

Summary of Schedule of quantity (Un-Price bid format)							
Project Name: IOCL Paradip-Standby SRU (525TPD) Train project, Odisha							
Works & Services Name for work: Installation, testing and commissioning of "Electrical, Control & Instrumentation" Works Tender enquiry ref no.T0AUX00043, dated:05.07.2021							
Abstract of sheet							
Sl No	Description	UOM	Qty	Rate in Rs.	Amount In Rs.	Weightage %	Remark
A	B	C	D	E	F	G	H
1	C&I Works and Services	Set	1			39.0744314%	Refer Section-1 for BOQ
2	Electrical Works and Services	Set	1			60.9255686%	Refer Section-2 for BOQ
	Total (Weightage Excluding Taxes)					100.0000000%	
	Total Amount Excluding GST.			Bidders not to quote or write anything here. Bidder has to quote the total price in BHEL NIC portal https://eprocurebhel.co.in			
Note:							
1	Bidders should quote only the Total Amount both in figures & words in the specified place. They should not fill/quote/write anything in col. (E) & (F) of Abstract sheet as well as section - 1 to 2 . These rates & amount will be derived from the Total amount quoted and weightage factor assigned against respective items indicated in col. G. (Bidder to quote the total price in BHEL NIC portal https://eprocurebhel.co.in)						
2	Evaluation Shall be based on total amount quoted by bidder.						

Section-1: Control and Instrumentation works.						
Sl No	Item Description	UOM	Qty	Rate in (Rs.)	Amount in (Rs.)	Weightage %
A	Installation, Testing and commssioning of following items: Instruments					
1	Mass flow meter	Nos	2			0.0338432%
2	RADAR Level Transmitter	Nos	15			0.4625309%
3	SMART transmitters (PT, DPT, FT, LT, TT)	Nos	169			1.4059198%
4	Pressure Gauges/ Differential Pressure gauges	Nos	107			0.6883421%
6	Level Gauges	Nos	22			0.3822786%
7	Temperature Gauges with Thermowell	Nos	51			0.3963367%
8	Temperature Elements (Thermo Couple, RTD, Multipoint thermocoples) with thermowell	Nos	91			0.6487559%
10	FRP Canopies	Nos	500			10.0478234%
11	Remote Indicators	Nos	2			0.0206276%
12	Junction Boxes (WP & ExP)	Nos	180			1.9821668%
13	EWLI (HYDRASTEP TYPE)	Nos	2			0.3632954%
14	FLAME SCANNER ASSEMBLY	Nos	8			0.2184262%
15	Flame Ionization Rods, Pilot Ignitors	Nos	2			0.1032115%
16	Pneumatic actuators- Regulating type for Incinerator Fans	Nos	2			0.1513435%
17	Vibration Transmitters for Condensate pump and blowdown fans	Nos	9			0.2775186%
B	Fabrication, Installation, painting of support and hookup material					
1	Pipes: Size 21.3x3.7, 4.5, 5.5, 7.1,, Qty to be in meters, Material shall be informed by engg.	Meter	2000			5.2427779%
2	Pre-fab hook-ups for PT: SS	Nos	45			0.4955417%
3	Pre-fab hook-ups for FT: SS	Nos	35			0.3854213%
4	2” pipe for transmitter and JB mounting & Support set up	Meter	300			1.4302092%
5	Structural steel (MS angle iron- 50x50x6, 75x75x6 mm for panel base frame & its site fabrication, STR STL 6MM (1500x5000X6), ISMC MS CHANNEL (100x50)	MT	50			12.7481112%
6	MCT Block : 6+6 x10 : 466x1311	Nos	3			0.3228155%
7	MCT Block : 6+6 x1 : 466x141	Nos	2			0.0538026%
8	MCT Block : 6+6 x2 : 466x271	Nos	1			0.0403528%

Sl No	Item Description	UOM	Qty	Rate in (Rs.)	Amount in (Rs.)	Weightage %
C	Installation, testing, commissioing of the following items: Packages					
1	Process Gas anaylsers & Gas Chromatograph					
1.a	Tail Gas Analyser (Field mounted cabinet)	Nos	1			0.3865228%
1.b	Conductivity analyser (Field mounted cabinet)	Nos	1			0.3865228%
1.c	Gas chroamatograph (Shall be installed in HPVP analyser shelter)	Nos	1			0.5797843%
2	STACK Analysers					
2.a	SOX, NOX, CO Analysers	Nos	1			0.7034810%
2.b	O2 Analyser	Nos	2			0.2855031%
2.c	Smoke Density Analyser	Nos	1			0.1901260%
3	DCS + PLC SYSTEMs consisting of (located at SRR-811 & MCR-815)					
3.a	DCS PLC Panels at SRR 811	Nos	26			3.5966153%
3.b	DCS PLC Panels, RIO, HWC at MCR 815	Nos	8			1.1066509%
3.c	BMS local panel and Pilot detector panel	Nos	4			0.5533254%
3.d	Operating Station and furniture/ CDSU PC for Stack Analyzers	Nos	2			0.1661223%
3.e	IRP Cabinets	Nos	4			0.5533254%
D	Laying, dressing, tagging, terminations with ferruling, testing, commissioing of the following items: Instrumentation CABLEs					
1	12P x 1.5 mm2/ 8T x 1.5 mm2	Meter	47000			11.2538139%
2	12P x 2.5 mm2/ 8P x 2.5 mm2/ 6P x 2.5 mm2	Meter	19600			5.8663498%
4	1P x 1.5 mm2/ 1P x 2.5 mm2/ 1T x 2.5 mm2 / 2P x 20 AWG	Meter	58000			9.3227393%
8	Field bus cables	Meter	30000			5.6652863%
9	FO cable	Meter	21000			4.8018537%
10	UTP/LAN Cables	Meter	8100			1.0274394%
11	Interpanel Cabling (2Cx2.5, 3Cx2.5, 4Cx2.5)	Meter	4000			0.5545882%
12	HDPE conduit	Meter	21000			15.0984978%
	Total (Weightage Excluding Taxes)					100.0000000%

Section-2: Electrical works.						
SI No	Item Description	UOM	Qty	Rate (In Rs.)	Amount (In Rs.)	Weightage %
A	Installation, Testing and commssioning of following items: Instruments					
1	HT SWITCHGEAR MODIFICATION					
1.1.	Modification of 2 Panels in 6.6kV Switchgear	Nos.	2			0.1543573%
2	LT SWITCHGEAR					
2.1	LT Switchgear Extension					
2.1.1	Installation, Testing and commissioning of Extension Panels in 331S-PMCC-406/ 331S-MCC-403/ 331S-MCC-401/ 331S-MLDB-3/ 331S-ACDB-1 (single panel width: 800mm)	Nos.	12			9.2637206%
2.1.2	Extension Panels in 811-INST-UPS-002	Nos.	1			0.0643314%
2.2	LT Switchgear/ UPS DB Modification					0.0000000%
2.2.1	Non DCS Field 110V UPS SUBDB(Wall Mounted) :1000 x 500 x 1000 mm	Nos.	2			0.0406817%
2.2.2	240V UPS PDB(Wall Mounted) for CCTV : 1000 x 500 x 1000 mm		1			0.0203408%
2.2.3	240V Non UPS DB/PDB (Wall Mounted) : 800 x 500 x 1000 mm		2			0.0406817%
2.2.4	Addition of 63A/100A feeder in existing UPS		6			0.0582787%
3	6.6kV HT XLPE ALUMINIUM CONDUCTOR ARMOURED CABLES					
3.1	6.6kV (UE) 3C x 240 Al	Meter	1600			1.1524003%
4	LT POWER CABLES: Laying, dressing, tagging, terminations, testing, commissioing of the following items					
4.1	2C x 95 Cu XLPE	Meter	1200			0.2668106%
4.2	1C x 120 Cu XLPE UNARM	Meter	1250			0.3367122%
4.3	1C x 35 Cu XLPE UNARM	Meter	1750			0.3590508%
4.4	1C x 10 Cu XLPE UNARM	Meter	1750			0.1309735%
4.5	3.5C x 70 Cu XLPE	Meter	300			0.0850760%
4.7	3.5C x 50 Al XLPE	Meter	3000			0.7415282%
4.8	3.5C x 95 Al XLPE	Meter	12500			3.7751080%
4.9	3.5C x 120 Al XLPE	Meter	3000			1.1211944%
4.10	3C x 2.5 Cu XLPE	Meter	20000			2.0554357%
4.11	3C x 4 Cu XLPE	Meter	4000			0.4640297%
4.12	3C x 6 Cu XLPE	Meter	4000			0.5519691%
4.13	3C x 10 Cu XLPE	Meter	2000			0.2875341%
4.14	3C x 16 Cu XLPE	Meter	5500			0.9859366%
4.15	3C x 35 Al XLPE	Meter	2000			0.5178794%
4.16	3C x 50 Al XLPE	Meter	6500			1.4124189%
4.17	3C x 70 Al XLPE	Meter	7000			1.8041987%
4.18	3C x 95 Al XLPE	Meter	2000			0.6037493%
4.19	4C x 50 Cu XLPE	Meter	500			0.1154602%
4.20	4C x 25 Al XLPE	Meter	3200			0.4876442%
4.21	4C x 35 Al XLPE	Meter	3500			0.6790827%
4.22	4C x 95 Al XLPE	Meter	2000			0.7450504%
4.23	4C x 120 Al XLPE	Meter	1800			0.7763432%
4.24	4C x 150 Al XLPE	Meter	1800			0.7915037%

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4.25	4C x 185 Al XLPE	Meter	6000			3.0757318%
5	HT CABLE TERMINATING KITS					
5.1	6.6kV (UE) 3C x 240 Terminating Kit	No.	4			0.1311328%
6	PRE FABRICATED CABLE TRAYS AND ACCESSORIES (GI & FRP) AND CABLE DUCTS (GI & FRP)					
6.1	Ladder type cable tray, W=600mm.	Meter	462			0.3514048%
6.2	Ladder type cable tray, W=300mm.	Meter	300			0.1632375%
6.3	300mm(W) Perforated type cable tray	Meter	1375			1.1335708%
6.4	150mm (W) Perforated type cable tray.	Meter	1250			0.8838628%
6.5	50mm(W) Perforated type cable tray	Meter	1000			0.5508428%
6.6	300mm(W) Perforated FRP Cable Tray & Cps	Meter	1200			0.9892982%
6.7	150mm(W) Perforated FRP Cable Tray & Cps	Meter	1800			1.2727625%
6.8	50mm(W) Perforated FRP Cable Tray & Cps	Meter	1200			0.6610114%
6.9	Cover For 300mm(W) Perforated FRP C.T	Meter	1500			1.2366227%
6.10	Cover For 150mm(W) Perforated FRP C.T	Meter	1800			1.2727625%
6.11	Cover For 50mm(W) Perforated FRP C.T	Meter	1500			0.8262642%
6.12	1000 MM WIDTH, 400 MM Height & 5 mm Thick, 2500mm length GI Cable duct with cover , Jointing plates and other accessories	Meter	575			0.7766384%
6.13	800 MM WIDTH, 300 MM Height & 5 mm Thick, 2500mm length GI Cable duct with cover , Jointing plates and other accessories	Meter	700			0.8194098%
6.14	400 MM WIDTH, 200 MM Height & 5 mm Thick, 2500mm length FRP Cable duct with cover , Jointing plates and other accessories	Meter	2812.5			3.0142679%
6.15	800 MM WIDTH, 200 MM Height & 5 mm Thick, 2500mm length FRP Cable duct with cover , Jointing plates and other accessories	Meter	325			0.6361416%
6.16	1000 MM WIDTH, 200 MM Height & 5 mm Thick, 2500mm length FRP Cable duct with cover , Jointing plates and other accessories	Meter	550			1.3456842%
7	PLANT EARTHING AND PLANT LIGHTNING PROTECTION MATERIALS					
7.1	50x10mm GI Strip Below ground	m	100			0.0506419%
7.2	75 x 10 mm GI Strip Below ground	m	100			0.0713749%
7.3	50 x 6 mm GI Strip	m	1650			0.7411280%
7.4	35 x 6mm GI Strips	m	800			0.3121862%
7.5	25 x 3mm GI Strips	m	500			0.1576695%
7.6	8SWG GI wire ,solid	m	3000			0.2524481%
7.7	Copper Pipe Electrodes (65mm dia 3 m length)	Nos.	14			0.5592236%
7.8	Copper Pipe Electrodes (65mm dia 6 m length)	Nos.	24			1.6023789%
7.9	Vertical Air Termination Rod for lightning protection.	Nos.	5			0.0139793%
8	PLANT ILLUMINATION PACKAGE					
8.1	Twin cluster LED obstruction light	Nos	15			0.0831060%
8.2	Industrial DC LED Well Glass fixture (35-45W approx) suitable for DC Supply	Nos	25			0.1074966%
8.3	Flame proof DC LED Well Glass fixture (35-45W approx) suitable for DC Supply	Nos	50			0.2770199%
8.4	LED Well Glass fixture (45W Approx, 230VAC)	Nos	200			0.8599730%
8.5	Flame proof LED Well Glass fixture (45WApprox, 230VAC)	Nos	500			2.7701990%
8.6	LED Flood lighting Fixture (100W approx)	Nos	2			0.0110808%
8.7	Flameproof LED Flood lighting Fixture (100W approx)	Nos	4			0.0232697%
8.8	LED Flood lighting Fixture (200W approx)	Nos	12			0.0698090%
8.9	11meter Steel tubular pole	Nos	4			0.2033856%
8.10	2 meter 50NB GI pole for Platform lighting	Nos	575			8.0105028%
8.11	4 way 200x150x100mm rectangular sheet steel weather proof JB (IP55)	Nos	220			0.8414896%
8.12	Flame proof Cast light alloy JB (200x150x100mm)	Nos	560			2.1419736%
8.13	Industrial metal clad type 1Ph, 20A Socket with 20A interlocked rotary switch & Plug	Nos	15			0.0299335%
8.14	Flameproof 1ph, 20A Socket with interlocked rotary switch & Plug	Nos	35			0.0962622%
8.15	Industrial metal clad type 3Ph, 63A (5pin) receptacle with interlocked rotary switch & Plug, weather proof (IP55) outdoor type	Nos	5			0.0266896%
8.16	Flameproof 3ph, 63A (5pin) Receptacle (Indoor type) with interlocked rotary switch & Plug	Nos	15			0.0872147%

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8.17	Flameproof 3-Pph, 250A (5-pin) Receptacle (Outdoor type) with interlocked rotary switch & Plug	Nos	1			0.0097131%
8.18	Weatherproof 3-Ph, 250A (5-pin) Receptacle (Outdoor type) with interlocked rotary switch & Plug	Nos	1			0.0097131%
8.19	24V socket module with FLP Hand lamp	Nos	4			0.0213517%
8.20	18 way AC Outdoor Lighting Panel	Nos	2			0.0345503%
8.21	12 way AC Outdoor Lighting Panel	Nos	2			0.0315549%
8.22	6 way DC Outdoor Lighting Panel	Nos	2			0.0275425%
8.23	FLP 12 way AC Lighting/Power Panel	Nos	10			0.1577745%
8.24	Flameproof 6 way DC Lighting Panel	Nos	3			0.0413137%
8.25	415V AC Wall Mounted DB	Nos	1			0.0149412%
8.26	230V AC UPS Wall Mounted DB	Nos	2			0.0298825%
8.27	110V AC UPS Wall Mounted DB	Nos	1			0.0149412%
9	CCTV SYSTEM					
9.1	CCTV Cameras (Weatherproof)	Nos.	3			0.0451570%
9.2	CCTV Cameras (Ex-Proof)	Nos.	6			0.1083768%
9.3	CCTV Rack/Cabinet	Nos.	1			0.0415916%
9.4	Network Switches	Nos.	1			0.0057015%
9.5	Media Converters, LIUs, Adaptors, along with Patch Cords etc.	Nos.	30			0.1033827%
9.6	Junction Boxes (Weatherproof)	Nos.	3			0.0164837%
9.7	Junction Boxes (Ex-proof)	Nos.	6			0.0364135%
9.8	Poles (each 10 Mtr length)	Nos.	3			0.1444422%
10	PLANT COMMUNICATION SYSTEM (PA SYSTEM & TELEPHONE)					
10.1	PA SYSTEM					
10.1.1	Modification of Existing PA System Cabinet for connection New Field Call Stations (UK0 Adapters-2, Power Supply Modules-1 etc.)	Lot	1			0.1289401%
10.1.2	Flame proof Field call station with flameproof loudspeakers 25W (Ex FCS + FLP loudspeaker)	Nos.	15			0.0824184%
10.1.3	Flashing Beacon lamps (Ex- proof type)	Nos.	8			0.0343989%
10.1.4	Acoustic hood	Nos.	15			0.0824184%
10.1.5	10.2.1AG113:AM114	Nos.	2			0.0109891%
10.1.6	50 pair x 0.9 mm Dia, Twisted Pair, Overall Screen, Armoured Communication cable (Non-Jelly filled)	m	1500			0.5118104%
10.1.7	5 pair x 0.9 mm Dia, Twisted Pair, Overall Screen, Armoured Communication cable (Non-Jelly filled)	m	2000			0.2682647%
10.1.8	2 pair x 1.5 sq.mm Dia, Armoured Communication cable (Non-Jelly filled)	m	150			0.0208621%
10.2	TELEPHONE SYSTEM					
10.2.1	Modification of Existing Telephone System Exchange (24 Analog media module, Line Cards etc.)	Lot	1			0.1289401%
10.2.2	Ex-proof Telephone Equipment	Nos.	3			0.0171045%
10.2.3	Weather proof Telephone, Wall mounting	Nos.	3			0.0171045%
10.2.4	Flashing Beacon lamps (Ex- proof type)	Nos.	2			0.0114030%
10.2.5	Acoustic Hood/Canopy (FRP) suitable for Weather proof & Ex-proof Telephones mounted in outdoor environment	Nos.	4			0.0694048%
10.2.6	Telephone System Junction boxes, Wp-proof type	Nos.	2			0.0109891%
10.2.7	10 pair x 0.9 mm Dia, Twisted Pair, Overall Screen, Armoured Communication cable (Jelly filled)	m	1500			0.2935564%
10.2.8	2 pair x 0.9 mm Dia, Twisted Pair, Overall Screen, Armoured Communication cable (Jelly filled)	m	500			0.0489495%
10.2.9	Main distribution for connection of Telephone sets to Main Telephone System Exchange	Nos	1			0.1289401%
11	CONVENTIONAL FIRE PROOF SEALING MATERIALS					
11.1	Fire Break Coatings for HT/ LT Power Cables	sq.m	150			0.7327644%
11.2	Fire proof materials required for sealing of cable entry through conduits/trenches & through panels	sq.m	80			0.3908077%
11.3	Ceramic Fibre Mattress GI cable Ducts	sq.m	2250			10.9914653%
11.4	Ceramic Fibre Mattress for below mentioned FRP cable trays & ducts	sq.m	2000			9.7701914%
12	ELECTRICAL INSULATING MATS					
12.1	Insulating Mat for voltage Grade upto 3.3kV (Class-A, Category-III)	Sqm	50			0.0328395%
13	LCS (LOCAL CONTROL STATION) PACKAGE					
13.1	Local Control Station (LCS)/ Local Push Button station (LPBS)	Nos.	30			0.1060620%

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14	UPS SYSTEM ALONG WITH UPSDB FOR FDA SYSTEM					
14.1	UPS System along with UPS DB (3KVA-5KVA) Battery isolation box	Set	1			0.1487883%
14.2	UPS Battery Bank	Set	1			0.3788189%
	Total sum for section-A					93.7436244%
B	Supply, Installation, Testing and Commissioning of the following items:					
1	6 mm thick chequered plate for covering cutouts in Switchgear room	KG	2335			1.4292030%
2	Cable Tags Aluminium Strips (75x25x2 mm)	Nos.	4500			0.3181005%
3	Safety Items including the following: a) Framed laminated shock treatment chart-5Nos, b) Danger boards-5Nos., b) Do not switch on boards-5Nos, d) Man on work boards-5Nos. e) Display charts-5Nos, f) Display board for artificial respiration system-1No., g) Exit Signs-2Nos.	Nos.	23			0.4476607%
4	First aid boxes near LT & HT panels- 3Nos.,	Nos.	3			0.0291817%
5	Self-contained portable hand lamp-complete with rechargeable battery-2Nos., portable battery operated emergency light-2Nos	Nos.	4			0.0149465%
7	Face shield-2 Nos	Nos.	2			0.0097197%
8	Safety hand gloves(HV and LV insulated)-2Nos.	Nos.	2			0.0209521%
8	GI Conduits of 50 mm diameter, medium duty, min 75 microns galvanizing thickness	m	200			0.6538732%
9	GI Conduits of 100 mm diameter, medium duty, min 75 microns galvanizing thickness	m	300			2.1617579%
10	GI Conduits of 150 mm diameter, medium duty, min 75 microns galvanizing thickness	m	50			0.4690215%
11	RCC Hume Pipes (150 NB as per IS: 458) for cables at Road Crossings - Satndard length 2.5 m	Nos.	20			0.1281275%
12	RCC Hume Pipes (200 NB as per IS: 458) for cables at Road Crossings - Satndard length 2.5 m	Nos.	5			0.0421794%
13	PVC Conduits Class-3 of 300 mm diameter	m	10			0.0270385%
14	PVC Conduits Class-3 of 200 mm diameter	m	100			0.2673281%
15	PVC Conduits Class-3 of 150 mm diameter	m	50			0.1223980%
16	PVC Conduits Class-3 of 100 mm diameter	m	50			0.1148873%
	Total sum for section-B					6.2563756%
	Grand Total (A+B), Excluding Taxes					100.00%