


REPUBLIC OF THE PHILIPPINES  
NATIONAL POWER CORPORATION  
BCFTPP

  
 JUL 13 2009  
 DC RD  
 GCP  
 7/21

PR NO.  
 TB-BCO09-054  
 Use this Number  
 in all communication

PURCHASE REQUISITION

026 B.1

Requisitioning Office : BATANGAS COAL FIRED OPERATIONS Date : 06/25/09  
 Cost Center Number : 5255012 Local : \_\_\_\_\_ Date Needed : 09/23/09  
 GL No. : 515 OE No. : 10685 Deliver to : BCFTPP  
 WO No. : \_\_\_\_\_ JO No. : \_\_\_\_\_ Date PR Rcvd. by Proc Office: \_\_\_\_\_

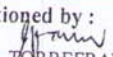
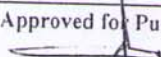
ITEM NO.	NSN	COMPLETE DESCRIPTION/SPECIFICATION	QUANTITY	U/M	ESTIMATED COST	ASSIGNED PO/IO NO.
----------	-----	------------------------------------	----------	-----	----------------	--------------------

O.P.O. FOR THE SUPPLY OF SODIUM HYDROXIDE TENTATIVELY FOR THE PERIOD FROM AUGUST 1, 2009 TO DECEMBER, 2009.

1	N00000425	SODIUM HYDROXIDE, RAYON GRADE, 50% NAOH MIN., CLEAR,COLORLESS W/ NO SUSP.SOLIDS. REFER TO DETAILS OF SPECIFICATION & ADDITIONAL TERMS & CONDITIONS AT SEPARATE SHEETS.BIDDERS SHOULD SUBMIT SAMPLE, CERTIFICATE OF ANALYSIS & MSDS FOR EVALUATION.	450	MT.	5,850,000.00	
---	-----------	--	-----	-----	--------------	--

PHP 5,850,000.00

NOTE: ITEM IS INCLUDED IN 2009 PPMP PG. 10, N00000425.

PURPOSE/REMARKS FOR WATER TREATMENT PLANT USE, IN THE REGENERATION OF DEMINERALIZERS FOR THE CONTINUOUS PRODUCTION OF BOILER MAKE-UP WATER.		
Attachments : 2009 PPMP, PREVIOUS P.O., BACK-UP COPY, TERMS & COND. CERTIFICATION, ANNEX A + ANNEX B	Requisitioned by :  F. B. TORREFRANCA Print Name & Position Prin. Engr. A-CHEMICAL	Approved for Purchase :  D. C. MATEO Print Name & Position (A) Plant Manager

COMPLETE SPECIFICATION & TERMS AND CONDITIONS IN THE SUPPLY  
OF RAYON GRADE SODIUM HYDROXIDE (CAUSTIC SODA), TB-BCO09-054

1. End-user shall conduct visual inspection, % NaOH & Specific Gravity determination prior to unloading of delivered item. Complete analysis of impurities on composite sample shall be conducted monthly by end-user and supplier's representative at our plant's laboratory.
2. Price adjustment of purity( % NaOH) shall be applied on Caustic Soda actually delivered to the plant. Price adjustment on impurities exceeding the maximum limits shall be applied monthly. No premium shall be paid on deliveries exceeding the minimum assay.
3. Deliveries which are found to be of substandard quality shall be subject to acceptance or rejection at the option of the plant's Chemical Section Head.
4. Consistent delivery of substandard quality product within one(1) month shall be considered a default on the part of the supplier and shall be a ground for termination of contract with appropriate penalties as duly provided under condition 8.
5. Suppliers must have storage facilities and lorries, buffer and testing facilities for this chemical.
6. Deliveries shall be accompanied with the supplier's chemical analysis and the exact quantity of chemical contained in their tanker.
7. NPC/Supplier has the option to terminate or rescind the contract if it deems that purchase thereof will be detrimental and disadvantageous to its interest. However,, such termination shall be subject to acceptance by both parties and shall take effect within one month upon notice of termination by either party.
8. Supplier shall be responsible in maintaining the continuous supply as required by the plant. Should NPC be compelled to procure the item from other sources due to urgent need, any additional cost shall be shouldered solely by the supplier.
9. In case the above approximate quantity is withdrawn before the expiration of contract, a supplemental order shall be issued for additional deliveries as required.
10. Deliveries to the plant shall be for a period of approximately six(5) months or until the total quantity has been delivered. Deliveries shall be required within 24 hours upon advise by the plant.
11. Payment shall be made against partial deliveries payable within 30 days from receipt of required documents subject to condition no. 2.
12. Performance Bond shall be equivalent to five percent (5%) of the total contract price in the form of Cash/Manager's Check or Cashier's Check or thirty percent(30% ) of the total contract price in the form of Surety Bond. This bond shall remain in full force and effect until all the items under the O.P.O. are fully delivered and accepted by the Obligee. In case of advance delivery under OPO Agreements accepted by the supplier or the strength of a Letter of inten, the

Performance Bond shall cover the duly documented outstanding contract value.

TABLE A: RAYON GRADE CAUSTIC SODA QUALITY SPECIFICATION

PARAMETER	SPECIFICATION	REJECTION LIMITS
Sodium Hydroxide, NaOH	50% min.	Less than 47%
Sodium Carbonate, Na <sub>2</sub> CO <sub>3</sub>	0.2% max.	Over 0.5%
Sodium Chloride, NaCl	0.05% max	Over 0.1%
Sodium Sulfate, Na <sub>2</sub> SO <sub>4</sub>	0.02% max.	Over 0.125%
Silica, SiO <sub>2</sub>	25 ppm max.	Over 100 ppm
Iron, Fe	5 ppm max	Over 20 ppm
Sodium Chlorate, NaClO <sub>3</sub>	1 ppm max.	Over 80 ppm
Mercury, Hg	0.1 ppm max.	Over 1.2 ppm
Sediments & Susp. Solids	1% max.	Over 1%
Oil	1 ppm max.	Over 1 ppm

1. Pls. See Formula for price adjustments at separate sheet
2. Result of analysis of samples by BCFTPP chemists shall be the Basis in the evaluation of compliance of offers.

**COMPUTATION OF PRICE ADJUSTMENT OF CAUSTIC SODA**

DELIVERED TO NPC-BCFTPP

For the Month of :

I. COMPOSITE ANALYSIS (NPC ANALYSIS)

CONTAMINANTS

- % Na<sub>2</sub>CO<sub>3</sub>
- % NaCl
- % Na<sub>2</sub>SO<sub>4</sub>
- % SiO<sub>2</sub>
- % Hg
- % Fe
- % NaClO<sub>3</sub>

II. CHEMICAL DELIVERY DATE:

DATE	TOTAL WEIGHT(kg)	TOTAL COST
------	------------------	------------

TOTAL	#REF!	KGS	#REF!
-------	-------	-----	-------

III. COMPUTATIONS

A. Price discount due to loss of useful exchange capacity

1. Specification

Contaminants

	Weight	Limit
a. Sodium Carbonate (Na <sub>2</sub> CO <sub>3</sub> )	106.0	0.200000
b. Sodium Chloride (NaCl)	58.0	0.050000
c. Sodium Sulfate (Na <sub>2</sub> SO <sub>4</sub> )	142.0	0.020000
d. Silica (SiO <sub>2</sub> )	60.0	0.002500
e. Mercury (Hg)	201.0	0.000010
f. Iron (Fe)	56.0	0.000500
g. Sodium Chlorate (NaClO <sub>3</sub> )	106.0	0.000100

2. Equivalent % Sodium Hydroxide (ESH)

$$\begin{aligned} \text{ESH} = & 0.75(\% \text{Na}_2\text{CO}_3 - 0.2) + 0.69(\% \text{NaCl} - 0.05) + 0.56(\% \text{Na}_2\text{SO}_4 - 0.02) \\ & + 0.67(\% \text{SiO}_2 - 0.0025) + 0.40(\% \text{Hg} - 0.00001) + 2.14(\% \text{Fe} - 0.0005) \\ & + 0.38(\% \text{NaClO}_3 - 0.0001) \end{aligned}$$

ESH = 0.00000

3. Price discount due to loss of useful exchange capacity (PDI)

PDI = (ESH/50)\*TC

WHERE:

PDI = price discount due to useful exchange capacity, peso(P)

TC = total cost of caustic soda deliveries, pesos (P)

ESH = equivalent Sodium Hydroxide

B. Price discount due to iron fouling

1. Volume of Resin Damaged, (V1)

$$\begin{aligned} V1 = & (3) (W) (\% \text{Fe} - 0.0005) / (\text{Fe})(\text{TEC}) (100\%) \\ = & (3)(55,180,580.0)(.0019) / (56)(1.2)(100) \end{aligned}$$

2. Price discount (PD2)

$$\begin{aligned} \text{PD2} = & (V1)(\text{Current Anion Resin Cost/liter}) \\ = & (46.8)(P 152.72) \end{aligned}$$

WHERE : PD2 = price discount due to oxidation of iron fouling, pesos (P)

C. Price discount due to oxidation of divinylbenzene(DVB)

1. Volume of Resin Damaged, (V2)

$$V2 = (3)(W)(\% \text{NaClO}_3 - .0001) / (\text{NaClO}_3)(\text{TEC})(100\%)$$

$$\text{PD3} = (V2)(\text{Current Anion Resin Cost/liter})$$

WHERE : PD3 = price discount due to oxidation of resin by NaClO<sub>3</sub>

D. Total Price Discount, TPD

TPD = PD1 + PD2 + PD3