



नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

(A Govt. of India Enterprise)

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ISO - 9001:2015, 14001:2015 & 45001:2018

No. NEEPCO/QP/ED/C&P/F/C/KHEP Stage-II/385/2019-20/ 2439-40 Dated 04.03.2020.

INTER OFFICE MEMO

From: CGM(C), i/c C&P

✓ To: GM(IT)

Sub:- Limited Tender for undertaking Industrial All Risk (IAR) Insurance Policy for the assets of Kopili Hydro Electric Plant, Stage-II (25 MW), Umrongso, Assam for a period of 1 (one) year w.e.f. 00:00:00 Hours of 19.03.2020 – Clarification No. 01 thereof.

Ref: NIB No. 348 Dated 18.02.2020.

With reference to the above, a Clarification No. 01 Dated 04.03.2020 to NIB No. 348 dated 18.02.2020 is forwarded herewith for uploading at NEEPCO's website.

Encl: Clarification No. 01 dated 04.03.2020


04/03/2020

Copy to:

1. GM(E/M), O/o Director (Tech), NEEPCO, Shillong, for kind appraisal of Director (Tech) please.

Clarification No. 01 Dated 04.03.2020 to Bidders Queries
NIB No. 348 Dated 18.02.2020.

Name of Work: Limited Tender for undertaking "Industrial All Risk (IAR) Insurance Policy for the assets of Kopili Hydro Electric Plant, Stage-II (25 MW), Umrongso, Assam for a period of 1(one) year w.e.f. 00:00:00 Hours of 19.03.2020".

Sl. No.	Bidders Queries	NEEPCO's Response
1	Details of critical machinery/ equipment are to 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-A .
2	Details of spares of the critical machinery/ equipment maintained at site ready to be used is to be provided.	The details of spares of the critical machinery/ equipment is attached at Annexure-B .
3	Details of AMC if any for those machinery/ equipment may be provided.	The details of AMC for those machinery/ equipment is attached at Annexure-C .
4	Please confirm the loss history for the last 5 years.	There is no claim on loss for the last 5 years.
5	Was there any major repair/ restoration/ rectification works carried out to the unit and associated items in the past. The details of such works and the reason for taking up such works may be provided.	The details of major repair/ restoration/ rectification works carried out and reason thereof is attached at Annexure-D .
6	Since the unit is developed in the Khangdong system, we are interested to understand if the Units are independent or if there are any common items/ assets shared which will affect the operations of both the units.	Reservoir, Dam, Vertical Gate, Intake Gate, Tunnel and Surge Shaft are common components/structure for both Khangdong and Kopili Stage-II Power Station.
7	We understand that there is a loss to the Kopili Stage-I HEP. We are interested to know if there is any affect of the same on the Stage-II Unit.	There is no affect on Kopili Stage-II due to loss on account of Kopili Power Station (4 x 50 MW).
8	What are the precautions, corrective measures taken for the Stage-II considering the loss to the Stage-I Unit.	Inspection of the Penstock and the other underwater parts of the plant has been carried out as a precautionary measure.
9	We are interested to know the Interdependencies for the HEP concerned.	Umrong reservoir feeding water to Kopili Power House relies mainly on operation of Khangdong and Kopili Stage-II Power stations. Accordingly, operation of Kopili Power House depends on operation of Khangdong and Kopili Stage-II and not vice versa.
10	We may not be able to provide the Interdependency clause for the IAR policy.	May please refer to Corrigendum No. 03.

 

Sl. No.	Bidders Queries	NEEPCO's Response
11	Under Insurance waiver up to 15%: Shall be applicable only for the PD portion.	May please refer to Corrigendum No. 03.
12	Claims Preparation cost for MD and BI: Shall be applicable only for only for BI portion.	May please refer to Corrigendum No. 03.
13	In Section-IV: Scope of Insurance Coverage point 3.1 i) SI 20) Prevention of Access - Actual (within Treaty Limitations), the Sub-Limits are not specified. Kindly specify the sub-limits for the coverages required and the sub-limits of these coverages should not exceed the SI of FLOP.	Bid stipulation shall stand.
14	In Section-IV: Scope of Insurance Coverage point 3.1 i), SI. 23) Interdependency Clause - Actual (within Sum Insured), the Sub-Limits are not specified. Kindly specify the sub-limits for the coverages required and the sub-limits of these coverages should not exceed the SI of FLOP.	May please refer to Corrigendum No. 03.
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.
16	Add-on Cover SI No.6 (Under Insurance) We can cover max upto 15% for Material Damage only. BI cover under insurance can't be covered.	May please refer to Corrigendum No. 03.
17	Add-on Cover SI No.7 (Escalation) We can cover max upto 5% for Material Damage SI (Excluding Stock, if any) only.	May please refer to Corrigendum No. 03.
18	Add-on Cover SI No.19 (Additional Increased Cost of Working) We can cover upto 10% of BI sum insured only with max sub-limit of INR 5 Cr.	Bid stipulation shall stand.
19	Add-on Cover SI No.20 (Prevention of Access) We can cover this as per the GIC wordings with additional premium loading	Bid stipulation shall stand.

Sl. No.	Bidders Queries	NEEPCO's Response
20	Add-on Cover SI No.23 (Interdependency) We can't cover this.	May please refer to Corrigendum No. 03.
21	B) Section-IV, Clause 4 (Deductibles) For IAR Cover, Sub Clauses 4.1.2, 4.1.3, 4.1.4, 4.1.5 Deductible to be taken as 5% of claim amount subject to minimum INR 5 Lacs for each & every loss.	Bid stipulation shall stand.
22	For IAR Cover, Sub Clause 4.1.6 Not agreeable.	Bid stipulation shall stand.
23	Section-IV, Clause 6 (Valuation) Valuation of the project assets on Free of Cost is not agreeable.	Bid stipulation shall stand.

DM *[Signature]*
04/03/2020

Details of Critical Machinery/Equipment of 1X25MW Kopili Stage-II Power Station

Sl. No.	Machinery/Equipment details	Make	Model	Year of manufacture	Capacity	Lead time (Approx.)	Unit value (Lakhs)	Value as per finance (Lakhs)
1.	Turbines	BHEL	Vertical shaft Francis turbine	2000-01	25.8 MW	14 Months	N/A	5053.96
2.	Main Inlet Valve	Voith Hydro Pvt Ltd.	Butterfly type	2017	N/A	14 Months		
3.	Generators & Rotors	BHEL	N/A	2000-01	27.77MVA, 11 KV, 0.9 pf lag, 333RPM	14 Months	N/A	
4.	Static Excitation System and Digital Voltage Regulator	BHEL	Static	2000-01	N/A	14 Months	N/A	
5.	11 KV Segregated Phase Bus duct and associated equipment	BHEL	N/A	2000-01	12 KV, 2900/200A mp	14 Months	N/A	
6.	Generator relay & protection panel	Alstom	N/A	N/A	N/A	14 Months	N/A	
7.	Auto sequencer electronics panel	BHEL	Pro-control	2001	N/A	14 Months	N/A	
8.	Station Service Board	L&T	N/A	N/A	N/A	12 Months	N/A	
9.	Governing system with HMC, EHG, OPU etc.	BHEL	G-40	N/A	N/A	14 Months	N/A	
10.	220V battery bank system with charger, DCDB etc.	Power Electronic s/ Caldyne/E xide	350Ah	N/A	N/A	14 Months	N/A	
11.	Diagnostic Station & special tools	BHEL / IBM / ABB	N/A	N/A	N/A	14 Months	N/A	110.93
12.	Generator Transformer	Bharat Bijlee	N/A	1990	28.5 MVA, 11/132KV	14 Months	N/A	123.26
13.	Unit Aux. Transformer	BHEL	Dry cast	2000	300KVA	12 Months	N/A	
14.	Station service transformer	Alfa	N/A	N/A	1MVA, 11/0.4KV	12 Months	N/A	
15.	GCB, isolators, CTs, LAs, conductors, towers & connected lines from GT to 132KV SY	ABB, Oblum, Hivoltrans etc.	N/A	2003	N/A	12 Months	N/A	259.63
16.	132/33KV Xér, 33KV section bus, isolators, Las, CTs, PTs, SST CBs, isolators, conductors etc.	ABB	N/A	N/A	N/A	12 Months	N/A	
17.	TOTAL							5547.78

Annexure-B

Critical Spares Of Kopili Stage II , P.H,KHEP As On 28.02.2020

<u>Sl. No.</u>	<u>Material Description</u>	<u>Quantity</u>	<u>Value in Rs.</u>	<u>Remarks</u>
1	Upper Fixed Labyrinth Ring	1 No.	N/A	Initial Spares
2	Lower Fixed Labyrinth Ring	1 No.	N/A	Initial Spares
3	Guide Vane with Lever & strap	4 Nos.	N/A	Initial Spares
4	Top Bush (Self Lubricating)	16 Nos.	N/A	Initial Spares
5	Bottom Bush (Self Lubricating)	16 Nos.	N/A	Initial Spares
6	Middle Bush (Self Lubricating)	16 Nos.	N/A	Initial Spares
7	Guide Bearing Pad, Type - A	2 Nos.	N/A	Initial Spares
8	Guide Bearing Pad Type - B	4 Nos.	N/A	Initial Spares
9	Hydraulic Amplifier with Electro Magnetic IC	1 No.	N/A	Initial Spares
10	Main Slide Valve Sleeve & Spool Assembly	1 No.	N/A	Initial Spares
11	Stator Coil	40 Nos.	N/A	Initial Spares
12	Stator Coil	41 Nos.	N/A	Initial Spares
13	Lower Guide Bearing Pads (12 Nos.)	1 Set	N/A	Initial Spares
14	Top Guide Bearing Pads (6 Nos.)	1 Set	N/A	Initial Spares
15	145 kV, G.O. Pole Assembly of Circuit Breaker (Complete with Pole Column & Interrupter but without Support Structure & Operating Mechanism	1 No.	N/A	Initial Spares
16	Programmable Processor, 70PR05,ED659P05B00	1 no.	N/A	Initial Spares
17	LP/IPB Coupler, 70BK02,ED692O5BC2DA	1 No.	N/A	Initial Spares
18	Bus End Module, 70BA01,ED659BT1AA00	2 Nos.	N/A	Initial Spares
19	Fault Indication Module,	1 No.	N/A	Initial Spares
20	Power Supply Module, XT377A,ED676VSPAA00	1 No.	N/A	Initial Spares
21	Power Supply Distribution,	1 No.	N/A	Initial Spares
22	16 Channels Binary Output Module, AB01,ED692O50B3AA	1 no.	N/A	Initial Spares
23	Binary Output Modules with Contacts, AB02,ED692O50B5AA	1No.	N/A	Initial Spares
24	IPB Traffic Director, 70FV01 b – (e),ED659HD1CA00	1 No.	N/A	Initial Spares
25	IPB Cable Input-2, XV7718 b/R1,ED659HC7AA00	1 No.	N/A	Initial Spares
26	32 Channel Alarm Indication Module, UN0665AV1,ED7470400338	1 No.	N/A	Initial Spares
27	Command Input Module,	1 No.	N/A	Initial Spares
28	32/32 Channel Input/Output Module, UN00662AV1,ED747040081	1 No.	N/A	Initial Spares
29	Bus Traffic Director, 70BV05,ED659BD5AA00	1 No.	N/A	Initial Spares
30	Blocking Diode Assembly with N – 30 Diode,CE9086204244	1 No.	N/A	Initial Spares
31	Pulse Transformer Assembly, XVA453A,CN9090256210	2 Nos.	N/A	Initial Spares

32	Temperature Surveillance Unit for Rectifying Transformer,220V, 1j, 50HZ, AC,Sensors: PTC Temperature 145oC Tripping,SA0653941021	1 No.	N/A	Initial Spares
33	Dual Output Transducer (-15 – 0 - +15) V DC Galvanically Isolate Output: 4 – 20 mA,230V, 1j, 50HZ, AC, SA0653942010	1 No.	N/A	Initial Spares
34	Shunt, 2000A/60mV,Accuracy: 0.5%,Material: Manganin Cu. Bus Bar Tin Plate,SA0653210086	1 No.	N/A	Initial Spares
35	Control Transformer, 100VA, 1φ, 50HZ,LV1: 220V, HV1: 240V, HV2: 220V,YNYN0, HV Tap:	1 No.	N/A	Initial Spares
36	Resin Cast Current Transformer Single Core Bar Primary,Burden: 15VA, Ratio: 1000A/1A,Accuracy Class: Insulation Class: B5P10,SA0653910029	1 No.	N/A	Initial Spares
37	Flat Transparent Lens with Translucent Support (CLEAR) SQ., BC0659431122	2 Nos.	N/A	Initial Spares
38	Potential Transformer, 30VA, 1φ, 50HZ, Secondary: 110V, Primary: 63.5V, Secondary Tap at 63.5V, HC0659530015Accuracy Class: 1.0	1 No.	N/A	Initial Spares
39	Control Transformer, 200VA, 1φ, 50HZ, LV1: 24V, HV1: 240V,HV Tap: +/- 2.5%, +/- 5%, Impedance 4%, Insulation Class: B,Insulation Level: 50 HZ/min (2.5KV)HC0659430533	1 No.	N/A	Initial Spares
40	Time Delay Relay (Delay on Pick-up), Time Range: 0.3 sec – 30 min.Coil Volt: 24 – 240 V AC/DC, Contacts: 2 C/O, Mounting Projection	Nil	N/A	Initial Spares
41	Aux. Relay with LED and Free Wheeling Diode Contact Rating: 10A, 240V AC, Coil Voltage: 24V DC, Aux. Contacts: 2 C/O,CN9076763054	1 Nos.	N/A	Initial Spares
42	“SIEMENS” Make Aux. Contacts 4NO + 4NC, System Voltage: 500 V AC/600 V DC, Coil Voltage: 220 V DC, CN9070111136	4 Nos.	N/A	Initial Spares
43	Circuit Breaker Motor, 690 V AC, Rating: 25A, 3P, OL RLS: 1.6 – 2.5 A, SC RLS: 33.5 A, CT7420604436	2 Nos.	N/A	Initial Spares
44	16 Channel Binary Input Module, 70EB02,	2 Nos.	N/A	Initial Spares
45	Supervision Module, 7TW2700-0 (SVSNA), ED69202SVSNB	1 No.	N/A	Initial Spares
46	AC Voltage Transducer, Single Output A1/0, Range: 0 – 15 KV, Input Voltage: 0 – 110V, Output: 4 – 20mA,Aux. Power Supply: 230V, 1j,	1 No.	N/A	Initial Spares
47	Circuit Breaker Motor, 690 V AC, Rating: 25A, 3P, OL RLS: 4 – 6.3A, SC RLS: 78 A, CT7420604444	1 No.	N/A	Initial Spares
48	Text Process, 70KS01, ED659PT1AA00	1 No.	N/A	Initial Spares
49	Mesurement input (MESHA), 7TM6100-0,	1 No.	N/A	Initial Spares

50	Relay Module, 7TS3000-0, ED7470400109	1N0.	N/A	Initial Spares
51	Fuse based isolator with pre isolating and Blown fuse indication.(Part. No.-J081428), SA0653980280	1N0.	N/A	Initial Spares
52	Transformer control 200VA, 3Ph, 50Hz, LV1: 110V, HV1: 190V, Vector group YNYNO, HV Tap: +/-5%, +/-10% impedance 4.0%, HV Tap: +/-5%, +/-10% impedance 4.0%insulation level	1 no.	N/A	Initial Spares
53	Transperant polycrab Onate 8mm sheet) SA0653930739	1No.	N/A	Initial Spares
54	Current Transformer Single core wound, Primary with A Tap on primary burden 20VA, Ratio:5-1A/1A, Accuracy class3, Insulation Class	1 No.	N/A	Initial Spares
55	Memory card CT370AV1, ED7470400389	1 No.	N/A	Initial Spares
56	Pulse supervision module UN0053CPV1, CN9090110704	1 No.	N/A	Initial Spares
57	Limit value detection 7TW25000-0	1 No.	N/A	Initial Spares
58	Potential seperating UN0099A, CN9090365702	1 No.	N/A	Initial Spares
59	IC Memory, D-2732A, CN9066241012	3 Nos.	N/A	Initial Spares
60	Thyristor for Thyristor rack, CN9064670048	1 No.	N/A	Initial Spares
61	Pulse Coupling Stage Module Assembly, UN0096A, CE - 69143350	1 No.	N/A	Initial Spares
62	Pulse final Stage Assembly, UN0097A, CE - 69138930	1 NO.	N/A	Initial Spares
63	CPU Module, UN0660 AV1, ED69203DB1AA	1 No.	N/A	Initial Spares
64	DC - DC Supply Module, UN664 AV1,	1 No.	N/A	Initial Spares
65	69203DB1AA UN0660AV1 Digital AVR CPU Module (Material Code: ED7470400133)	1 Nos.	545622.00	
66	MDL 69203NB1AA UN0662AV1 Digital I/O Module (Mat.Code: ED7470400281)	1 Nos.	161315.00	
67	MDL 69203DU1AA UN0663BV1 (Mat.Code:ED7470400141)	1 Nos.	645040.00	
68	MDL 69203GB1AA UN0661AV1 Mat Code : ED7470400168	1 Nos.	438240.00	
69	MDL CE 69143350 UN0096A Mat Code: CN9090433503	1 Nos.	234850.00	
70	MDL CE69138930 UN0097A Mat Code: CN9090389300	1 Nos.	134640.00	
71	MDL 69203YV1AA CT370AV1 Mat Code: ED7470400389	1 Nos.	59950.00	
72	MDL 69203YB1AA UNS2661AV1 Mat Code:ED7470400362	1 Nos.	170500.00	
73	MDL 69203TB2AA UNS2660AV1 Mat Code:ED7470400354	1 Nos.	514195.00	
74	MDL 69203SV1AA UN0665AV1 Mat Code:ED7470400338	1 Nos.	154220.00	

75	MDL 69203IVIAA UN0611AV1 Mat Code:ED7470400265	1 Nos.	219340.00	
76	MDL CE69133400KX9180A Mat Code:CN9090334009	1 Nos.	541860.00	
77	MDL CE69138840 UN0094A Mat Code:CN9090388400	1 Nos.	95480.00	
78	MDL CE69136570 UN0099A Mat Code: CN9090365702	1 Nos.	202400.00	
79	MDL CE69111070 UN0053CPV1 Mat Code:CN9090110704	1 Nos.	180620.00	

Annexure-B

Critical Equipment Of Kopili Stage II P.H As On 28.02.2020

Sl. No.	Name of Assets	Physical Stock (Qty.) as on 28/02/2020	Asset ID	Value in Rs.	Location	Remarks
1	25.8MW, 333.3rpm vertical shaft, francis turbine rated/design head 99m with EHG, HMC,MIV and control panels.	1 set.			Stage-II P.H.	
2	27.777MVA, 25MW, 11KV, Generator with unit control panels, Relay panels, excitation panels & auxiliary control	1 set.			Stage-II P.H.	
3	Oil pressure unit, BHEL Make, System Pressure:- 40Kg/cm sq., Discharge capacity:- 600 ltrs./min. with control	1 set.			Generator Floor	
4	Oil leakage unit, BHEL Make with control pane , Make:- Bharatia Cutler	1 set.			Valve Galary	
5	Dewatering pump, Make:- Jyoti Ltd. With control panel, Make:- Bharatoa Cutler Hammer.	2 sets.			Turbine Floor	
6	Drainage pump set with control panel.	1 set.			Turbine Floor	
7	E.O.T. Crane 100/25T	1 No.			Stage-II P.H.	
8	Station battery 350 AH , 220V plante, Exide make	1 set	07022017216600050014	4470635	Stage-II Battery Room	Installed on 08/03/17 (All old batteries are returned back to supplier)
9	220V DCDB	1 set	07022017216600050016	1358110	Stage-II Battery Room	Installed on 08/03/18
10	48V Battery Bank with Charger for UPS system, Model:- HR-XP.5, Sl.No.:- 01022207	1 set.			Khandong P.H.	
11	24V Battery Bank with Charger, Sl. No.:- 637/1	1 set			Khandong P.H.	
12	Braking unit with all accessories.	1 set.			Turbine Floor	
13	Jacking H.P. oil pump, Sl. No.:- 537	1 set.			Turbine Floor	
14	H.S. Lub. System alogwith control panel. Make:- Bharatia Cutler hammer	1 set.			Generator Floor	
15	Diesel Generating Set 125KVA, AC amp.:-174, M/c no.:- 75410AL-04	1 No.			Outside P.H. building	
16	300KVA Unit auxiliary cast resin transformer . Ratio:- 11KV/415V,	1 no.			Service Bay	
17	Dry Type Cast Resin Neutral Grounding Transformer, Sl. No.:-	1 no.			Generator Floor	
18	410KVA Dry Type Cast Resin Excitation Transformer, Ratio:- 11KV/190V, sl. No.:- 2013838	1 no.			Service Bay	
19	28.5 MVA, 11/132 KV, OFW cooled Generator Transformer. Sl. No. 3299				Outside P.H. building	
20	Ingersall Rand make three stagehigh pressure Air Comppressure, Model:- 15T2X without electrical motor, Sl.No.- 1154033 & 1154032 with Control panel, Make:- Bharatia Cutler Hammer.	2 Sets			Turbine Floor	
21	H.P. Pressure Tank, capacity:- 600 ltrs., Sl.no.:- 1161	1 No.			Turbine Floor	
22	Turbine oil filtration unit, Make:- Alfa Laval, Type:- MAB 103B-24, Sl.No.:- 4109136-2000	1 Set			Stage-II P.H.	

23	Operating work Station:- Server with Monitor, Server make:- IBM, Type:- X series 200, Monitor make:- LG	2 sets			Khandong P.H.	
24	Engineering work station(SCADA) :- Pc with monitor, Model:- 8476-91U, Sl.no.:- 99YV074 P1170	1 set.			Khandong P.H.	
25	1MVA, 33/.440KV, 3 phase ,50Hz double wound outdoor , oil cooled cooper wound Station Service transformer with complete ascessories and fittings including oil for first filling, Sl.No.1000/09.	1 No.			Switch Yard	
26	SF-6 Ciircuit Breaker, Make-ABB, Type:- ELF SF 2-1,Sl.No.:- 10000430, feeder:- Stage-II	1 set.			Switch Yard	
27	Current Transformer 132KV 150/1A,Barden-30VA, Class 0.5, Sl. No. for “R” phase	3 nos.			Switch Yard	
28	Isolator 132 KV, Type :- Centre Break	2 sets			Switch Yard	
29	SF-6 Ciircuit Breaker, Make-ABB, Type:- EDF SK1-1,Sl.No.:- 30000747, feeder:- SST-II	1 set.			Switch Yard	
30	Current Transformer 33KV, Ratio:- 50-25/1, Sl. No.:- R- 0378783, Y-0378785, B-0378782	3 nos.			Switch Yard	
31	Isolator 33KV, Type:- Double Break	1 set.			Switch Yard	
32	33KV Voltage Transformer	3 nos.			Switch Yard	
33	Dry Type Excitation Transformer	01 Nos.	07022019215600020002	2492597	KOPI LI STAGE II P.H	Fixed Asset Txn.ID 322 Transformer Having Rating Of 100kVA & above

ANNEXURE – C**Details of AMC against machinery/equipment of 1X25MW Kopili Stage-II Power Station**

Sl. No.	Vendor	Order No.	AMC Details	Price
1	M/s Hydro Magus	NEEPCO/KHEP/C&P/ Khandong P.S./T-297/2018- 19/5728 dtd. 30.03.19	Day to day maintenance AMC w.e.f. 01.02.2019 for 2 years	Rs. 20.06 Lakhs/month
2			APM of units for 2 years w.e.f. 01.02.2019	Rs. 11.80 Lakhs / unit

Annexure-D

MAJOR EXPENDITURE OF KOPILI STAGE-II FOR LAST 5 YEARS i.e. 2014-2019 AGAINST KOPILI STAGE-II POWER STATION

Year	Description of Items	Order No.	Name of Vendors	Value in Lakhs	Reason for works
2013-14	Major Overhauling and Repairing of underwater parts of 25 MW Kopili Stage-II Unit	NEEPCO/KHEP/C&P (E)/T-198/2013-14/89 dtd. 8.4.14	M/s Hydro Magus Pvt. Ltd. Ghaziabad-201010	109.6	Due to severe corrosion & errosion of underwater parts, the replacement of top cover & pivot ring done by outsourcing.
2016-17	Annual Planned Maintenance of Kopili Stage-II	NEEPCO/KHEP/C&P (E)/Khandong/W-368/2016-17/2780 Dated 06.01.2017	M/s PES engineers Pvt. Ltd. Hyderabad 500082	39.67	Due to severe corrosion & errosion of underwater parts, weld repairing of DT cones, runner cone, spiral guide pipe & spiral casing done through outsourcing.
	Supply of MIV	NEEPCO/ED(C&P)/QP/F/E/KHEP/MIVs/Vol-II/ 882 dtd. 04.08.16	Voith Hydro Pvt Ltd	218.36	Due to severe erosion & corrosion of MIV disc, the same was required to replace with new one.
2018-19	Dismantling of Old butterfly valve (MIV) and Installation & Commissioning of Stainless Steel make new butterfly vslve (MIV) Supplied by M/s Voith Hydro Pvt./ Ltd.	NEEPCO/KHEP/C&P / Khandong /W-368/2018-19/3641 Dated 13.11.2018	M/s PES Engineers pvt. Ltd. Hyderabad-500082	36.43	Due to severe erosion & corrosion of MIV disc, the same was required to replace with new one.
Total				404.06	