none"> - Two separate earthing terminals shall be provided. - Bolted joints with tooth spring washers for good earth continuity. - Earth bus to run in all cable alley of the panel.
10.	Shipping length	To be limited to 2.4 Mtr.
11.	Limiting dimensions	<p>Width of Vertical :- 800 mm (min)</p> <p>Width of Module :- 500 mm (min)</p> <p>Width of Cable alley :- 300 mm (min)</p> <p>Depth :- 600 mm</p> <p>Height :- 2400 mm (max)</p> <p>Height of module :- 300 mm (min)</p>

	<p style="text-align: center;"> URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA </p>	
---	--	---



12.	Paint shade	RAL 7035 (Light Grey)
Busbars		
Main horizontal & vertical busbars		
1.	Arrangement	Three phase & neutral. Bus Bar chamber on the top.
2.	Material	High conductivity electrolytic aluminium alloy confirming to grade E91E as per IS-5082 –1981.
3.	Phase Busbar Rating	<ul style="list-style-type: none"> - Minimum rating shall be same as incomer ACB/MCCB rating. - Shall be able to carry continuously the connected load (considering all derating factors) plus a 25% margin. - Max. current density shall be <ul style="list-style-type: none"> •0.8 A/sq.mm for Aluminium. •1.2 A/sq.mm for Copper.
4.	Neutral Busbar Rating	50 % of phase busbar rating.
5.	Short circuit rating	50kA for 1 sec.
6.	Busbar configuration	Red-yellow-blue from front to back or top to bottom or left to right as viewed from front.
7.	Busbar insulation	Heat shrinkable PVC <ul style="list-style-type: none"> - R, Y, B coloured sleeves for phases. - Black for neutral.
8.	Busbar supporting insulator	<ul style="list-style-type: none"> - Non-hygroscopic - Flame retarded - Track resistant - High strength - Sheet moulded compound or equivalent polyester fibre glass moulded type.
9.	Max. temp. rise of bus	Not to exceed 35 deg. C. above ambient of 50 deg. C.
10.	Air clearance for bare busbar	Phase to phase :- 25.4 mm (minimum) Phase to earth :- 19.0 mm (minimum)

	<p style="text-align: center;"> URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA </p>	
---	--	---



11.	Joins and tap off points	<ul style="list-style-type: none"> - Busbar joins and tap off points shall be shrouded and bolted (with cadmium coated bolts with plain and spring washers and locknuts). - Bimetallic connectors for connection between dissimilar metals. - Anti-oxide grease for all bus connections.
12.	Neutral bus isolation	Through disconnecting link.
13.	Vertical busbar	Rear side/Front side (Type tested)
Earth bus		
1.	Material	GI/AL at bottom through the panel length.
2.	Size	Minimum 50x6 mm with extension at both ends.
Control bus		
1.	Material	Copper.
2.	Size	Minimum 25x3 mm.
3.	Segment	Control bus shall be sectionalized and each bus shall be fed from control transformer of respective section. However selector switch in one module shall be available to select the feed of both sections of control bus from either of control transformer also.
4.	Selector Switch	25A, 4 position (Trafo -1, Trafo -2, Individual, OFF) and as described above.
Insulation level		
1.	Rated insulation voltage	1100 V
2.	Impulse withstand voltage	4 kV as per IS-13947 (Part I) 1993
3.	One minute power frequency withstand	2.5 kV for power circuit & 500 V for control circuit

	URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA	
---	---	---

	voltage	
Feeder arrangement		
Incomers		
1.	Isolating Equipment	<p>For PDB-1250A ACB incomer</p> <p>Each incomer shall be provided with one Control transformer of minimum 1000VA rating with auto changer, MPCBs at primary side & DP MCBs at secondary for control & indication lamps for incomers.</p> <p>For Utility DB – 400A MCCB</p> <p>All ACBs/MCCBs shall be microprocessor based with LSIG releases.</p>
2.	Quantity	<p>Two incomers & One Bus coupler for PDB.</p> <p>Single incomer for Utility DB.</p>
3.	Interlocking	Required for PDB.
4.	Auto changeover scheme	<ul style="list-style-type: none"> - Usually both the incomers shall be 'ON' with bus-coupler in the 'OFF' condition. - In case of failure of one of the supply feeders (say by upstream fault), it shall be sensed by the under-voltage relay which in turn shall trip the incoming breaker after a pre-set time delay. - Through the normally closed auxiliary contacts of the tripped incoming breakers, the bus-coupler breaker shall close provided the other section is "Healthy". - The automatic transfer scheme shall be such that the automatic closing of the bus section can be done only once and in case the bus coupler breaker trips during auto changeover, no further auto closing shall be permitted. Auto changeover shall not take place if the incomer breaker trips on fault. The restoration of power shall be manual.
5.	Indication Lamps	<p>LED cluster type indicating lamps for :-</p> <p>Incoming Power ON: R/Y/B.</p> <p>ACB/MCCB - ON/OFF/Trip/Spring Charged etc.</p>

	<p style="text-align: center;"> URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA </p>	
---	--	---

6.	Meter and selector switch	144 sq.mm size voltmeter with 7 position selector switch. 144 sq.mm size ammeter with 4 position selector switch.
7.	Current transformer	3 numbers for metering.
8.	Potential transformer	1 number
	Gland plate of PDB incomer shall be suitable for terminating the required nos. of cables as indicated in SLD. If required additional cable termination box to be provided.	
Outgoing feeder arrangements		
1.	Circuit breaker	As indicated in SLD. All ACBs/MCCBs shall be microprocessor based with LSIG releases. In case earth fault release is not available with smaller rating MCCB, same shall be through external CBCT.
2.	Meter and selector switch	96 sq.mm size ammeter with 4 position selector switch as indicated in SLD.
3.	Indications	ON/OFF/Trip indication lamp.
Panel wiring		
1.	Power / current transformer circuit	1.1kV grade single core, black color PVC insulated, stranded copper conductor of minimum size 2.5 sq.mm.
2.	Ferrules	- Numbered plastic/ceramic ferrules. - Self-locking type.
3.	Marking	- Wiring shall be properly marked as per relevant IS.
4.	Terminals	- Power & control terminals shall be segregated by insulating material like hylam / bakelite sheet. - Power terminals shall be stud type.

	URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA	
---	---	---

		<ul style="list-style-type: none"> - Control terminals shall be clip on type suitable for connecting two cores of 2.5 sq.mm wires. - Minimum 20 % spare terminals shall be provided. - The minimum rating of control terminal shall be 10 Amps.
5.	Cable glands	Double compression cable glands for receiving external power and control cables.
6.	Space heater& panel illumination power supply	240V AC power supply for Space heater/panel illumination shall be arranged by tapping from phase & neutral side of both incomers by providing MPCB at incomer side, DP MCB, thermostat etc.

Note: Utility DB shall have single incomer and other technical details of board are as indicated above.



B. ELECTRICAL EQUIPMENTS SPECIFICATION

i. AIR CIRCUIT BREAKER (ACB)

Electrical Features

- Air break triple pole draw out type conforming to IS 13947.
- Motor operated spring charge mechanism.
- Symmetrical breaking capacity and 1 second rating of the breaker not less than the system short circuit level.
- Making capacity 2.55 times breaking capacity.
- Performance category : P2
- Auxiliary contacts : 4 NO+4 NC minimum, convertible from NO to NC and vice versa.
- Ratings :

Continuous	10 amps
AC 11	4 amps at 240 V
DC 11	0.5 amps at 110 V

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---

Operating Mechanism



- Electrically operated mechanism for incomers, bus-coupler& outgoing feeders.
- Spring charged stored energy mechanism to ensure high speed closing and tripping independent of the operating forces.
- Anti-pumping and trip free feature
- Closing operation of the breaker to charge the tripping spring, ready for tripping.
- Mechanical indication to show :
 - ⇒ Closing spring charged
 - ⇒ Breaker ON/OFF/TRIP
- Breaker to close only when spring fully charged.
- Non-reset type operations counter.
- For electrically operated breakers :
 - ⇒ Charging of closing spring by motor.
 - ⇒ Closing by closing coil.
 - ⇒ Spring charging motor and closing coil suitable for rated control voltage (240V AC).
 - ⇒ One opening and one closing operation without control supply.
 - ⇒ Provision also for manual closing with spring charging motor automatically decoupled as soon as charging handle is inserted.

Draw out Features

- 3 distinct positions viz. service, test, and isolated with the door closed.
- Mechanical position indication and locking/latching facility for all 3 positions.
- Power connections -self-aligning, plug-in type.
- Control connections - sliding or plug socket type, mechanically coded, to prevent wrong insertion.
- Automatic safety shutters to prevent accidental contact with live parts when the breaker is withdrawn.

Safety Interlocks

- It shall not be possible to close the breaker in any intermediate position other than the 3 fixed positions.
- With the breaker closed, it shall not be possible to rack it in from any of the 3 position to another.
- Mechanical stopper to prevent accidental falling while withdrawing.
- It shall not be possible to rack in the breaker from isolated to 'test' position with

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---

the door open together with provision for defeat of this interlocking, however, it shall be possible to close the door only when the breaker is brought back to 'isolated' position.

- It shall be possible to open the door only when breaker is OFF and is in Isolated position.

Microprocessor based releases

General

- Sensors shall be non-magnetic or of the Rogosky type for accurate current measurements.
- The control unit shall measure the true RMS value of the current.
- The control unit shall comprise a thermal memory to store temperature-rise data in the event of repeated overloads or earth faults. It shall be possible to disable this function if necessary.

Protection



- The control unit shall offer the following protection functions as standard:
 - A Long-time (LT) protection with an adjustable current setting and time delay.
 - A Short-time (ST) protection with an adjustable pick-up and time delay.
 - A Instantaneous (INST) protection with an adjustable pick-up and an OFF position.
- Earth-fault protection with an adjustable pick-up and time delay shall be provided.

Communication

- The circuit breaker shall be capable of communicating with the plant automation.

ii. MOULDED CASE CIRCUIT BREAKER (MCCB)

1.0	Reference standard	IS : 13947 (Part-2) : 1993
2.0	Rated Current	Minimum 100A (frame rating). Irated shall be as per load current with 150% margin with adjustable setting.
3.0	Type	Complete with continuous electronic/ microprocessor based adjustable releases.
4.0	Short circuit rating	50 kA (Minimum) (Ics =Icu). (Ics) = Service Short circuit breaking capacity

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---



		(Icu) =Rated ultimate short circuit breaking capacity.
5.0	Operating handle	Yes
6.0	Safety Door interlock	Door interlock, Padlocking in ON/OFF position
7.0	Withstand capability	Rated short time with-stand current (Icw) shall be 12 times maximum rated operational current for 1 sec.
8.0	Utilisation category	AC23B
9.0	Electrical features	<ul style="list-style-type: none"> - S/C, O/C, E/F protection for power supply feeders. - Features to minimise the let-through energy (I^2t) in the event of short circuit on load side.
10.0	Auxiliary contacts	1 NO + 1 NC, Alarm contacts.
11.0	Miscellaneous	Shunt trip coil.

iii. CONTROL TRANSFORMER

1.0	Type	Dry type , cast resin
2.0	Voltage	415V/240V
3.0	Primary taps	+2.5 %, +5 %

iv. INDICATING INSTRUMENTS


1.0	Basic details	<ul style="list-style-type: none"> - Shall not damage by passage of fault current or existence of over voltage for the maximum permitted duration of fault conditions. - Ammeters for drives above 15 kW shall be CT operated. - Voltmeters protected by fuses placed as close to the busbar as possible. - Maximum reading 700% of IFL for motor feeders.
2.0	Mounting	Flush mounting, square dial with zero adjusting device for external operation.
3.0	Accuracy class	1.5

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---

4.0	Size	<ul style="list-style-type: none"> - Size of voltmeter and ammeter for incomer 144 x 144 mm for incoming feeders. - Size of ammeter for motor feeders 96 x 96 mm.
-----	------	---

v. INDICATING LAMPS

1.0	Type	LED Cluster type
2.0	Basic details	Sufficient number of lamp grips shall be provided for easy replacement of lamps.
2.0	Size	22.4 mm diameter
3.0	Colour	<ul style="list-style-type: none"> - For 'ON', supply 'ON', breaker 'CLOSE' : Red - For 'OFF', supply 'OFF', breaker 'OPEN' : Green - Fault, Service & Test position : Amber - General purpose indication : White <p>Other colours may be adopted depending upon particular application as approved by the Purchaser.</p>
4.0	Layout of indication lamps on boards / panels	<p>Indicating lamps shall be located just above the associated push-button / control switches.</p> <p>Red lamps shall invariably be located to the right of green lamps.</p> <p>In case a white lamp is also provided, it shall be placed between red and green lamps along the centre line of control switch/ push button pair.</p> <p>Blue and Amber should normally be located above the Red and Green lamps.</p> <p>When associated with push buttons, red lamps shall be directly above the green push button and green lamp shall be directly above the red push button.</p>

	<p style="text-align: center;">URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA</p>	
---	--	---



vi. MINIATURE CIRCUIT BREAKER (MCB)

1.0	Type	Heat resistant plastic moulded type.
2.0	Number of Poles	Double Pole (DP).
3.0	Reference Standard	IS: 8828 –1978
4.0	Protections	MCBs shall be provided with quick break trip-free mechanism and direct acting thermal overload and short circuit trip elements.
5.0	Short circuit capacity	Not less than 9kA at 0.8pf.
6.0	Mounting	DIN Channel mounting. Single phase MCBs mounted adjacent to each other and connected to different phases shall be provided with adequate insulated phase barriers.
7.0	Current Rating	The MCBs shall be selected from standard current ratings. MCB characteristics curve shall be as per application.

C. SCHEDULE OF QUANTITIES



The scope of supply shall necessarily include (but not limited to) the major items listed under this schedule, and shown in the enclosed drawings (Drg No.-MEC/11/E1 (DC&C)/Q79R/TS/002, R-1, 2 sheets).

Sl. No.	Item Description	Unit	Qty.	Remarks
1.	415V, Power Distribution Board (PDB) as per SLD	Set	1	
2.	415V, Utility DB as per SLD	Set	1	

	URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA	
---	---	---

D. LIST OF APPROVED MAKE

Sl. No.	Item Description	Preferred Make
1.	Power Distribution Board (PDB)/Utility DB	Andrew Yule/Schneider Electric / Control & Switchgear/ L&T/ GE Power Control/ Siemens/ BCH/ ABB/ Amara Raja
2.	Indicating Meters	AE/Meco/L&T/Motwani/Conzerve/Rishab Instruments/Secure Meters/ABB/Siemens/ Emerson
3.	Air Circuit Breaker (ACB)	L&T/Siemens/Schneider/ABB/GE Power Control
4.	Moulded Case Circuit Breaker (MCCB)	Schneider/ L&T/ ABB/ Siemens/ GE Power Control / BCH
5.	Motor Protection Circuit Breaker (MPCB)	Schneider/ L&T/ ABB/ Siemens/ GE Power Control
6.	Miniature Circuit Breaker (MCB)	Siemens/ L&T/ GE Power Control/ Schneider/ Standard/ Indoasian/ Havells/ MDS (Legrand)/ ABB / HPL India
7.	HRC Fuse	GE Power Control/ L&T/ Siemens/ Indo Asian/ Havells/ Standard/ Bussman/ Control & Switch Gear/ ABB
8.	Current Transformer	ABB/ Jayshree/ Pragati/ Kappa/ Intravidhyut/ Indcoil/ Precise /Jyoti
9.	Ammeter/Voltmeter	AE/ Meco/ L&T/ Motwani/ Conzerve/ Rishab Instruments/ Secure Meters/ BB/ Siemens/ Emerson/ Areva/ Kappa
10.	Indicating Lamps (LED)	Binay/ Siemens/ L&T/ Essen/ BCH/ Vaishno/Tecnic/Osram/ Telemecanique/ Areva/ Esbee / ABB / Hot Line Switchgear
11.	Push Buttons	BCH/ L&T/ Schneider/ Siemens/ Essen Deinki/ Control & Switchgear / Hot Line Switchgear
12.	Selector Switches & Control Switches	BCH/ Kaycee/ Siemens/ L&T/ Control & Switchgear/ Jyoti/ Hot Line Switchgear & Control / HPL India / Siemens

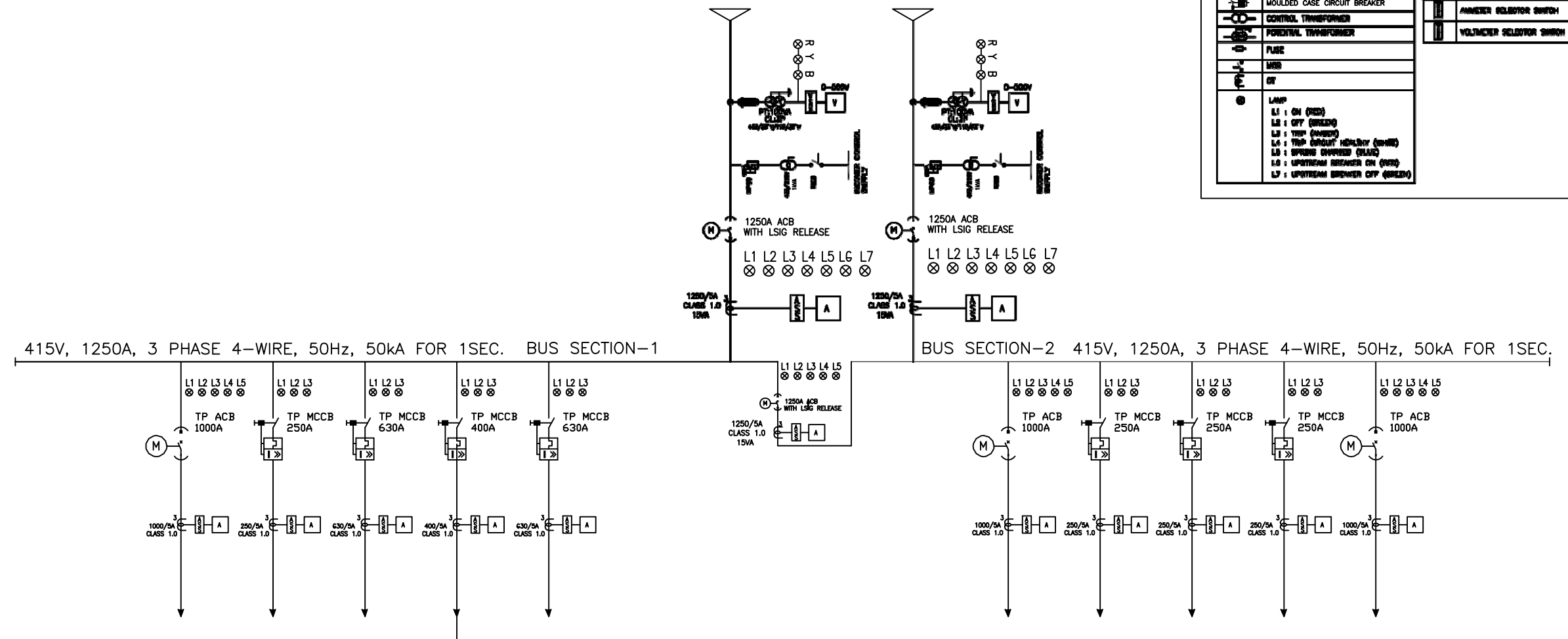
	<p style="text-align: center;"> URANIUM CORPORATION OF INDIA LIMITED (UCIL) TECHNICAL SPECIFICATION OF 415V PDB & UTILITY DB INSTALLATION OF HORIZONTAL BELT FILTERS AT JADUGUDA </p>	
---	--	---

13.	Terminal Blocks	EPCC/ Elmex/ Phoenix Contact/ Connect Well/ Essen Deinki/ Wago/ Lapp/ S&S/ Hansel
14.	Control Transformers	AEI/ AEP/ Voltamp/ Indcoil/ Kappa/ Indushree/ Siemens/ Kalpa

E. TESTING & COMMISSIONING ASSISTANCE

Bidder shall provide testing & commissioning assistance at UCIL Jaduguda for four (4) working days of one (1) person during testing & commissioning. Bidder shall also arrange his own transport, local transport, accommodation etc. during assistance at UCIL Jaduguda.

415V INCOMER FROM EXISTING LT SWITCHBOARD
(OLD CRUSHING & GRINDING S/S)



FEEDER DESCRIPTION	MCC INCOMER-1	MLDB INCOMER-1	UTILITY DB INCOMER	SPARE FEEDER	SPARE FEEDER	INCOMER-1	BUSCOUPLER	INCOMER-2	SPARE FEEDER	SPARE FEEDER	FEEDER FOR HTSS AUX.	MLDB INCOMER-2	MCC INCOMER-2
FEEDER RATING KW (CL)	355 KW	30 KW	350 KW			780 KW		780 KW				30 KW	355 KW
FEEDER RATING KW (MD) WITH 20% SPARE	384 KW		138 KW			610 KW		610 KW					384 KW
FEEDER CURRENT AMPS				400 A	630 A				1000 A	250 A	250 A		
CABLE TYPE & SIZE			PVC, AL, 2X(3.5CX185)			PVC, AL, 13X(3.5CX240)		PVC, AL, 13X(3.5CX240)			PVC, AL, 1X(3.5CX185)		

FOR TENDER PURPOSE ONLY













URANIUM CORPORATION OF INDIA LTD	B
JADUGUDA MINES	



मैकॉन लिमिटेड
MECON LIMITED

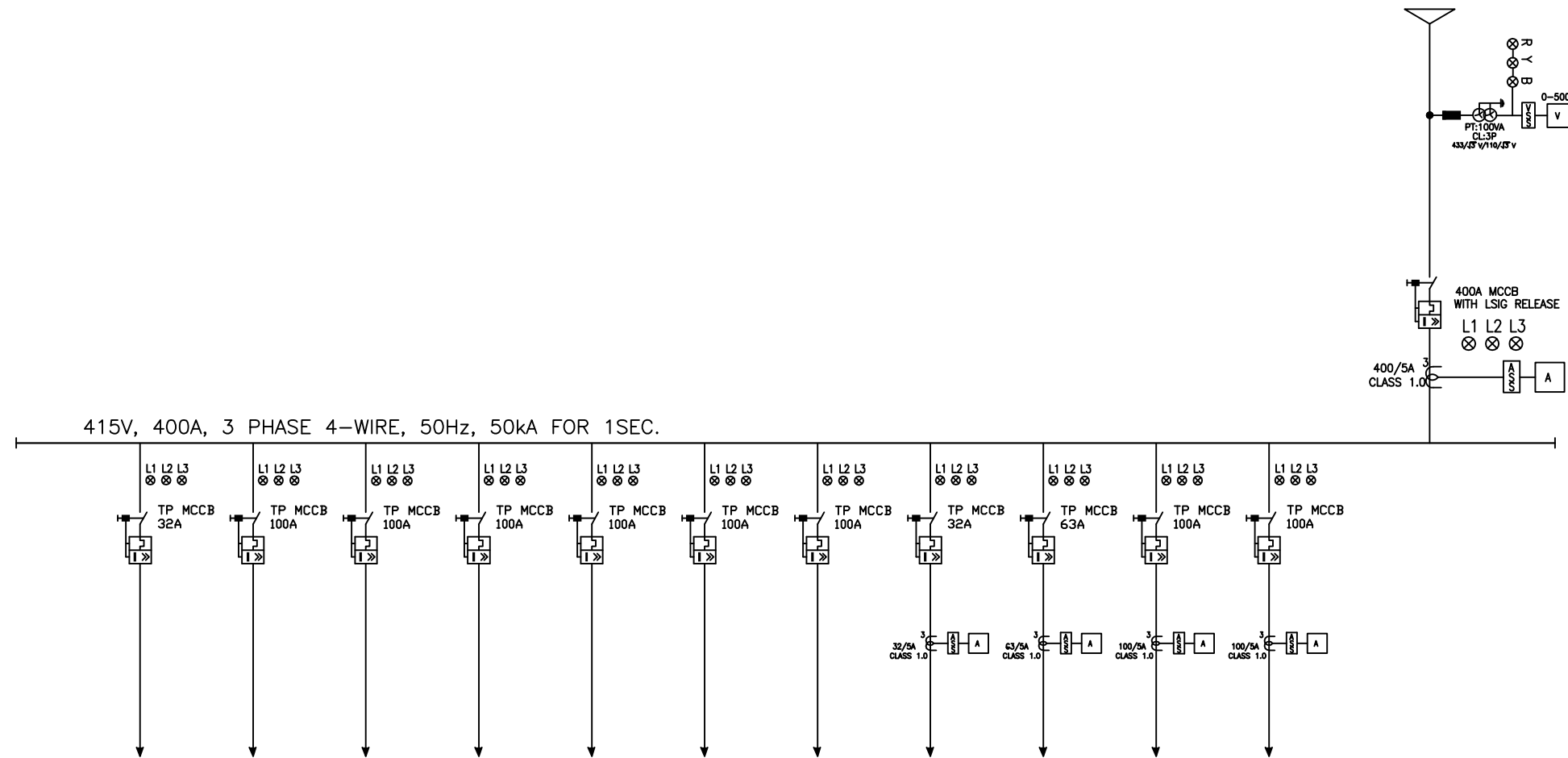
ELECTRICAL-E1(DC&C)		HORIZONTAL BELT FILTER AT UCIL JADUGUDA MILL		
LOCATION	RANCHI			
DESIGNED	VIVEK	SINGLE LINE DIAGRAM OF PDB		
DRAWN	VIVEK			
CHECKED	MSN MURTHY			
APPROVED	K KARUPPUSAMI	SCALE : NTS	SHEET No. 1 OF 2	REV
DATE:		DRG. NO. MEC/11/E1(DC&C)/Q79R/TS/002		1












A						
						
						
						
						
						
						
						
						
						
REV.						
SEC.	CONCURRED BY.					

△					
△					
△					
△					
△					
△					
△					
REV.No.	DATE	ZONE	DESCRIPTION		BY VERIFIED
REVISION					

THIS DRAWING IS THE PREPARED BY MECON AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN. THIS IS NOT TO BE COPIED OR USED FOR OTHER PROJECTS UNLESS EXPRESSLY PERMITTED BY MECON.

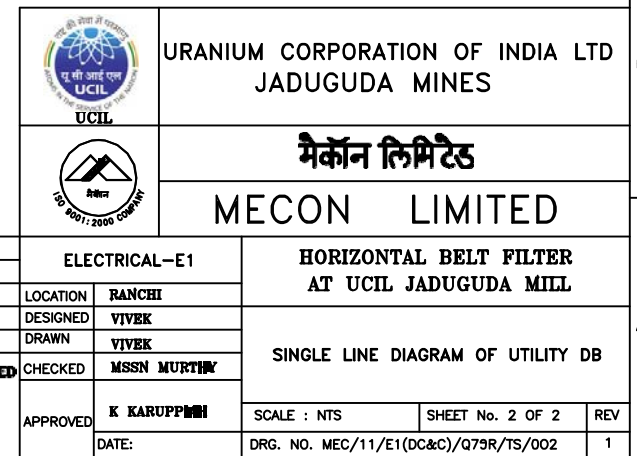
INCOMER FROM PDB









<u>LEGEND:</u>	
	MOULDED CASE CIRCUIT BREAKER
	CONTROL TRANSFORMER
	POTENTIAL TRANSFORMER
	FUSE
	MCB
	GT
	LAMP L1 : ON (RED) L2 : OFF (GREEN) L3 : TRIP (WHITE)
	AMM_I_R
	VOLTMETER
	AMMETER SELECTOR SWITCH
	VOLTMETER SELECTOR SWITCH

[illegible]

FOR TENDER PURPOSE ONLY



A								NOTE:-- 1. ALL RATINGS AND QUANTITY OF FEEDERS ARE INDICATIVE ONLY. FEEDER HAS TO FOLLOW THE TECHNICAL SPECIFICATION OF FDB & UTILITY DB FOR PANEL CONSTRUCTION & INTERNAL EQUIPMENT SPECIFICATION.
								
								
								
								
								
	REV.							
	SEC.	CONCURRED BY.						

△							
△							
△							
△							
△						REFERENCES	DRG.No.
△						THIS DRAWING IS THE PREPARED BY MECON AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN. THIS IS NOT TO BE COPIED OR USED FOR OTHER PROJECTS UNLESS EXPRESSLY PERMITTED BY MECON.	
△							
REV.No.	DATE	ZONE	DESCRIPTION	BY	VERIFIED		
R E V I S I O N							