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ENERGY POLICY PROGRAM

MATERIAL INSPECTION REPORT OF PIL ITEMS RECEIVED AT MUZAFFARGARH

August, 2013

The activity of testing under EPP has been funded by USAID to help GENCOs in determining new basis of Tariff.

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USAID-PAKISTAN:
ENERGY POLICY PROGRAM (EPP)

Inspection Report of PIL items at Muzaffargarh Thermal Power Station

Contract No: AID-EPP-I-00-03-00004 **Order No**: AID-391-TO-12-00002

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Introduction

The Chief Executive Officer of NPGCL invited through a letter (Annexure 'A') that five PIL items which were received earlier have been jointly inspected with Insurance Company's designated Surveyor and are ready for inspection.

AEAI's Senior Energy Expert visited Muzaffargarh TPS on 25-26 July '13 to see the equipment and relevant documents. The respective store and procurement officials accompanied to two different stores for inspection, collected necessary documents and discussed minor discrepancies and solutions.

The sheet material (PIL-23) was not got tested by the station management whether it complies with PIL spec (Steel alloy's composition) or not. CE/PD promised to get it done from some reputable laboratory and provide us with the results.

Similarly, a voltmeter received under PIL item 31 was having 50% larger scale. TPS management will install this and check the resolution whether it suits the operators, corresponds to and calibrated by the input or not. Overall, receipts were according to PIL's technical specifications.

1. PIL Item 03, Purchasing of Fuel Oil Additive as on Unit-4 for Units 1 to 6:

This item had two options in technical specs of PIL for suppliers i.e. either to quote/supply Magnesium oxide (MgO) or Magnesium hydro-oxide, Mg $(OH)_2$ and at TPS MUZ, Mg $(OH)_2$ has been evaluated to be effective and lowest in price out of two.

Half of the total quantity given in PIL has been received (225 MT) and the dosing systems are installed on boilers of units 3, 4, 5 & 6. The installation of dosing systems on the remaining units is under progress.

The remaining quantity will be transported once the quantity received is used or near depletion. This segregation was done by station management in view of unpredictable availability of units due to fuel supply limitations and the shelf life of the additive. The dosing system was witnessed at Unit 4 where a log sheet was maintained to monitor pH of ash and dosing rate of fuel additive. The chemical is being issued from stores but upon a query, it was informed that the supply has not yet been recorded on stock book (SMB). GRN will also be issued after receiving of Bill of Entry from CRRK office.

Stock in stores

Dosing System at unit 4

NORTHERN POWER GENERATION COMPANY LTD MUZAFFARGARH
MATERIAL INSPECTION CERTIFICATE FOR PIL ITEM 03

SR#	DESCRIPTION	NO. AND DATE
1	P.O. No. and date	**CEO/MZG/RE-I/T-ICB-02 /P.O /8932-43 dated 22.11.2012**
2	Estimated cost as in PIL $ / PKR	**$921,225/-**
3	Name of supplier	M/s System Separation Sweden AB, Box 101, SE-472 21 Svanesund, Sweden.
4	Date of material receipt	1st Partial Shipment received on 27.05.2013 & 28.05.2013.
5	Date of Joint Inspected with N.I.C Surveyor.	19.06.13
6	M.B. Page No./Book No./date taken on stock	Bill of entry awaited
7	Date of inspection by sectional head for quality and quantity.	21.06.13
8	Supplier's bill of lading /Shipping documents /Packing list/ Contractor's Invoice	i) No.2124-130401 Dated 01.04.2013 ii) Bill of Lading No. S-656 Dated 08.04.2013
11	Certificate of origin / Name of manufacturer	SEB 943882/11.4.13 Ab Regoz, Germany/LII, USA/ Rosal Engg, Sweden.

12) COMPARISON OF SPECIFICATIONS

PIL # 03	AS IN PIL	QTY IN PIL	AS ORDERED	QTY RECEIVED
01	Magnesium oxide or hydro-oxide Fuel Oil Additive in oil dispersed form (particle size: 1 to 1.5 micron) along with necessary dosing / monitoring equipment having features like inhibition of Slag formation at the super-heater & re-heater tubes, low viscosity that provides immediate mixing with fuel oil. The additive should be able to increases ash melting temperature and should prevent hot end corrosion as well as controls low temperature corrosion in cold end boiler area including regenerative air heaters. It should also be able to reduce un-burnt carbon quantity, SOx and NOx emissions. Monitoring equipment should include but not limited to that given below: 1. Acid dew point and rate of acid buildup meter pH measuring probe for fly ash after air pre-heater	**450 M. Ton**	Magnesium oxide or hydro-oxide Fuel Oil Additive in oil dispersed form along with necessary dosing / monitoring equipment Fuel oil Additive Protea MGS-1 (Magnesium Hydroxide Based) in oil dispersed form, for Unit 1~ 6 GENCO-III, TPS, Muzaffargarh. Specifications: Magnesium Contents, %wt ~ 18 Particle size (Micron) 1 - 1.5 Specific Gravity @ 25°C gm/cm³ ~ 1.3 Viscosity @ 25°C CST ~ 150 Flash Point (°C) > 140 Country of Origin: Sweden PRODUCT FEATURES. Inhibition of Slag formation at the super-heater & re-heater tubes, low viscosity that provides immediate mixing with fuel oil. Increases ash melting temperature and should prevent hot end corrosion as well as controls low temperature, corrosion in cold end boiler area including regenerative air-heaters. Reduction in un-burnt Carbon quantity. Reduction in SOx and NOx emission. Optimization of ash PH. Decrease in Stack temperature.	**225 M. Ton**
02.	Covered under 'necessary dosing / monitoring equipment'		**ACID DEW POINT & RATE OF ACID BUILD UP METER.**	**02 Nos.**

			Make: AMETEK LAND, USA. Model: Lancom 200 Portable Sulphuric Acid Dew Point Temperature Monitor.	
03.	Covered under 'necessary dosing / monitoring equipment'		**<u>Portable Flue Gas Analyzer</u>** Make: TESTO, Germany Model: 350 M/XL equipped with Filter & Printer, Analyzer of O2, Nox, Sox, Flue Gas Temp: Calculation of Air Axcess.	**02**
04.	Covered under 'necessary dosing / monitoring equipment'		**a. <u>Dozing Pumps 40 Bars</u>** Manufacturer: Pump SERA, Germany. **b. <u>Dozing Pumps 10 Bars</u>**	**03** **03**

13) DEVIATIONS IN SPECS IN PIL AND AS SUPPLIED

PIL # 03	AS IN PIL	AS ORDERED/STATUS	QTY RECEIVED
	Specs	Same as in PIL	50%
	Quantity received short/damaged	NIL	
	Claim with contractor/insurance company	NIL	
	Retention Money % Voucher No /date	10% P.B.G. US$ 11,620.00 No. IGT013500311611 Dated 21.12.2011	

2. PIL Item 08, Purchasing of 220Kv circuit breaker SF6 type for Units1, 2, 3:

This item consisting of six (6) breakers has been received and stacked in stores. These have been recorded on stock book (SMB) and will be issued turn by turn upon shutdown of units because these are intended for units and starting/station auxiliary transformers on 220 KV side. The specifications of equipment received correspond to those given in PIL.

NORTHERN POWER GENERATION COMPANY LTD MUZAFFARGARH

MATERIAL INSPECTION CERTIFICATE OF PIL-08

SR#	DESCRIPTION	NO. AND DATE
1	P.O. No. and date	**CEO/MZG/RE-4/T 1729 /P.O /1869-79 dated 27.03.2012**
2	Estimated cost as in PIL $ / PKR	**$ 337,605/-**
3	Name of supplier	M/S. Siemens AG ET HP CB B SC, Nonnentmmallee 104, 13629 Berlin, Germany.
4	Was order placed on lowest bidder as a result of ICB?	Yes
5	Date of material receipt	18.03.2013
6	Inspected date of material by N.I.C Surveyor.	02.05.13
7	GRN No. and date	006386 dated 06.05.13
8	M.B. Page No./Book No./date taken on stock	006386 dated 06.05.13
9	Date of inspection by sectional head for quality and quantity.	06.05.13
10	Supplier's bill of lading /Shipping documents /Packing list/ Contractor's Invoice Guarantee / Warranty (Copy Attached).	i) No.744INA50780127 Dated 12.12.2012 ii) Bill of Lading No. C-01 Dated 15.01.2013
11	Certificate of origin / Name of manufacturer	A305916 dated 18.12.12 Siemens AG , Germany

12) COMPARISON OF SPECIFICATIONS

PIL # 08	AS IN PIL	QTY IN PIL	AS ORDERED	QTY RECEIVED
1.	**PURCHASING OF 220KV CIRCUIT BREAKER SF6 TYPE FOR UNITS 1,2,3** SF-6 outdoor, 3-Pole Circuit Breaker with a single operation mechanism, mounted on a common frame. Rated Voltage:- 245 K.V, Rated Normal Current : 2000Amp. Rated Short Circuit Breaking Current: 50KA Accessories:-Complete foundation drawings and Manual/Brochure etc.	**6 Sets. (One set consists of 3 Poles)**	**220KV, SF-6 CIRCUIT BREAKER.** TYPE: 3AP1-FI Siemens Germany 245KV, 2000Amp, 220V DC Circuit Breaker (Extended Creepage Distance) along-with SSS, Anchor bolts Connectors for Pipe & SF-6 Gas for first filling with accessories. Rupturing Current Capacity =50KA.	**6 Sets. (One set consists of 3 Poles)**

13) DEVIATIONS IN SPECS IN PIL AND AS SUPPLIED

PIL # 08	AS IN PIL	QTY IN PIL	AS ORDERED	QTY RECEIVED
1.	**PURCHASING OF 220KV CIRCUIT BREAKER SF6 TYPE FOR UNITS 1,2,3** SF-6 outdoor, 3-Pole Circuit Breaker with a single operation mechanism, mounted on a common frame. Rated Voltage:- 245 K.V, Rated Normal Current : 2000Amp. Rated Short Circuit Breaking Current: 50KA Accessories:-Complete foundation drawings and Manual/Brochure etc.	**6 Sets. (One set consists of 3 Poles)**	**220KV, SF-6 CIRCUIT BREAKER.** TYPE: 3AP1-FI Siemens Germany 245KV, 2000Amp, 220VDC supply voltage for auxiliary Circuit (Extended Creepage Distance) along-with SSS, Anchor bolts Connectors for Pipe & SF-6 Gas for first filling with accessories. Rupturing Current Capacity =50KA.	**6 Sets. (One set consists of 3 Poles)**

14	Quantity received short/damaged	NIL
15	Claim with contractor/insurance company	NIL
16	Retention Money % Voucher No /date	10% P.B.G. EURO 25,020.00 415-02-0114288 dated 08.03.2012
17	Quantify Gain achieved in MW Efficiency/BTU reduction in HR Availability/Reliability.	Reliability of units will improve

3. PIL Item 12, Changing of UPS 1&2 for Unit 4:

Two ordered UPS as per PIL have been received and installed in control room. Both of UPS have not still become redundant due to lack of necessary redundancy cards, connections and slight difference in output voltage. Station's maintenance crew tried to couple both UPS but resulted into damage of some cards which has been replaced by the supplier. The supplier has now been requested to make arrangement for redundant connections vide letter No. CEO/MZG/RE (M) 1-4/EE/3376 dated: 19.07.13. Upon complete gaining of redundancy, GRN will be issued.

A closer view of UPS

NORTHERN POWER GENERATION COMPANY LTD MUZAFFARGARH
MATERIAL INSPECTION CERTIFICATE OF PIL-12

SR#	DESCRIPTION	NO. AND DATE
1	P.O. No. and date	**CEO / MZG / RE-I /P.O/T-ICB-18/ 6242-52 dated 07.08.2012.**
2	Estimated cost as in PIL $ / PKR	**$ 62,835/-**
3	Name of supplier	M/s Ever Exceed Industrial Company Limited, 0416-0418, Tower A, Marina Bay Centre, Xinghua Rd., Bao'an CBD, Shenzhen 518101, China.
4	Was order placed on lowest bidder as a result of ICB?	Yes
5	Date of material receipt	02.04.13
6	Inspected date of material by N.I.C Surveyor.	25.04.13
7	GRN No. and date	Awaited, as both UPS are not redundant with each other due to slight difference in output voltage
8	M.B. Page No./Book No./date taken on stock	--do--
9	Date of inspection by sectional head for quality and quantity.	19.07.13
10	Supplier's bill of lading /Shipping documents /Packing list/ Contractor's Invoice Guarantee / Warranty (Copy Attached).	i) No. EED-11100803 Dated 24.01.2013 ii) Bill of Lading No. 210213000030 Dated 28.01.2013
11	Certificate of origin / Name of manufacturer	EED-11100803 Dated 24.01.2013 EverExceed, China.

12) COMPARISON OF SPECIFICATIONS

PIL # 12	AS IN PIL	QTY IN PIL	AS ORDERED	QTY RECEIVED
01.	Changing of UPS 1&2.for Unit 4		Uninterruptible power supply (UPS) redundant with mains bypass, including, erection, commissioning, interfacing with UPS#2 and dismantling of both old UPS # 1&2 FOR UNIT No.4, TPS, MUZAFFARGARH.	
	100 KVA, cos Φ: 0.8, Input: 3x380V, 50 Hz Output: 1x230 V, 50 Hz Manufacturer; M/S GUTOR Electronic AG, Switzerland OR Equivalent.		Model: PG 100 EU 100 KVA Cos Ø 0.8 3 Phase in / 1 Phase out 50H **Specification:** Input 3x380 Volts, 50 HZ Output 1x230 Volts, 50 HZ **MAKE: EVEREXCEED INDUSTRIAL CO., LTD, CHINA.**	**02 SETS**

13) DEVIATIONS IN SPECS IN PIL AND AS SUPPLIED: Equivalent

14	Quantity received short/damaged	NIL
15	Claim with contractor/insurance company	NIL
16	Retention Money % Voucher No /date	10% P.B.G. **Rs 544, 000.00** **AKBL09120011/LAD/G/1689** DATED **10.07.2012**
17	Quantify Gain achieved in MW Efficiency/BTU reduction in HR, Availability/Reliability.	Reliability will increase.

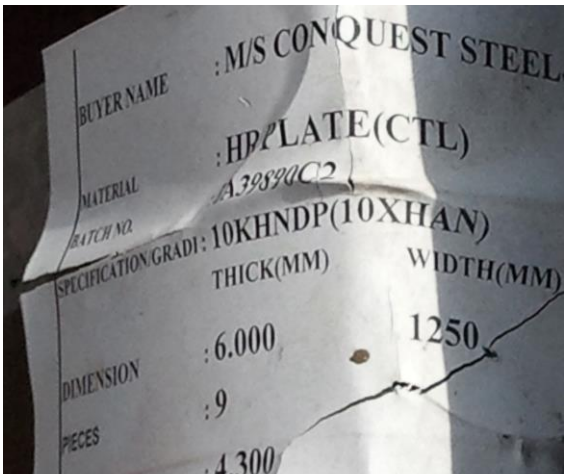
4. PIL Item 23, Replacement of Damaged Exhaust flue gas ducts of material Russian Grade Steel sheets, Plate Type Heat Exchanger for Generator Inner Water Cooling System and Motor for Starting Oil Pump (Vertical) Units 5-6:

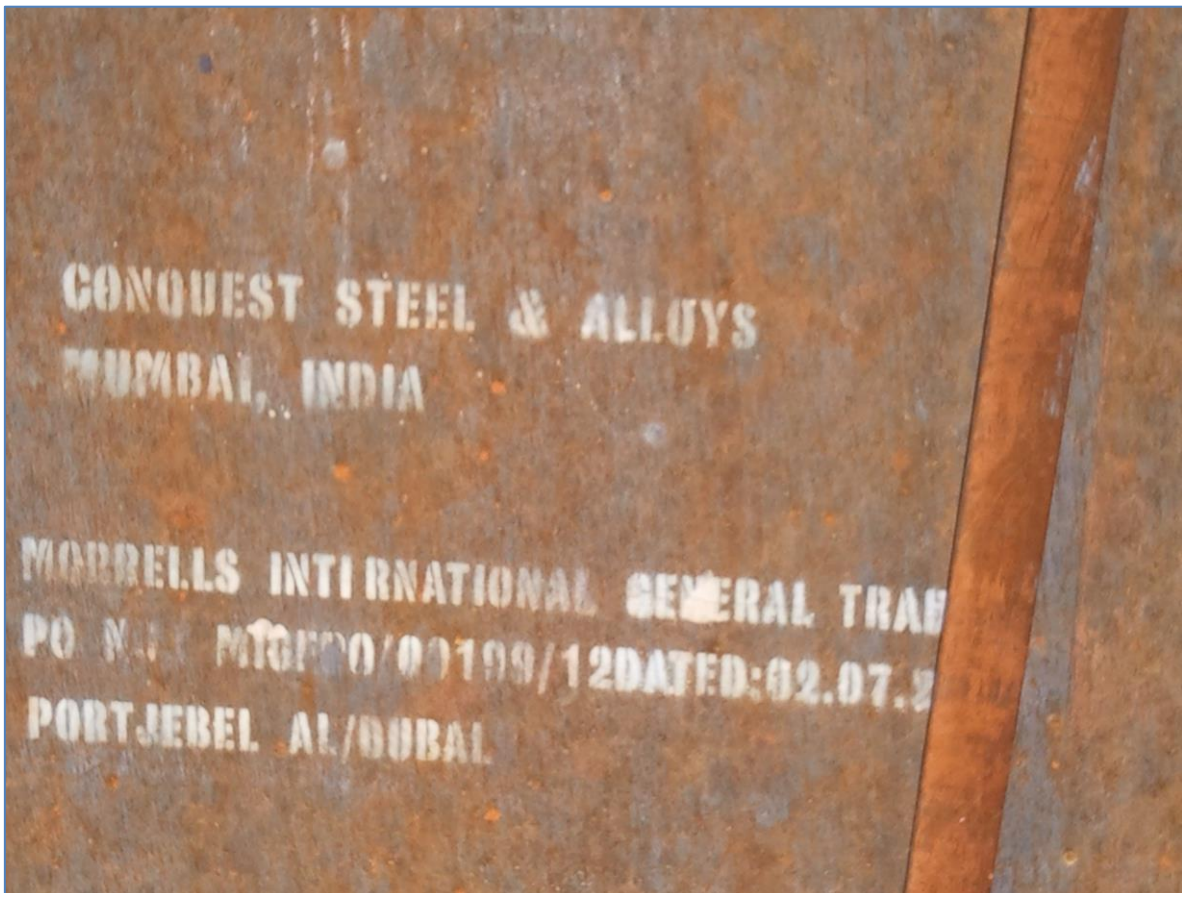
As per PIL technical specifications, acid and temperature resistant alloy steel of Grade **'10 Х НДП'** (Russian) Sheets for duct along with the following chemical composition was to be procured:

C: 0.12, Si: 0.17-0.37, Mn: 0.3-0.6, P: 0.035, S: 0.04 and Cr: 0.5-0.8. Since the arrival of material it is being used after inspection but chemical composition of the sheet material has not been got tested.

CE/TD was requested to do the same and provide us the results and he promised to get checked the material from PCSIR Laboratories.

The stickers and labels of CONQUEST STEEL AND ALLOY, MUMBAI, INDIA do indicate the same type of steel name as given in technical specs. The confirmation of material is necessitated because the country of origin is not Russia rather it has been routed from India through a Dubai based firm/trader.





Other two Sub-items procured under this PIL item through a separate Purchase Order were also received and inspected. One is Starting Oil Pump motor shown below. Its name plate data corresponded to PIL specs.

And the second item is plate type heat exchanger for generator inner water cooling system (x6), one of which has been installed and working satisfactorily. GRN of Plate type Heat Exchanger will be issued after Testing of one installed unit.

NORTHERN POWER GENERATION COMPANY LTD MUZAFFARGARH
MATERIAL INSPECTION CERTIFICATE

SR#	DESCRIPTION	NO. AND DATE
1	P.O. Nos. and dates	1. CEO / MZG / RE-I / P.O/T-ICB-03/ 7501-11 dated 29.06.2012.
		2. CEO / MZG / RE-I / P.O/T-ICB-1618 (A & B)/8658 dated 16.11.2012
2	Estimated cost as in PIL $ / PKR	**$ 287,550/-**
3	Name of suppliers	**1.** M/s Morrells International General Trading, P.O.Box 2627, Manama, Kingdom of Bahrain.
		2. M/s Tianjin Tianbao Century Development Co., Ltd., 31 Hiabin Fifth Road, Tianjin Free Trade Zone, Tianjin 300450, China.
4	Was order placed on lowest bidder as a result of ICB?	1. Yes
		2. Yes
5	Date of material receipt	**1.** 1st Partial Shipment & Material Received at site on 18.03.2013, 2nd & the final Shipment Received at site on 18.06.2013
		2. 18.06.2013

6	Inspected date of material by N.I.C Surveyor.	1. 19.06.13 2. 26.06.13
7	GRN No. and date	**1.** 0097333/19.06.13 &250510/27.06.13 **2.** GRN will be issued after Testing of sub-Item No.2
8	M.B. Page No./Book No./date taken on stock	**1.** 0097333/19.06.13 &250510/27.06.13 **2.** GRN will be issued after Testing P.O Item No.3
9	Date of inspection by sectional head for quality and quantity.	**1.** 25.06.13 **2.** Awaited
10	Supplier's bill of lading /Shipping documents /Packing list/ Contractor's Invoice Guarantee / Warranty (Copy Attached).	**1.** i)Invoice No. 00194/13 Dated 20.03.2013 ii) Bill of Lading No. J/KHI/4273 Dated 20.03.2013 **2.** i) Invoice No. 12TBSC043 Dated 05.01.13 ii) Bill of Lading No. KHI3150753V Dated 10.02.13
11	Certificate of origin / Name of manufacturer	**1.** 22623 Dated 21.03.2013 EVRAZ, South Africa **2.** CCPIT 112909398 Dated: 13.01.13 Tianjin Tianbao, China.

5. PIL Item 31 Protection Relay for Generators Units 5 & 6:

All the equipment has been received and inspected. However minor deviation in Specification of Sub-item 15 (DC Volt Meter type 2101 FS 1 mA INT RST 0~100V) was found because the dial scale is 0~150 V instead of 0-100V given in tech: specs. It will be installed and checked for calibration with input signal and then all the equipment will be taken on stock measuring book (SMB) and Goods Received Note (GRN) will be issued as NPGCL's internal documentation.

Generator's Relays and Voltmeter

NORTHERN POWER GENERATION COMPANY LTD MUZAFFARGARH
MATERIAL INSPECTION CERTIFICATE OF PIL-31

SR#	DESCRIPTION	NO. AND DATE
1	P.O. No. and date	**CEO/MZG/RE-I/T-ICB-05 /P.O /5816-25 dated 31.05.2012**
2	Estimated cost as in PIL $ / PKR	**$ 29,820/-**
3	Name of supplier	M/s Harbin Integrated Power Control Engineering Ltd. Harbin city, china.
4	Was order placed on lowest bidder as a result of ICB?	Yes
5	Date of material receipt	02.04.13
6	Inspection date of material by N.I.C Surveyor.	06.05.13
7	GRN No. and date	Due to difference in Specification of Sub-Item 15, GRN is pending.
8	M.B. Page No./Book No./date taken on stock	As mentioned above
9	Date of inspection by sectional head for quality and quantity.	Certificate not yet signed
10	Supplier's bill of lading /Shipping documents /Packing list/ Contractor's Invoice Guarantee / Warranty (Copy Attached).	i) No. HIPCE-L/C-1302 Dated 06.01.2013 ii) Bill of Lading No. XGGKHI3150492V Dated 20.01.2013
11	Certificate of origin / Name of manufacturer	CCPIT 103877928 HIPCEL, China.

12) COMPARISON OF SPECIFICATIONS

PIL # 31	AS IN PIL	QTY IN PIL	AS ORDERED	QTY RECEIVED
	PROTECTION RELAYS FOR GENERATORS UNIT NO. 5 & 6, TPS, MUZAFFARGARH.		**PROTECTION RELAYS FOR GENERATORS UNIT NO. 5 & 6, TPS, MUZAFFARGARH.**	
	(A) PROTECTION RELAYS (M/S. ACHENG RELAY WORKS CHINA).		**A) PROTECTION RELAYS (M/S. ACHENG RELAY WORKS CHINA).**	
1.	Negative sequence current relay AC 5A 50 HZ LFL-6 DC – 220 V	1	Negative sequence current relay AC 5A 50 HZ LFL-6 DC – 220 V	1
2.	Low frequency relay SDP-2 100V Ac 50 HZ DC – 220 V Time 3-20 Sec	2	Low frequency relay SDP-2 100V Ac 50 HZ DC – 220 V Time 3-20 Sec	2
3.	Loss of excitation LDC-2 AC-100V 5A 50 HZ-DC-220 V	1	Loss of excitation LDC-2 AC-100V 5A 50 HZ-DC-220 V	1
4.	Rotor Voltage relay DY-6 Voltage (100-200V)	1	Rotor Voltage relay DY-6 Voltage (100-200V)	1
5.	Current relay:		Current relay:	
	i. DL – 21 C / 20	6	ii. DL – 21 C / 20	6
	iii. DL-21 C/2.0-2A 50 HZ	6	iv. DL-21 C/2.0-2A 50 HZ	6
	v. DL-21-C/10 – 10A – 100 HZ	3	vi. DL-21-C/10 – 10A – 100 HZ	3
6.	Time Relay		Time Relay	
	i. DS-23 C 220 V DC	2	ii. DS-23 C 220 V DC	2
	iii. SS-21 220 V DC 30 Sec.	3	iv. SS-21 220 V DC 30 Sec.	3
7.	Aux. Relay		Aux. Relay	
	i. ZJ3 – 1C-4.4 DC 220 V	4	ii. ZJ3 – 1C-4.4 DC 220 V	4
	iii. ZJ3-3C-8.0 DC 220V	4	iv. ZJ3-3C-8.0 DC 220V	4
8.	Time Relay		Time Relay	
	i. JS7-4A TH-220 V AC Make: Shanghai Huayi China.	10	ii. JS7-4A TH-220 V AC Make: Shanghai Huayi China.	10
	iii. JS7-2A-220 V AC Make: Shanghai Huayi China.	10	iv. JS7-2A-220 V AC Make: Shanghai Huayi China.	10
	v. BS-33 ~ 220 V AC 30 Min. Make: Acheng Relay Works China.	4	vi. BS-33 ~ 220 V AC 30 Min. Make: Acheng Relay Works China.	4
	vii. JS7-4N TH 380V AC Make: Shanghai Huayi China.	10	viii. JS7-4N TH 380V AC Make: Shanghai Huayi China.	10
	ix. JS7-2A TH 380V AC Make: Shanghai Huayi China.	10	x. JS7-2A TH 380V AC Make: Shanghai Huayi China.	10
	xi. JS7-2N-380 V AC	10	xii. JS7-2N-380 V AC	10

	Make: Shanghai Huayi China.		**Make: Shanghai Huayi China.**	
9.	Buzzer DDZ1 – 220 V DC 20 Watt **Make: Zhejiang Tianzheng China.**	6	Buzzer DDZ1 – 220 V DC 20 Watt **Make: Zhejiang Tianzheng China.**	6
	B) MEASURING EQUIPMENTS (M/S. BEIJING AUTOMATIC – CONTROL EQUIPMENT PLANT CHINA)		**B) MEASURING EQUIPMENTS (M/S. BEIJING AUTOMATIC – CONTROL EQUIPMENT PLANT CHINA)**	
1.	Amp. Meter type 2182 CT 1.5 KA/5A FS 5A 0~1.5 KA	6	Amp. Meter type 2182 CT 1.5 KA/5A FS 5A 0~1.5 KA	6
2.	Amp. Meter 1/1 200/5 FS 5A 0 ~ 200A	8	Amp. Meter 1/1 200/5 FS 5A 0 ~ 200A	8
3.	Amp. Meter type 2102 12K/5A FS 5A 0~1.2 KA	10	Amp. Meter type 2100 12K/5A FS 5A 0~1.2 KA	10
4.	AC Volt meter type 2182 0~500 V 380/100V FSV	10	AC Volt meter type 2182 0~500 V 380/100V FSV	10
5.	AC Volt Meter type 2182 6.6 KV/100 V FS113.6V (0 – 7.5 KV)	10	AC Volt Meter type 2182 6.6 KV/100 V FS113.6V (0 – 7.5 KV)	10
6.	AC Volt Meter type 45L8 220kv/100 0~300 kv	10	AC Volt Meter type 45L8 220kv/100 0~300 kv	10
7.	AC Volt Meter type 2102 15.75 KV /100 FS127V 0~20KV	10	AC Volt Meter type 2102 15.75 KV/100 FS127V 0~20KV	10
8.	DC amp. Meter type 2101 FS 75MV Ext SH 0~ 150 A	5	DC amp. Meter type 2101 FS 75MV Ext SH 0~ 150 A	5
9.	DC amp. Meter type 2101 FS 75MV Ext SH 0 ~ 300 A	6	DC amp. Meter type 2101 FS 75MV Ext SH 0 ~ 300 A	6
10.	DC Amp meter type 2101 FS 75 MV Ext SH 0~75 A	6	DC Amp meter type 2101 FS 75 MV Ext SH 0~75 A	6
11.	DC Amp. Meter type 2101 FS 50 MV INT RES – 10~0~+10A	5	DC Amp. Meter type 2101 FS 50 MV INT RES – 10~0~+10A	5
12.	DC Volt meter type 2101 FS 1mA INT RST. 0~300 V	5	DC Volt meter type 2101 FS 1mA INT RST. 0~300 V	5
13.	DC Volt Meter type 2181 FS 1 mA Ext. RST. 0~1.5 K v	5	DC Volt Meter type 2181 FS 1 mA Ext. RST. 0~1.5 K v	5
14.	DC Volt Meter type 2101 – 150~0~+150 v	4	DC Volt Meter type 2101 – 150~0~+150 v	4
15.	DC Volt Meter type 2101 FS 1 mA INT RST. 0~100 v	5	DC Volt Meter type 2101 FS 1 mA INT RST. 0~100 v	5
16.	MW meter type 2185 220kv/100v 600/5A 0~250MW	5	MW meter type 2185 220kv/100v 600/5A 0~250MW	5
17.	Gen. Freq. meter type 45L8 100 v 45~55 C/s	4	Gen. Freq. meter type 45L8 100 v 45~55 C/s	4
18.	Gen. PF Meter type 45L8 100 v 5A .5 to 1 lead .5 to 1 lag.	4	Gen. PF Meter type 45L8 100 v 5A .5 to 1 lead .5 to 1 lag.	4
19.	Gen. MVAR type 15750/100 v 12 KA/5A lead 300 ~0~300 2 lag.	4	Gen. MVAR type 15750/100 v 12 KA/5A lead 300 ~0~300 2 lag.	4
20.	MW Meter type 2105 15.75 kv/100 V 12KA/5A 0~350 MW	2	MW Meter type 2105 15.75 Kv/100 V 12KA/5A 0~350 MW	2
21.	MVAR Meter type 45L8 15.75 kv/100v 0~350 MW	4	MVAR Meter type 45L8 15.75 kv/100v 0~350 MW	4

13) DEVIATIONS IN SPECS IN PIL AND AS SUPPLIED

PIL # 31	AS IN PIL	QTY IN PIL	AS Supplied	QTY RECEIVED
15.	DC Volt Meter type 2101 FS 1 mA INT RST. **0~100 V**	5	DC Volt Meter type 2101 FS 1 mA INT RST. **0~150 V**	5

14	Quantity received short/damaged	NIL
15	Claim with contractor/insurance company	NIL
16	Contractor Bill No and date	Covered under Sr. No. 10
17	Retention Money % Voucher No /date	10% P.B.G. US$ 2,820.00 No. 0110PBG213612 Dated 04.05.2012
18	Quantify Gain achieved in MW	Equipment is meant for increase in reliability of units

Request for inspection

GHC

NORTHERN POWER GENERATION COMPANY LTD.

Phone: 066-9200286
PBX. 066-9200151-154
Fax: 066-9200186

OFFICE OF THE
CHIEF EXECUTIVE OFFICER,
NPGCL, (GENCO-III) TPS,
MUZAFFARGARH.

No. CEO /MZG/RE-I/T-ICB CASES/ 1228-31

Dated. 05 / 07 / 2013

The Chief of Party,
USAID Energy Policy Programme,
Energy Policy Project, House No.4, Street No. 88,
G-6/3, Islamabad.
Fax: 051-8357071

Subject: **INSPECTION OF RECEIVED MATERIAL AGAINST UNDER MENTIONED PURCHASE ORDERS.**

Material received at Thermal Power Station site Muzaffargarh of PIL line items Nos. **03, 08, 12, 23 & 31** of Attachment-**IV**. The details are as under:-

Sr. No.	PIL No.	Purchase Order No.	Description	Date of Material Received at Site
1.	PIL-03	CEO/MZG/RE-I/T-ICB-02 /P.O /8932-43 dated 22.11.2012	Use of Fuel Oil Additive as done on Unit No.4 (450 Ton.) for Units 1 to 6, TPS, MUZAFFARGARH	NICL Surveyor Inspected the Material.
2.	PIL-08	CEO/MZG/RE-4/T 1729 /P.O /1869-79 dated 27.03.2012	PURCHASE OF 220KV SF-6 CIRCUIT BREAKERS FOR 220KV SWITCH YARD PHASE-I, TPS, MUZAFFARGARH	NICL Surveyor Inspected the Material
3.	PIL-12	CEO / MZG / RE-I /P.O/T-ICB-18/ 6242-52 dated 07.08.2012.	PROCUREMENT OF UN-INTERRUPTIBLE POWER SUPPLY (UPS) REDUNDANT WITH MAINS BY PASS, INCLUDING, ERECTION, COMMISSIONING, INTEREACING WITH UPS#1 & UPS#2 AND DISMANTLING OF BOTH OLD UPS #1 & 2 FOR UNIT-4 TPS, MUZAFFARGARH	NICL Surveyor Inspected the Material
4.	PIL-23	CEO / MZG / RE-I / P.O/T-ICB-03/ 7501-11 dated 29.06.2012. CEO / MZG / RE-I / P.O/T-ICB-1618 (A & B)/8658 dated 16.11.2012	PROCUREMENT OF ALLOY STEEL SHEETS OF GRADE 10XH/Ц (RUSSIAN), ACID & TEMPERATURE RESISTANT FOR EXHAUST FLUE GAS DUCTS OF BOILERS OF UNIT NO 5 & 6 TPS, MUZAFFARGARH PLATE TYPE HEAT EXCHANGER FOR INNER WATER COOLING SYSTEM OF GENERATOR AND MOTOR FOR STARTING OIL PUMP (VERTICAL) UNIT 5 & 6, TPS, MUZAFFARGARH	NICL Surveyor Inspected the Material NICL Surveyor Inspected the Material
5.	PIL-31	CEO / MZG / RE-I/ T-ICB-05/PO/ 5816-25 dated 31.05.2012.	PURCHASE OF PROTECTION RELAYS & MEASURING EQUIPMENT OF UNIT NO 5 & 6, TPS, MUZAFFARGARH	NICL Surveyor Inspected the Material

It is therefore requested that representative of USAID be deputed at the earliest to inspect the said material at site TPS, Muzaffargarh.

CHIEF EXECUTIVE OFFICER
NPGCL, TPS, MUZAFFARGARH.

Copy to:-

1. Finance Director, TPS Muzaffargarh.
2. Resident Engineer (M) 1 to 4, Unit No. 1, 2, 3 & 4 and Resident Engineer- II, Unit No. 5 & 6, TPS, Muzaffargarh is requested to provide the relevant Record to USAID Inspection Team.
3. P.A to Chief Executive Officer, TPS Muzaffargarh.

The Director General (Insurance) Wapda,
5th Floor, Wapda Building,
Boherwala Chowk, 34-Nicoloson Road,
Lahore.

PIL-03

Subject: CLAIM NO NICL/PAK-00056/13, P.O.NO.CEO/MZG/RE-I/T-ICB-02/ P.O/8932-43 DATED 22.11.2012,AMENDMENT NO. 105-14 DATED 04-03-13

Dear Sir:

Procurement of magnesium oxide or Hydro- Oxide fuel oil additive in oil dispersed form along with necessary dosing /monitoring equipment for Unit,1-6 received in store of Phase-I, against subject purchase order have been inspected jointly. Mr.Hammad Gulzar surveyor of M/S Bashir-A-Khan & Copmany (PVT) Ltd Abdali Road Multan visited TPS Muzaffargarh on 19.06.2013. The consignment was safe & sound.

Signatures.

1. Additional Director (Chemical)

2. A.S.M-I

3. S.S.K

4. Mr. Hammad Gulzar (Surveyor)

5. Mr.Shahbaz Khan (M/S INTAS)

RESIDENT ENGINEER (M) I-IV,
NPGCL, TPS, MUZAFFARGARH

The Director General (Insurance) Wapda,
5th Floor, Wapda Building,
Boherwala Chowk, 34-Nicoloson Road,
Lahore.

PIL-08

Subject:- CLAIM NO NICL/PAK-00045/13,
P.O.NO.CEO/MZG/RE-4/ T-1729/PO/1869-79 DATED 27-03-2012

Dear Sir,

220 KV SF-6 Circuit Breakers for 220 KV Switch Yard Phase-I, inspected jointly on 02-05-2013 in the presence of Mr.Muhammad Irfan Ali surveyor of M/S Bashir-A-Khan & Copmany (PVT) Ltd Abdali Road Multan.The consignment was found complete in safe and sound condition.

Signatures.

1. E.E-I

2. A.S.M-I

3. S.S.K-I

4. Mr. Muhammad Irfan (Surveyor)

5. Usman Younis (SIEMENS)

RESIDENT ENGINEER (M) I-IV,
NPGCL, TPS, MUZAFFARGARH.

JOINT INSPECTION REPORT

PIL-12

It is to certify that the material of said consignment against international purchase order No.**CEO/MZG/RE-I/T-ICB-18/PO/6206-16 dated:07.08.2012,** has been inspected in the presence of representative of M/s Ali Murtaza & Company, Multan (Insurance Surveyor) and representative staff of Thermal Power Station GENCO-III, Wapda Unit-4, Muzaffargarh on **25.04.2013**.

The following material of subject consignment of Unit-4 has been inspected and found as per packing list.

ABID ALI
Insurance Representative of
M/s Ali Murtaza & Co,
(Pvt) Ltd, Multan

Asstt: Store Manager
Unit-4, TPS, M.Garh.

Electrical Engineer
Unit-4, TPS, M.Garh.

INSPECTION CERTIFICATE

PIL-23/1

It is certified that the consignment for Unit 5&6 against International Purchase Order *No.* ***C.E.O/MZG/RE-4/T-ICB-03/P.O/7501-11*** *DATED* ***29-06-2012*** has been found safe & sound and inspected in the presence of representative of **M/S Bashir-A-Khan & COMPANY. (PVT.) Ltd**. (Insurance Surveyor) and Thermal Power Station NPGCL, GENCO-III, Unit 5&6, Muzaffargarh on dated 19-06-12.

Item No.	Description of Material	Quantity Required	Remarks
	ALLOY STEEL SHEETS OF GRADE OF GRADE 10XH (RUSSIAN) ACID & TEMPERATURE RESISTANT FOR EXHAST FLUE GAS DUCT OF BOILERS OR EQUIVALENT MANUFACTURE EVER HIGH VELD STEEL & VANADIUM.		
01.	SHEET SIZE: 2000X8000mm or any available size thickness: 4.5mm	**40 M.T**	O.K
02.	SHEET SIZE: 2000X8000mm or any available size thickness: 6.0mm	**60 M.T**	O.K

The detail report will be submitted after thorough inspection and Installation of material at site.

Representative
M/s Bashir A Khan.
Multan.

Assistant Store Manager
Unit 5&6 TPS Muzaffargarh

Sectional Head
(Mechanical Engineer)

Joint Inspection Certificate

PIL-23/2

It is certified that the consignment for Unit 5&6 against International Purchase Order **No. C.E.O/MZG/RE-1/T-ICB-1618(A&B)/8658-68 Dated 16-11-2012**has been found safe & sound and inspected in the presence of representative of **M/S Bashir-A-Khan & Co. (PVT.) Ltd.**(Insurance Surveyor) and Thermal Power Station NPGCL, GENCO-III, Unit 5&6, Muzaffargarh on dated **26-06-2013**.

Item No.	Description of Material	Quantity Required	Remarks
1.	**A) PROCURMENT OF MOTOR FOR STARTING OIL PUMP FOR UNIT NO. 5&6 TPS, M/GARH.**		
	Motor for starting oil Pump V1 (Vertical) Type: YB2-355m1-2 Capacity: O/P 200KW Frequency: 50Hz Speed: 2980 RPM Power Supply 380V,(3Phase) Current: 350Amp Explosion Proof Class: dIIBT4 Protection Class:IP55 Insulation Class :F **Make: M/s Shandong Huali Electric Motor Group Ltd, China.**	**1 No.**	The Technical inspection is under process & the material will be accepted after its installation
2.	**B) PLATE TYPE HEAT EXCHANGER FOR GENERATING INNER WATER COOLING SYSTEM.**		
	Type: BR-0.2C Heat Surface: 25M² Assemble form: (2* 15+2*16)/2*31 Design Pressure: 1MPA Design Temp: 150°C Plate Thickness: 0.7mm, SUS 304 **Seal Pad Material: EPDM and** **Media: Oil Free Water /Water** **Make: Tianjin Zhonghui Heat Exchange Facilities Co Ltd, China.**	**6 Nos.**	The Technical inspection is under process & the material will be accepted after its installation

The detail report will be submitted after thorough inspection and Installation of material at site.

Representative
M/s Bashir A Khan.
Multan.

Sectional Head
(Electrical Engineer)

Assistant Store Manager
Unit 5&6 TPS Muzaffargarh

JOINT INSPECTION CERTIFICATE

PIL-31/P1

It is certified that the consignment for Unit 5&6 against International Purchase Order *No.* ***C.E.O/MZG/RE-4/T-05/P.O/5816-25*** *DATED 31-05-2012* has been found safe & sound and inspected in the presence of representative of **M/S ALI MURTAZA & COMPANY. (PVT.) Ltd**. (Insurance Surveyor) and Thermal Power Station NPGCL, GENCO-III, Unit 5&6, Muzaffargarh on dated 06.05.2013.

Item No.	Description of Material	Quantity Required	Remarks
A)	**PROTECTION RELAYS (M/S. ACHENG RELAY WORKS CHINA).**		
01.	Negative sequence Current realy AC 5A 50HZ LFL-6 DC-220V	1	O.K
02.	Low frequency relay SDP-2 100V Ac 50 HZ DC-220V 03~20Sec	2	O.K
03.	Loss of Excitation LDC-2 100V 5A 50 HZ DC-220V	1	O.K
04.	Rotor Voltage relay DY-6 , Rated Voltage 100-200V	1	O.K
05.	Current relay:		
	i) DL-21C/20	6	O.K
	ii) DL-21C/2.0-2A 50HZ	6	O.K
	iii) DL-21C/10-10A 100HZ	3	O.K
06	Time Relay.		
	i) DS-23 C 220V DC	2	O.K
	ii) SS-21 220V DC 30Sec.	3	O.K
07.	Aux. Relay		
	i) ZJ3 -lC-4.4 DC 220V	4	O.K
	ii) ~~DZJ3-lC-4.4 DC 220V~~ ZJ3-3C-8.0 DC 220V	4	O.K
08.	Time Relay		
	i) JS7-4A TH-220 V AC Make: Shanghai Huayi China.	10	O.K
	ii) JS7-2A-220 V AC Make: Shanghai Huayi China.	4	O.K
	iii) BS-33~220 V AC 30 Min. Make: Acheng Relay Works China.	10	O.K
	iv) JS7-4N TH-380 V AC Make: Shanghai Huayi China	10	O.K
	v) JS7-2A TH-380 V AC Make: Shanghai Huayi China	10	O.K
	vi) JS7-2N-380 V AC Make: Shanghai Huayi China	6	O.K
09.	**Buzzer DDZI-220V DC 20Watt** **Make: Zhejiang Tianheng China.**	6	O.K
B	**MEASURING EQUIPMENTS (M/S BEIJING AUTOMATIC-CONTROL EQUIPMENT PLANT CHINA.**		
1.	Amp. Meter Type 2182 CT 1.5 KA/5A FS 5A 0~1.5KA	6	O.K
2	Amp. Meter 1/1 200/5 FS 5A 0~200A	8	O.K
3	Amp. Meter Type ~~2012~~ 2102 12K/5A FS 5A 0~1,2 KA	10	O.K
4	AC Volt Meter Type 2182 0~500V 380/100V FSV	10	O.K
5	AC Volt Meter Type 2182 6.6KV/100 V FS113.6V (0~7.5KV)	10	O.K
6	AC Volt Meter Type 45LB 220Kv/100 0~300 Kv	10	O.K
7	AC Volt Meter Type 2102 15.75Kv/100 FS127V ~~0-200KV~~ 0~20KV	10	O.K
8	DC amp Meter Type 2101 FS 75~~MV~~ mV EXT SH 0~150A	5	O.K

	DC amp Meter Type 2101 FS 75MV EXT SH 0~300A	6	O.K
10	DC amp Meter Type 2101 FS 75MV EXT SH 0~75A	6	O.K
11	DC amp Meter Type 2101 FS 50MV INT RES-10~0~+10A	5	O.K
12	DC Volt Meter Type 2101 FS 1mA INT RST 0~300V	5	O.K
13	DC Volt Meter Type 2181 FS 1 mA EXT RST 0~1.5Kv	5	O.K
14	DC Volt Meter Type 2101-150~0~+150V	4	O.K
15	DC Volt Meter Type 2101 FS 1 mA INT RST 0~100v	5	–
16	MW meter Type 2185 220Kv/100v 600/5A 0~250MW	5	O.K
17	Gen. Freq. meter type 45LB 100v 45~55 C/s	4	O.K
18	Gen. PF. meter type 45LB 100v 5A 5to1 Lead 5 to1lag	4	O.K
19	Gen. MVAR. meter type 15750/100v 12KA/5A Lead 300~0~300 2 Lag	4	O.K
20	MW meter Type 2105 15.75Kv/100v 12KA/5A 0~350MW	2	O.K
21	MVAR. meter type 45LB 15.75kv/100v 0~350 MVAR	4	O.K

The detail report will be submitted after thorough inspection and Installation of material at site.

• Specifications of material is O.K except item # 15, but all material will be accepted after Testing.

Representative
M/s Ali Murtaza & Co.
Multan.

Representative
Al-Tariq Traders
Karachi.

Sectional Head
(Electrical Engineer)

PIL-31/P2

Assistant Store Manager
Unit 5&6 TPS Muzaffargarh

Energy Policy Program (USAID Funded)
House 4, Street 88, G-6/3
Islamabad, Pakistan
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Fax: +92 51 835 7071