

Clarification No. 01 Dated 12.05.2020 to Bidders Queries
NIB No. 355 Dated 02.05.2020.

Name of Work: Limited Tender for undertaking Industrial All Risk (IAR) Insurance Policy for the assets of Pare Hydro Electric Plant (110 MW), Doimukh, Arunachal Pradesh for a period of 1(one) year w.e.f. 00:00:00 Hours of 26.05.2020”.

Sl. No.	Bidders Queries	NEEPCO's Response
1	With respect to the Claim history provided in the tender (Point no. 23-ii, Pg. No. 15), we would like to have the following details on the claim: A. The cause of loss/ damage. B. Date of loss. C. Are the repair/ replacement process of the damaged items completed successfully. D. What are the preventive and corrective measures taken after the incident. E. Was there any stoppage to the generation or reduction in generation following the loss. If yes, the following may be of interest to us. F. The duration of stoppage/ time taken to return to normal generation. G. Pre and post loss generation figures if can be made available. H. Are any reports available. The same may be shared if possible.	A. The root cause of the damage of stator/rotor was due to failure of Nut of rotor rim pressing bolt (No.29) driving end (DE). Non driving end Nut was unaffected, but the bolt also got dislocated due to rotational force. The broken nut got dislocated and was rotating inside the generator causing major damage to the rotor/stator windings. B. Date of loss on 03.02.2020. C. Till date repairing activity is going on. D. To be suggested by OEM. E. Yes. F. W.e.f. 03/02/2020 to expected date of return is 20/05/2020. G. Since lean season is going on, generation loss is not taking place. But revenue loss is taking place in the form of recovery of AFC i.e. Capacity Charge. H. Report on damage of Rotor & Stator is attached at Annexure-A .
2	Details of critical machinery/ equipment may be provided along with the details of make, model, year of mfg, capacity, lead time, values.	The details of critical machinery/ equipment is attached at Annexure-B .
3	Details of spares of the critical machinery/ equipment maintained at site ready to be used may be provided.	The details of spares of the critical machinery/ equipment is attached at Annexure-C .
4	Details of AMC if any for those machinery/ equipment may be provided. In-house maintenance programmes if any may be highlighted.	The O&M contract of the Plant viz: TG Units along with all associated control, protection, aux. plant and equipment, 132 KV Switch yard, all Transformers, HM Gates, Sub-stations, is awarded in favour of M/s AndritzO&M. No AMC is awarded for any other services till date. Periodic repair and maintenance works are taken up to maintain

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		operating efficiency of the Plant.
5	Escalation clause in Sec-IV (3.1 -7, Pg. 19) may be rephrased as '5% of S.I. for Building, Machinery and Accessories (excl. Stock)'.	Bid stipulation shall stand.
6	We may not be able to agree for the 'Valuation of Assets' clause (Sec-IV, 6.0, Pg. 20).	Bid stipulation shall stand.
7	Sec-IV, Clause 8.1, Pg. no. 21 for Terrorism cover may be rephrased as 'Terrorism Damage {Material Damage (MD) + Business Interruption (BI) Loss}'.	Bid stipulation shall stand.
8	Are the Transmission lines as included in Sec-VI within the premises of the Plant. You would understand that there are restriction to coverage of Transmission lines which have been shared with you on an earlier occasion.	All the transmission lines mentioned in the Asset List are within the premises of the Pare HEP.
9	Premium paid during the past four years.	The information on premium payouts pertaining to instant tender are considered to be confidential. In the circumstance, we are constraint to disclose this information.
10	Claim received, if any, during the past four years.	Claim history for the last 5 years has been indicated at Clause 23.0, Section-III: Instruction to Bidders of the bid document. However, during the past four years no claims has been received yet.
11	Due to COVID -19 situation, many of our offices are not working at regular strength. Can the signed documents be substituted by email.	All bid submittals shall invariably be signed and sealed by the authorized person and submitted in the tender portal only.
12	In the assets value it is mentioned T&D lines, kindly provide the details for route map, river crossings, length of T&D lines.	Kindly see the attached file for Power Map of Arunachal Pradesh (Annexure-D). From the Map it is evident that there are four outgoing lines from Pare Power Station. Before construction of Pare P.S. there was 132 KV line between RHEP and Nirjuli LILOed at Lekhi. After construction of Pare P.S. this line was again LILOed at Pare and one section became Pare--RHEP-I and other section as Pare-Lekhi-Nirjuli. This LILO portion at Pare is about 1.4 Km long double circuit before entering to Pare Switchyard. Moreover, DoP, Arunachal Pradesh constructed one more double circuit line from RHEP to Itanagar, out of which one circuit was LILOed at Pare and one section became Pare--RHEP-II and other section as Pare-Itanagar. Other Circuit is directly from RHEP to Itanagar. This

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		LILO portion at Pare is about 2.4 Km long double circuit before entering to Pare Switchyard.
13	Specific reasons, Why the quote is required for 90 days validity when the renewal is on 25.05.2020.	Bid validity of 90 days has been kept only to ensure that the tender is finalized well within the bid validity period, in case of any unforeseen circumstance. Nevertheless, the current SFSP policy is valid till 25.05.2020 and the instant tender needs to be finalized before expiry of the current insurance policy.
14	Pl. specify the level of interdependency on Ranganadi HEP.	Pare is almost in Tandem in Ranagnadi H.E. Plant. Discharge of RHEP (about 160 cumec) is released to Dikrong river which is the main source of Pare machines. When RHEP Units are not running, if inflow of Dikrong river is sufficient then only both the units of Pare can run and it is possible only in rainy season only. But in dry season, in every two alternative days only for 4-5 hours per day of one Unit of Pare can run.
15	Add-on Cover. SI No. 1-23 We can accept max sub-limit of INR 10 Crores for EEL (Each & Every Loss) and in Aggregate. Premium loading will be applicable in all add-ons desired above INR 5 Cr on the full sub-limit required.	Bid stipulation shall stand.


12/05/2020


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Annexure-1: Summary of Damages

Pare HEP U#2 Stator & Rotor damages

Description	Total Quantity	Remarks
Top bar overhang insulation minor damages - NDE side	34	To be repaired at site
Top bar overhang insulation deep damages	20	To be replaced by new bars
Top bar EPG insulation damages NDE side	17	To be replaced by new bars
Top bar conductor damages NDE side	8	To be replaced by new bars
Insulation CAPS NDE side damage	57	To be replaced by new CAPS
Top bar overhang insulation minor damages - DE side	7	To be repaired at site
Top bar overhang insulation deep damages -DE side	4	To be replaced by new bars
Top bar conductor damages DE side	3	To be replaced by new bars
Insulation CAPS -DE side damage	5	To be replaced by new CAPS
Pole Coil	8	B21 to be repaired at site, remaining to be repaired at Andritz works
Pole Top connection	21	to be repaired at site, remaining to be repaired at Andritz works
Pole Bottom Connection	10	B-21 to be repaired at site, remaining to be repaired at Andritz works
Damper connection copper link	1	To be repaired at site
Damper Connection	6	B07 & B04 To be repaired at site
Continuous dent mark on rotor coil	7	To be repaired at site
Fan dent mark	1	To be cleaned and painted at site
Pole key stopper	1	To be replace by new stopper

LIST OF ELECTRICAL EQUIPMENT IN POWER HOUSE

Sl. No	Name of the equipment	Make	Serial No.		Qty.	Rating
			Unit#I	Unit#II		
1	Generator	Andritz Hydro Pvt. Ltd	C340/252	C340/253	2	61.8MVA,11KV
2	Generator Transformer	Alstom	10227	10228	2	68MVA,11/132KV
3	Station Auxiliary Transformer	Kirloskar Electric Company Ltd.	12CMG007/1	12CMG007/2	2	1250KVA
4	Excitation Transformer	Raychem RPG Pvt Ltd	ADA2409024/001	ADA2409024/002	2	442KVA,11000/270V
5	Unit Auxiliary Transformer	Raychem RPG Pvt Ltd	ADA2409023/002	ADA2409023/001	2	500KVA,11000/433V
6	Lightning Transformer	Raychem RPG Pvt Ltd	ADA2103012/001,	ADA2103012/002	2	100KVA
7	DG Set	Jakson	CJK-13080298		1	500KVA
8	Unit Protection relays	DRS Compact 2,	151020(F11), 151014(F12), 151023(F11), 151016(F12).	151022(F11), 151010(F12)	8	NA
		DRS light	151016, 151011, 151013 (M1). 151017, 149018(M2)	151514, 151009, 545002 (M1) 151019, 547006 (M2)	10	NA
9	Line Protection relays (Line 1 - Nirjuli)	Mi COM	32355480/6/17, 32355478/06/17, 36099708/03/12		3	NA
	Line Protection relays (Line 2 - RHEP1)	Mi COM	32355477/06/17, 32355484/06/17, 36099677/03/12		3	NA
	Line Protection relays (Line 3 -Itanagar)	Mi COM	32355485/06/17, 32355481/06/17, 36099684/03/12		3	NA
	Line Protection relays (Line 4 - RHEP2)	Mi COM	32355480/06/17, 32355479/06/17, 36099688/03/12		3	NA
10	Bus bar protection relays (Main 1)	DRS light	Q6-/BN24320003, 151006,151017,151002, 151013,151012	151005, 151016' 151014	9	NA
	Bus bar protection relays (Main 2)	DRS light	Q6-/BN24320004, 151004,151013,469002, 768002	764001, 151007, 768001, 766002	9	NA
11	SST, BC , islanding protection relays	DRS Compact 2	766021, 151015	1,51,01,11,51,013	4	NA
		DRS light	151015, 771001	550004, 347011	4	NA
13	Relays in LT panels like SSB, UAB etc.,	ABB Ltd.	SSB Relays: B12-6556,B13-15103, B13-15093, M13-43799, M3-6490, B13-15107, B13-15106, M3-6491, M13-47453, B13-15110, B13-14398, M3-6494, M13-43833, M13-43798, M3-6488, B13-15097, B13-15099, M3-6495, M13-43795, B13-15098, B13-15104, M3-8833, M13-43800, B12-6537, 31701395, M13-43797, M3-6489 UAB Relays: B12-6548,B13-15105, B13-14599,M13-43825 ,M3-6493,B13-15101, B13-15111,B13-15094 ,B13-15109,M13-47436, M3-6486,B12-7116, B13-15108,B13-15112, M13-47470,M3-6492, B13-13936,B13-14960, B13-15202,M13-47590, M3-8836,B13-15095,B13-15204,B13-13-0104/20,13-0833/7,13-1260/5,13-0104/21,13-0833/8,13-1260/4		56	NA
		J.V.S Electronics	13-0104/20,13-0833/7,13-1260/5,13-0104/21,13-0833/8,13-1260/4			
14	Circuit Breakers in LT panels	L&T	HW552682U,HW552680UHW552688U,HW552683UHW552687U,HW552679UHW552681U,HW552689UHW552684U,HW552685U HW552686U		11	NA
15	Relays in 33KV switch gear panel	ALSTOM	32341136/11/12, 130698360509001, 32384056/12/12, 32360160/12/12, 32299759/12/12, 32299755/10/12, 32384057/12/12, 32360161/12/12, 32396643/01/13, 32299762/10/12, 32384060/12/12, 32360159/12/12, 32299761/101/2, 32299756/12/12, 32384056/12/12, 323690157/12/12, 32396644/01/13, 32299757/10/12		24	NA
16	Circuit Breakers in 33KV panel		6 Nos. (122105, 122106, 122107, 122108, 122109, 122100)		6	Vaccum type
17	220V Battery Bank	HBL Power systems Ltd.	10551-4709		2	174 Nos.cells with 1.2V each
18	48V Battery Bank	HBL Power systems ltd.,	10552-4709		1	32 No.s cells with 1.2V each

19	220V Battery Charger	HBL Power systems ltd.,	10546-4709	10546-4709	2	
20	48V Battery Charger	HBL Power systems ltd.	10548-4709		1	
21	Inverter	Emerslon	116IN5052001		1	5KVA
22	UPS	Navateur electrical & digital systems pvt.ltd	IVI30808934		1	6KVA
23	L.P Compressor motors	Atlas copco	1036450061	1035923102	2	10HP
24	OPU-MIV (Main Pump1, Main Pump2)	ABB Ltd.	9,23,16,59,23,166	9,23,16,89,23,167	4	55KW
25	OPU-Turbine(Main Pump1, Main Pump2)	ABB Ltd.	9,25,95,79,25,958	9,25,96,09,25,956	4	37KW
26	CW Pump Motor	ABB Ltd.	90044283 (Main) 90044502 (Standby)	90044503 (Main) 90044239 (Standby)	4	75KW
27	Fire Fighting Filling Pump motor	Crompton greaves pvt Ltd.	NADP99588	NADP99587	2	45KW (60HP)
28	Lube Oil Plant		113636-1/02	113632-1/01	2	120KW
29	HP Oil Plant	Crompton greaves pvt Ltd.	1932FCF	1932FCF	2	7.5KW
30	Generator Brake Dust Exhaust Plant	Crompton greaves pvt Ltd.	2422DJ	2422DJ	2	1.5KW
33	Drainage Pump	Flow more	130413321001, 130413321002		2	39.97KW
34	Flood pump	Flow more	130413321003, 130413322003		2	39.97KW
35	Dewatering pump	Flow more	130413322001, 130413322002		2	39.97KW
42	EOT Crane		11-12/C/012		1	220/30 T
43	HVAC (PAC)	Voltas	D002292, D002293, D002294		3	22.5KW
44	AHU	Zeco Aircon Ltd	NADM24SC		3	30KW
45	OPU-Turbine Offline Circulation	ABB Ltd.	A531486	A531485	2	1.5KW
46	CW Pump Motor	ABB Ltd.	90044283(Main) 90044502(Standby)	90044503(main) 90044239(Standby)	4	75KW
47	MOV	Roktok Controls pvt ltd.	2B28330201, 2B28330204, 2B28330205, 2B28330302, 2B28330209, 2B28330206, 2B28330208, 2B28330301, 2B28330207, 2B28330202, 2B28330203,		14	1.2KW
			2B28330103, 2B28330102		2	0.18KW

List of Equipment under Switchyard & Transformer package

Sl no.	Item Description	Qty	Make	Location
1	GT- 1 & GT-2 68 MVA, 11/132 kV, three phase 50Hz, YNd11, OFWF cooled outdoor type step -up Generator Transformer, Sr. no. 10227, 10228	2 nos.	Alstom T&D	Transformer Yard
2	SST 7.5 MVA, 132 /33 kV, three phase, 50Hz, YNyno, ONAF/ONAF cooled, outdoor type step down station service transformer (SST)	1 no.	IMP Power	Transformer Yard
3	SAT-1, SAT-2 1.25 MVA, 33/0.433 kV, three phase, 50 Hz, Dyn11, AN cooled, indoor dry type step down Station Auxiliary Transformer Sr no. 12MG007/1, 12MG007/2	2 nos.	Kirloskar	Machine Hall floor
4	33KV Switchgear panel , Make: Megawin	1 no.	Megawin	33KV Room
5	Illumination system of Switchyard fixed at 4 nos. of LM tower	1 lot	Crompton Greaves	Switchyard
6	CB for Line-1,2,3&4 and Buscoupler 132 kV, 1250 amps continuous current, 40kA short circuit breaking current, triple pole outdoor type, SF6 circuit breaker suitable for high speed single / three phase rapid auto reclosing duty (Sr. no. 170001, 170002, 170004, 170005, 170006) at Line & Buscoupler bays	5 nos.	Alstom T&D	132KV Switchyard
7	CB for Unit-1&2 and SST 132 kV, 1250 amps continuous current, 40kA short circuit breaking current, triple pole outdoor type, SF6 circuit breaker suitable for 3 phase gang operated (Sr. no. 180348, 180349, 180350) at Unit-1, Unit-2 & SST bay	3 nos.	Alstom T&D	132KV Switchyard
8	Isolator for 132 kV System			
	a. 132kV, 1250 A, triple pole double break type isolators (3 phase), without earth switch Sr. no. 821-312-1, 821-312-2, 821-312-3, 821-312-4, 821-312-12, 821-312-8, 821-312-22	7 nos.		132KV Switchyard
	b. 132 kV, 1250 A, triple pole double break type isolators cum earthing switches (3 phase) with earth switch Sr no. 821-312-15, 821-312-6, 821-312-17, 821-312-16, 821-312-19, 821-312-14, 821-312-2, 821-312-6, 821-312-7 821-312-9, 821-312-23, 821-312-13, 821-312-20, 821-312-21, 821-312-18	16 nos.	Switchgears & Structurals India Pvt Ltd.	132KV Switchyard
9	CT for Unit-1 & Unit-2 132 kV, 400/1,1,1, 800/1,1 Amps. Single phase outdoor type current transformers at Unit bays Sr no. (12/M-9275, 12/M-9273, 12/M-9274) (12/M-9280, 12/M-9279, 12/M-9278)	6 nos.	Pragati Electricals	132KV Switchyard
10	CT for Line-1,2,3&4 and Buscoupler 132 kV, 800-400/1,1,1,1 Amps. Single phase outdoor type current transformers at Line-1 (12/M-9259, 12/M-9263, 12/M-9264), Line-2 (12/M-9271, 12/M-9262, 12/M-9260), Line-3 (12/M-9258, 12/M-9261, 12/M-9257), Line-4 (12/M-9265, 12/M-9267, 12/M-9272) & Buscoupler bay (12/M-9266, 12/M-9268, 12/M-9269).	15 nos.	Pragati Electricals	132KV Switchyard

11	CT for SST 132 kV, 100/1,1,1,1,1 Amps. Single phase outdoor type current transformers at SST bay. Sr no. 12/M-9283, 12/M-9281, 12/M-9282	3 nos.	Pragati Electricals	Transformer Yard
12	Bus PT Single phase, Electromagnetic voltage transformers suitable for connection in star/star, open delta and star at Bus#1 & Bus#2. Sr no. (12/M-9342, 12/M-9345, 12/M-9346)	6 nos.	Pragati Electricals	132KV Switchyard
13	Line CVT Single phase, Capacitor voltage transformers at Line#1 Sr no. 1210A2424, 1210A2433, 1210A2434, Line#2 Sr no. 1210A2429, 1210A2430, 1210A2426, Line#3 Sr no. 1210A2427, 1210A2431, 1210A2428 Line#4 Sr no. 1210A2425, 1210A2423, 1210A2432	12 nos.	Alstom T&D	132KV Switchyard
14	120 kV Surge Arresters 10kA, metal oxide gapless type heavy duty single pole surge arrester for 132 kV system, 50 c/s effectively grounded system	21 nos.	LAMCO	Switchyard & Transformer Yard
15	Line Trap	8 nos.	Alstom T&D	132KV Switchyard
16	DC panel	1 no.	Aim Engineering Industries	LT Room
17	Bay Marshalling Box	8 nos.		132KV Switchyard
18	132 KV, 8kN Bus Post Insulator	20 nos.	Allied Ceramic Pvt. Ltd.	132KV Switchyard
19	Switchyard Structures			
	Column -TA	13 nos.		132 KV Switchyard
	Column -TB	5 nos.		132 KV Switchyard
	Column-TAB	11 nos.		132 KV Switchyard
	b. Lightning mast	4 nos.		132 KV Switchyard
	Beam -BH	18 nos.		132 KV Switchyard
	Beam -BL	9 nos.		132 KV Switchyard
20	Transformer yard structures			
	Column-TA	4 nos.		132 KV Switchyard
	Beam-BH	3 no.		132 KV Switchyard

O&M Spares

Sl No	Description	Location	Unit	Qty	Unit Price (INR)	Total Price (INR)
1	High Pressure oil Injection Pump Unit, Make: Polyhydron /CGL/Flowmore					
1.1	Pressure Switch For HP Pump	Store-2	Nos	1	14,335	14,335
1.2	Direct Pressure relief Valve Operated	Store-2	Nos	1		
1.3	Filter Element	Store-2	Nos	2	8,130	16,261
1.5	HP Pump	Store-2	Nos.	1	41,722	41,722
2	Guide vane servomotor (DRG PA-TU-02-1233), Make:Hydac/Rexroth/Salzgitter					
2.1	Guide vane servomotor (DRG PA-TU-02-1233)	Store-2	Nos.	1	14,13,900	14,13,900
3	Shaft Seal System(Drawing No PA-TU-02-1209)					
3.1	Stand Still Sealing	Store-2	Set	2	36,366	72,732
3.2	Hose pipe With Fitting for Shaft seal System	Store-2	Nos	2	42,784	85,568
4	Shaft Seal System(Drawing No E-AHF-PA-SSP-01), Make: Energy Progress/Auma/Darling					
4.1	Motorisezd Valve Com No. 91701510-02	Store-2	Nos	1	1,68,970	1,68,970
4.2	Glove Valve (50 NB,CL-150)	Store-2	Nos	2	16,128	32,256
4.3	Glove Valve 1" BSB (F)	Store-2	Nos	1	7,885	7,885
4.4	Pressure Relief Valve	Store-2	Nos	1	34,945	34,945
4.5	Flow Indicator	Store-2	Nos	1	43,905	43,905
4.6	Needle Valve 1/2" BSP(F)	Store-2	Nos	1	7,168	7,168
4.7	Pressure Gauge	Store-2	Nos	1		
4.8	Ball Valve 1" BSP (F)	Store-2	Nos	1		
4.9	Flow Indicator Cum Transmitter	Store-2	Nos	1	1,54,114	1,54,114
4.1	Ball Valve DN 40	Store-2	Nos	2	8,064	16,128
4.11	Flow Meter	Store-2	Nos	1	43,905	43,905
4.12	Pressure Transmitter	Store-2	Nos	3	10,752	32,256
5	BFV Spare, Make: Duojet/Hyekimp Hoses/Cair/Venus					
5.1	Air Release Valve	Store-2	Set	2	86,979	1,73,958
5.2	High pressure hose pipe with fitting for BFV Servomotor(WP- 290Mpa(4200 PSI, MSHA, IC 195/-38mm, L-1.2 Mtr.)	Store-2	Nos.	2	39,421	78,842
6	Low Pressure Compressed Air System-(Drawing No PA-CA-02-0020), Make:Energy					
6.1	Pressure Switch	Store-2	Set	2	23,784	23,784
6.2	Pressure Gauge	Store-2	Set	1		
6.3	Pressure Gauge	Store-2	Set	2		

6.4	Electric Operated Timer based Drain Valve	Store-2	Set	2	9,358	18,715
6.5	Isolating Valve(Ball Valve) G1/2"/PN 30	Store-2	Nos.	2	1,170	2,339
6.6	Line Mounted Filter for oil & Other Impurities	Store-2	Nos.	1	10,722	10,722
6.7	Check valve	Store-2	Nos.	2	6,044	12,087
6.8	Pressure Transmitter	Store-2	Nos.	1	11,697	11,697
6.9	Safety Relief Valve	Store-2	Nos.	1	12,672	12,672
6.1	Pressure Switch	Store-2	Nos.	1	5,069	5,069
6.11	Instrument Valve.	Store-2	Nos.	1	8,968	8,968
6.12	Quick Release Coupling	Store-2	Nos.	1		
6.13	Air Spray Nozzle	Store-2	Nos.	1		
6.14	Needle valve	Store-2	Nos.	1		
6.15	Air Vent Valve	Store-2	Nos.	1		
6.16	Safety Relief Valve	Store-2	Nos.	1	5,849	5,849
6.17	Isolating Valve	Store-2	Nos.	1		
6.18	Belt Sets ,GX7 10 bar (9096948603)	Store-2	Sets	1	23,394	23,394
6.19	Compressed air system_PUSH BUTTONS 22.5Q (R-2,G-2,A-1&BL-1)	Store-2	Nos	2	877	1,755
6.20	Compressed air system_SELECTOR SW .3POLE,2WAY WITH OFF	Store-2	Nos	2	5,849	11,697
6.21	Compressed air system_2P,ON/OFF SELEC SW	Store-2	Nos	1	11,112	11,112
6.22	Compressed air system_TRANSFORMER 415/230VAC ,500A	Store-2	Nos	1	14,621	14,621
6.23	Compressed air system_UNDER VOLTAGE RELAY (75-95%.ADJUSTABLE)	Store-2	Nos	1	9,748	9,748
7	Cooling Water System & Dewatering System, Make:Flowmore/Daring					
7.1	Flow Indicator with Contact	Store-2	Nos	2	1,93,835	3,87,670
7.2	Flow Indicator with Contact - 80 NB	Store-2	Set	1	1,58,592	1,58,592
7.3	Pressure Switch (0 to 5 bar, Ac 250V. 8A, AC.125V 15A	Store-2	Nos	1	4,405	4,405
7.4	Pressure Reducing Valve,	Store-2	Set	1	65,023	65,023

7.5	Pressure Reducing Valve,	Store-2	Set	1	1,41,147	1,41,147
7.6	Pressure Indicator (0-10 Bar)	Store-2	Set	2	14,097	14,097
7.7	Pressure Indicator (0-10 Bar)	Store-2	Set	1		
7.8	Pressure Indicator (0-4 Bar)	Store-2	Set	1		
7.9	Pressure Transmitter	Store-2	Set	1	10,573	10,573
7.10	Temperature Indicator(Dail Type,0 to 100)	Store-2	Set	1	18,502	18,502
7.11	RTD	Store-2	Set	1	5,639	5,639
7.12	Filter Element For Y-Strainer 200 NB	Store-2	Nos.	1	47,578	47,578
7.13	Cooling Water Pump Model No.5824 (150X125) Horizontal Pump along 75 KW motor	Store-2	Nos.	1	8,01,771	8,01,771
7.14	Grease Release Fitting	Store-2	Nos.	2	17,445	34,890
7.15	Cap(For Brg.Housing)	Store-2	Nos.	2	19,383	38,767
7.16	Water Seal ring	Store-2	Nos.	2	32,952	65,904
7.17	Water Seal tube	Store-2	Nos.	2	4,405	8,811
7.18	Wearing ring casing	Store-2	Nos.	1	56,036	56,036
7.19	pipe plug	Store-2	Nos.	2	4,582	9,163
7.2	Cinch fitting	Store-2	Nos.	4	8,811	35,243
7.21	Sleeve nut & lock nut(Shaft sleeve)	Store-2	Nos.	1	19,207	19,207
7.22	Water slinget	Store-2	Nos.	2	12,511	25,022
7.23	Shaft collar	Store-2	Nos.	2	19,031	38,062
7.24	Lock washer	Store-2	Nos.	2	19,736	19,736
7.25	Lock Nut(For Bearing	Store-2	Nos.	2		
7.26	Dowel Pin	Store-2	Nos.	2		
7.27	Shaft Sleeve	Store-2	Nos.	2	38,415	76,829
7.28	Pipe Neeple	Store-2	Nos.	2	5,991	5,991
7.29	Key(For Impeller)	Store-2	Nos.	1		
7.30	Sleeve nut & lock nut(Shaft sleeve)	Store-2	Nos.	1	19,207	19,207
7.31	Pump Shaft	Store-2	Nos.	1	90,398	90,398
7.32	Key(For Pump half Coupling)	Store-2	Nos.	1	3,877	3,877
7.33	Butter fly Valve 200 ND (Leaver Operated)	Store-2	Nos.	3	27,859	83,578
7.34	Butter fly Valve 150 ND (Leaver Operated)	Store-2	Nos.	3	21,595	64,785
7.35	Butter fly Valve DN 80(Lever Operated)	Store-2	Nos.	4	12,476	49,904
7.36	Ball Valve DN 32	Store-2	Nos.	2	2,115	4,229

8	Dewatering System, Make: Flowmore/Darling Muesco/John Crane)					
8.1	Mechanical seal SI no. 32 (as per drawing no CSD-SALE1304 1332 Rev.04) Proposed: Mechanical seal_SNo. 26 As per drawing no.CSD-SALE1304 1332 Rev. 04	Store-2	Nos.	1	2,50,593	2,50,593
8.2	Mechanical seal SI no.33 as per drawing no CSD-SALE1304 1332 Rev.04) Proposed: Mechanical seal_SNo. 27 As per drawing no.CSD-SALE1304 1332 Rev. 04	Store-2	Nos.	1	2,56,107	2,56,107
9	HVAC SYSTEM, Make: Darling Muesco/Eletta/Baumer/Hawae/Emerson					
9.1	Butter Fly DN 150 (Leaver Oprated)	Store-2	NOS	3	28,205	84,614
9.2	Butter Fly DN 200 (Leaver Oprated)	Store-2	Nos	1	36,386	36,386
10	Fire Fighting System					
10.1	Deluge Valve(DV)- Size- 100 NB	Store-2	Nos.	2	1,11,677	2,23,355
10.2	Quartzoid Blub	Store-2	Nos.	10	16,277	16,277
10.3	Half Cupling	Store-2	Nos.	1		
10.4	Water Spray Nozzle	Store-2	Nos.	3		
10.5	Pressure Swich	Store-2	Nos.	1		
10.6	Y Strainer(STR)- 80mm Drg. No.- SE/GA/FAB/Y/002	Store-2	Nos.	1	24,234	24,234
10.7	Cast Iron Swing Type Non Return Valve	Store-2	Nos.	1	54,021	54,021
10.8	SS 63mm Hydrant	Store-2	Nos.	1	28,304	28,304
10.9	2/2 Way Internal Pilot Diaphragm Type solenoid Valve	Store-2	Nos	1		
10.1	Ball Bearing,Double Row (NDE)-3311-C-3	Store-2	Nos	1		
11	Spares for OPU Turbine, Make:Eskay/Rexroth/Hydac					
11.1	Off line Filter	Store-2	Nos	2	6,979	13,958
12	Spares HPOP Syatem, Make:CG Power					
12.1	HPOP Motor, 7.5KW/10HP, 415 Volts, 1455 RPM, Enclosure-IP55, Frame-ND 132M.	Store-2	No.	1	33925	33925
13	Spares for LP Compressor, Make:AtlasCopco					
13.1	Oil Filter Element for LP Compressor	Store-2		1	1906.3	1906.3
13.2	Air Filter for LP Compressor	Store-2		1	2982.1	2982.1
13.3	Oil Seperator LP Compressor	Store-2		1	13840.2	13840.2
14	Turbine OPU, Make: Rexroth/Barksdale/Dowty/ABB/Eskay/Moog					
14.1	Clogging Indicator	Store-2	Nos	2	13418.01	26836.02
14.2	Ele Dual Pressure Switch	Store-2	Nos	1	34435.00	34435.00
14.3	Connector	Store-2	Nos	1	1212.50	1212.50
14.4	Logic Cartridge Valve	Store-2	Nos	2	16874.12	33748.24
14.5	Logic Cover	Store-2	Nos	1	23786.34	23786.34
14.6	Logic Cover	Store-2	Nos	1	10335.35	10335.35
14.7	Gear Pump (Offline Circulation)	Store-2	Nos	1	11058.00	11058.00
14.8	Coupling Element	Store-2	Nos	1	3724.80	3724.80
14.9	Motor AC	Store-2	Nos	1	22232.40	22232.40
14.1	Water Oil cooler	Store-2	Nos	1	41128.00	41128.00
14.11	Fluid Level Indicator (Leakage pump Unit)	Store-2	Nos	1	1212.50	1212.50
14.12	Gear Pump (Leakage Unit)	Store-2	Nos	1	4591.01	4591.01
14.13	Coupling Element	Store-2	Nos	1	26675.00	26675.00
14.14	Motor AC	Store-2	Nos	1	16620.95	16620.95
14.15	Poppet Directional Valve	Store-2	Nos	1	66746.67	66746.67
14.16	Solenoid Closing Coil	Store-2	Nos	2	13036.80	26073.60
14.17	Bearing For Motor	Store-2	Set	3	6208.00	18624.00
14.18	4/3 Guide vane controlling valve	Store-2	Nos	1	519609.60	519609.60
14.19	Pressure Relief Valve	Store-2	Nos	2	3615.19	7230.38
14.2	Offline Circulation Pressure Relief Valve	Store-2	Nos	1	4944.09	4944.09
14.21	Pressure Relief Valve	Store-2	Nos	1	55984.52	55984.52
14.22	Pressure Switch	Store-2	Nos	2	16335.77	32671.54
15	MIV OPU SPARE, Make: Rexroth/Barksdale					
15.1	Temp Controller	Store-2	Nos	1	22610.70	22610.70
15.2	Clogging Indicator	Store-2	Nos	2	13418.01	26836.02
15.3	Poppet Directional Valve	Store-2	Nos	1	66746.67	66746.67
15.4	Solenoid Closing Coil	Store-2	Nos	2	13036.80	26073.60
15.5	Logic Cartridge Valve	Store-2	Nos	1	23412.89	23412.89
15.6	Logic Cover	Store-2	Nos	1	28469.50	28469.50

15.7	Directional Spool Valve	Store-2	Nos	1	14247.36	14247.36
15.8	Solenoid Closing Coil	Store-2	Nos	4	7406.92	29627.68
15.9	Connector	Store-2	Nos	1	1212.50	1212.50
15.1	Ele Dual Pressure Switch	Store-2	Nos	1	34435.00	34435.00
15.11	Pressure Relief Valve	Store-2	Nos	2	3615.19	7230.38
15.12	Pressure Relief Valve	Store-2	Nos	1	9550.62	9550.62
15.13	Pressure Switch	Store-2	Nos	1	16335.77	16335.77
15.14	Bearing for Motor	Store-2	Set	3	11155.00	33465.00
16	Diesel Generator Spares, Make:Kaycee/Usha/EAPL					
16.1	Multifunction METER.3P 4W 95SOMIAA UX.. Supply 230VAC with RS485 port	Store-2	Nos	1	21,044	21,044
16.2	DIGITAL FREQUENCY METER CL0.2 96SQMM,FLUSH TYPE AUX.SUPPLY 230V	Store-2	Nos	1	2,290	2,290
16.3	VOLTMETER TRANSDUCER ,AUX SUPPLY 220DC	Store-2	Nos	1	22,471	22,471
16.4	8 CHANNEL TEMPETURE SCANNER SUITABLE FOR RTD WITH RS 485 PORT	Store-2	Nos	1	35,953	35,953
16.5	ENHIN START RELAY	Store-2	Nos	1	11,235	11,235
16.6	RECTIFIER WITH HEAT SINK	Store-2	Nos	1	14,606	14,606
16.7	ON DELAY TIMER	Store-2	Nos	2	1,910	3,820
16.80	TICKLE/BOOST SEL SW	Store-2	Nos	1	380	380
16.90	CURRENT TRANSFORMER	Store-2	Nos	1	2,348	2,348
16.1	CURRENT TRANSFORMER	Store-2	Nos	1	7,528	7,528
17	DC SYSTEM Spares, Make:HBL/Schenieder/Hirect					
17.1	MAIN TRANSFORMER	Store-2	Nos	1	4,35,170	4,35,170
17.2	MAIN TRANSFORMER	Store-2	Nos	1	5,24,094	5,24,094
17.3	CONTROL TRANSFORMER	Store-2	Nos	1	4,459	4,459
17.4	SYNCH.TRANSFORMER	Store-2	Nos	1	3,567	3,567
17.5	CHOKE	Store-2	Nos	1	40,663	40,663
17.6	CHOKE	Store-2	Nos	1	41,020	41,020
17.7	FILTER CAPACITORS	Store-2	Nos	3	7,669	23,007
17.8	THY-THY MODULE	Store-2	Nos	1	3,924	3,924
a)	HS (weight -2.52KGS)	Store-2	Nos	1	2,854	2,854
17.9	F.W/BLOCKING/TAPCELL DIODES	Store-2	Nos	1	2,675	2,675
a)	HS (weight -3.325KGS)	Store-2	Nos	1	3,210	3,210
17.10	BTY TO LOAD CONTACTOR	Store-2	Nos	1	67,772	67,772
17.11	SUMMARY CONTACT RELAY	Store-2	Nos	4	2,675	10,701
17.12	VOLTAGE SENSING RELAY	Store-2	Nos	2	2,675	5,350
17.13	BOOST RELAY	Store-2	Nos	2	2,675	5,350
17.14	CHARGER,BTY & LOAD SHUNT	Store-2	Nos	2	2,854	5,707
17.15	CONNECTOR CARD	Store-2	Nos	1	9,809	9,809
17.16	CONTROL CARD	Store-2	Nos	1	14,981	14,981
17.17	PULSE TXR CARDS	Store-2	Nos	1	9,809	9,809
17.18	MULTI ALARM CARD	Store-2	Nos	1	10,701	10,701
17.19	MAINS FAIL CARD	Store-2	Nos	1	9,988	9,988
17.20	MAIN LED CARD	Store-2	Nos	1	11,593	11,593
17.21	SUB LED CARD	Store-2	Nos	1	10,701	10,701
17.22	RC CARD	Store-2	Nos	1	8,917	8,917
17.23	RELAY CARD	Store-2	Nos	1	10,701	10,701
17.24	VOLTAGE SENSING CARD	Store-2	Nos	1	10,701	10,701
17.25	ANALOG CARD	Store-2	Nos	1	9,988	9,988
17.26	PORT CARD	Store-2	Nos	1	8,846	8,846
17.27	CURRENT TRANSFORMERS	Store-2	Nos	1	3,210	3,210
17.28	EARTH LEAKAGE AMMETER	Store-2	Nos	1	3,924	3,924
17.29	DC-DC CONVERTOR	Store-2	Nos	1	7,990	7,990
17.30	FUSEFAIL CARDS	Store-2	Nos	1	8,418	8,418
18	48 VDC, Make: HBL/Schenieder/Hirect					
18.1	MAIN XMER	Store-2	Nos	1	26,744	26,744
18.2	CHOKE	Store-2	Nos	1	13,645	13,645
18.3	CONTROL XMER	Store-2	Nos	1	4,873	4,873
18.4	ANOLOG CARD	Store-2	Nos	1	10,916	10,916
18.5	PORT CARD	Store-2	Nos	1	9,668	9,668
18.5	CURRENT TRANSFORMER	Store-2	Nos	1	3,119	3,119
18.7	CONNECTOR CARD	Store-2	Nos	1	11,695	11,695
18.8	CONTROL CARD	Store-2	Nos	1	18,323	18,323

18.9	PULSE TXR CARDS	Store-2	Nos	1	11,695	11,695
18.10	MULTI ALARM CARD	Store-2	Nos	1	12,670	12,670
18.11	MAINS FAIL CARD	Store-2	Nos	1	11,306	11,306
18.12	DC-DC CONVERTOR	Store-2	Nos	1	11,695	11,695
18.13	MAIN LED CARD	Store-2	Nos	1	13,645	13,645
18.14	SUB LED CARD	Store-2	Nos	1	12,670	12,670
18.15	RC CARD	Store-2	Nos	1	10,721	10,721
18.16	FUSEFAIL CARDS	Store-2	Nos	1	11,695	11,695
18.17	RELAY CARD	Store-2	Nos	1	12,670	12,670
18.18	DVR CARD	Store-2	Nos	1	12,670	12,670
18.19	FILTER CAPACITORS	Store-2	Nos	3	4,678	14,035
18.20	THY-THY MODULE	Store-2	Nos	1	3,509	3,509
a)	HS (weight -2.52KGS)	Store-2	Nos	1	3,509	3,509
18.21	F.W/BLOCKING DIODES	Store-2	Nos	1	975	975
a)	HS	Store-2	Nos	1	877	877
18.22	DVR CONTACTOR	Store-2	Nos	1	8,967	8,967
18.23	SUMMARY CONTACT RELAY	Store-2	Nos	4	3,119	12,475
18.24	DVR RELAY	Store-2	Nos	4	3,119	12,475
18.25	BOOST RELAY	Store-2	Nos	4	3,119	12,475
18.26	CONTROL CKT & V.METER FUSES	Store-2	Nos	3	585	1,754
18.27	CHARGER,BTY & DCDB SHUNTS	Store-2	Nos	2	1,364	2,729
19	EPS, Make: HBL/Schenieder/Hirect/Switzer					
19.1	AC VOLTAGE TRANSDUCER	Store-2	Nos	1	7,737	7,737
19.2	TIMMER A1,D1.X TIMER	Store-2	Nos	1	1,566	1,566
19.3	VOLTAGE MONITORING RELAY	Store-2	Nos	1	3,261	3,261
19.4	SIGNAL INSULATOR	Store-2	Nos	2	66,319	1,32,637
19.5	HOOTER POWER GUARD	Store-2	Nos	1	737	737
19.6	OPERATING INSTRUCTIONS TIMER	Store-2	Nos	2	3,684	7,369
19.7	DANFOSS KP36 PRESSURE SWITCH	Store-2	Nos	1	1,750	1,750
19.8	TRANSFORMER PROTECTION RELAY-85-275VAC/DC	Store-2	Nos	1	30,857	30,857
19.9	SOLENOID VALVE	Store-2	Nos	1	6,742	6,742
19.2	PRESSURE TRANSMETER,10-30VDC,0-10BAR,OUT 4-20ma	Store-2	Nos	1	10,132	10,132
19.21	CURRENT TRANSMITTER	Store-2	Nos	2	9,045	18,090
19.22	Lube oil plant pressure switch	Store-2	Nos	1	11,974	11,974
19.23	N2 Level detector	Store-2	Nos	1	12,895	12,895
20	UCB Spares List, Make: Andritz Hydro					
20.1	Usb cable (3.0 m) USB cable	Store-2	Nos	1	642	642
20.2	Analog Input Module AI 6300	Store-2	Nos	2	57,492	1,14,984
20.3	Digital input module DI 6103	Store-2	Nos	2	57,349	1,14,698
20.4	digital output module DO 6212	Store-2	Nos	2	58,624	1,17,247
20.5	Power supply module PS 6632	Store-2	Nos	2	98,052	1,96,103
20.6	Peripheral control module PE 6410	Store-2	Nos	3	93,517	2,80,552
20.7	Peripheral control module PE 6411	Store-2	Nos	3	1,74,938	5,24,813
20.8	Peripheral control module PE 6400 (Proposed PE 6410)	Store-2	Nos	2	93,517	1,87,035
20.9	Power supply module PS 6621	Store-2	Nos	1	1,00,386	1,00,386
20.10	Analog input module AI 6310	Store-2	Nos	2	89,592	1,79,184
20.11	Analog input module AI 6303	Store-2	Nos	1	1,41,836	1,41,836
20.12	Bus interface module CM-0842	Store-2	Nos	1	97,957	97,957
20.13	Bus interface module CM-0843	Store-2	Nos	1	31,223	31,223
20.14	Star Coupler CM 0821	Store-2	Nos	1	69,408	69,408
20.15	Bus interface module CM-0821	Store-2	Nos	1	84,765	84,765
20.16	Power supply module PS 5622	Store-2	Nos	2	1,61,465	3,22,929
20.17	Interface plug CM 2860	Store-2	Nos	1	591	591
20.18	Bus interface module CM 2838	Store-2	Nos	1	15,161	15,161
20.19	Protocol element SM 2556	Store-2	Nos	1	65,274	65,274
20.20	Bus interface module CM 2837	Store-2	Nos	1	37,718	37,718
20.21	Interface processor module SM 2551	Store-2	Nos	1	63,008	63,008
20.22	Ethernet Rail Switch RS20-800M2 M2 SDAE	Store-2	Nos	1	1,62,102	1,62,102
20.23	Bus Interface Module CM 0829	Store-2	Nos	1	27,665	27,665
20.24	AC/ DC-Dc Converter Quint- PS-1 AC/24 DC /10 A	Store-2	Nos	1	29,373	29,373
20.25	AC/ DC-Dc Converter Quint- PS-1 AC/24 DC /20 A	Store-2	Nos	1	44,326	44,326

20.26	SWYCB bay controller	Store-2	Nos	1	17,97,465	17,97,465
20.27	Star Coupler CM 0822	Store-2	Nos	2	1,89,532	3,79,063
20.28	Auto synchronizer + coupling module	Store-2	Nos	1	6,26,982	6,26,982
20.29	Energy meter current input 5 A accuracy 0.2 s	Store-2	Nos	1	1,37,638	1,37,638
20.30	Voltage transformer TJP6.1	Store-2	Nos	1	5,735	5,735
20.31	Multifunctional time relay RE7-MY13MW	Store-2	Nos	2	40,664	81,327
20.32	Rectifier SKB 60/16A3	Store-2	Nos	2	38,233	76,466
20.33	Selector Switch	Store-2	Nos	1	38,233	38,233
20.34	Relay	Store-2	Nos	10	1,961	19,607
20.35	Relay	Store-2	Nos	10	1,961	19,607
20.36	Rotation speed monitor	Store-2	Nos	1	77,284	77,284
21	GCP spare, Make: Andritz Hydro					
21.1	Sicam TM 1703 PS 6630	Store-2	nos	2	27,898	55,795
21.2	Sicam TM 1703 PE 6410	Store-2	Nos	2	16,170	32,341
21.3	Sicam TM 1703 AO 6380	Store-2	Nos	2	43,657	87,314
21.4	Sicam TM 1703 TE 6420	Store-2	Nos	2	31,740	63,480
21.5	Sicam TM 1703 TE 6200	Store-2	Nos	2	31,740	63,480
21.6	Sicam TM 1703 DI 6100	Store-2	Nos	2	17,348	34,696
21.7	Sicam TM 1703 DI 6300 Proposed DO 6200	Store-2	Nos	2	28,504	57,008
21.8	Position indicator	Store-2	Nos	1	31,044	31,044
21.9	TM 1703 ACP CP6014	Store-2	Nos	1	1,84,803	1,84,803
22	Excitation System Spares, Make: Andritz Hydro					
22.1	Actual Value P.C.B IWK 2-11	Store-2	Nos	1	2,18,197	2,18,197
22.2	programmable transducer ,sineax TV 809	Store-2	Nos	1	81,824	81,824
22.3	capacitor	Store-2	Nos	1	6,234	6,234
22.4	Power capacitor	Store-2	Nos	1	43,639	43,639
22.5	Rotor overvoltage Protection PUS 6	Store-2	Nos	1	27,430	27,430
22.6	Fuse block, US 142 M	Store-2	Nos	1	14,027	14,027
22.7	Reversing Link	Store-2	Nos	1	6,546	6,546
22.8	Field Discharge Resistor	Store-2	Nos	1	1,90,143	1,90,143
22.9	Resistor with AMP connector, GRF 30/200A	Store-2	Nos	1	7,793	7,793
22.10	Resistor, GRF20/140L	Store-2	Nos	1	7,637	7,637
22.11	Resistor	Store-2	Nos	1	81,824	81,824
22.12	Current sensor	Store-2	Nos	1	36,626	36,626
22.13	Transformer,DTZ0.4/W/TA	Store-2	Nos	1	54,549	54,549
22.14	Transformer,STZ 0.4/TA	Store-2	Nos	1	24,937	24,937
22.15	Transformer STZ 1.6TA	Store-2	Nos	1	63,900	63,900
22.16	Varistor MOV	Store-2	Nos	2	45,198	90,396
22.17	Rectifier	Store-2	Nos	1	4,831	4,831
22.18	Diode Module	Store-2	Nos	1	26,184	26,184
22.19	Diode SKNa 4/17	Store-2	Nos	1	4,364	4,364
22.20	AIR FLOW MONITOR	Store-2	Nos	1	28,054	28,054
22.21	CAPACITOR	Store-2	Nos	2	39,587	79,174
22.22	RESISTOR	Store-2	Nos	1	8,572	8,572
22.23	Resistor HS 25	Store-2	Nos	1	2,338	2,338
22.24	Cubicle fan	Store-2	Nos	1	50,653	50,653
22.25	RECTIFIER	Store-2	Nos	1	18,079	18,079
22.26	WTI Scanner TR 7570	Store-2	Nos	1	30,717	30,717
22.27	current transducer PD1	Store-2	Nos	1	10,239	10,239
22.28	Voltage transducer PD1	Store-2	Nos	1	10,239	10,239
22.29	Shunt, 2000A / 60mV	Store-2	Nos	1	15,359	15,359
23	Protection System Spares, Make: Andritz Hydro					
23.1	Trip Circuit Supervision Relay, VDF-10	Store-2	Nos	5	15,757	78,786
23.2	Stabilizing Resistor	Store-2	Nos	2	24,511	49,023
23.3	Metrosil,1Phase 600A/S1/S1088	Store-2	Nos	1	24,511	24,511
23.4	Rectifier SKD 30/16 A1	Store-2	Nos	1	4,202	4,202
23.5	voltage transformer	Store-2	Nos	2	19,259	38,518
23.6	DRS Light (DRS - LBB/11/E/1/50/-/1111/1111/EN)	Store-2	Nos	1	3,88,259	3,88,259
24	PACKAGE AC					
24.1	Compressor	Store-2	Nos	1	1,25,917	1,25,917
24.2	Outdoor motor	Store-2	Nos	1	23,889	23,889
24.3	Blower motor	Store-2	Nos	1	35,834	35,834
24.4	V belt	Store-2	Nos	2	4,380	8,759
25	33KV breaker control panel, Make: CGL/Everest/KPT)					

25.1	Spring Charging motor for 33 KV Breaker	Store-2	Nos	1	80,317	80,317
25.2	VCB	Store-2	Nos	1	5,17,598	5,17,598
25.3	Lightening Arresters 11 KV side	Store-2	1Set=3Nos	3	44,621	1,33,862
25.4	VCB	Store-2	Nos	1	2,67,723	2,67,723
26	Additional Items					
26.1	Sono Control 14 Type 3, switching output PNP, max Viscosity 500cST	Store-2	Nos	1	1,21,412	1,21,412
26.2	Special Medium for Coupling Cartridge 50 ml	Store-2	Nos	1	2,488	2,488
27	LT System Spares. Make L&T					
27.1	MCCB TP 16A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	8	5978	47824
27.2	MCCB TP 63A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	6	6072	36432
27.3	MCCB TP 63A, 25KA TM REL for O/C & S/C	Eectrical Workshop	No	3	3492	10476
27.4	MCCB TP 40A, 25KA TM REL for O/C & S/C	Eectrical Workshop	No	1	3492	3492
27.5	MCCB TP 40A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	4	5978	23912
27.6	MCCB TP 100A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	2	6072	12144
27.7	MCCB TP 160A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	2	8538	17076
27.8	MCCB TP 160A, 36KA TM REL for O/C & S/C	Eectrical Workshop	No	1	7086	7086
27.9	MCCB TP 250A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	1	12378	12378
27.1	MCCB TP 250A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	1	12378	12378
27.11	MCCB TP 250A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	1	12378	12378
27.12	MCCB TP 400A, 50KA TM REL for O/C & S/C	Eectrical Workshop	No	1	14778	14778
27.13	MCCB ACC Rot.Handle DH100-200/DM100/DU125-200/DL	Eectrical Workshop	No	10	998	9975
27.14	MCCB ACC Rot.Handle extended for DN2	Eectrical Workshop	No	5	1029	5145
27.15	MCCB ACC Rot.Handle extended for DN3	Eectrical Workshop	No	1	1680	1680
27.16	MCCB ACC spreader 3P for DU250/DN2-250 1set 6PCs	Eectrical Workshop	No	5	714	3570
27.17	MCCB ACC spreader 3P DN3 for 400A 1set 6PCs	Eectrical Workshop	No	1	1230	1230
27.18	MCCB ACC Aux contact 1C/O RT DH100-200/DM100/DU125-200/DL	Eectrical Workshop	No	13	494	6415.5
27.19	MCCB ACC Aux Trip contact 1C/O Left DH100-200/DM100/DU125-200/DL	Eectrical Workshop	No	1	494	493.5
27.2	MCCB ACC Aux Trip contact 1C/O RT DH100-200/DM100/DU125-200/DL	Eectrical Workshop	No	10	494	4935
27.21	MCCB ACC Aux+Trip Contact RT for DN2/DN3 each 1C/O	Eectrical Workshop	No	3	921	2763
27.22	Indicating Light Red 240V AC TEEKAY E SERIES	Eectrical Workshop	No	10	85	854
27.23	Indicating Light Yellow 240V AC TEEKAY E SERIES	Eectrical Workshop	No	2	85	170.8
27.24	Indicating Light Blue 240V AC TEEKAY E SERIES	Eectrical Workshop	No	2	146	291.2
27.25	Indicating Light Green 240V AC TEEKAY E SERIES	Eectrical Workshop	No	10	85	854
27.26	Indicating Light Amber 240V AC TEEKAY E SERIES	Eectrical Workshop	No	10	85	854

27.27	Indicating Light Red 220V DC TEEKAY E SERIES	Eectrical Workshop	No	6	85	512.4
27.28	Indicating Light Green 220V DC TEEKAY E SERIES	Eectrical Workshop	No	4	85	341.6
27.29	Indicating Light Amber 220V DC TEEKAY E SERIES	Eectrical Workshop	No	5	85	427
27.3	Indicating Light White 220V DC TEEKAY E SERIES	Eectrical Workshop	No	2	146	291.2
27.31	Indicating Light Blue 220V DC TEEKAY E SERIES	Eectrical Workshop	No	2	146	291.2
27.32	Indicating Light Red 110V AC TEEKAY E SERIES	Eectrical Workshop	No	2	85	170.8
27.33	Indicating Light Yellow 110V AC TEEKAY E SERIES	Eectrical Workshop	No	2	85	170.8
27.34	Indicating Light Blue 110V AC TEEKAY E SERIES	Eectrical Workshop	No	2	146	291.2
27.35	Push Button Illuminated Red H series	Eectrical Workshop	No	2	138	275.8
27.36	Push Button Illuminated Green H series	Eectrical Workshop	No	2	138	275.8
27.37	Push Button Illuminated Red With 1NC contact TEEKAY E SERIES	Eectrical Workshop	No	2	138	275.8
27.38	Push Button Illuminated Green With 1NO contact TEEKAY E SERIES	Eectrical Workshop	No	2	138	275.8
27.39	Illuminated Push Button Red Trip Ckt. Healthy	Eectrical Workshop	No	2	138	275.8
27.4	Start Push Button Green	Eectrical Workshop	No	2	76	151.2
27.41	Push Button Red with 1NC Contact TEEKAY E Series	Eectrical Workshop	No	2	76	151.2
27.42	Push Button Green with 1No Contact TEEKAY E Series	Eectrical Workshop	No	2	76	151.2
27.43	EM STOP Push Button Red Mushroom Head Lockable Stayput	Eectrical Workshop	No	8	197	1579.2
27.44	SDFU TP32A with door handle suitable for cylinder type HF	Eectrical Workshop	No	2	1274	2548
27.45	SDFU TP 100A with door handle suitable for DIN type HN00	Eectrical Workshop	No	1	3633	3633
27.46	SDFU TP 125A with door handle suitable for DIN type HN00	Eectrical Workshop	No	1	4753	4753
27.47	SDFU TP 160A with door handle suitable for DIN type HN00	Eectrical Workshop	No	3	5180	15540
27.48	SDFU TP 200A with door handle suitable for DIN type HN00	Eectrical Workshop	No	1	7854	7854
27.49	SDFU Acc Aux contact block 1NO+1NC for FN 32-63	Eectrical Workshop	No	2	284	567
27.5	SDFU Acc Aux contact block 1NO+1NC for FN 100-160	Eectrical Workshop	No	4	319	1274
27.51	SDFU Acc Aux contact block 1NO+1NC for FN 200-250	Eectrical Workshop	No	2	378	756
27.52	HRC Fuse Link 2A Cylindrical Type HF	Eectrical Workshop	No	4	68	271.6
27.53	HRC Fuse Link 4A Cylindrical Type HF	Eectrical Workshop	No	5	68	339.5
27.54	HRC Fuse Link 16A Cylindrical Type HF	Eectrical Workshop	No	5	68	339.5
27.55	HRC Fuse Link 20A Cylindrical Type HF	Eectrical Workshop	No	5	68	339.5
27.56	HRC Fuse Link 32A Cylindrical Type HF	Eectrical Workshop	No	5	68	339.5
27.57	HRC Fuse Link 100A DIN Type HN SIZE 00	Eectrical Workshop	No	5	284	1417.5
27.58	HRC Fuse Link 125A DIN Type HN SIZE 00	Eectrical Workshop	No	5	298	1487.5
27.59	HRC Fuse Link 160A DIN Type HN SIZE 0	Eectrical Workshop	No	5	385	1925

27.6	HRC Fuse Link 160A DIN Type HN SIZE 00	Eectrical Workshop	No	5	298	1487.5
27.61	Fuse base 32A for Cylindrical type Fuses HF	Eectrical Workshop	No	4	130	518
27.62	Power Contactor TP 9A AC3, Coil-240V AC with 1NO	Eectrical Workshop	No	2	515	1029
27.63	Power Contactor TP 18A AC3, Coil-240V AC with 1NO	Eectrical Workshop	No	2	697	1393
27.64	Power Contactor TP 40A	Eectrical Workshop	No	1	2797	2796.5
27.65	Power Contactor TP 70A AC3, Coil-240V AC with 2NO+2NC	Eectrical Workshop	No	1	4416	4416
27.66	Power Contactor TP 95A AC3, Coil-240V AC with 2NO+2NC	Eectrical Workshop	No	4	7062	28248
27.67	Power Contactor TP 110A AC3, Coil-240V AC with 2NO+2NC	Eectrical Workshop	No	3	8508	25524
27.68	Cont ACC Add on Block 2NO+2NC FM for MNX9-40/MCX01-12	Eectrical Workshop	No	2	301	602
27.69	Cont ACC Add on Block 1NO+1NC SM 2nd LT for MNX95-650/MCX31	Eectrical Workshop	No	7	368	2572.5
27.7	Cont ACC Add on Block 1NO+1NC SM 2nd LT for MNX45-80/MCX11	Eectrical Workshop	No	2	322	644
27.71	OLR 0.6-1A With SPP with 1NO+1NC	Eectrical Workshop	No	2	812	1624
27.72	OLR 3-5 A With SPP with 1NO+1NC	Eectrical Workshop	No	1	819	819
27.73	OLR 6-10 A With SPP with 1NO+1NC	Eectrical Workshop	No	1	819	819
27.74	OLR 6-10 A With SPP with 1NO+1NC	Eectrical Workshop	No	1	819	819
27.75	OLR 9-15A With SPP with 1NO+1NC	Eectrical Workshop	No	1	840	840
27.76	OLR 66-110A With SPP With 1NO+1NC	Eectrical Workshop	No	2	2821	5642
27.77	OLR 66-110A With SPP With 1NO+1NC	Eectrical Workshop	No	3	2821	8463
27.78	OLR 45-75A With SPP With 1NO+1NC	Eectrical Workshop	No	1	2450	2450
27.79	ACB ACC Motor 240V AC/DC for u-power	Eectrical Workshop	No	2	17388	34776
27.8	ACB ACC Shunt release 240V AC/DC for u-power	Eectrical Workshop	No	2	2051	4102
27.81	ACB ACC Shunt release 20V AC/DC for u-power	Eectrical Workshop	No	1	2051	2051
27.82	ACB ACC Closing release 220V AC/DC for u-power	Eectrical Workshop	No	2	2051	4102
27.83	ACB ACC Microswitch EPI For ACBfor u-power	Eectrical Workshop	No	2	1512	3024
27.84	ACB MDO TP 2000A 65KA without Release	Eectrical Workshop	No	1	121996	121995.5
27.85	ACB MDO TP 800A 65KA without Release	Eectrical Workshop	No	1	76593	76593
27.86	Load Monitor CL-1 with RS485 AUX 44-300V AC/DC 96SQ MM	Eectrical Workshop	No	2	5835	11669

Annexure-C

SPARES OF EPS				
SR.NO	Description of Material	Qty	Unit	Location
1	Protection panel door	1	Nos	Store-2
2	Ferrule Tube 2.2mm	500	Mtr	Store-2
3	Ferrule Tube 3.2mm	400	Mtr	Store-2
4	Ferrule Tube 4.0mm	100	Mtr	Store-2
5	Ferrule Tube 6.0mm	100	Mtr	Store-2
6	Ferrule Tube 8.0mm	200	Mtr	Store-2
7	BMT Lugs 16-12 (Braco)	183	Pcs	Store-2
8	BMT Lugs 50-12 (Braco)	106	Pcs	Store-2
9	BMT Lugs 70-12 (Braco)	11	Pcs	Store-2
10	BMT Lugs 95-12 (Braco)	34	Pcs	Store-2
11	BMT Lugs 35-12 (Braco)	50	Pcs	Store-2
12	Copper Lugs 240mm	172	Pcs	Store-2
13	Allumnium lugs 240mm	41	Pcs	Store-2
14	Allumnium lugs 120mm	11	Pcs	Store-2
15	Alluminium/Copper lugs 95mm	18	Pcs	Store-2
16	Alluminium lugs 70 mm	09	Pcs	Store-2
17	Alluminium/Copper lugs 50mm	23	Pcs	Store-2
18	Alluminium/Copper lugs 35mm	10	Pcs	Store-2
19	Alluminium/Copper lugs 10mm	25	Pcs	Store-2
20	Insulated Ring type Lugs 1.5 Sqmm	4600	Pcs	Store-2
21	Insulated Pin type Lugs 1.5 Sqmm	4600	Pcs	Store-2
22	Insulated Ring type Lugs 6 Sqmm	100	Pcs	Store-2
23	Non Insulated Ring type Lugs 16 Sqmm	100	Pcs	Store-2
24	Insulated Pin type Lugs 4 Sqmm	2100	Pcs	Store-2
25	Insulated Pin type Lugs 1.5 Sqmm	2300	Pcs	Store-2
26	Insulated Ring type Lugs 2.5 Sqmm	500	Pcs	Store-2
27	Insulated pin type Lugs 0.75 Sqmm	200	Pcs	Store-2
28	Insulated pin type Lugs 2.5 S qmm	3000	Pcs	Store-2
29	Insulated Dual Pin Type 1.5 Sqmm	1000	Pcs	Store-2
30	Insulated Dual Pin Type 0.75 Sqmm	1000	Pcs	Store-2
31	Terminal Block URTKS	120	Pcs	Store-2
32	Terminal Block MTKPP	280	Pcs	Store-2
33	Terminal link 95 Sqmm	20	Pcs	Store-2
34	Terminal Block 32A 415VAC	73	Pcs	Store-2
35	Tube Last Blast 2×36 Watt	67	Pcs	Store-2
36	Single Compressed gland	75	Pcs	Store-2
37	Single Compressed gland CBW10	11	Pcs	Store-2
38	Single Compressed gland 38mm	42	Pcs	Store-2
39	Single Compressed gland 38mm	10	Pcs	Store-2
40	Single Compressed gland 32mm	157	Pcs	Store-2
41	Single Compressed gland 28mm	106	Pcs	Store-2
42	Single Compressed gland 16mm	190	Pcs	Store-2
43	Junction Box 2 Way	32	Pcs	Store-2
44	Junction Box 3 Way	03	Pcs	Store-2
45	Junction Box 4 Way	03	Pcs	Store-2

46	Screw 4 × 38mm	4500	Pcs	Store-2
47	GI Bolt M8×20mm	3800	Pcs	Store-2
48	GI Band	176	Pcs	Store-2
49	Seiling Rose	680	Pcs	Store-2
50	Connector	288	Pcs	Store-2
51	Copper Lugs 240mm	96	Pcs	Store-2
52	Gland 28mm	106	Pcs	Store-2
53	Gland 16mm	105	Pcs	Store-2
54	Sealing Rose Base plate	711	Pcs	Store-2
55	Alluminium lugs 60 mm	73	Pcs	Store-2
56	GI Coupling (Lighting)	693	Pcs	Store-2
57	Gland CBW	121	Pcs	Store-2
58	GI Clamp	1771	Pcs	Store-2
59	GI 6mm×25mm Nut + Bolt + Wahser	1000	Pcs	Store-2
60	GI 12mm×20mm Nut + Bolt +Washer	250	Pcs	Store-2
61	GI 6mm×20mm Nut + Bolt + Wahser	200	Pcs	Store-2
62	Cable 1.5Sqmmx2	25	Mtr	Store-2
63	Lighting Coupling	208	Pcs	Store-2
64	GI Socket	167	Pcs	Store-2
65	3 Way JB (Lighting)	216	Pcs	Store-2
66	4 Way JB (lighting)	111	Pcs	Store-2
67	2 Way JB (lighting)	24	Pcs	Store-2
68	1 Way JB (lighting)	2	Pcs	Store-2
69	GI T Bend (lighting)	88	Pcs	Store-2
70	Switch Board (lighting)	11	Pcs	Store-2
71	Tube Light Blast 2×36W	34	Pcs	Store-2
72	PVC Wall plug	300	Pcs	Store-2
73	6mm MS bolt	200	Pcs	Store-2
74	Anchor Fasnure bolt Hilti M6	03	Pcs	Store-2
75	Anchor Fasnure bolt Hilti M8	05	Pcs	Store-2
76	PVC Gland	50	Pcs	Store-2
77	Tube light Hanging Chain	100	Pcs	Store-2
78	Insulator	24	Nos	Store-2
79	Insulator	12	Nos	Store-2
80	Siemens Power Supply - 5622	04	Pcs	Store-2
81	Pheonix Contact DC to DC Supply	05	Pcs	Store-2
82	Schnider Electric MCB Auxiliary Contacts - A9N26924)	40	Pcs	Store-2
83	Siemens Module AI-6300	18	Pcs	Store-2
84	Siemens Module CM-0822	09	Pcs	Store-2
85	Siemens Module DO-6212	08	Pcs	Store-2
86	Siemens Module PE-6411	07	Pcs	Store-2
87	Siemens Module PS-6632	06	Pcs	Store-2
88	Siemens Module AI-6310	10	Pcs	Store-2
89	Siemens Module DI-6103	11	Pcs	Store-2
90	Siemens Module CM-0821	03	Pcs	Store-2
91	Siemens Module CM-0843	02	Pcs	Store-2
92	Phoenix Contact-PLC Relay -220VDC/230VAC	50	Pcs	Store-2

93	Syn-3000 Module	01	Pcs	Store-2
94	Fiber optic Cable_STST OM2 10 MPC	20	Pcs	Store-2
95	Fiber optic Cable_STST OM2 30 MPC	20	Pcs	Store-2
96	Electrical Heat Shrik Sleeve Size-60mm 600Volt (Re	25	Mtr	Store-2
97	Electrical Heat Shrik Sleeve Size-60mm 600Volt (Y	25	Mtr	Store-2
98	Electrical Heat Shrik Sleeve Size-60mm 600Volt (B	25	Mtr	Store-2
99	Electrical Heat Shrik Sleeve Size-30mm 600Volt (B	15	Mtr	Store-2
100	Electrical Heat Shrik Sleeve Size-5.0mm 600Volt (E	20	Mtr	Store-2
101	Electrical Heat Shrik Sleeve Size-35mm 600Volt (Y	40	Mtr	Store-2
102	Electrical Heat Shrik Sleeve Size-35mm 600Volt (B	30	Mtr	Store-2
103	Electrical Heat Shrik Sleeve Size-35mm 600Volt (R	35	Mtr	Store-2
104	Electrical Heat Shrik Sleeve Size-30mm 600Volt (B	30	Mtr	Store-2
105	Electrical Heat Shrik Sleeve Size-20mm 600Volt (B	40	Mtr	Store-2
106	Electrical Heat Shrik Sleeve Size-30mm 600Volt (R	20	Mtr	Store-2
107	Electrical Heat Shrik Sleeve Size-5.0mm 600Volt (E	30	Mtr	Store-2
108	Electrical Heat Shrik Sleeve Size-10mm 600Volt (B	30	Mtr	Store-2
109	Electrical Heat Shrik Sleeve Size-6.0mm 600Volt (E	130	Mtr	Store-2
110	Electrical Heat Shrik Sleeve Size-30mm 600Volt (B	50	Mtr	Store-2
111	Electrical Heat Shrik Sleeve Size-35mm 600Volt (B	20	Mtr	Store-2
112	Electrical Heat Shrik Sleeve Size-25mm 600Volt (B	15	Mtr	Store-2
113	Electrical Heat Shrik Sleeve Size-30mm 600Volt (B	30	Mtr	Store-2
114	Electrical Heat Shrik Sleeve Size-25mm 600Volt (B	45	Mtr	Store-2
115	Electrical Heat Shrik Sleeve Size-25mm 600Volt (Y	48	Mtr	Store-2
116	Electrical Heat Shrik Sleeve Size-20mm 600Volt (B	68	Mtr	Store-2
117	Electrical Heat Shrik Sleeve Size-20mm 600Volt (R	30	Mtr	Store-2
118	Electrical Heat Shrik Sleeve Size-5.0mm 600Volt (E	200	Mtr	Store-2
119	Electrical Heat Shrik Sleeve Size-25mm 600Volt (R	47	Mtr	Store-2
120	Electrical Heat Shrik Sleeve Size-30mm 600Volt (Y	30	Mtr	Store-2
121	Electrical Heat Shrik Sleeve Size-60mm 600Volt (B	35	Mtr	Store-2
122	Electrical Heat Shrik Sleeve Size-60mm 600Volt (Y	25	Mtr	Store-2
123	Electrical Heat Shrik Sleeve Size-60mm 600Volt (B	25	Mtr	Store-2
124	Electrical Heat Shrik Sleeve Size-20mm 600Volt (R	25	Mtr	Store-2
125	PVC Conduit Color Black Size-42mm	175	Mtr	Store-2
126	PVC Conduit Color Black Size-35mm	40	Mtr	Store-2
127	PVC Conduit Color Black Size-22mm	15	Mtr	Store-2
128	Cable Black 2core×1.5sqmm	330	Mtr	Store-2
129	Cable Black 3core×1.5sqmm	300	Mtr	Store-2
130	Surdhi Buzzer Auxiliary 230VAC	2	Pcs	Store-2
131	L&T Auxiliary Contact for SFU FNX-160	3	Pcs	Store-2
132	ABB thermistor Motor Protection Relay (CM-mss-225)-1SVR730700R0200	4	Pcs	Store-2
133	Minilec phase failure relay VSP-D1	1	Pcs	Store-2
134	EAPL off delay timer A1D-A	3	Pcs	Store-2
135	L&T Electronics off delay timer-2ANDTO	1	Pcs	Store-2
136	Schneider Electric Miniature Relay - LED 4C/O 24VDC (with Base Block)	12	Pcs	Store-2
137	Schneider electric MCB Auxiliary Contact -Ref A9N26924	7	Pcs	Store-2

138	Omran Miniature relay - 3A4N-GS AC 220/240	8	Pcs	Store-2
139	L&T Multifunction meter WL4410210000	1	Pcs	Store-2
140	Legends for Switch , indication	70	Pcs	Store-2
141	Emergency switch with ADD ON NO/NC Block	8	Pcs	Store-2
142	Push button with contacts	10	Pcs	Store-2
143	Excella Electronics Speed Monitor meter (SM-110)	1	Pcs	Store-2
144	Blue LED for Indication 220VAC (GNE)	8	Pcs	Store-2
145	Door Lock	7	Pcs	Store-2
146	ABB Contactor -NL22E, 16A 240VAC Coile	2	Pcs	Store-2
147	Siemens HRC fuse 160/40Amp	7	Pcs	Store-2
148	Siemens Sirius Contactor -3RH2140-IBM40 220VDC Coile	4	Pcs	Store-2
149	Schneider electric -CA2KN22M7 2NO/NC 220VDC Coile	5	Pcs	Store-2
150	Siemens contactor Varistor Diode -3TX4490-3J	32	Pcs	Store-2
151	L&T Bimetallic Relay - Range 0.9 to 1.5 & 0.6 to 1 Amp	2	Pcs	Store-2
152	Limit Switch push roller PSTPRA2-2NO/NC	2	Pcs	Store-2
153	Vaishno Hotline Limit switch-1NO+NC	5	Pcs	Store-2
154	Siemens Sirius NG Contactor -3RT29161JPOO- ADD ON Block	20	Pcs	Store-2
155	Siemens Contactor ADD on Block 3RH2911-1HA22	7	Pcs	Store-2
158	Terminal Block	73	Pcs	Store-2
159	Capacitor (make-Apcos) 42uF/250 VAC	5	Pcs	Store-2
160	Salzer-came operated rotary switch 6A	9	Pcs	Store-2
161	Salzer-came operated rotary switch 10A	4	Pcs	Store-2
162	Salzer-4 pole came operated rotary switch 10A (Lock type)	2	Pcs	Store-2
163	Salzer-came operated rotary switch 25A	1	Pcs	Store-2
165	HID BALLAST 400W HPSV/MH	2	NOS	Store-2
166	FUSE 2A (L & T)	18	NOS	Store-2
167	4 POLE MCCB 250A 175 -250A	1	NOS	Store-2
168	4 POLE MCCB 63A 44 -63A	2	NOS	Store-2
169	3 POLE MCCB 32A 22-32A	2	NOS	Store-2
170	HPSV LAMP- TUBLER 400W E-40 (200-250V)	9	NOS	Store-2
171	HPMV LAMP - 400W (200-250V)	6	NOS	Store-2
172	S TYPE HOOK	6	NOS	Store-2
173	FLUO LIGHT FIXTURE 400W	2	NOS	Store-2
174	HAND LAMP WITH CABLE	4	NOS	Store-2
175	REFLECTOR-PRE-COATED	7	NOS	Store-2
176	GLAS FIXTURE -IDJ 1124	7	NOS	Store-2
177	FAN ROAD	335	NOS	Store-2
178	400W STREET LIGHT FIXTURE	1	NOS	Store-2

179	GLASS PROTCTED LIGHT FIXTURE	4	NOS	Store-2
180	FLP/WP FLOURESCENT (EXTL 240)- HOLDER SET	2	NOS	Store-2
181	LIGHTING TRANSFORMER	5	NOS	Store-2
182	Junction Box	2	NOS	Store-2
183	Main Switch	3	NOS	Store-2
184	C CLAMP 100 NB	200	NOS	Store-2
185	C CLAMP 50 NB	150	NOS	Store-2
186	C CLAMP 600 NB	3	NOS	Store-2
187	CONNECTOR PLATE 100*50 MM	500	NOS	Store-2
188	SUPPORT 600 NB	20	NOS	Store-2
189	CONNECTOR PLATE 75*50 MM	50	NOS	Store-2
190	C TYPE CONNECTOR	200	NOS	Store-2
191	DUMMY PLATE 200 NB	40	NOS	Store-2
192	JOINTING PLATE	25	NOS	Store-2
193	EQUAL TEE BENT	10	NOS	Store-2
194	FERRULE 2.2 MM	500	MTR	Store-2
195	FERRULE 3.2 MM	400	MTR	Store-2
196	FERRULE 4 MM	100	MTR	Store-2
197	FERRULE 6 MM	100	MTR	Store-2
198	FERRULE 8 MM	200	MTR	Store-2
199	BMT LUGS 16-12 (BARCO)	183	NOS	Store-2
200	BMT LUGS 50-12 (BARCO)	106	NOS	Store-2
201	BMT LUGS 70-12	11	NOS	Store-2
202	BMT LUGS 95-13	34	NOS	Store-2
203	BMT LUGS 35-12	50	NOS	Store-2
204	COPPER LUGS 240 MM	76	NOS	Store-2
205	ALUMINIUM LUGS 240 MM	38	NOS	Store-2
206	MIX LUGS 10 MM	25	NOS	Store-2
207	MIX LUGS 35 MM	10	NOS	Store-2
208	MIX LUGS 95 MM	18	NOS	Store-2
209	MIX LUGS 240 MM	3	NOS	Store-2
210	MIX LUGS 120MM	1	NOS	Store-2
211	MIX LUGS 50 MM	23	NOS	Store-2
212	INSULATED RING TYPE LUGS 1.5 MM	4600	NOS	Store-2
213	INSULATED PIN TYPE LUGS 1.5 MM	4600	NOS	Store-2
214	INSULATED RING TYPE LUGS 6 MM	100	NOS	Store-2
215	INSULATED RING TYPE LUGS 16 MM	100	NOS	Store-2
216	INSULATED PIN TYPE LUGS 4MM	2100	NOS	Store-2
217	INSULATED RING TYPE LUGS 1.5 MM	2300	NOS	Store-2
218	INSULATED RING TYPE LUGS 2.5 MM	500	NOS	Store-2
219	INSULATED PIN TYPE LUGS0.75 MM	200	NOS	Store-2
220	INSULATED PIN TYPE LUGS 2.5 MM	3000	NOS	Store-2
221	DUAL LUGS 1.5 MM	1000	NOS	Store-2
222	DUAL LUGS 0.75 MM	1000	NOS	Store-2
223	CAT CABLE	600	MTR	Store-2
224	JAINSON (ACC-50)	300	NOS	Store-2

ANNEXURE-C

Details of Spares of Equipment

Sl no.	Item Description	Unit	Present stock	Purchase cost	Date of purchase	Location	
	Mandatory Spares						
1	Mandatory Spares for 68MVA 11/132KV Gen. Transformers as listed below.			14183697.60		Store No	Other
(i)	Spare Coil HV	No.	1				Power House
(ii)	Spare Coil LV	No.	1				Power House
(iii)	Gaskets for all openings on transformer tank gaskets.	Sets	2			Store-2	
(iv)	Oil and winding temperature indicator.	Sets	1				
(v)	Magnetic oil level gauge.	No.	1				
(vi)	Pressure relief device.	Set	1				
(vii)	Oil pumps with motor and starter.	Set	1				
(viii)	Oil flow indicator.	Set	1				
(ix)	Silica gel.	Kgs.	50			Store-1	
(x)	LV Bushing (Complete set).	Set	1			Store-2	
(xi)	HV Bushing (Complete set).	Set	1			Store-1	
(xii)	Neutral Bushing (Complete set)	Set	1			Store-2	
xiii	Silica gel breather.	No.	1				
2	Mandatory Spare for 132KV Circuit Breaker			511015.49			
i)	One complete pole of CB complete with pole column (support insulator stack) and interrupter (but without support structure and operating mechanism.)	Nos.	2			Store-1	
ii)	Relays, power contractors, limit switches, push buttons, timers and resistors for electrical control circuit. (consisting of one no. each of all type)	Set	1				
	Relay- Pole Discrepancy, Timing- 0.5 - 5 sec, 4NO, 220VDC		1			Store-2	
	Contactors 2NO+2NC, 220VDC Make: Siemens Type: 3RH1122-1BM40		1				
	Contactors 2NO+2NC, 220VDC Make: Siemens Type:3RH1122-1BM40 Add on block 1NO+1NC		1				
	Contactors 3NO+1NC, 220VDC Make: Siemens Type: 3RH1131-1BM40		1				
	Contactors 3NO+1NC, 220VDC Make: Siemens Type:3RH1131-1BM40 Add on block 1NO+1NC		1				
	Contactors 2NO+2NC, 230VAC Make: Siemens Type: 3RH1122-1AP00		1				
	Limit Switch 4NO+4NC, 15Amp, Make: Areva Type		1				
	Counter		1				
	Resistor, (PEC, 3K3 5%, 35W, MZB9015 006 TQ AE)		1				
	Push button		1				
iii)	Rubber gaskets, O-rings and seals for SF6 gas. (complete set for one circuit breaker)	Set	1				
iv)	Molecular filter for SF6 CB. (complete set for one circuit breaker)	No.	1				
v)	Density monitor for SF6 gas.	No.	1				
vi)	Closing coil assembly.	Nos.	2				
vii)	Trip coil assembly.	Nos.	2				
viii)	Auxiliary switch assembly consisting of 24 Nos. reversible type contactors	No	1				
ix)	SF6 gas. (Total quantity for one circuit breaker)	Lot	1				Power House
x)	Pressure Switches (for SF6 circuit). (complete set for one circuit breaker)	set	1			Store-2	
3	132KV Spare Single phase, Capacitor voltage transformers complete with protection fuses etc. (without mounting structure).	No.	1	152902.27		Store-2	
4	Mandatory Spares for 7.5MVA, 132/33KV transformer as listed below						
(i)	Gaskets for all type.	Set	1				

(ii)	Oil and winding temperature indicator.	Set	1	145860.72	27-12-2011	Store-2		
(iii)	Magnetic oil level gauge.	No.	1					
(iv)	Pressure relief device.	Set	1					
(vi)	Silica gel.	Kgs.	50			Store-1		
vii	Silica gel breather.	No.	1			Store-2		
5	Spare 132kV Voltage Transformer			132783.55				
a)	Single phase, Electromagnetic voltage transformers suitable for connection in star/star, open delta, star and complete with protection fuses etc. (without mounting structure).	No	1			Store-2		
b)	Terminal connector	No	1			Store-2		
6	Jacks for changing the direction of bi-directional wheel common for transformers.	Set	1	247289.71		Store-2		
iii	Circuit breaker operational analyzer as specified in the tender specification	No	1	2874738.91			Power House EWS	
iv	Terminal connector of each type(Complete set for one circuit breaker)	Set	1	12363.98		Store-2		
9	Mandatory Spares as per details given below for Isolator			317210.01				
i)	Support insulator stack for isolator (complete for one three phase isolator)	Set	1			Store-1		
ii)	Copper contact finger for female contacts. (complete for one three phase isolator)	Set	1			Store-2		
iii)	Relays, Power Contactors, MCBS, switch fuses, push button etc. for electrical control circuit (complete for one three phase isolator)	Set	1			Store-2		
	Interlocking Contactor, Make- Siemens, Model- 3RH2122-1BM40, 2NO+2NC	No	1					
	Close & Open Contactor, Make-Siemens, Model- 3RT2015-1BM42, 1NC+1NO with Addon block	No	1					
	6A MCB for 3phase AC supply, make- Siemens, Model- 5SQ23	No	1					
	20A MCB for 1phase AC supply, Make- Siemens, Model- 5SX42	No	1					
	2A MCB for DC supply, Make- Siemens, Model- 5SX52	No	1					
	Overload Relay, 1-1.6A, 1NO+1NC, Make- Siemens, Model- 3RU2116-1AB0	No	1					
	Close & Open push button, Make- Siemens	No	1					
	Interlock pushbutton, Make-Siemens	No	1					
	Limit switches 1NO+1NC, make-Mani	No	1			Store-2		
	Solenoid inetlocking coil, Make-Own	No	1					
	iv)	Terminal connectors	Nos.			2	Store-2	
v)	Limit switches and auxiliary contacts.	Set	1					
vi)	Earthing blade and contact assembly.	Set	1					
10	Spare CT for 132 kV system			1409548.89				
i	132kV, 800-400/1,1,1,1,1 Amps. Single phase outdoor type current transformers as specified in Table-I of Volume-2, Part-II complete with terminal boxes, junction boxes as specified in the tender specification	No	1			Store-1		
ii	Connector	Lot	1			Store-2		
iii)	132kV 800/1,1,1,1,1 Amps., single phase outdoor type current transformers having parameters as specified in Table-I of Volume-2, Part-II, complete with terminal boxes, junction boxes as specified in tender documents	No	1			Store-1		
iv	Connector	Lot	1			Store-2		
v	132kV 800-100/1,1,1,1,1 Amps., single phase outdoor type current transformers having parameters as specified in Table-I of Volume-2, Part-II, complete with terminal boxes, junction boxes as specified in tender documents	Nos	1			Installed at 10MVA SST		
vi	Connector	Lot	1		Store-2			

11	Spare single pole Surge Arrestor (without mounting structure)	Nos	3	250382.30				
	Corona ring- 3 nos.					Store-2		
	Insulator- 6 nos.					Store-1		
	Insulator base support- 9 nos.					Store-2		
	Surge counter- 3 nos.					Store-2		
	LA downcomer cable (1.1KV grade, 1 core, 50 sq mm Al cable)-3					Store-2		
12	Spare 145KV Bus Post Insulator			87789.12				
i	Spare 145 KV Bus Post Insulator (Single Moose) without mour	Nos	2			Store-1		
ii	Terminal connector	Lot	1			Store-2		
iii	Spares 145 KV Bus Post Insulator (Twin Moose) without mo	Nos	2			Store-1		
iv	Terminal connector	Lot	1			Store-2		
13	Crimping tool suitable for manually operation for making cable joint with lugs for Aluminium conductor upto size of 50 sq mm.	No	1	15455.00		Store-2		
14	Portable hydraulic Crimping tool for making compression / cable joints with lugs for conductor upto size of 630 sq mm.	No	1	77278.00		Store-2		
15	Terminal connector for spare single phase CVT with protection fuses(without mounting structure)	Lot	1			Store-2		
16	Terminal connector for Line Trap	Lot	1			Store-2		
17	Mandatory spares for Illumination of Switchyard	5% of total lot		289684.00				
i	Lamp	No	3			Store-2		
ii	Ballast		3			Store-2		
iii	Condenser/igniter		3			Store-2		
iv	Lamp Holder		3			Store-2		
v	Covers and Reflectors		2					
vi	Complete fittings		2			Store-2		
18	G.T. Dummy All Type	Set	2			Store-1		
19	Transformer Oil Drum (Full)	Drum	19	Included in transformer		Store-1		
General Spares								
Circuit Breaker spares								
1	SF6 Densimeter 6.4Bar NC/NO	Nos	4	149094.00	04-10-2019	Store-2		
2	O-Ring D=12.37 D=2.62	Nos.	7	762.30		Store-2		
3	O-Ring D=31.4 D=0.62		7	1524.60		Store-2		
4	O-Ring D=23.4 D=3.53		7	1524.60		Store-2		
5	Set of pipe (Copper) with NRV, O-ring & Sleeve	Set	3	95782.50		Store-2		
6	Distribution block assembly	No	2	41580.00		Store-2		
7	Trip magnet assembly FKS-1-CK	No	5	80190.00		Store-2		
8	Closing magnet assembly FKS-1-CK	No	5	51975.00		Store-2		
9	Aux. contact 16NO+16NC complete assembly with mounting arr	Nos.	4	59400.00		Store-2		
10	Limit switch	Nos.	4	19206.00		Store-2		
11	Plastic gear with pinion & shaft for FKS-1CK	Nos.	4	21384.00		Store-2		
12	220V AC motor (Agni make)	Nos.	2	43560.00		Store-2		
13	Crank wheel for FKS-1CK	Nos.	2	84150.00		Store-2		
14	Free wheel for FK s-1 CK	Nos.	3	102465.00		Store-2		
15	NRB Hosing assy for FK s-1 CK	Nos.	5	7425.00		Store-2		
16	Roller lever assy for FK s-1 CK	Nos.	2	39600.00		Store-2		
17	Trip latch assembly stage 1 for FK s-1	Nos.	3	17820.00		Store-2		
18	Trip latch assembly stage 2 for FK s-1	Nos.	6	47520.00		Store-2		
19	Close latch assembly for FK s-1	Nos.	6	106920.00		Store-2		
20	Consumable kit	Nos.	4	19800.00		Store-2		
21	TNC switch	Set	3	8019.00		Store-2		
22	LOC-O-REM selector switch	Nos.	3	8019.00		Store-2		
23	LOC-OFF-REM switch lockable	Nos.	3	8019.00		Store-2		
24	SF6 Filling kit with DILO couplings DN20/DN8 and Transition piec	Set	1	46332.00		Store-2		
25	220VDC Trip Coil	Nos.	10	66375.00	04-04-2018	Store-2		
26	220VDC Close Coil	Nos.	5			Store-2		
33KV Panel spares								
1	PT 33KV/R-3- 110V/R3-110V/R3, 100VA-0.5, 100VA-3P	Nos.	3	91287.00		Store-2		
2	CT 33KV 200/1-1-1A Core1: 0.5/15VA Core2: PS KpV>100V, Im<50mA at Vk/4 Core3:15VA/5P10	Nos.	3	109882.50		Store-2		
3	CT 33KV 100/1-1 Core1: CL 0.5 Core2: 5P10 Burden 15VA 25kA	Nos.	3	72653.28		Store-2		
4	Annunciator 110-220V DC 6W in without Buzzer-MW	Nos.	2	9016.00		Store-2		

5	Annunciator 110-220V without Buzzer 12 window	Nos.	1	8452.50	04-10-2019	Store-2	
6	VT Fuse 33KV 2A MVTF33	Nos.	6	19404.00		Store-2	
7	Coil-220VDC- Close	Nos.	10	33810.00		Store-2	
8	Coil- 220VDC- Trip	Nos.	15	50715.00		Store-2	
9	Limit Switch VCB	Nos.	6	16563.96		Store-2	
10	Insulator Busbar 33KV	Nos.	1	3381.00		Store-2	
11	Surge Arrestor 27kV/ 10kA	Nos.	6	45981.60		Store-2	
12	Auxiliary Switch 8NO+8NC Mani	Nos.	6	14876.40		Store-2	
13	BCS (SBC 32P/224R/114LM/SL) Switron	Nos.	4	24794.00		Store-2	
14	L/R Selector switchSRP223A with key- Kaycee	Nos.	6	17581.20		Store-2	
15	Rotary switch SRP-136 ASS Keycee	Nos.	6	23167.20	31-01-2019	Store-2	
16	Rotary switch SRP-136VS VSS Keycee	Nos.	6	25019.40		Store-2	
17	Hooter- Universal JVS	Nos.	4	3382.96		Store-2	
18	Finger Contact 25*6 Cu VCB	Nos.	4	27832.00		Store-2	
GT spares							
1	145KV, 800 AMPS 300 MM CT 31 MM/KV	No	1	2,24,994.38		Store-2	
2	24KV, 5000 AMPS BUSHING	No	1	3,29,544.00		Store-2	
3	HV N BUSHING 36KV, 1000AMPS	No	1	55,521.00		Store-2	
4	G M VALVE 15 BORE BEF	No	1	3,207.60		Store-2	
5	G M VALVE 25 BORE BEF	No	2	12,592.80		Store-2	
6	GUN METAL VALVE 50 BORE BEF	No	2	27,840.78		Store-2	
7	GUN METAL VALVE 80 BORE BEF	No	2	57,012.12		Store-2	
8	SHUT OFF VALVE 80 BORE- BUTTERFLY	No	2	4,193.64		Store-2	
9	ISOLATING VALVE 100 BORE BUTTERFLY	No	2	5,167.80		Store-2	
10	NON RETURN VALVE 100 BORE- ITEM 56	No	2	83,255.04		Store-2	
11	OTI PC252, 4SET MICRO SW, CAP 15M WITH POT	No	1	37,671.48		Store-2	
12	WTI PC252, 4SET MICRO SW, CAP 15M WITH POT	No	1	40,344.48		Store-2	
13	RTD FOR OTI 2001	No	1	19,602.00		Store-2	
14	RTD FOR WTI 2000	No	1	24,778.71		Store-2	
15	MOLG SO-HE-10-ATMS DS, H&L, 30 Deg. Incl.	No	1	23,837.22		Store-2	
16	PRV 150 NB, 0.49 kg/sq. cm, 2NO+2NC	No	1	21,235.50		Store-2	
17	BUCHHOLZ RELAY TYPE: GOR-3	No	2	39,916.80		Store-2	
18	OIL FLOW INDICATOR MODEL: 4032, 100NB, 1100 LPM (LEFT TO RIGHT)- ITEM 54A	No	2	84,650.94		Store-2	
19	OIL FLOW INDICATOR MODEL: 4032, 100NB, 1100 LPM (RIGHT TO LEFT)- ITEM 54B	No	2	84,650.94		Store-2	
20	WATER FLOW INDICATOR MODEL: 4022, 80 NB, 600 LPM, ITEM-55A	No	1	42,325.47		Store-2	
21	SILICAGEL BREATHER DTO-7	No	1	10,692.00		Store-2	
22	CENTRIFUGAL OIL PUMP 1143T, 100X100 MM, 1100 LPM, 8.0 MTR HEAD, ITEM 53, DS 2401R5	No	2	2,38,407.84		Store-2	
23	FLEXIBLE SEPARATOR	No	1	1,13,278.77		Store-2	
24	22 KV PORCLAIN POST INSULATOR	No	3	6,415.20		Store-2	
25	FLEXIBLE FOR BUSHINGS 50X0.3THK, CU TAPE 33/1050 MM DEV LONG	No	1	26,195.40		Store-2	
26	AIR RELAESE PLUGS (½", ¾")	No	8	7,318.08		Store-2	
1	Spare 132kV Bus PT	Nos.	1	1,75,000.00	16-02-2018	Store-1	
2	Digital Clamp meter AC/DC, Current range 40A - 1000A	Nos.	1	41746.00	10-09-2018	Power house	
3	Digital Clamp meter AC, Current range 30mA/300mA/30A/300A	Nos.	1				
4	O/C & E/F Relay for 33KV & 11KV Line	Nos.	3	88500	05-03-2019	Power house	

Single Line Diagram of Arunachal Pradesh (UNDER OPERATION)

Legend	
400 kV	220 kV
132 kV	33 kV
Line Length in km	
Reactor/Capacitor Capacity in MVAR	
Transformer capacity in MVA	
Installed Capacity in MW	

