



Bharat Heavy Electricals Limited
(A Govt. of India Undertaking)

Piping Centre , 80, G. N. Chetty Road, CHENNAI – 600 017
Phone : 91 (044) 28161243/28161245 .Fax-(044)28161341
e-mail: prs@bhelmpc.co.in

REF: ENQ NO:PC: 9014

DT: 16.09.2009

Sub: Request for quotation for Pipe Bends– reg.

Ref: Enquiry No:PC:9014 dt 16.09.2009

Please find the following tender documents enclosed for you to submit offer. The offers should reach us before the time of opening tenders. The Technical offers will be opened at **14.30 hrs** IST on the **due date 14.10.2009** in the presence of tenderers who may like to be present. Late tenders are liable to be rejected. Price Bids of Technically accepted offers only will be opened on fixed date subsequently.

1. List of items – Annexure A
2. TDG 10 Rev02 for Pipe bends.
3. Check list.
4. Terms and conditions.
5. Special terms and conditions –Annexure B
6. A typical isometric drawing is enclosed where in the required bends are available against respective item no. Soft copies of all the Isometric drawings where the bends are incorporated can be obtained from the undersigned.
7. Vendors should quote the price against each item number of Annexure-A enclosed.
8. EP and Tolerance drawings.

VENDORS SHOULD SUBMIT THEIR CREDENTIALS ALONG WITH THE THREE PAGE VENDOR REGISTRATION FORMAT AVAILABLE IN WEB SITE 'www.bhel.com'

Please indicate enquiry no and date and due date in all correspondences. This is only a request for quotation and not an order.

P.RAVISHANKAR
DGM / Purchase
BHEL / Piping Centre
80,GN Road, T.Nagar
Chennai-600017
e-mail:prs@bhelmpc.co.in

ANNEXURE-A

S/NO	Description	Matl Spec.	Reqd Qty	Weight	Drawing No	Drawing Rev	Item No	Tolerance dtg	EP DRG	UNIT PRICE IN EURO	DELIVERY TERMS FOB DESPATCHING PORT / C&F CHENNAI PORT, INDIA - INDICATE
1	PIPE BEND NB550 WITH TRUNNION /	SA335P91	1	5,343.80	1-80-301-12215	02	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
2	PIPE BEND 90DEG R=2850 OD 559X54	SA335P91	1	5,230.00	1-80-301-12215	02	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
3	PIPE BEND 22.40DEG R=2850 OD 559X54	SA335P91	1	3,857.00	1-80-301-12215	02	27	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
4	PIPE BEND NB550 WITH TRUNNION	SA335P91	1	5,343.80	1-80-301-12215	02	28	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
5	PIPE BEND NB550 WITH STUBS	SA335P91	1	5,087.95	1-80-301-12216	03	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
6	PIPE BEND NB700 WITH CARRIER	SA335P91	1	2,749.72	1-80-310-12219	02	09	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
7	PIPE BEND NB700 WITH CARRIER	SA335P91	1	2,740.72	1-80-310-12219	02	10	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
8	PIPE BEND 89.5 DEG R=2100 OD 711X25	SA335P91	1	2,735.00	1-80-310-12219	02	11	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
9	PIPE BEND NB700 WITH CARRIER	SA335P91	1	2,749.72	1-80-310-12219	02	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
10	PIPE BEND NB700 WITH CARRIER	SA335P91	1	2,740.72	1-80-310-12219	02	13	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
11	PIPE BEND 89.5 DEG R=2100 OD 711X25	SA335P91	1	2,735.00	1-80-310-12219	02	14	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
12	PIPE BEND NB700 WITH CARRIER	SA335P91	1	3,645.72	1-80-310-12220	03	15	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
13	PIPE BEND 89.5 DEG R=2100 OD 711X25	SA335P91	1	2,501.00	1-80-310-12220	03	16	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
14	PIPE BEND 90 DEG R=3200 OD 711X25	SA335P91	1	3,268.00	1-80-310-12220	03	17	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
15	PIPE BEND NB700 WITH CARRIER	SA335P91	1	3,645.72	1-80-310-12220	03	18	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
16	PIPE BEND 45 DEG R=2100 OD 711X25	SA335P91	1	1,664.00	1-80-310-12220	03	19	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
17	PIPE BEND NB700 WITH TRUNNION	SA335P91	1	3,663.00	1-80-310-12220	03	20	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
18	PIPE BEND 89.5 DEG R=2100 OD 711X25	SA335P91	1	2,501.00	1-80-310-12220	03	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
19	PIPE BEND 90DEG R=3200 OD 711X25	SA335P91	1	3,268.00	1-80-310-12220	03	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
20	PIPE BEND NB700 WITH CARRIER	SA335P91	1	3,645.72	1-80-310-12220	03	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
21	PIPE BEND 45DEG R=2100 OD 711X25	SA335P91	1	1,664.00	1-80-310-12220	03	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
22	PIPE BEND NB700 WITH TRUNNION	SA335P91	1	2,519.00	1-80-310-12221	02	18	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
23	PIPE BEND NB700 WITH CARRIER	SA335P91	1	2,501.72	1-80-310-12221	02	19	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
24	PIPE BEND 30 DEG R=1067 OD 711 X 30	SA335P91	1	1,478.00	1-80-310-12221	02	20	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
25	PIPE BEND 30 DEG R=1067 OD 711 X 30	SA335P91	1	1,478.00	1-80-310-12221	02	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
26	PIPE BEND 89.5 DEG R=3200 OD 914X32	SA335P91	1	5,850.00	1-80-310-12221	02	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
27	PIPE BEND 90 DEG R=3200 OD 914X32	SA335P91	1	5,831.00	1-80-310-12221	02	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
28	PIPE BEND 89.5 DEG R=3200 OD 914X32	SA335P91	1	5,850.00	1-80-310-12221	02	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
29	PIPE BEND NB900 WITH TRUNNION	SA335P91	1	5,886.00	1-80-310-12221	02	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
30	PIPE BEND NB700 WITH STUBS	SA335P91	1	1,741.63	1-80-310-12221	02	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
31	PIPE BEND 30 DEG R=1067 OD 711X30	SA335P91	1	1,857.00	1-80-311-12222	01	05	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
32	PIPE BEND 30 DEG R=1067 OD 711X30	SA335P91	1	1,504.00	1-80-311-12222	01	06	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
33	PIPE BEND NB700 WITH STUBS AND CARRIER	SA335P91	1	2,513.86	1-80-311-12222	01	07	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
34	PIPE BEND NB700 WITH STUBS AND CARRIER	SA335P91	1	2,261.05	1-80-311-12222	01	08	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
35	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
36	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
37	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
38	PIPE BEND NB600 WITH STUB	SA335P91	1	1,748.43	0-80-312-03916	01	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
39	PIPE BEND NB600 WITH BRANCH	SA335P91	1	1,762.00	0-80-312-03916	01	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
40	PIPE BEND NB600 WITH TRUNNION	SA335P91	1	1,389.00	0-80-312-03916	01	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
41	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	27	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
42	PIPE BEND NB600 WITH CARRIER	SA335P91	1	1,754.72	0-80-312-03916	01	28	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
43	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	29	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
44	PIPE BEND NB600 WITH TRUNNION	SA335P91	1	1,772.00	0-80-312-03916	01	30	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
45	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,301.00	0-80-312-03916	01	31	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
46	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	32	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		

S/NO	Description	Matl Spec.	Reqd Qty	Weight	Drawing No	Drawing Rev	Item No	Tolerance drg	EP DRG	UNIT PRICE IN EURO	DELIVERY TERMS FOB DESPATCHING PORT / C&F CHENNAI PORT, INDIA - INDICATE
47	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,756.00	0-80-312-03916	01	33	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
48	PIPE BEND NB600 WITH STUB	SA335P91	1	1,756.43	0-80-312-03916	01	34	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
49	PIPE BEND NB600 WITH BRANCH & TRUNNION	SA335P91	1	1,548.00	0-80-312-03916	01	35	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
50	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,402.00	0-80-312-03916	01	36	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
51	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03916	01	37	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
52	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,654.00	0-80-312-03916	01	38	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
53	PIPE BEND WITH CARRIER PLATE	SA335P22	1	5,024.92	1-80-320-12224	03	05	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
54	PIPE BEND 90 DEG R=1295 OD864X42	SA335P22	1	4,682.00	1-80-320-12224	03	06	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
55	PIPE BEND WITH STUBS	SA106Gr B	1	4,617.43	1-80-320-12225	03	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
56	PIPE BEND WITH TRUNNION	SA106Gr B	1	4,857.00	1-80-320-12225	03	13	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
57	PIPE BEND 90 DEG R=3400 OD864X27	SA106Gr B	1	4,816.00	1-80-320-12225	03	14	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
58	PIPE BEND 89.4 DEG R=3400 OD864X27	SA106Gr B	1	4,835.00	1-80-320-12225	03	15	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
59	PIPE BEND NB 550 WITH TRUNNION	SA335P91	1	5,345.80	1-80-301-12375	02	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
60	PIPE BEND NB 550 WITH TRUNNION	SA335P91	1	5,345.80	1-80-301-12375	02	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
61	PIPE BEND NB 550 WITH STUBS & B.S	SA335P91	1	5,387.02	1-80-301-12375	02	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
62	PIPE BEND NB 550 WITH STUBS	SA335P91	1	3,912.41	1-80-301-12375	02	27	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
63	PIPE BEND NB 550 WITH STUBS	SA335P91	1	5,067.64	1-80-301-12376	03	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
64	PIPE BEND 90 DEG R=457 OD 323 9X38 L=323	SA335P91	1	866.68	1-80-304-12378	03	10	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
65	PIPE BEND 90 DEG R=457 OD 323 9X38 L=371	SA335P91	1	995.02	1-80-304-12378	03	11	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
66	PIPE BEND 90 DEG R=457 OD 323 9X38 L=358	SA335P91	1	963.135	1-80-304-12378	03	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
67	PIPE BEND 90 DEG R=457 OD 323 9X38 L=267	SA335P91	1	717.195	1-80-304-12378	03	13	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
68	PIPE BEND 90 DEG R=457 OD 323 9X38 L=330	SA335P91	1	885.98	1-80-304-12378	03	14	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
69	PIPE BEND 90 DEG R=457 OD 323 9X38 L=347	SA335P91	1	932.06	1-80-304-12378	03	15	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
70	PIPE BEND 90 DEG R=457 OD 323 9X38 L=371	SA335P91	1	995.02	1-80-304-12378	03	16	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
71	PIPE BEND 90 DEG R=457 OD 323 9X38 L=358	SA335P91	1	963.135	1-80-304-12378	03	17	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
72	PIPE BEND 90 DEG R=457 OD 323 9X38 L=267	SA335P91	1	717.195	1-80-304-12378	03	18	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
73	PIPE BEND 90 DEG R=457 OD 323 9X38 L=330	SA335P91	1	885.98	1-80-304-12378	03	19	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
74	PIPE BEND 45 DEG R=457 OD 323 9X38 L=332	SA335P91	1	891.87	1-80-304-12378	03	20	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
75	PIPE BEND NB300 WITH STUB NB25	SA335P91	1	526.18	1-80-304-12378	03	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
76	PIPE BEND 45 DEG R=457 OD 323 9X38 L=332	SA335P91	1	891.87	1-80-304-12378	03	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
77	PIPE BEND NB300 WITH STUB NB25	SA335P91	1	620.485	1-80-304-12378	03	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
78	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	2,787.84	1-80-310-12379	01	09	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
79	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	2,749.35	1-80-310-12379	01	10	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
80	PIPE BEND 89.5 DEG R=2100 OD711X25 L=658	SA335P91	1	2,785.77	1-80-310-12379	01	11	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
81	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	2,787.84	1-80-310-12379	01	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
82	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	2,749.35	1-80-310-12379	01	13	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
83	PIPE BEND 89.5 DEG R=2100 OD711X25 L=658	SA335P91	1	2,785.77	1-80-310-12379	01	14	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
84	PIPE BEND 89.5 DEG R=3200 OD711X25 L=855	SA335P91	1	3,617.65	1-80-310-12380	02	15	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
85	PIPE BEND 89.5 DEG R=2100 OD711X25 L=598	SA335P91	1	2,531.17	1-80-310-12380	02	16	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
86	PIPE BEND 90 DEG R=3200 OD711X25 L=762	SA335P91	1	3,226.00	1-80-310-12380	02	17	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
87	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	3,603.22	1-80-310-12380	02	18	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
88	PIPE BEND 45 DEG R=2100 OD711X25 L=393	SA335P91	1	1,663.77	1-80-310-12380	02	19	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
89	PIPE BEND 89.5 DEG R=3200 OD711X25 L=855	SA335P91	1	3,617.65	1-80-310-12380	02	20	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
90	PIPE BEND 89.5 DEG R=2100 OD711X25 L=598	SA335P91	1	2,531.17	1-80-310-12380	02	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
91	PIPE BEND 90 DEG R=3200 OD711X25 L=762	SA335P91	1	3,226.00	1-80-310-12380	02	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
92	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	3,603.22	1-80-310-12380	02	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		

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93	PIPE BEND 45DEG R=2100 OD711X25 L=393	SA335P91	1	1,663.77	1-80-310-12380	02	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
94	PIPE BEND 90DEG R=2100 OD711X25 L=393	SA335P91	1	2,598.94	1-80-310-12381	02	18	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
95	PIPE BEND NB700 WITH CARRIER PLATES	SA335P91	1	2,581.66	1-80-310-12381	02	19	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
96	PIPE BEND 30DEG R=1067 OD 711X30 L=2993	SA335P91	1	1,508.00	1-80-310-12381	02	20	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
97	PIPE BEND 30DEG R=1067 OD 711X30 L=2993	SA335P91	1	1,508.00	1-80-310-12381	02	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
98	PIPE BEND 85DEG R=3200 OD914X32 L=852	SA335P91	1	5,932.74	1-80-310-12381	02	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
99	PIPE BEND 90DEG R=3200 OD 914X32 L=849	SA335P91	1	5,914.00	1-80-310-12381	02	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
100	PIPE BEND 89.5DEG R=3200 OD914X32 L=852	SA335P91	1	5,932.74	1-80-310-12381	02	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
101	PIPE BEND NB900 WITH TRUNNIONS	SA335P91	1	5,990.15	1-80-310-12381	02	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
102	PIPE BEND NB700 WITH STUBS	SA335P91	1	1,741.63	1-80-310-12381	02	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
103	PIPE BEND 30 DEG R=1067 OD 711X30 L=3745	SA335P91	1	1,889.00	1-80-311-12382	00	05	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
104	PIPE BEND 30 DEG R=1067 OD 711X30 L=3066	SA335P91	1	1,545.00	1-80-311-12382	00	06	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
105	PIPE BEND NB700 WITH STUBS & CARRIER P	SA335P91	1	2,592.86	1-80-311-12382	00	07	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
106	PIPE BEND NB700 WITH STUBS & CARRIER P	SA335P91	1	2,332.86	1-80-311-12382	00	08	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
107	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	21	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
108	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	22	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
109	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	23	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
110	PIPE BEND NB600 WITH STUB NB25	SA335P91	1	1,748.43	0-80-312-03957	00	24	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
111	PIPE BEND NB600 WITH BR NB150	SA335P91	1	1,762.00	0-80-312-03957	00	25	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
112	PIPE BEND NB600 WITH TRUNNIONS	SA335P91	1	1,389.00	0-80-312-03957	00	26	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
113	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	27	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
114	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,754.72	0-80-312-03957	00	28	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
115	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	29	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
116	PIPE BEND NB600 WITH TRUNNIONS	SA335P91	1	1,772.00	0-80-312-03957	00	30	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
117	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,301.00	0-80-312-03957	00	31	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
118	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	32	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
119	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,756.00	0-80-312-03957	00	33	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
120	PIPE BEND NB600 WITH STUB NB25	SA335P91	1	1,756.43	0-80-312-03957	00	34	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
121	PIPE BEND NB600 WITH BR NB150 & TRUNNION	SA335P91	1	1,548.00	0-80-312-03957	00	35	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
122	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,402.00	0-80-312-03957	00	36	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
123	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,748.00	0-80-312-03957	00	37	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
124	PIPE BEND 90 DEG R=914 OD 610X25	SA335P91	1	1,654.00	0-80-312-03957	00	38	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
125	PIPE BEND NB 850 WITH CARRIER PLATES	SA335P22	1	5,128.92	1-80-320-12384	03	05	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
126	PIPE BEND 90DEG DEG R=1295 OD 864X42	SA335P22	1	4,682.00	1-80-320-12384	03	06	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
127	PIPE BEND 89.4DEG R=3400 OD 864X27	SA106GRC	1	4,610.00	1-80-320-12385	03	12	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
128	PIPE BEND NB 850 WITH TRUNNION	SA106GRC	1	4,657.00	1-80-320-12385	03	13	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
129	PIPE BEND 90DEG R=3400 OD 864X27	SA106GRC	1	4,263.00	1-80-320-12385	03	14	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
130	PIPE BEND 89.4DEG R=3400 OD 864X27	SA106GRC	1	4,835.00	1-80-320-12385	03	15	4-80-001-37654 & 4-80-301-26192	3-80-300-19825		
			130	354,325.88							



1.0 GENERAL

- 1.1 This Technical Delivery Condition specify the requirements for pipe bends manufactured as per drawing indicated in enquiry / P.O. The bends will be used in Power Plants for high pressure, high temperature services.

- 1.2 Materials are SA106 Gr B, Gr C. SA 335 P11, P12, P22, P91

2.0 PIPES

The pipes shall meet the requirements of BHEL's Technical Delivery Conditions number TDG:101 (latest) and the original test certificates shall be submitted. The make shall be approved by BHEL.

3.0 BENDING AND HEAT TREATMENT

- 3.1 The bends shall be made by incremental induction bending process only. The first off trial results for the different material grades of comparable sizes shall be submitted along with the offer.
- 3.2 The bending temperatures used in the extrados and intrados shall be furnished in the test report.
- 3.3 Post bending heat treatment shall be as below. For SA 335 P 91 bends, heat treatment shall be done immediately after bending.

Specification	Normalising	Tempering
	Deg. C	Deg. C
SA106 Gr B, Gr C	870 - 900	610 ± 15
SA335 P11, P12	920 - 950	655 ± 15
SA335 P22	920 - 950	695 ± 15
SA335 P91	1040 - 1070	760 ± 10

4.0 NDE

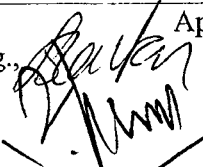
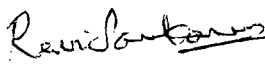
- 4.1 MPT shall be carried out on 100% of the bends covering the entire bend zone and weld edge preparations. In the case of P 91 bends, wet fluorescent MPT to be adopted.
- 4.2 Hardness test shall be conducted on each bend. Hardness for SA106 Gr B, Gr C, SA 335 P11, P 12, P 22 bends shall be 197 BHN maximum. Hardness for SA 335 P 91 shall be 180 – 270 BHN. Variation in hardness in any bend shall not more than 50 BHN.

- 5.0 For SA335P91: Microstructure shall be checked by taking 3 replicas in one bend per heat treatment batch and the results shall be furnished.

6.0 Tolerances:

Following tolerances shall apply unless otherwise specified in drawing / enquiry / purchase order

- a. Wall thickness at any point shall not be less than 0.875 times the nominal thickness

Approved by	
S. Jayakumar, Engg., 	P. Elangovan, QA 
K. Ganeshan, MPL 	U. Revisankaran, QA, HPBP 
T.R. Suchindra Babu, OP&G 	



- b. Ovality ≤ 20 D/R or 8% of outside diameter whichever is lower (D=Outside diameter of pipe before bending. R=Radius of bend)
- c. Bend angle: ± 0.5 degree
- d. Wrinkless : As per PFI ES-24
- e. Out of squareness of ends : 0.75 mm
- f. Tangent lengths: As per drawing / enquiry / P.O.

7.0 POSITIVE MATERIAL IDENTIFICATION (PMI) FOR ALLOY STEEL BENDS.

Each alloy steel (SA 335) bend shall be checked for the correctness of the material during manufacturing and final inspection using X-ray fluorescence principle or spark emission spectrography.

8.0 WORK MANSHIP, FINISH AND REPAIR

All items shall have smooth, workman like finish, and to be free from scale & defects like laps, seams, folds, cracks, etc. Surface defects can be removed by mechanical means and defective areas smoothly dressed up with the adjacent surface. Minimum dimension after repair shall meet drawing / Specification. Repairs by fusion welding are prohibited.

9.0 MARKING , COLOUR CODING , PACKING, PAINTING / PRESERVATION

- 9.1 All items shall be hard stamped (using low stress punches) with specification, size, Grade, Heat Number, Maker's identification mark and Inspection Authorities Seal; these details shall also be paint stenciled. In addition, Purchase Order number, material code and other identification details as per P.O. shall be paint stenciled.

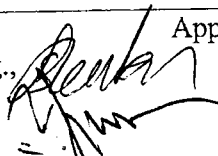
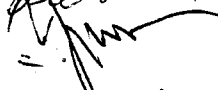
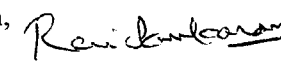
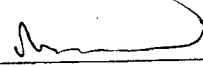
9.2 Colour Coding:-

SA 106 Gr B	=	Red
SA 106 Gr.C	=	Blue
SA 335 P11	=	Green & White
SA 335 P12	=	Black & Red
SA 335 P22	=	Blue & Red
SA 335 P91	=	Brown & Red

- 9.3 Packing: All items shall be suitably packed in boxes / crate to avoid transit / other damages

- 9.4 Painting shall be as per drawing / enquiry / P.O. When not indicated, minimum preservation requirement shall be:

- Outside:- resin type rust preventive coating with visibility to punched , stenciled details.

Approved by	
S. Jayakumar, Engg., 	P. Elangovan, QA 
K. Ganeshan, MPL 	U. Revisankaran, QA, HPBP 
T.R. Suchindra Babu, OP&C 	



- Inside:- rust inhibitor or resin type rust preventive coating
- Ends of the bends shall be secured with caps.

10.0 MANUFACTURING QUALITY PLAN.

Vendor shall submit manufacturing Quality plan along with technical part of the bid for BHEL approval.

11.0 INSPECTION & CERTIFICATION

All items are to be inspected at the manufacturer's works by the Inspection agencies / authorities as per IBR. Inspection certificate in IBR Form III A shall be submitted along with the Work Test Certificate countersigned by authorities as per IBR and shall include the following. (Three ink signed originals required). BHEL, BHEL's authorized inspectors may also inspect the items.

Test Certificate Number & date.

BHEL P.O Number & Amendment Number(if any)

BHEL P.O. Serial Number

BHEL TDC Number

Size-wise Quantity

Specification, Grade & Year of code.

Heat / Melt Number

Starting material (pipe) test certificate - Original

Positive Material identification (PMI) report for Alloy steel bends

Heat Treatment Chart. \$\$

NDE reports \$\$

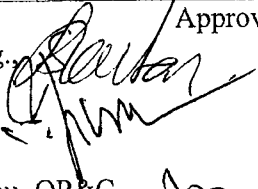
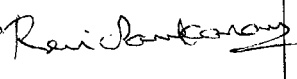
Hardness Test report \$\$

Metallography report for P91.

Dimensional details \$\$

\$\$ Details furnished in the Tests certificate in lieu of chart / report is acceptable.

*** **

S. Jayakumar, Engg.		Approved by	P. Elangovan, QA 
K. Ganeshan, MPL		U. Revisankaran, QA, HPBP 	
T.R. Suchindra Babu, OP&C 			

CHECK LIST - FOREIGN

Vendors are requested to give confirmation against each point and send it along with the technical cum commercial part **without fail**.

Sl No	Details of Enquiry	Confirmation by vendor
1	This is a Two part bid a. Technical cum commercial part and b. Price part Please Submit your offer as per the terms and conditions.	
2	Kindly confirm supply as per TDG:10:02	
3	Kindly confirm supply as per drawings enclosed wherever applicable.	
4	Edge preparation is as per Drg. 3-80-300-19825 and tolerance is as per Drg. 4-80-001-37654 & 4-80-301-26192 .	
5	Quotation shall be submitted in Euro currency only.	
6	Please quote on FOB dispatching port or C&F / Chennai sea port / India. Price shall include inspection, packing and forwarding charges. Please do not quote on Ex-works.	
7	Delivery shall be within 4 months from the date of ordering.PI note Delivery is an important factor to decide acceptance of your offer.	
8	Third Party Inspection shall be by IBR approved agency. (Name of the inspection agency to be mentioned)	
9	Validity of your offer shall be for 90 days from after tender opening date.	
10	Payment terms shall be 100% through LC with PBG for 10% of PO Value.	
11	LD of 0.5% per week subject to a max of 15% for the undelivered portion.	
12	Vendors shall guarantee the supplies for a period of 24 months from the date of dispatch of materials or 18 months from the date of their commissioning whichever is later	
13	BHEL reserves the right to order in Part quantity. No Minimum order condition is acceptable to BHEL.	
14	BHEL reserves the right to go for a Reverse Auction instead of opening the submitted sealed bid, which will be decided after technical evaluation.	
15	L1 prices shall be counter offered to other vendors. Ordering quantity will be decided considering the vendor's capacity and our Plan/project requirements.	

Vendor's signature.



TERMS & CONDITIONS FOR PROCUREMENT OF BENDS

SL NO	BHEL REQUIREMENT	SUPPLIER CONFIRMATION
1	TYPE OF BID – OFFERS ARE TO SUBMIT IN TWO PARTS NO DEVIATION SHALL BE TAKEN AND BIDS WILL BE REJECTED IF ANY DEVIATION IS TAKEN. THE ORDER WILL BE FINALIZED BASED ON PRICE /NEGOTIATION REVERSE AUCTION WITH ALL OTHER CONDITIONS BEING ACCEPTED BY THE BIDDER. TWO PART BID, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. PART-I TECHNICAL - CUM – COMMERCIAL PART :- This part of the Bid shall contain following Technical and Commercial Points only (Except Price Portion) • ACCEPTANCE TO OUR TDC (TECHNICAL DELIVERY CONDITION) AS GIVEN IN THE TENDER. DEVIATION IF ANY SHALL BE CLEARLY INDICATED. IF THERE IS NOS SPECIFIC INDICATION ABOUT DEVIATION IT WILL BE TAKEN AS TOTALLY ACCEPTED AND PROCESSED. • COPY OF PRICE BID WITHOUT PRICE PART TO KNOW THE ITEMS FOR WHICH YOU ARE QUOTING AGAINST THIS TENDER. (MONEY VALUES SHALL NOT BE INDICATED I.E.UN PRICED BID). Part II PRICE PART : THE UNIT PRICE ON FOB SEA PORT (OR) C&F / CHENNAI SEA PORT AND SHALL INCLUDE ALL TESTING, INSPECTION,PACKING & FORWARDING CHARGES THIS PART OF THE BID SHALL CONTAIN ITEM-WISE PRICE DETAILS AGAINST EACH ENQUIRY SL.NO. AND THE SAME SHALL BE PUT IN A SEALED COVER DULY INDICATING TENDER No, TENDER OPENING DATE, AND “PRICE Bid” ON THE SEALED COVER. SOFT COPY OF THE SAME ALSO TO BE PROVIDED IMMEDIATELY AFTER THE PRICE BID OPENING. INCASE OF DIFFERENCE BETWEEN THE TWO, HARD COPY WILL PREVAIL AND BINDING ON THE SUPPLIER. PRECONDITIONS FOR PRICE WILL NOT BE ACCEPTED. BOTH THE ABOVE REFERRED PARTS OF THE BID EACH SEALED IN A SEPARATE COVER SHALL BE PUT IN A SEALED OUTER COVER DULY INDICATING TENDER No.& DATE, TENDER OPENING DATE AND TO BE SENT TO DGM/PURCHASE (FITTINGS) BHEL : PIPING CENTRE 80, G.N. CHETTY STREET T. NAGAR, CHENNAI 600017	
2	IF YOU ARE NOT INTERESTED / NOT IN A POSITION TO PARTICIPATE IN THE TENDER, PLEASE SEND REGRET LETTER FOR NOT PARTICIPATING, BEFORE DUE DATE OF THE TENDER.	
3	You are requested to quote only for the sizes / spec within your manufacturing range.	
4	TOLERANCES FOR DIMENSIONS OTHER THAN EDGE PREPARATION SHALL BE AS PER ASME B 16.9/B 16.28/B 16.11	
5	QUALITY DOCUMENTS AS LISTED BELOW SHOULD BE SENT TO PURCHASE / PIPING CENTRE BHEL CHENNAI IMMEDIATELY AFTER THE SHIPMENT / DISPATCH OF ITEMS AND NOT THROUGH BANK. 1) THREE SETS OF ORIGINAL CERTIFICATES ITEM-WISE (IE) WORKS TC, IBR FORM III C, UT REPORT, MPI REPORT, DIMENSIONAL REPORT, RAW MATERIAL TC (XEROX COPY)	

6	ii) 3 COPIES OF IBR FORM III C FOR EACH ITEM DULY ATTESTED BY THE MAKERS REPRESENTATIVE WHO HAS SIGNED IN IBR FORM III C. THE COMPANY SEAL SHALL BE AFFIXED BELOW THE SIGNATURE IN CASE THE ORDERED QUANTITY OF AN ITEM IS 10 AND ABOVE, (OTHERWISE YOU CAN RESTRICT THE NUMBER OF ATTESTED COPIES TO THE ORDERED QUANTITY OF AN ITEM). THESE CERTIFICATES ARE TO BE DISPATCHED ALONG WITH THE OTHER TC AND NOT THROUGH BANK. ALL THE ABOVE DOCUMENTS ARE TO BE SUBMITTED IN SOFT COPY APART FROM THE HARD COPIES AS ABOVE. IF THE MATERIALS ARE NOT READY ON THE DATE OF VISIT BY BHEL INSPECTOR AGAINST SPECIFIC CALL FOR INSPECTION BY VENDOR, ALL THE EXPENSES INCURRED FOR THE VISIT SHALL BE LIABLE FOR RECOVERY FROM THE INVOICES OF THE VENDOR. FURTHER, THIS WILL ALSO HAVE AN ADVERSE BEARING ON THE PERFORMANCE RATING OF THE VENDOR. YEAR OF CODE FOR VIZ. THE STANDARDS ASME B16.9, ASME B28 & ASME B.16.11 ETC. SHALL BE LATEST AND THE SPECIFIC YEAR IS TO BE MENTIONED IN THE MANUFACTURER'S TEST CERTIFICATES, AS WELL AS IN IBR FORM III-C. ALSO THE RELEVANT YEAR CODE FOR MATERIAL STANDARD AND THE NDT STANDARD (IE U.T/LPI/MPI) HAS TO BE MENTIONED.	
7	VALIDITY OF THE OFFER :- THE QUOTATION SHALL BE VALID AT LEAST FOR A PERIOD OF 90 DAYS FROM THE DATE OF BID OPENING DATE. OFFER WITH LESSER VALIDITY WILL NOT BE CONSIDERED.	
8	DELIVERY SCHEDULE :- AS INDICATED IN THE ENQUIRY, PL NOTE DELIVERY	
9	TERMS OF DELIVERY FOB LOADING SEA PORT (OR) C&F, CHENNAI ,INDIA	
10	TRANSPORT :- . FOREIGN SUPPLIERS: ALL ITEMS ARE TO BE SHIPPED TO CHENNAI HARBOUR –INDIA	
11	PRESERVATION :- AS PER RESPECTIVE TECHNICAL DELIVERY CONDITION.	
12	INSPECTION :- A) IBR & THIRD PARTY INSPECTION AGENCY FOR CS & AS MATERIALS. B) THIRD PARTY INSPECTION AGENCY FOR SS MATERIALS C) LLOYDS INSPECTION / SGS/BV/BHEL APPROVED AGENCIES D) BHEL / QC INSPECTION.	
13	CERTIFICATION :- IBR TC IN FORM III C, INSPECTION REPORT OF BHEL THIRD PARTY INSPECTION AGENCY, MFG TC, INCORPORATING BHEL SPECIFICATION REQUIREMENT /ASME REQUIREMENT. MECHANICAL / HARDNESS & HEAT TREATMENT AND OTHER LAB TEST REPORTS TO BE FURNISHED. CONFIRMATION REPORT TO BHEL SPECIFICATION TO BE FURNISHED. BASIC RAW MATERIAL (MILL) TC & OTHER REQUIREMENTS AS PER TDC / SPECNS SHALL BE SUBMITTED. INSPECTION CHARGES:- INSPECTION CHARGES OF BHEL/ THEIR REPRESENTATIVE ARE TO BHEL A/C. ANY OTHER TESTING CHARGES AND IBR INSPECTION CHARGES SHOULD BE INCLUDED IN THE QUOTED PRICES. INSPECTION DOCUMENTS SHALL BE FURNISHED FOR EACH BATCH OF DISPATCH / CONSIGNMENT. IF ENTIRE P O QUANTITY IS MANUFACTURED IN ONE LOT BUT DISPATCHED IN PHASED MANNER, ORIGINAL IBR SHOULD BE SENT ALONG WITH THE FIRST CONSIGNMENT AND THE ATTESTED XEROX COPY OF IBR SHALL BE SENT FOR SUBSEQUENT CONSIGNMENTS.	
14	IDENTIFICATION AS PER TDC	
15	GUARANTEE : VENDORS SHALL GUARANTEE THE SUPPLIES FOR A PERIOD OF 24 MONTHS FROM THE DATE OF DISPATCH OF MATERIALS OR 18 MONTHS FROM THE DATE OF THEIR COMMISSIONING WHICH EVER IS LATER	
16	PENALTY :- "IF THE SUPPLIER FAILS TO DELIVER THE RAW MATERIAL / EQUIPMENT / COMPONENTS WITHIN THE PERIOD SPECIFIED IN THE CONTRACT THE PURCHASER SHALL DEDUCT LIQUIDATED DAMAGES, A SUM EQUIVALENT TO 0.5% OF THE PRICE FOR EACH WEEK OF DELAY UPTO A MAXIMUM OF 15% OF THE PRICE OF DELAYED/UNDELIVERED GOODS TO BE RECKONED FROM THE CONTRACT DELIVERY DATE TO CARGO READINESS DATE (I.E., FINAL INSPECTION AGENCY'S SIGNED DATE IN THE CERTIFICATE)"	
17	TERMS OF PAYMENT : FOREIGN VENDORS: 100% THROUGH LC AND PBG FOR 10% OF PO VALUE.	
18	FOR ALL OTHER TERMS & CONDITIONS,, IF THE OFFER IS NOT CONFIRMED FOR ANY OTHER TERMS WE WILL LOAD HIGHEST OFFER SUBMITTED BY ANY OTHER SUPPLIER.	

19	GENERAL :- A)THE PO COPY WITH ALL DETAILS WILL BE GIVEN TO SUCCESSFUL BIDDERS IN SOFT MODE ALSO. HOWEVER HARD COPY WILL BE USED FOR RECORD PURPOSE. THE SAME SOFT COPY SHOULD BE UTILIZED BY THE SUPPLIERS TO FURNISH INFORMATION AS CALLED FOR IN THE FORMAT. SEE ATTACHED FORMAT FOR DETAILS. THIS SOFT COPY WILL GO UP AND DOWN BETWEEN BHEL AND THE SUPPLIER FOR TRACKING THE FULL PROCESS AND SMOOTH CLOSING OF THE PO B) DURING THE CONTRACT PERIOD, ANY OF OUR SISTER UNITS OF BHEL PIPING CENTRE WILL BE ENTITLED TO PLACE ORDER FOR THIS ITEM ON THE SAME TERMS AND CONDITIONS C) BHEL RESERVES THE RIGHT TO CANCEL THIS TENDER WITHOUT ASSIGNING ANY REASONS WHAT SO EVER. D)DEVIATION TAKEN AFTER PLACEMENT OF ORDER WILL NOT BE ACCEPTED (BOTH TECHNICAL & ON DELIVERY) SUPPLIERS TO ANALYZE IN DETAIL, AT THE TIME OF SUBMISSION OF OFFER WITH REFERENCE TO OUR “DELIVERY” REQUIREMENT OF FITTINGS AND CONFIRM COMPLIANCE OR OTHERWISE. E)TO ENSURE CORRECT & TIMELY SUBMISSION OF ALL ORIGINAL TEST CERTIFICATES INCLUDING IBR FORM III-C. THERE SHOULD NOT BE ANY DISCREPANCIES IN DETAIL LEADING TO TIME WASTAGE IN CLARIFICATION AND REVISIONS. F)BHEL RESERVES THE RIGHT TO INCREASE OR DECREASE THE TENDERED QUANTITY G)LOWEST PRICES RECEIVED AGAINST BHEL TENDERS DOES NOT MEAN ORDER WILL BE PLACED ON THAT SUPPLIER. BHEL RESERVES THE RIGHT NOT TO CONSIDER THE SAME. H)BHEL RESERVES THE RIGHT TO NEGOTIATE OR RE-FLOAT THE TENDER OPENED IF L1 PRICE /OR OTHER DETAILS ARE NOT ACCEPTABLE TO THEM I) BHEL RESERVES THE RIGHT TO NEGOTIATE THE L1 RATE. J)BHEL RESERVES THE RIGHT TO ORDER ON MORE THAN ONE VENDOR AT THE LOWEST ACCEPTABLE PRICE TO BHEL K)PRE QUALIFICATION IS THE CRITERIA FOR CONSIDERATION FOR OTHER THAN THE BHEL APPROVED VENDORS. AFTER QUALIFYING FOR REGISTRATION, THE NEW VENDORS, MAY BE CONSIDERED FOR FUTURE INLINE WITH THEIR SYSTEM AND POLICY. SUCH VENDORS WILL NOT BE CONSIDERED IN THIS ENQUIRY. L)BHEL reserves the right to go for a Reverse Auction instead of Opening the submitted sealed bid, which will be decided after technical evaluation. M)THE NEW VENDORS MAY DOWNLOAD VENDOR REGISTRATION FORMS FROM BHEL WEB SITE www.bhel.com SUBMIT ALL RELEVANT DATA FOR FORMAL REGISTRATION.	
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Note : Please confirm your acceptance/other wise to all the points indicated above positively and submit this format duly filled, signed & stamped along with the technical bid.

(VENDOR) SIGNATURE

ANNEXURE – B
SPECIAL TERMS AND CONDITIONS

Enquiry Ref.No. 9014

Dated 16.09.09

Standard Conditions applicable to all enquiries in addition to the Printed sheets and conditions laid down in Technical and commercial specifications:

1.Delivery is the essence of the contract/order. 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.

2.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 of the contract/order irrespective of the P.O. Delivery date, if there is no response for improvement in delivery from the vendor as per BHEL requirement.

3.BHEL may counter offer the final L1 rate to other eligible vendors for acceptance and decide to distribute the orders fully or partly to the accepting Vendors for ensuring deliveries meeting production/project requirement. BHEL decision will be final in this regard.

4.After receiving the order, any initial delays by the vendors in supply as per requirements shall be made good by controlling the subsequent activities by the vendor to contain the overall delivery time. Apart from recovery of LD, BHEL will ask foreign vendors to air lift at vendor's cost to makeup the time lost.

5.BHEL has the right to reject delayed deliveries or accept on a conditional basis.

7.Raw Material(Pipes, plates and forgings) for manufacture of the bends shall be sourced from renowned Manufacturers acceptable to BHEL and IBR.

8.Vendors should have experience in manufacturing of bends and welding of attachments. Qualified Bending and welding procedures (with appropriate Trial Bends, Weld Procedure Qualification Records) shall be submitted for BHEL approval before proceeding with further manufacture. Further production can be taken up only after clearance.

9.Vendors shall deploy approved third party inspectors and all Bends and welded attachments Shall conform to Indian Boiler Regulations(IBR), and Form IIIC Certificate of IBR shall be submitted as a part of test certificates.

10.Rates quoted shall include packing and forwarding charges.

11.In accordance with Indian Laws, if any Foreign suppliers employ Indian Agencies, details like Their agreement with the Indian Agents, Payment Terms and rates shall be furnished. All payments made to the Indian agents shall be made only in Indian National rupees.

12.Considering the technical and delivery requirements Offers from reputed foreign vendors who have proximity to source the material quickly only will be considered.

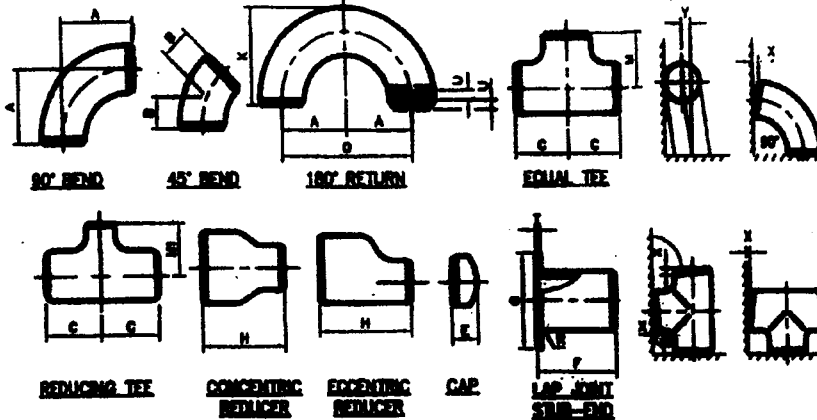
13.Vendors shall submit the registration data in the format displayed in the BHEL website for foreign vendors. Only vendors submitting this data and meeting BHEL's evaluation requirements will be considered for acceptance of the Technical and Price Bid. Vendors are advised to contact BHEL Piping Centre for any clarifications before submitting the offers.

15.Technical offers will be opened first and Price offers of Technically accepted vendors will be considered and opened subsequently.

REV	DATE	ALTERED
01	05.02.05	APPROVED

TITLE BLOCK AND DRAWING ALTERED

(REFERENCE : IS: 3811(A) INCLUDED IN ASSEMBLY)



ALL FITTINGS				90°/45° ELBOWS AND TEES	REDUCER	180° RETURN			CAPS	LAP-JOINT		STUB END	
DN	±0.5 AT BEND	±0.5 AT END	WALL THICKNESS	CHORD TO END AS/CS/M1	OVERALL LENGTH H	CHORD TO CHORD	BACK TO FACE OF ELBOW	CHORD ALL	END TO END	RADIUS OF LAP	CHORD OF LAP	CHORD OF LAP	CHORD OF LAP
15 TO 25	+1.5 -0.5	±0.5	REF. LINE THICK OF 1/28 OF NOMINAL THICKNESS	±1.5	±1.5	±0.4	±0.4	±0.5	±3.2	±1.5	+0 -0.5	+0 -0.5	+1.5 -0
25 TO 50	±1.5	±1.5		±1.5	±1.5	±0.4	±0.4	±0.5	±3.2	±1.5	+0 -0.5	+0 -0.5	+1.5 -0
50 TO 100	±1.5	±1.5		±1.5	±1.5	±0.4	±0.4	±0.5	±3.2	±1.5	+0 -0.5	+0 -0.5	+1.5 -0
100 TO 150	+2.4 -1.5	±1.5		±1.5	±1.5	±0.4	±0.4	±0.5	±0.4	±1.5	+0 -0.5	+0 -0.5	+1.5 -0
150 TO 200	+4.0 -3.2	±3.2		±2.4	±2.4	±0.5	±0.4	±1.5	±0.4	+0 -1.5	+0 -1.5	+1.5 -0	
200 TO 250	+6.4 -4.8	±4.8		±2.4	±2.4	±0.5	±0.4	±1.5	±2.4	+0 -1.5	+0 -1.5	+1.5 -0	

OFF-SQUARE TOLERANCES		
NOMINAL SIZE OF FITTING	OFF SQUARE TOLERANCE, X	OFF SQUARE TOLERANCE, Y
UP TO AND INCLUDING 100	0.8	1.6
100 TO 150	1.2	2.4
150 TO 200	1.6	3.2
200 & ABOVE	3.2	6.4

NOTES : 1. ALL DIMENSIONS ARE IN MILLIMETRES

STANDARD

BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DESIGN	NAME	ENGG. ENTERPRISES	SKIN	DATE	NO. OF
		CHD	R. ANANTH		Sd	15.10.1998	VAR
		APPD	J. JADE		Sd	15.10.1998	
DEPT	GRADE OF UNTOLO. DEM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.			
CODE	C / M / F	N.T.S	-	-			
TITLE			CARD CODE	DRAWING NO.			REV
TOLERANCES ON FITTINGS			U 01	4-80-301-26192			01

V/A4

Size A4