

**BHARATH HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)

PIPING CENTRE, MATERIAL MANAGEMENT

Phone:044-28161244

Fax:044-28161341

PUR 002/01

80, Gopathy Narayanaswamy Road, T.Nagar, Chennai – 600 017.

INDIGENOUS ENQUIRY	ENQUIRY REFERENCE	DATE
	4011000070	09.09.2010
DUE DATE FOR QUOTATION : 22.09.2010		
THIS IS ONLY A REQUEST FOR QUOTATION AND NOT AN ORDER		

Suppliers Are Requested To Go Through Terms & Conditions Before Submission of Offers.

Sl. No.	Material Code	Description & Specification	Unit	Qty.	DELIVERY SHEDULE		
					Qty.	Date	Remarks
		---- As per Annexure ----					

Encl. to Enquiry:

1. Important Information to Bidders
2. TDC : TDG : 07 : 05
3. MOU Terms
4. Painting QP Ref: 7045:QPC:12 Rev:01 DT: 02.02.10
5. Price Format
6. Technical Specification No. PC:E:GF:001 DT:16.12.09

Dear Sirs,

Please submit your lowest quotation in triplicate, subject to our terms and conditions overleaf, for the above materials, so as to reach us on or before the due date by 2.00 P.M.

1. Quotations will be opened at 2-30 P.M. on the due date in camera/In the presence of the tenderers who may like to be present.
2. Price should be nett FOR destination inclusive of risk in transmit and remain valid for 60 days from the due date.
3. If any Sales tax and Excise duty are payable as extra to the quoted price the percentage of the same should be specifically stated in the quotation failing which the purchaser will not be liable for payment of Sales Tax / Excise Duty. Our T.N.G.S.T.No.3560005/dt.1-4-95, C.S.T.No.239383 dt.11-6-91.
4. If the enquired items are coming under D.G.S & D rate contract, please indicate the rate contract prices duly sending a copy of the rate - contract along with your offer.
5. No revision of prices will be entertained after tenders are opened.
6. Manufacturers name, brand name trademark or patent No. if any should be specified. Illustrate leaflets giving particulars are required along with quotation wherever necessary.
7. Products with I.S.I.certification marks will be preferred.
8. The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject in part or full without assigning any reason whatsoever.
9. Late tenders are liable to be rejected.
10. Any deviations to the enquired technical and commercial conditions shall be clearly indicated in the covering letter of the quotation.

Note : 1. Clause No 3 of Terms & Condition given overleaf is superceded by MOU for CW Pipes.

2. Clause No.4 of Terms & Condition not applicable.

Yours faithfully,

For BHARATH HEAVY ELECTRICALS LIMITED

Dy. Manager / Purchase

Dy. Manager / Purchase

BHEL / Piping Centre

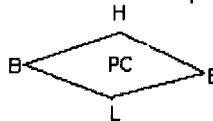
T. Nagar, Chennai - 600 017.

TERMS AND CONDITIONS

1. QUOTATION: Each tender should be sent in double cover; inner cover should be sealed with tenderer's distinctive seal and super scribed with correct tender No. Item of supply and due date of opening. The outer cover should only bear the address of this office and should not have any indication that a tender is within. Two or more quotations should not be sent in one cover but the quotation against each tender should be sent separately to avoid confusion.

Tenders should be free from CORRECTIONS AND ERASURES: Corrections if any, must be attested. All amounts shall be indicated both in words shall prevail.

2. PAINTING, PACKING AND MARKING: The supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit, as per enquiry specification wherever applicable. The following marking should be made in each packages.



The mark should be stenciled on the package itself. Should the packages be too small suitable cards giving these details may be tagged under seal of the seller. Special precaution shall be taken to prevent rusting and corrosion of metal parts during transit.

3. ~~TERMS OF PAYMENT:~~ ~~Payment will be made within 30 days of satisfactory receipt of materials at BH&L stores / site as required by the purchaser. The successful tenderer must send the operation and maintenance manuals, test certificate, drawing, etc., for the manuals ordered. These should be sent immediately after dispatch of the materials and statement to that effect should be made in the invoice. Failure to comply with this provision will result in delay in payment of the bills. Goods dispatched either by V.P.P. or by the document presented through bank will not be accepted unless agreed to by the purchaser.~~

4. ~~SECURITY DEPOSIT:~~ ~~In the case of orders above Rs.5,000/- with deliveries of 3 months or above, the seller shall, within 14 days after written notice of acceptance of his tender quotation has been pasted to him deposit with the purchaser (in cash or equivalent in Govt. Securities or Bankers Guarantee bond) a sum equal to 5% of total value of the stores detailed in the order as security for the due fulfillment of the contract. No claim shall lie with the purchaser in respect of interest on cash deposits on Govt. Securities or depreciation there of, Purchaser shall be entitled to deduct from the said deposit any loss or damages which they may be put to by reason of any act or default to the seller and recoverable by them from the seller and to call upon the seller to maintain the deposit as its original limit by making further deposits in the event of the seller failing to make and to maintain the Security of deposit in the manner aforesaid the purchaser shall be entitled to cancel the order.~~

5. LIQUIDATED DAMAGES: It is clearly among the parties to the contract that time is the essence of the contract. Therefore the delivery of the goods specified, in the purchase order should be made within the time limit prescribed. Where the seller supplies or dispatches the goods beyond the delivery period specified, the purchaser will have no obligation to accept the goods if accepted liquidated damages, at the rate of ½% of the value of goods delayed for each week of delay or part thereof subject to a maximum of 5% of the order value will be levied without prejudice to any other relief or compensation due to the purchaser under any other condition of this contract.

6. RISK PURCHASE: Alternatively the purchaser at this option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in clause 6 above.

7. PREFERENTIAL DELIVERY: It is noted if a correct is placed on a higher tenderer as a result of this invitation to tender in preference to the lowest acceptable offer in consideration of the earlier delivery, the seller will be liable to pay to the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price F.O.R. Destination, including all elements of freights, sales tax, duties and other incidentals in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.

8. GENERAL: The purchaser reserves the right to split up the tender and place order for individual terms with different, tenderers and also increase the quantity.

Any other conditions, which might have been quoted by the seller and are in contravention to the terms prescribed in the order and which have not been specifically accepted in by the purchaser will not be applicable to this contract.



BHEL : PIPING CENTRE : CHENNAI – 600 017

ENQUIRY NO: 4011000070

DATE: 09.09.10

IMPORTANT INFORMATION TO BIDDERS.

1. This Tender is a **TWO PART BID**.
Type and quantum of work is detailed in "SCOPE OF WORK"
2. The quoted price shall be " FIRM " till the complete execution of the scope.
3. Mode of Operation for Price Bid – Reverse Auction.
4. Last date for submission of offer **22.09.2010 - Time - 14.00 Hours.**
5. Techno-Commercial Bid Opening Date **22.09.2010 - Time - 14.30 Hours.**
6. The above bid shall be sent in a sealed cover duly indicating

Enquiry No. & date, Tender Opening date and "CIRCULATING WATER PIPES AS PER IS 3589 – TUTICORIN TPS Project.

**To
ADDL.GM / MM
BHEL - Piping Centre
Old No 93, (New No:80) G N Chetty Road
T Nagar / Chennai 600 017 . PHONE : 28161244 / 28161331**

SCOPE OF WORK :

BHEL requires the below mentioned quantity of Welded Pipe – Pipes either **Spiral or Longitudinal Seam Weld** conforming to IS 3589 FE 410 Pipes with Painting and as per TDC-TDG:07:05 and to be delivered to Tuticorin TPS project site. The raw material plate is to be arranged by suppliers themselves.

LIST OF ITEMS

Enq. Sl.no	Pipe Size in MM - ODx Thickness	Qty. Meters	Delivery	Project Site	Work Order Details
10	3240 mm x20 mm UG	502	31.01.11	TUTICORIN TPS	P1/7045 1 80 468 - 001-004 -133 Meters P1/7046 1 80 468 -001-004-369 Meters
20	2235 mm x 18 mm UG	438			P1/7045 1 80 468- 005,006,007,008,010,011, 012 -203 Meters P1/7046 1 80 468 -005, 006,007,008,010,011, 012, 013- 235 Meters
30	2235 mm x 18 mm OG	26			P1/7045 1 80 468-009,013- 13 Meters P1/7046 1 80 468 -009,014- 13 Meters

Total Weight ~ 1254 MT

TECHNICAL CUM COMMERCIAL

Technical :

The bidder shall supply the Welded Pipes complying with the following BHEL documents:

1. As per IS 3589 Specification and BHEL TDC :TDG:07:05
2. Technical requirements viz. Length, Edge Preparation, Spider Arrangement, Quality Plan etc, as finalized and agreed in MOU.
3. Pipes shall be supplied as despatchable units and in the lengths as mentioned in the Drawings ref. 3-80-468-27526 & 27527.



ENQUIRY NO: 4011000070 DT. 09.09.2010 – CW PIPES FOR TUTICORIN PROJECT

4. Painting requirements for CW Pipes shall be as per the enclosed Painting QP ref. 7045:QPC:12 Dt. 02.02.10 for Tuticorin Project.
Under ground Piping – Sl.no. 1 & 2 of QP
Overground Piping – Sl.no. 1 & 3 of QP

5. W.r.t Internal Coating, Pipes shall be supplied with special coating of Glass Flake reinforced Iso-Pthalic Polyester/ Acrylic Co-Polymer Coating of Internal Surface of Steel Pipes handling Sea Water confirming to Technical Specification No. PC:E:GF:001 Dt. 16.12.09.

6. Supply and application of above internal Coating shall be done through either of the following approved vendors of BHEL.

- a) M/s Kirloskar Corrocoat Private Limited, Kirloskawadi
- b) M/s Akzo Nobel Coating India Private Limited, Hoskote, Bangaluru

Pipe Vendor shall have a tie-up with the Coating vendor and the name shall be indicated in the bid. Responsibility for supplying the coated pipes to Tuticorin Project site shall rest with the Pipe vendor.

Commercial :

1. The prices quoted by the Bidder shall be on F.O.R. Ex-works basis inclusive of Coating, Packing and Forwarding charges with Freight extra for transportation of Finished pipes to Tuticorin project site. Price quoted shall be "FIRM" till the execution of the complete scope with raw material plate in their scope.
2. Payment for freight will be based on per meter.
3. The bidder shall furnish all the breakups as requested in the price bid format as enclosed. Unpriced bid format shall be submitted along with the techno-commercial bid.
4. The bidder shall clearly indicate the source of supply and all the applicable Taxes.
5. This project being Mega power project is eligible for Excise Duty exemption. Necessary documents will be provided by BHEL for the same. Kindly take this into account while submitting the bid.
6. Ordering shall be done as a package and on FOR Project Site basis. Overall L1 bidder for the entire requirement against this enquiry shall be considered for placement of Order.
7. Delivery – Supplies to be completed before 31.01.2011. The Bidder shall strictly confirm to our delivery requirement.

Delivery is the essence of the Contract/ PO. BHEL may accept or reject the price bid if delivery is not as specified, or if offered delivery is not suiting Project Plan/ Production plan as per BHEL.

BHEL has the right to order partly or fully considering the various requirements. BHEL may short close/cancel an order or divert to another vendor if the performance of the vendor is poor, or the delivery requirement of the item is very critical and not being met, at any time during the currency of the Contract/PO irrespective of the PO Delivery date, if there is no response for improvement in delivery as per BHEL requirement.

BHEL may counter offer the final L1 rate to other eligible vendors for acceptance and decide to distribute the Purchase orders fully or partly to the accepting vendors for ensuring deliveries meeting production/ project requirement. BHEL decision will be final in this regard.
BHEL has the right to reject delayed deliveries or accept on a conditional basis.



ENQUIRY NO: 4011000070 DT. 09.09.2010 – CW PIPES FOR TUTICORIN PROJECT

6. Bidder shall give a minimum validity of 60 days from the date of Technical bid opening.
7. All other commercial terms as finalized and agreed in the MOU
8. In case of incomplete/inadequate information provided against the requirements of this tender, the offer shall be liable for rejection.
9. Offers with deviation from the above Commercial and Technical Terms will not be considered.

PRICE :

The bidder shall provide the price strictly as per the price format annexed herewith. In this addition to the hard copy, the bidder has to submit in soft copy also in excel format (Preferably in CD).

- a. Base Price shall include Cost of Raw Material plus conversion cost per Meter of bare pipe including Edge Preparation and providing Spider Arrangement and Testing as per BHEL
TDC : TDG : 07 : 05.
- b. Coating charges, Internal and External, shall be clearly indicated.
- c. Freight rate shall be clearly mentioned.
- d. Ordering shall be on FOR – Tuticorin Project Site basis.
- e. Percentage of applicable Taxes, Service Tax on Transportation etc shall be clearly indicated.
- f. Service Tax, if included in Freight or extra, shall be clearly indicated.
- g. A soft copy of the price format with price details are also to be sent along with price bid.

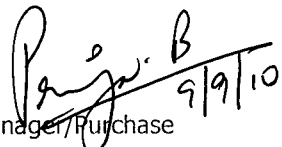
Prices quoted shall be " FIRM " till complete execution of the scope and bidder shall give **validity** of this price offer for a period of **minimum 60 days** from the date of opening of Bids.

LIST OF DOCUMENTS ENCLOSED :

1. Painting Quality Plan - QP Reference for Tuticorin - QP NO:7045:QPC:12 Rev:01 Dt. 02.02.10
2. Technical Specification Ref. PC:E:GF:001 Dt. 16.12.09
3. BHEL TDC : TDG : 07 : 05
4. Price Format
5. MOU Terms

The above documents form part of this tender document and bidder shall ensure that they have received all these along with tender and confirm.

- **Pre Qualified** is the criteria for consideration for other than the BHEL PC/Chennai Approved Vendors for supply of CW Pipes. After qualifying for registration, the new Vendors, may be considered for future in line with the system and policy. **Such Vendors will not be considered in this Enquiry.**
- The new Vendors may download Vendor registration forms from BHEL Web Site www.bhel.com and submit all relevant data for formal registration.


Dy. Manager / Purchase

PRIYA BALAJI
Dy. Manager / Purchase
BHEL - Mining Centre
T. Nagar, Chennai - 600 017.



ENQUIRY
(INDIGENOUS)

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
80, G.N.ROAD, T.NAGAR
Purchase Department - Piping Centre
CHENNAI - 600 017.
TAMILNADU (INDIA)

PHONE : 044-28161244
GRAMS : BHARATELEC
FAX NO : 044-28161341
E-mail : Pb@bhel.mpc.co.in
Web : www.bhel.com

ZPage 1/3

Enquiry No	Enquiry Date	Due Date for Quotation
4011000070	09.09.2010	22.09.2010

Please quote Enquiry No, Date and due date in all correspondences.
This is only a request for quotation and not an order

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07.05 Length: 10000.00	M	35.000	35.00	31.01.11
20	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07.05 Length: 10000.00	M	35.000	35.00	31.01.11
30	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07.05 Length: 10000.00	M	33.000	33.00	31.01.11
40	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07.05 Length: 10000.00	M	30.000	30.00	31.01.11
50	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	35.000	35.00	31.01.11
60	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	35.000	35.00	31.01.11
70	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	14.000	14.00	31.01.11
80	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	10.000	10.00	31.01.11

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

PRERNA BALAJI
Dy. Manager / Purchase
BHARAT HEAVY ELECTRICALS LIMITED
T. Nagar, (Piping Centre) 017.



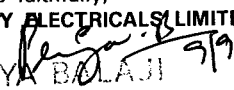
BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
80, G.N.ROAD, T.NAGAR
Purchase Department - Piping Centre
CHENNAI - 600 017.
TAMILNADU (INDIA)

4011000070 / 09.09.2010

90	159385970000 PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	6.000	6.00	31.01.11
100	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	51.000	51.00	31.01.11
110	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	51.000	51.00	31.01.11
120	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	7.000	7.00	31.01.11
130	159385970000 PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	7.000	7.00	31.01.11
140	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07:05 Length: 10000.00	M	35.000	35.00	31.01.11
150	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07:05 Length: 10000.00	M	153.000	153.00	31.01.11
160	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07:05 Length: 10000.00	M	33.000	33.00	31.01.11
170	1593860100UG PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA TDC: TDG:07:05 Length: 10000.00	M	148.000	148.00	31.01.11
180	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	42.000	42.00	31.01.11
190	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP	M	42.000	42.00	31.01.11

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

PRIYA BOLAJI
Dy. Manager / Purchase
MANAGER / PURCHASE
(Piping Centre)
T. Nagar, Chennai - 600 017.



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
80, G.N.ROAD, T.NAGAR
Purchase Department - Piping Centre
CHENNAI - 600 017.
TAMILNADU (INDIA)

4011000070 / 09.09.2010

	TDC: TDG:07:05 Length: 10000.00				
200	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	14.000	14.00	31.01.11
210	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	10.000	10.00	31.01.11
220	159385970000 PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	6.000	6.00	31.01.11
230	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	57.000	57.00	31.01.11
240	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	57.000	57.00	31.01.11
250	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	6.000	6.00	31.01.11
260	1593859700UG PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	7.000	7.00	31.01.11
270	159385970000 PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MP TDC: TDG:07:05 Length: 10000.00	M	7.000	7.00	31.01.11

General Note:

Enclosures:

"LD clause has to be confirmed without fail."

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED
PRIYA BALAJI
Dy. Manager / Purchase
MANAGER / PURCHASE
(Piping Centre)
T. Nagar, Chennai - 600 017.

BHEL : PIPING CENTRE : CHENNAI - 17

Limited Tender No. 4011000070 Dt.09.09.2010

PRICE FORMAT FOR TUTICORIN TPS 2 X 500 MW

Name of the Bidder:

Name of the Coating Vendor:

Supply Works (BHEL approved Manufacturing Works)

Item Sl No	Tender Serial No ----->	10-40,140-170,
	Item Description ----->	Underground Piping 1.Pipe Dia 3240 X 20 - 502 Mtrs. Tuticorin Project Site
	Elements of Cost	Rate per Meter
1	BASE PRICE including P & F (for Bare Pipe) : Detail Description (To be filled by the bidder in INR)	
2	Painting Charges - Underground piping a. Internal - Isophthalic Polyester / Acrylic Co-Polymer filled with glass flakes coating - 1 x 1000 Microns b. External - Red Oxide Zinc Phosphate - Alkyd base to IS 12744 - 1 x 30 Microns - Primer Coat	
3	CST (applicable on Base price+Painting) or VAT (as applicable)	-----%
4	Freight Charges excluding service tax (up to Tuticorin Project Site) (To be filled by the bidder in INR)	Rate per Meter
5	Service Tax for Freight Charges (including Cess) - if applicable	-----%
6	Transit Insurance Charges {Transit Insurance by BHEL @ 0.05% on Basic Price including P&F, Painting, Taxes, Duties and Freight - (1+2a+2b+3+4+5*0.05%)}	-----%
7	Unit All-inclusive Price (Rate per Meter) - 1+2a+2b+3+4+5+6	
8	Net Cash Outflow - Rate per Meter - Unit All-inclusive price in Rs.	

Work Order Details (Detailed sheet attached)

- Pipe Dia 3240 x 20 UG - (ENQ S.NO 10,20,30,40) (a) P1 7045 1 80 468 001 / 002 / 003 / 004 - 35 / 35 / 33 / 30 Mtrs
- Pipe Dia 3240 x 20 UG - (ENQ S.NO 140,150,160,170) (b) P1 7046 1 80 468 001 / 002 / 003 / 004 - 35 / 153 / 33 / 148 Mtrs

PLEASE SUBMIT UNPRICED BID ALSO, AS PER THE ABOVE FORMAT, ALONG WITH TECHNO-COMMERCIAL BID, INDICATING THE APPLICABLE TAXES, ANY OTHER LEVIES.

**


P. PRIVA
Dy. Manager, Purchase
BHEL / Piping Centre
T. Nagar, Chennai-600 017.

BHEL : PIPING CENTRE : CHENNAI - 17

Limited Tender No. 4011000070 Dt.09.09.2010

PRICE FORMAT FOR TUTICORIN TPS 2 X 500 MW

Name of the Bidder:

Name of the Coating Vendor:

Supply Works (BHEL approved Manufacturing Works) :

Item Sl No	Tender Serial No ----->	90,130,220,270
	Item Description ----->	Overground Piping Pipe Dia 2235 X 18 - 26 Mtrs. Tuticorin Project Site Rate per Meter
	Elements of Cost	
1	BASE PRICE including P & F (for Bare Pipe) : Detail Description (To be filled by the bidder in INR)	
2	Painting Charges - Over ground piping a. Internal - Isophthalic Polyester / Acrylic Co-Polymer filled with glass flakes coating - 1 x 1000 Microns b. External - Epoxy Polyamide resin based Zinc Phosphate Primer - 2 x 30 Microns c. External - Epoxy resin with MIO - 1 x 100 Microns	
3	CST (applicable on Base price+Painting) or VAT (as applicable)	-----%
4	Freight Charges excluding service tax (up to Tuticorin Project Site) (To be filled by the bidder in INR)	Rate per Meter
5	Service Tax for Freight Charges (including Cess) - if applicable	-----%
6	Transit Insurance Charges {Transit Insurance by BHEL @ 0.05% on Basic Price including P&F, Painting, Taxes, Duties and Freight - (1+2a+2b+2c+3+4+5*0.05%)}	-----%
7	Unit All-inclusive Price (Rate per Meter) - 1+2a+2b+2c+3+4+5+6	
8	Net Cash Outflow - Rate per Meter - Unit All-inclusive price in Rs.	

Work Order Details (Detailed sheet attached)

1. Pipe Dia 2235 x 18 OG - (ENQ S.NO 90,130) (a) P1 7045 1 80 468 009/013 - 6 / 7 Mtrs
2. Pipe Dia 2235 x 18 OG - (ENQ S.NO 220,270) (a) P1 7046 1 80 468 009/014 - 6 / 7 Mtrs

PLEASE SUBMIT UNPRICED BID ALSO, AS PER THE ABOVE FORMAT, ALONG WITH TECHNO-COMMERCIAL BID, INDICATING THE APPLICABLE TAXES, ANY OTHER LEVIES.

**


PRIVATISATION
Cy. Manager / Purchase
BHEL / Piping Centre
T. Nagar, Chennai-600 017.

BHEL : PIPING CENTRE : CHENNAI - 17

Limited Tender No. 4011000070 Dt.09.09.2010

PRICE FORMAT FOR TUTICORIN TPS 2 X 500 MW

Name of the Bidder:

Name of the Coating Vendor:

Supply Works (BHEL approved Manufacturing Works)

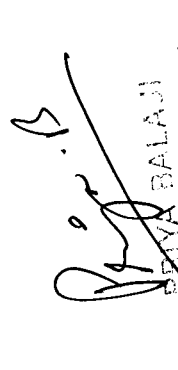
Item Sl No	Tender Serial No ----->	50-80, 100-120, 180-210, 230- 260
	Item Description ----->	Underground Piping Pipe Dia 2235 X 18 - 438 Mtrs. Tuticorin Project Site
	Elements of Cost	Rate per Meter
1	BASE PRICE including P & F (for Bare Pipe) : Detail Description (To	
	Painting Charges - Underground piping	
2	a. Internal - Isophthalic Polyester / Acrylic Co-Polymer filled with glass flakes coating - 1 x 1000 Microns b. External - Red Oxide Zinc Phosphate - Alkyd base to IS 12744 - 1 x 30 Microns - Primer Coat	
3	CST (applicable on Base price+Painting+ED) or VAT (as applicable)	-----%
4	Freight Charges excluding service tax (up to Tuticorin Project Site) (To be filled by the bidder in INR)	Rate per Meter
5	Service Tax for Freight Charges (including Cess) - if applicable Transit Insurance Charges {Transit insurance by BHEL @ 0.05% on Basic Price including P&F, Painting, Taxes, Duties and Freight - (1+2a+2b+3+4+5*0.05%)}	-----%
6		-----%
7	Unit All-inclusive Price (Rate per Meter) - 1+2a+2b+3+4+5+6	
8	Net Cash Outflow - Rate per Meter - Unit All-inclusive price in Rs.	

Work Order Details (Detailed sheet attached)

1. Pipe Dia 2235 x 18 UG - (ENQ S.NO 50,60,70,80,100,110,120) (a) P1 7045 1 80 468 005 / 006 / 007 / 008 / 010 / 011 / 012 - 35 / 35 / 14 / 10 / 51 / 51 / 7 Mtrs
2. Pipe Dia 2235 x 18 UG - (ENQ S.NO 180,190,200,210,230,240,250,260) (b) P1 7046 1 80 468 005 / 006 / 007 / 008 / 010 / 011 / 012 / 013 - 42 / 42 / 14 / 10 / 57 / 57 / 6 / 7 Mtrs

PLEASE SUBMIT UNPRICED BID ALSO, AS PER THE ABOVE FORMAT, ALONG WITH TECHNO-COMMERCIAL BID,
INDICATING THE APPLICABLE TAXES, ANY OTHER LEVIES.

**

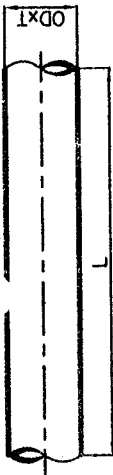

DR. MANOJ KUMAR
Dr. Manager / Purchase
BHEL / Piping Centre
T. Nagar, Chennai-600 017.

MATLCD	USAGE	DESCRIPTION	ENQ SL NO	QTY IN METERS	WEIGHT (MT)	WBS	DU REF
159385970000	OVERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00090	6.000	5.90	P1/7045	P7045-1-80-468 DU 009
159385970000	OVERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00130	7.000	6.89	P1/7045	P7045-1-80-468 DU 013
159385970000	OVERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00220	6.000	5.90	P1/7046	P7046-1-80-468 DU 009
159385970000	OVERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00270	7.000	6.89	P1/7046	P7046-1-80-468 DU 014
				26.000	25.58		
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00050	35.000	34.44	P1/7045	P7045-1-80-468 DU 005
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00060	35.000	34.44	P1/7045	P7045-1-80-468 DU 006
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00070	14.000	13.78	P1/7045	P7045-1-80-468 DU 007
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00080	10.000	9.84	P1/7045	P7045-1-80-468 DU 008
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00100	51.000	50.18	P1/7045	P7045-1-80-468 DU 010
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00110	51.000	50.18	P1/7045	P7045-1-80-468 DU 011
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00120	7.000	6.89	P1/7045	P7045-1-80-468 DU 012
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00180	42.000	41.33	P1/7046	P7046-1-80-468 DU 005
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00190	42.000	41.33	P1/7046	P7046-1-80-468 DU 006
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00200	14.000	13.78	P1/7046	P7046-1-80-468 DU 007
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00210	10.000	9.84	P1/7046	P7046-1-80-468 DU 008
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00230	57.000	56.09	P1/7046	P7046-1-80-468 DU 010
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00240	57.000	56.09	P1/7046	P7046-1-80-468 DU 011
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00250	6.000	5.90	P1/7046	P7046-1-80-468 DU 012
1593859700UG	UNDERGROUND	PIPE DIA 2235X18 (SPI/LONGI)IS3589-410MPA	00260	7.000	6.89	P1/7046	P7046-1-80-468 DU 013
				438.000	430.99		
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00010	35.000	55.58	P1/7045	P7045-1-80-468 DU 001
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00020	35.000	55.58	P1/7045	P7045-1-80-468 DU 002
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00030	33.000	52.40	P1/7045	P7045-1-80-468 DU 003
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00040	30.000	47.64	P1/7045	P7045-1-80-468 DU 004
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00140	35.000	55.58	P1/7046	P7046-1-80-468 DU 001
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00150	153.000	242.96	P1/7046	P7046-1-80-468 DU 002
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00160	33.000	52.40	P1/7046	P7046-1-80-468 DU 003
1593860100UG	UNDERGROUND	PIPEDIA3240X20UG(SPIRAL/LS)IS3589-410MPA	00170	148.000	235.02	P1/7046	P7046-1-80-468 DU 004
				502.000	797.18		
					1,253.75		

PRIYA BALAJI
 Dy. Manager / Purchase
 BHEL / Piping Centre
 T. Nagar, Chennai-600 017.

COOLING WATER PIPE (COATED INSIDE WITH GLASS FLAKE) ORDERING QTY. AND DATA FOR TUTICORIN 2x500MW

MATERIAL SPECN. - IS: 3589
(PGMA: 80-468)



CUST. No. 7045 (UNIT-1)						TOTAL WEIGHT (UNIT-1) = 423748 Kg				
SL. No.	ITEM No.	D.U. No.	PIPE SIZE (ODxT)	L LENGTH PER SET /PIECE	No. OF SET/PIECE	TOTAL QTY	WEIGHT (KG)	MATERIAL CODE	DESIRED LENGTH OF EACH PIECE	REMARKS
01	01	001	PIPE #3240 X 20 (UG)	35 M	1	35 M	55580.000	15 938 601 00UG	8 TO 10 M	
02	02	002	PIPE #3240 X 20 (UG)	35 M	1	35 M	55580.000	15 938 601 00UG	8 TO 10 M	
03	03	003	PIPE #3240 X 20 (UG)	33 M	1	33 M	52404.000	15 938 601 00UG	8 TO 10 M	
04	04	004	PIPE #3240 X 20 (UG)	30 M	1	30 M	47640.000	15 938 601 00UG	8 TO 10 M	
ERECTION ISO. DRG. No. 1-80-468-15921						133 M	211204.000			
05	01	005	PIPE #2235 X 18 (UG)	35 M	1	35 M	34440.000	15 938 597 00UG	8 TO 10 M	
06	02	006	PIPE #2235 X 18 (UG)	35 M	1	35 M	34440.000	15 938 597 00UG	8 TO 10 M	
07	03	007	PIPE #2235 X 18 (UG)	7 M	2	14 M	13776.000	15 938 597 00UG	7 M	
08	04	008	PIPE #2235 X 18 (UG)	5 M	2	10 M	9840.000	15 938 597 00UG	5 M	
09	05	009	PIPE #2235 X 18 (OG)	3 M	2	6 M	5904.000	15 938 597 0000	3 M	
ERECTION ISO. DRG. No. 1-80-468-15922						100 M	98400.000			
10	01	010	PIPE #2235 X 18 (UG)	51 M	1	51 M	50184.000	15 938 597 00UG	10 TO 12 M	
11	02	011	PIPE #2235 X 18 (UG)	51 M	1	51 M	50184.000	15 938 597 00UG	10 TO 12 M	
12	03	012	PIPE #2235 X 18 (UG)	3.5 M	2	7 M	6888.000	15 938 597 00UG	3.5 M	
13	04	013	PIPE #2235 X 18 (OG)	3.5 M	2	7 M	6888.000	15 938 597 0000	3.5 M	
ERECTION ISO. DRG. No. 1-80-468-15923						116 M	114144.000			

NOTES:-

1. LENGTH 'L' INDICATES TOTAL LENGTH OF EACH DU. WHEREVER THE LENGTH OF EACH DU EXCEEDS 10M, THE SUPPLY CAN BE MADE AS ONE SET (DESIRED LENGTH OF EACH PIECE AS INDICATED IN REMARKS COLUMN)
2. EACH PIECE OF PIPE SHALL BE SUPPLIED WITH BEVEL ENDS AS PER DRG. NO. 4-80-999-93079
 - a) EDGE PREPARATION FOR PIPE OD3240x20 IS FIG 'A' ; d1=3226.0
 - b) EDGE PREPARATION FOR PIPE OD2235x18 IS FIG 'A' ; d1=2221.0
3. COATING:-
 - a) INSIDE SURFACE OF THE PIPE SHALL BE COATED WITH GLASS FLAKE COATING AS PER SPECIFICATION PC:E:GF:001
 - b) OUTSIDE SURFACE SHALL BE PAINTED AS APPLICABLE FOR U/G PIPING OR O/G PIPING AS PER QP No. 7045:QPC:12
 - c) FOR COATING NEAR BEVEL ENDS REFER DRG. NO. 4-80-468-71285
4. SPIDER ARRANGEMENT TO BE PROVIDED AT PIPE ENDS AS PER DRG. NO. 4-80-999-93078
5. APPLICABLE TDC FOR PIPES TDC:07

BHARAT HEAVY ELECTRICALS LIMITED		NAME		DATE
PIPING CENTRE		CKOMAR	28.07.10	VAR.
CHENNAI 600 017		CKARUNAKARAN	28.07.10	
		APPO	28.07.10	
REF DRG. NO:	1-80-468-15921	ITEM No.		
	1-80-468-15922			
	1-80-468-15923			
PC DRG. NO.	3-80-468-27526			
CARD CODE	U 01			
TITLE	COOLING WATER PIPING ORDERING QTY. & DATA(UNIT-1)			
REV	DATE	ALTERED		
01		APPROVED		
ZONE				

GROUP MANUFACTURING SPECIFICATION										PRINCIPLE DRG: DPN-NS-PG-MA : 055-1-80-468 PGMA DESC : MAIN CIRCULATION WATER PIPING										RCI	NETWORK NUMBER 6138275	001/003 PAGE NUMBER	RVN '00'
CUST No. 7045		TUTICORIN 2X500MW PCPLP-1																					
LINE	D N A R M V	DU NO.	B O M	I T E M	DRAWING NUMBER / BPS CODE	R V A R	DESCRIPTION	MATL CODE		ACDUI	REVUNIT	QTY / JOB NO	WT / JOB NO	FINISHED WT									
010		*					MAIN CIRCULATION WATER PIPING			A		1.000	423748.000										
020		*	01			00	MAIN CW PIPING-DTS PIPES			A		1.000	423748.000										
030		001	01	01	3-80-468-27526	00	PIPE DIA 3240X20 (UG)	1593860100UG IS3589-410MPA		C	L	35.000	55580.000										
040		002	01	02	3-80-468-27526	00	PIPE DIA 3240X20 (UG)	1593860100UG IS3589-410MPA		C	L	35.000	55580.000										
050		003	01	03	3-80-468-27526	00	PIPE DIA 3240X20 (UG)	1593860100UG IS3589-410MPA		C	L	33.000	52404.000										
060		004	01	04	3-80-468-27526	00	PIPE DIA 3240X20 (UG)	1593860100UG IS3589-410MPA		C	L	30.000	47640.000										
070		005	01	05	3-80-468-27526	00	PIPE DIA 2235X18 (UG)	1593859700UG IS3589-410MPA		C	L	35.000	34440.000										

Weights indicated against piping DU's are average weights only

GROUP MANUFACTURING SPECIFICATION										PRINCIPLE DRG: DPN-NS-PG-MA : 055-1-80-468 PGMA DESC : MAIN CIRCULATION WATER PIPING				RCI	NETWORK NUMBER 6138275	002/003 PAGE NUMBER	RVN '00'
CUST No. 7045		TUTICORIN 2X500MW PCPLP-1															
LINE	D A M	N R V	DU NO.	B O M	IT E M	DRAWING NUMBER / BPS CODE	R V N	V A R	DESCRIPTION	MATL CODE		ACDUI	REVUNIT	QTY / JOB NO	WT / JOB NO		
										MATL SPECN					FINISHED WT		
010			006	01	06	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG)	1593859700UG	C	L	M	35.000	34440.000		
020			007	01	07	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG) (L=7000;2NOS)	1593859700UG	C	L	M	14.000	13776.000		
030			008	01	08	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG) (L=5000;2NOS)	1593859700UG	C	L	M	10.000	9840.000		
040			009	01	09	3-80-468-27526	00	00	PIPE DIA 2235X18 (OG) (L=3000;2NOS)	159385970000	C	L	M	6.000	5904.000		
050			010	01	10	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG)	1593859700UG	C	L	M	51.000	50184.000		
060			011	01	11	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG)	1593859700UG	C	L	M	51.000	50184.000		
070			012	01	12	3-80-468-27526	00	00	PIPE DIA 2235X18 (UG) (L=3500;2NOS)	1593859700UG	C	L	M	7.000	6888.000		

Weights indicated against piping DU's are average weights only

PRINT DT: 03.08.2010

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Weights indicated against piping DU's are average weights only

COOLING WATER PIPE (COATED INSIDE WITH GLASS FLAKE) ORDERING QTY. AND DATA FOR TUTICORIN 2x500MW

MATERIAL SPECN. - IS: 3589
(PGMA: 80-468)



NOTES:-

1. LENGTH 'L' INDICATES TOTAL LENGTH OF EACH DU. WHEREVER THE LENGTH OF EACH DU EXCEEDS 10M, THE SUPPLY CAN BE MADE AS ONE SET (DESIRED LENGTH OF EACH PIECE AS INDICATED IN REMARKS COLUMN)
2. EACH PIECE OF PIPE SHALL BE SUPPLIED WITH BEVEL ENDS AS PER DRG. NO. 4-80-999-93079
 - a) EDGE PREPARATION FOR PIPE OD3240x20 IS FIG 'A' ; d1=3226.0
 - b) EDGE PREPARATION FOR PIPE OD2235x18 IS FIG 'A' ; d1=2221.0
3. COATING:-
 - a) INSIDE SURFACE OF THE PIPE SHALL BE COATED WITH GLASS FLAKE COATING AS PER SPECIFICATION PC:E:GF:001
 - b) OUTSIDE SURFACE SHALL BE PAINTED AS APPLICABLE FOR U/G PIPING OR O/G PIPING AS PER QP No. 7045:QPC:12
 - c) FOR COATING NEAR BEVEL ENDS REFER DRG. NO. 4-80-468-71285
4. SPIDER ARRANGEMENT TO BE PROVIDED AT PIPE ENDS AS PER DRG. NO. 4-80-999-93078
5. APPLICABLE TDC FOR PIPES TDC:07

CUST. No. 7046 (UNIT-2)						TOTAL WEIGHT (UNIT-2) = 830004 Kg			
SL. No.	ITEM No.	D.U. No.	PIPE SIZE (ODxT)	L LENGTH PER SET /PIECE	No. OF SETS (nos)	TOTAL QTY	WEIGHT (KG)	REMARKS	
								MATERIAL CODE	DESIRED LENGTH OF EACH PIECE
01	01	001	PIPE #3240 X 20 (UG)	35 M	1	35 M	55580.000	15 938 601 00UG	8 TO 10 M
02	02	002	PIPE #3240 X 20 (UG)	153 M	1	153 M	242984.000	15 938 601 00UG	8 TO 12 M
03	03	003	PIPE #3240 X 20 (UG)	33 M	1	33 M	52404.000	15 938 601 00UG	8 TO 10 M
04	04	004	PIPE #3240 X 20 (UG)	148 M	1	148 M	235024.000	15 938 601 00UG	8 TO 12 M
ERECTION ISO. DRG. No. 1-80-468-15924						369 M	585972.000		
05	01	005	PIPE #2235 X 18 (UG)	42 M	1	42 M	41328.000	15 938 597 00UG	10 TO 12 M
06	02	006	PIPE #2235 X 18 (UG)	42 M	1	42 M	41328.000	15 938 597 00UG	10 TO 12 M
07	03	007	PIPE #2235 X 18 (UG)	7 M	2	14 M	13776.000	15 938 597 00UG	7 M
08	04	008	PIPE #2235 X 18 (UG)	5 M	2	10 M	9840.000	15 938 597 00UG	5 M
09	05	009	PIPE #2235 X 18 (OG)	3 M	2	6 M	5904.000	15 938 597 0000	3 M
ERECTION ISO. DRG. No. 1-80-468-15925						114 M	112176.000		
10	01	010	PIPE #2235 X 18 (UG)	57 M	1	57 M	56088.000	15 938 597 00UG	10 TO 12 M
11	02	011	PIPE #2235 X 18 (UG)	57 M	1	57 M	56088.000	15 938 597 00UG	10 TO 12 M
12	03	012	PIPE #2235 X 18 (UG)	3 M	2	6 M	5904.000	15 938 597 00UG	3 M
13	04	013	PIPE #2235 X 18 (UG)	3.5 M	2	7 M	6888.000	15 938 597 00UG	3.5 M
14	05	014	PIPE #2235 X 18 (OG)	3.5 M	2	7 M	6888.000	15 938 597 0000	3.5 M
ERECTION ISO. DRG. No. 1-80-468-15926						134 M	131856.000		



BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE
CHENNAI 600 017

DRG. NO.	DATE	SIGN	NAME
VAR.	26.07.10		CKAMAR
CHKD	26.07.10		CKARUNAKARAN
APPD	26.07.10		CKARUNAKARAN
REF DRG. NO:	1-80-468-15924		
ITEM No.	1-80-468-15925		
	1-80-468-15926		
PC SKETCH NO.	3-80-468-27527		
REV			

DEPT. ENGR. CODE	GRADE OF UNITS DM C/M/F	SCALE	WEIGHT (KG)	N.T.S.
REV	DATE	ALTERED	APPROVED	ZONE
01				

TITLE
COOLING WATER PIPING
ORDERING QTY. & DATA(UNIT-2)

GROUP MANUFACTURING SPECIFICATION										PRINCIPLE DRG: DPN-NS-PG-MA : 055-1-80-468 PGMA DESC : MAIN CIRCULATION WATER PIPING		RCI	NETWORK NUMBER 6138376	001/003 PAGE NUMBER	RVN '00'	
CUST No. 7046		TUTICORIN 2X500MW PCPLP-2														
LINE	D A M	N R V	DU NO.	B O M	IT E M	DRAWING NUMBER / BPS CODE		R V N	V A R	DESCRIPTION	MATL CODE		ACDUI	REVUNIT	QTY / JOB NO	WT / JOB NO
												MATL SPECN				FINISHED WT
010			*							MAIN CIRCULATION WATER PIPING			A		1.000	830004.000
020			*					00	00	MAIN CW PIPING-DTS PIPES			A		1.000	830004.000
030			001	01	01		3-80-468-27527	00	00	PIPE DIA 3240X20 (UG)		1593860100UG IS3589-410MPA	C	L	35.000	55580.000
040			002	01	02		3-80-468-27527	00	00	PIPE DIA 3240X20 (UG)		1593860100UG IS3589-410MPA	C	L	153.000	242964.000
050			003	01	03		3-80-468-27527	00	00	PIPE DIA 3240X20 (UG)		1593860100UG IS3589-410MPA	C	L	33.000	52404.000
060			004	01	04		3-80-468-27527	00	00	PIPE DIA 3240X20 (UG)		1593860100UG IS3589-410MPA	C	L	148.000	235024.000
070			005	01	05		3-80-468-27527	00	00	PIPE DIA 2235X18 (UG)		1593859700UG IS3589-410MPA	C	L	42.000	41328.000

GROUP MANUFACTURING SPECIFICATION										PRINCIPLE DRG: DPN-NS-PG-MA : 055-1-80-468 PGMA DESC : MAIN CIRCULATION WATER PIPING				RCI	NETWORK NUMBER 6138376	002/003 PAGE NUMBER	RVN '00'
CUST No. PROJ NAME		7046 TUTICORIN 2X500MW PCPLP-2															
LINE	D A M	N R V	DU NO.	B O M	IT E M	DRAWING NUMBER / BPS CODE	R V N	V A R	DESCRIPTION	MATL CODE		ACDUI	REVUNIT	QTY / JOB NO	WT / JOB NO		
										MATL SPECN					FINISHED WT		
010			006	01	06	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG)	1593859700UG IS3589-410MPA	C	L	M	42.000	41328.000		
020			007	01	07	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG) (L=7000;2NOS)	1593859700UG IS3589-410MPA	C	L	M	14.000	13776.000		
030			008	01	08	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG) (L=5000;2NOS)	1593859700UG IS3589-410MPA	C	L	M	10.000	9840.000		
040			009	01	09	3-80-468-27527	00	00	PIPE DIA 2235X18 (OG) (L=3000;2NOS)	159385970000 IS3589-410MPA	C	L	M	6.000	5904.000		
050			010	01	10	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG)	1593859700UG IS3589-410MPA	C	L	M	57.000	56088.000		
060			011	01	11	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG)	1593859700UG IS3589-410MPA	C	L	M	57.000	56088.000		
070			012	01	12	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG) (L=3000;2NOS)	1593859700UG IS3589-410MPA	C	L	M	6.000	5904.000		

Weights indicated against piping DU's are average weights only

		GROUP MANUFACTURING SPECIFICATION		PRINCIPLE DRG: DPN-NS-PG-MA : 055-1-80-468 PGMA DESC : MAIN CIRCULATION WATER PIPING		RCI	NETWORK NUMBER 6138376	003/003 PAGE NUMBER	RVN '00'					
CUST No. 7046		TUTICORIN 2X500MW												
PROJ NAME ECPLP-2														
LINE	D A M	N R V	DU NO.	B O M	IT E M	DRAWING NUMBER / BPS CODE	R V N	V A R	DESCRIPTION	MATL CODE	ACDUI	REVUNIT	QTY / JOB NO	WT / JOB NO FINISHED WT
										MATL SPECN				
010			013	01	13	3-80-468-27527	00	00	PIPE DIA 2235X18 (UG) (L=3500;2NOS)	1593859700UG ----- IS3589-410MPA	C L	M	7.000	6888.000
020			014	01	14	3-80-468-27527	00	00	PIPE DIA 2235X18 (OG) (L=3500;2NOS)	159385970000 ----- IS3589-410MPA	C L	M	7.000	6888.000

Weights indicated against piping DU's are average weights only

1.0 SCOPE

- 1.1 This Technical Delivery Conditions specify the requirements in addition to IS:3589 for electrically welded (ERW \ SAW) steel pipes.
- 1.2 The pipes are intended for water services (under Non-IBR piping system only).
- 1.3 The pipes shall conform to the size, grade and quantity as specified in the purchase order.

2.0 MATERIAL

- 2.1 The plates / coils used for pipe shall meet the requirements as per IS: 3589 Grade Fe 410 MPa including mechanical test requirements.

3.0 DIMENSIONAL TOLERANCES

- 3.1 The tolerances limits are:
 OD:- Upto NB 1600 mm: ± 4 mm; Above NB 1600 mm: ± 6 mm
 Thickness:- Upto 14mm : $+1.3$ mm / -0.8 mm; Above 14 mm : $+1.4$ mm / -0.8 mm.

Length:- for OD upto 1300 mm : $+10$ mm/ -0 mm;
 for OD above 1300 mm : ± 50 mm

Ovality (Difference between major and minor inside diameter) : 0.5% maximum

Squareness of ends: The ends of pipe section shall not vary by more than 3 mm at any point from a true plane perpendicular to the axis of the pipe and passing through the center of the pipe at the end.

- 3.2 Other tolerances shall be as per IS: 3589

4.0 MANUFACTURING

- 4.1 The pipe shall be of longitudinally welded or spirally welded as indicated in the P.O.
- 4.2 The ends shall be edge prepared as indicated in the purchase order.
- 4.3 Circumferential seams shall be 1500 mm apart from each other and from ends.
- 4.4 All pipes shall be completely finished and free from surface, sub surface defects such as pits, cracks, weld spatters & laminations etc..

5.0 NDE

- 5.1 The spiral welds/butt welds of length 100 mm from both the ends of the pipe shall be radiographically tested.

6.0 HYDROSTATIC PRESSURE TEST

- 6.1 Each pipe shall be subjected to a hydraulic test pressure as per IS: 3589 .
 (i.e., using the formula $P = 2ST / D$)

7.0 INSPECTION

- 7.1 All pipes shall be inspected by the vendor prior to BHEL / Customers' Inspection. BHEL or BHEL authorized inspector / Customer will select the pipes at random and carryout the inspection. The necessary Material Despatch Clearance Certificate is to be obtained by the vendor prior to the despatch of material.

P.Elangovan, QA K.Ganeshan, MM	Approved by C. Karunakaran, Engg K. Vedaprasad, QC
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8.0 PAINTING AND PACKING

- 8.1 Unless otherwise specified in the Purchase Order, all the pipes shall be coated with resin type translucent dry type rust preventive on the outside; pipes of diameter above NB 450 mm, shall be coated inside also.
- 8.2 Spiders are to be provided on both ends of the pipes as per the drawing - if indicated in the enquiry / Purchase Order.

9.0 MARKING

- 9.1 All pipes shall be paint stencilled, hard punched with the following details.

Paint Stencil

- Specification
- Heat number
- Pipe number
- Manufacturer's identification
- Material Code
- Size

Hard punch

- Specification
- Heat number
- Pipe number
- Manufacturer's identification

- 9.2 In addition to the above, for the pipes directly despatched to project site, the following details (furnished in the P.O. or separately) shall be paint stencilled & hard punched on both ends of the pipes

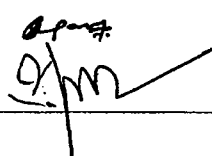
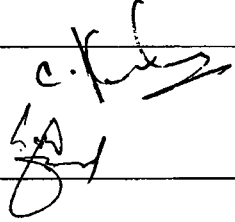
- | | | |
|-----------------|----------|----------------|
| ➤ Work order No | ➤ DU No | ➤ Project name |
| ➤ Quantity | ➤ Weight | |

10.0 CERTIFICATES

- 10.1 Three original test certificates typed in English shall be submitted along with the inspection report.

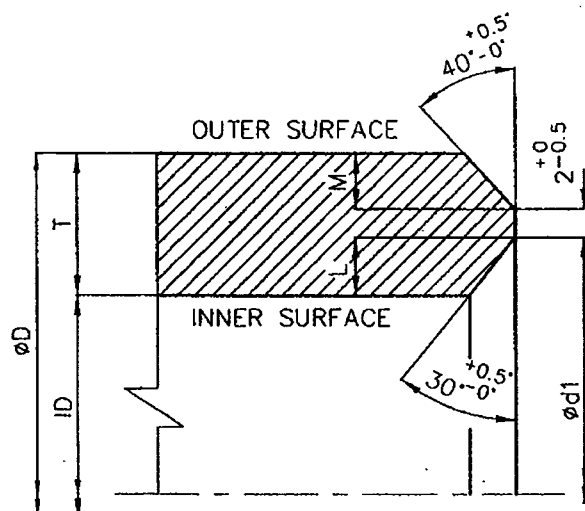
- 10.2 The test certificate shall furnish the following details.

- a. Purchase Order references.
- b. Test Certificate number.
- c. Specification, grade, size, quantity
- d. Heat number of plate (or pipe number with traceability to heat number)
- e. Chemical composition and mechanical properties
- f. Hydrostatic pressure test report
- g. RT Report.

P.Elangovan, QA  K.Ganeshan, MM	Approved by C. Karunakaran, Engg K. Vedaprasad, QC 
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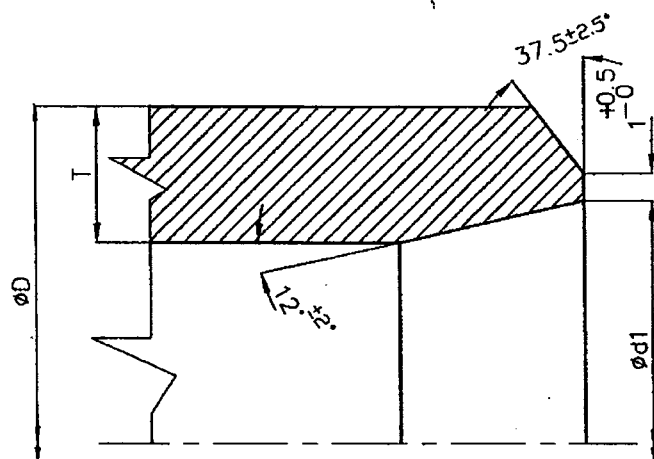
ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

REV	DATE	ALTERED	ALL DIMENSIONS ARE IN MILLIMETRES
		APPROVED	



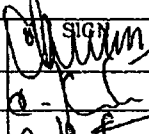
PIPE SIZE	M	L	ID	$\phi d1$
$\phi D \times T$	5	T-7	D-2T	D-14

FIG-A E.P.DETAIL FOR PIPES OF THICKNESS
ABOVE 14mm



PIPE SIZE	$\phi d1$
$\phi D \times T$	D-2T

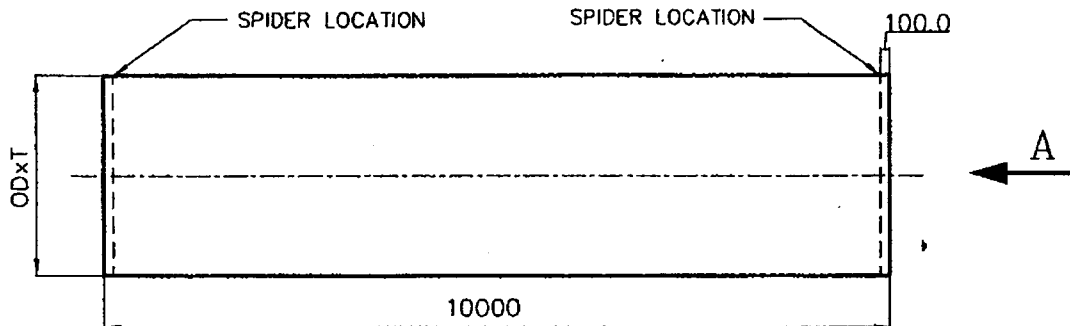
STYLE-D E.P.DETAIL FOR PIPES OF THICKNESS
14mm AND BELOW

		BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	C.KUMAR		DATE	11.04.08	NO. OF VAR
				CHD	C.K.KARAN		11.04.08		
				APPD	C.K.KARAN		11.04.08		
DEPT	GRADE OF UNTOLD DIM		SCALE	WEIGHT (KG).	REF. TO ASSY.	OLD DRG.	ITEM NO.	NO. OF ITEMS	
CODE	C / M / F		N.T.S						
TITLE EDGE PREPARATION DETAIL FOR PIPE DIA > 1000				CARD CODE U 01	DRAWING NO. 4-80-999-93079			REV 00	

UNLESS OTHERWISE SPECIFIED, THE DIMENSIONS ARE TO THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

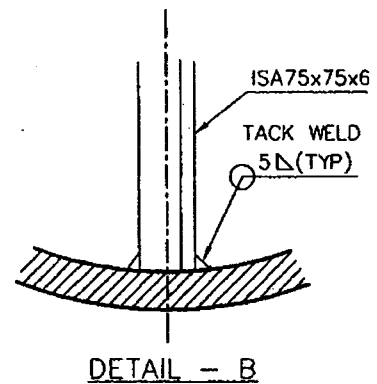
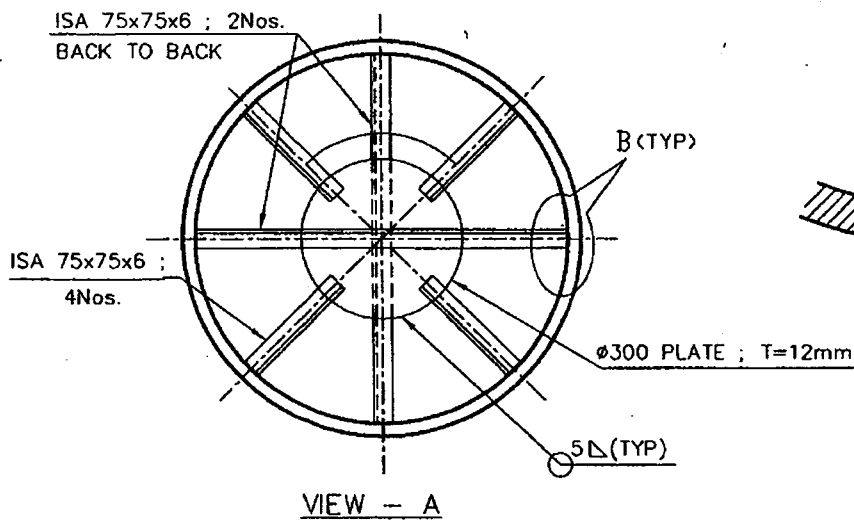
REV	DATE	ALTERED
		APPROVED

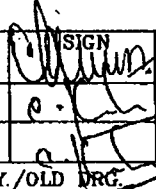
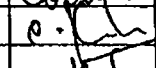
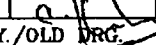
ALL DIMENSIONS ARE IN MILLIMETRES



SPIRAL/LONGITUDINAL WELDED PIPE

(2 LOCATIONS IN 10 MTR. PIPE)



 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017				DRN CHD APPD	NAME C.KUMAR C.K.KARAN C.K.KARAN	SIGN   	DATE 11.04.08 11.04.08 11.04.08	NO. OF VAR
DEPT CODE	GRADE OF UNTOLD DIM C / M / F	 SCALE N.T.S.	WEIGHT (KG). 	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS	
TITLE SPIDER ARRANGEMENT FOR FOR PIPE DIA > 1000				CARD CODE U 01	DRAWING NO. 4-80-999-93078		REV 00	

Bharat Heavy Electricals Limited Piping Centre, Chennai-17 QUALITY ASSURANCE & CONTROL DEPT.		PAINTING SCHEME FOR LP PIPING (CW / ACW / ECW / Plant water, Air Piping, etc....)					JPN: 7045:QPC:12 REV.NO: 01 Dt: 02.02.10					
PROJECT NAME :- NTPL - TUTICORIN TPS (2 X 500 MW) BHEL CUSTOMER Nos : 0673, 0674, 7045, 7046.												
Sl. NO	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat		REMARKS			
			Primer	No of coats	Paint	No of coats	Shade	Paint		No of coats	Shade	Total DFT Microns (Min.)
1	2	3	4	5	6	7	8	9	10	11	12	13
1	(a) Internal Surface of - CW Pipes handling sea water (Carbon steel pipes of all size)	Blast Cleaning SSPC SP-10 Sa 2½ (Refer Note 1)									1000 Microns (min)	(Refer Note 2)
	(b) Holiday test (Refer Note 3)	Holiday testing as per Paint Manufacturer's Quality Plan approved by BHEL. Holiday test Equipment shall be calibrated before testing.										
2	External Surface of CW -Buried Piping / Encased in concrete (Temporary Protection for transportation from works to site). **Further protection to be done by BHEL Erection Group as per Contract requirement.	SSPC-SP3 / Power Tool Cleaning	Red Oxide Zinc Phosphate (Alkyd base to IS 12744)	1 (30 Microns per coat)							30 Microns	
3	External Surface (over ground piping) of CW/ACW (For all diameters)	Blast cleaning to Sa2½	Epoxy Polyamide resin based Zinc Phosphate Primer	2 (30 microns per coat)	Epoxy resin with MIO	(100 microns per coat.)		Epoxy Polyamide enamel finish Paint	2 (40 microns per coat)	Refer Note-4	160 @ Shop 80 @ Site	
4	External Surface of ECW, Plant water (For all diameters)	Blast cleaning to Sa2½	Epoxy Polyamide resin based Zinc Phosphate Primer	2 (30 microns per coat)	Epoxy resin with MIO	(100 microns per coat.)		Epoxy Polyamide enamel finish Paint	2 (40 microns per coat)	Refer Note-4	160 @ Shop 80 @ Site	
5	Galanised and Stainless steel Piping											
No painting												

APPROVED
WITHOUT PREJUDICE TO CONTRACTUAL OBLIGATION & LIABILITIES

Sign: *[Signature]* Date: 19.02.10

Name: *P. VERMA*

Sect/DW.C.V.

Notes:

- Blast cleaning to near white metal as per Paint manufacturer's data sheet.
- Application of Isophthalic polyester / acrylic co-polymer filled with glass flakes and inspection (including DFT) shall be as per Paint manufacturer's QP and Painting procedure reviewed by BHEL and approved by Customer.
- Witness by BHEL / BHEL nominated inspection agency.
- The final colour shade applied at site after erection shall be as per Customer colour coding scheme.

PREPARED BY: *[Signature]*
VIVEKANANDA YELLU, Engr / QA

APPROVED BY: *[Signature]*
G. PANNEER SELVAM, DGM / QA

Original Stampd copy for forwarded to QA (for GPS) on 25.2.10.