

BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE, CHENNAI 600017

REF : PC:OS: PVM

DT.: 15.07.2014

BHEL Piping Centre is interested in empanelling vendors for supply of **Piping Systems and Tanks & Vessels** for **Power Stations**, including material procurement, fabrication and forwarding the finished items to various project sites in India or to BHEL Shipping at Tiruchi/Thirumayam. Materials have to be procured from BHEL approved sources as per International and National codes and fabrication shall be as per BHEL drawings and approved procedures and quality documents including Statutory requirements like Indian Boiler Regulations (IBR).

Indian vendors who have experience and capacity to produce **Piping systems / Tanks & vessels** with sufficient financial background with a minimum annual turnover of **10 crores / 1 crore** respectively in the previous three consecutive years, may send their expression of interest giving detailed 17 page application in the downloadable format from www.bhel.com with all documents as called for therein including all technical information, the list of machineries, covered and open area available, list of reputed customers with details of orders executed, Balance Sheets of last three years and any other information of relevance and important.

Applications will be scrutinised and vendors meeting our requirements will be evaluated and empanelled as per procedure. Vendors are also to be approved by our clients like NTPC, NPCIL, Tatas etc., before we can place orders for projects of these customers.

VENDORS ARE REQUESTED TO GET FAMILIARISED WITH PRODUCTS AND TECHNICAL REQUIREMENTS FROM WEBSITE OR THE OFFICE OF AGM/Outsourcing, BHEL , PIPING CENTRE, CHENNAI.

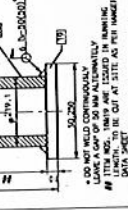
VENDORS ARE REQUESTED TO INDICATE CLEARLY WHETHER THEY ARE INTERESTED IN SUPPLY OF PIPING SYSTEMS OR TANKS & VESSELS.

Detailed application as above may be sent to:

"AGM/Outsourcing
BHEL PIPING CENTRE
80 GN Road, T.Nagar
CHENNAI-600 017"

Download:

1. Sample drawing-IBR AS piping
2. Sample drawing-IBR CS piping
3. Sample drawing-NIBR piping
4. Sample drawing-IBR TANK
5. Sample drawing-NIBR TANK
6. QP for piping fabrication
7. QP for IBR Tank

[illegible]

Technical drawing of a mechanical part, likely a bracket or support, showing a cross-section with a central hole and a smaller hole on the side. The drawing includes dimension lines and a table with fields for 'REV', 'CD', 'DATE', and 'FORM'.

Technical drawing of a roof structure showing a cross-section. Labels include: R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{11} , R_{12} , R_{13} , R_{14} , R_{15} , R_{16} , R_{17} , R_{18} , R_{19} , R_{20} , R_{21} , R_{22} , R_{23} , R_{24} , R_{25} , R_{26} , R_{27} , R_{28} , R_{29} , R_{30} , R_{31} , R_{32} , R_{33} , R_{34} , R_{35} , R_{36} , R_{37} , R_{38} , R_{39} , R_{40} , R_{41} , R_{42} , R_{43} , R_{44} , R_{45} , R_{46} , R_{47} , R_{48} , R_{49} , R_{50} , R_{51} , R_{52} , R_{53} , R_{54} , R_{55} , R_{56} , R_{57} , R_{58} , R_{59} , R_{60} , R_{61} , R_{62} , R_{63} , R_{64} , R_{65} , R_{66} , R_{67} , R_{68} , R_{69} , R_{70} , R_{71} , R_{72} , R_{73} , R_{74} , R_{75} , R_{76} , R_{77} , R_{78} , R_{79} , R_{80} , R_{81} , R_{82} , R_{83} , R_{84} , R_{85} , R_{86} , R_{87} , R_{88} , R_{89} , R_{90} , R_{91} , R_{92} , R_{93} , R_{94} , R_{95} , R_{96} , R_{97} , R_{98} , R_{99} , R_{100} .

DETAIL 11

2.5
2.8
2.7
8.0

13.5

0.0077 x 4.35

[illegible]

DO NOT WELD CONTINUOUSLY

50, 200, 500

1.2

1.2

1.2

1.5

1.2 + 1.2 = 2.4

50 mm

DO NOT WELD CONTINUOUSLY

G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES
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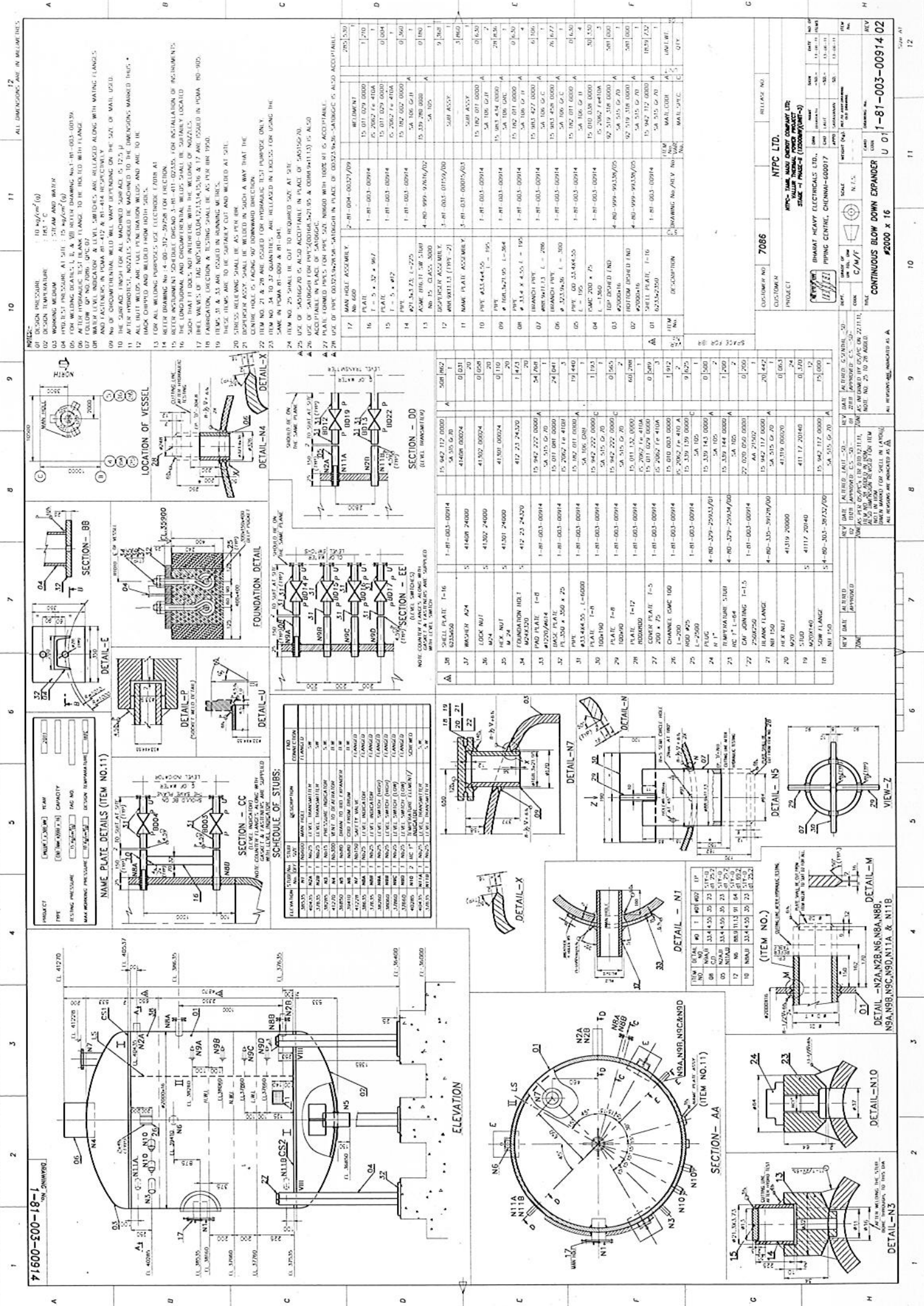


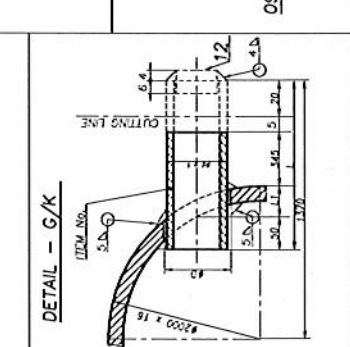
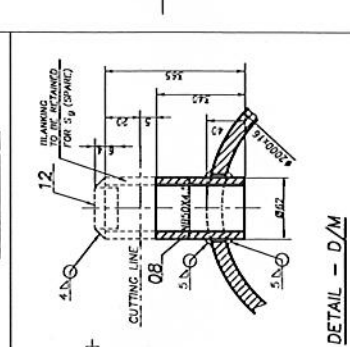
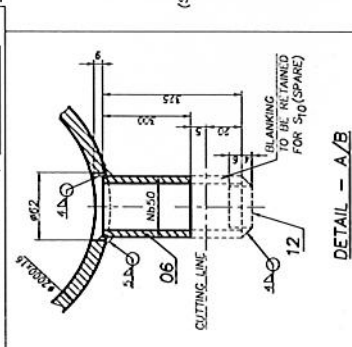
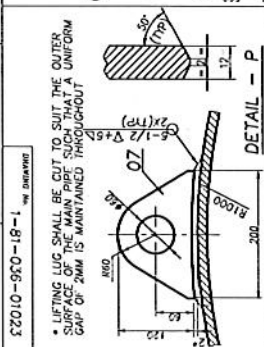
Table with 4 columns: Item No., Description, Quantity, and Unit. It lists various components of the expander, including valves, flanges, and piping, with their respective quantities and units.

Table with 4 columns: Item No., Description, Quantity, and Unit. It continues the list of components from the previous table, including more valves, flanges, and piping.

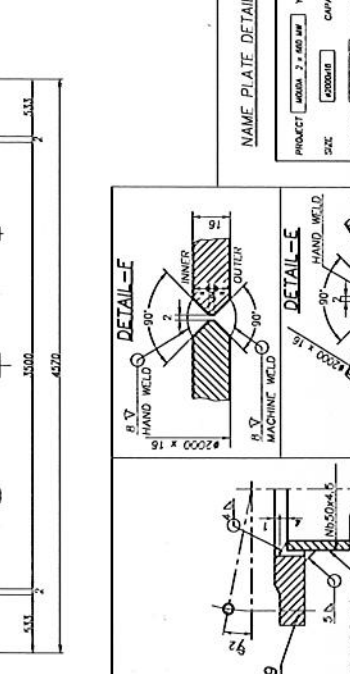
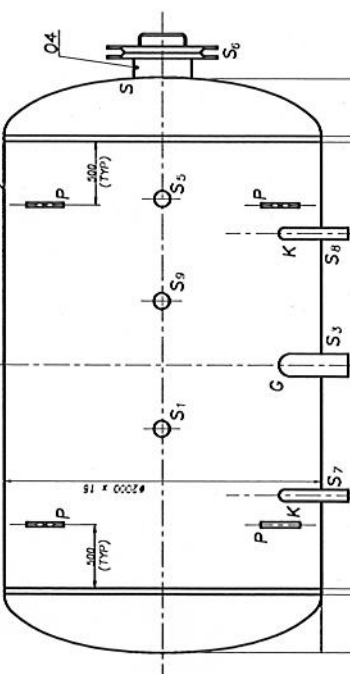
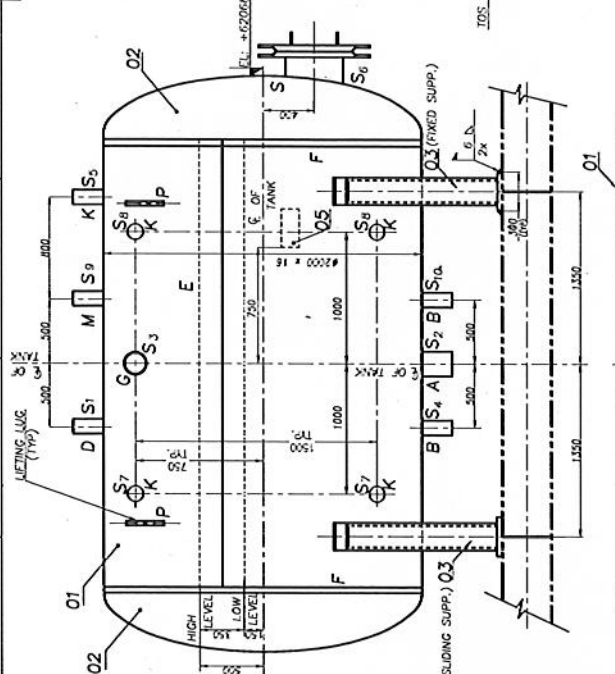
Table with 4 columns: Item No., Description, Quantity, and Unit. It continues the list of components from the previous tables, including more valves, flanges, and piping.

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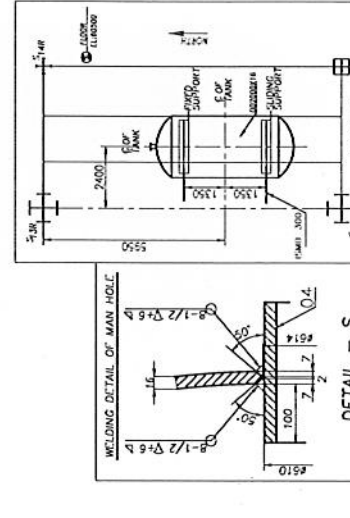
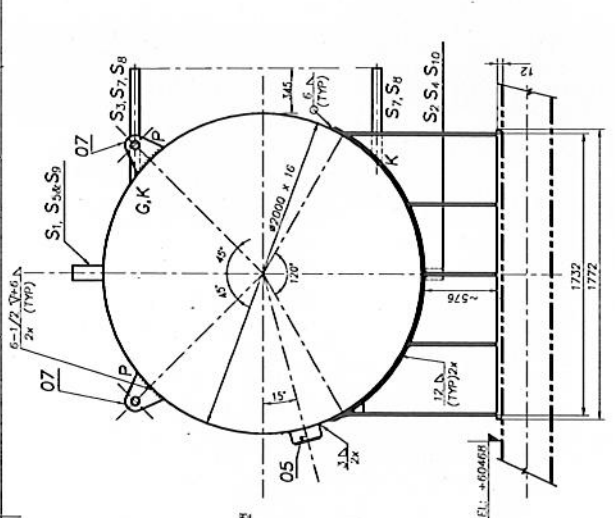


DETAIL	L	LI	ITEM NO.	SIZE
K	400	60	10	60
K	400	60	11	20
K	400	60	12	20

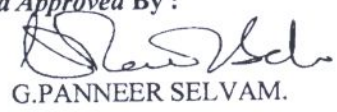


NAME PLATE DETAILS 05

PROJECT	WATER 2 x 60 MW	YEAR	2011
SIZE	400000	CAPACITY	120 M ³
TEST PR.	82.5 (mm ²)	TAG NO.	
DESIGN PR.	7.5 (mm ²)	DESIGN TANK	500



ITEM	SIZE	NO	CONNECTION	SERVICE
D 31	INB 30	1	FLANGED	1. FULL FLOW COOLING WATER
A 32	INB 30	1	FLANGED	2. FULL FLOW COOLING WATER
C 33	INB 30	1	FLANGED	3. FULL FLOW COOLING WATER
D 34	INB 30	1	FLANGED	4. FULL FLOW COOLING WATER
E 35	INB 30	1	FLANGED	5. FULL FLOW COOLING WATER
F 36	INB 30	1	FLANGED	6. FULL FLOW COOLING WATER
G 37	INB 30	1	FLANGED	7. FULL FLOW COOLING WATER
H 38	INB 30	1	FLANGED	8. FULL FLOW COOLING WATER
I 39	INB 30	1	FLANGED	9. FULL FLOW COOLING WATER
J 40	INB 30	1	FLANGED	10. FULL FLOW COOLING WATER
K 41	INB 30	1	FLANGED	11. FULL FLOW COOLING WATER
L 42	INB 30	1	FLANGED	12. FULL FLOW COOLING WATER
M 43	INB 30	1	FLANGED	13. FULL FLOW COOLING WATER
N 44	INB 30	1	FLANGED	14. FULL FLOW COOLING WATER
O 45	INB 30	1	FLANGED	15. FULL FLOW COOLING WATER
P 46	INB 30	1	FLANGED	16. FULL FLOW COOLING WATER
Q 47	INB 30	1	FLANGED	17. FULL FLOW COOLING WATER
R 48	INB 30	1	FLANGED	18. FULL FLOW COOLING WATER
S 49	INB 30	1	FLANGED	19. FULL FLOW COOLING WATER
T 50	INB 30	1	FLANGED	20. FULL FLOW COOLING WATER
U 51	INB 30	1	FLANGED	21. FULL FLOW COOLING WATER
V 52	INB 30	1	FLANGED	22. FULL FLOW COOLING WATER
W 53	INB 30	1	FLANGED	23. FULL FLOW COOLING WATER
X 54	INB 30	1	FLANGED	24. FULL FLOW COOLING WATER
Y 55	INB 30	1	FLANGED	25. FULL FLOW COOLING WATER
Z 56	INB 30	1	FLANGED	26. FULL FLOW COOLING WATER
AA 57	INB 30	1	FLANGED	27. FULL FLOW COOLING WATER
AB 58	INB 30	1	FLANGED	28. FULL FLOW COOLING WATER
AC 59	INB 30	1	FLANGED	29. FULL FLOW COOLING WATER
AD 60	INB 30	1	FLANGED	30. FULL FLOW COOLING WATER
AE 61	INB 30	1	FLANGED	31. FULL FLOW COOLING WATER
AF 62	INB 30	1	FLANGED	32. FULL FLOW COOLING WATER
AG 63	INB 30	1	FLANGED	33. FULL FLOW COOLING WATER
AH 64	INB 30	1	FLANGED	34. FULL FLOW COOLING WATER
AI 65	INB 30	1	FLANGED	35. FULL FLOW COOLING WATER
AJ 66	INB 30	1	FLANGED	36. FULL FLOW COOLING WATER
AK 67	INB 30	1	FLANGED	37. FULL FLOW COOLING WATER
AL 68	INB 30	1	FLANGED	38. FULL FLOW COOLING WATER
AM 69	INB 30	1	FLANGED	39. FULL FLOW COOLING WATER
AN 70	INB 30	1	FLANGED	40. FULL FLOW COOLING WATER
AO 71	INB 30	1	FLANGED	41. FULL FLOW COOLING WATER
AP 72	INB 30	1	FLANGED	42. FULL FLOW COOLING WATER
AQ 73	INB 30	1	FLANGED	43. FULL FLOW COOLING WATER
AR 74	INB 30	1	FLANGED	44. FULL FLOW COOLING WATER
AS 75	INB 30	1	FLANGED	45. FULL FLOW COOLING WATER
AT 76	INB 30	1	FLANGED	46. FULL FLOW COOLING WATER
AU 77	INB 30	1	FLANGED	47. FULL FLOW COOLING WATER
AV 78	INB 30	1	FLANGED	48. FULL FLOW COOLING WATER
AW 79	INB 30	1	FLANGED	49. FULL FLOW COOLING WATER
AX 80	INB 30	1	FLANGED	50. FULL FLOW COOLING WATER
AY 81	INB 30	1	FLANGED	51. FULL FLOW COOLING WATER
AZ 82	INB 30	1	FLANGED	52. FULL FLOW COOLING WATER
BA 83	INB 30	1	FLANGED	53. FULL FLOW COOLING WATER
BB 84	INB 30	1	FLANGED	54. FULL FLOW COOLING WATER
BC 85	INB 30	1	FLANGED	55. FULL FLOW COOLING WATER
BD 86	INB 30	1	FLANGED	56. FULL FLOW COOLING WATER
BE 87	INB 30	1	FLANGED	57. FULL FLOW COOLING WATER
BF 88	INB 30	1	FLANGED	58. FULL FLOW COOLING WATER
BG 89	INB 30	1	FLANGED	59. FULL FLOW COOLING WATER
BH 90	INB 30	1	FLANGED	60. FULL FLOW COOLING WATER
BI 91	INB 30	1	FLANGED	61. FULL FLOW COOLING WATER
BJ 92	INB 30	1	FLANGED	62. FULL FLOW COOLING WATER
BK 93	INB 30	1	FLANGED	63. FULL FLOW COOLING WATER
BL 94	INB 30	1	FLANGED	64. FULL FLOW COOLING WATER
BM 95	INB 30	1	FLANGED	65. FULL FLOW COOLING WATER
BN 96	INB 30	1	FLANGED	66. FULL FLOW COOLING WATER
BO 97	INB 30	1	FLANGED	67. FULL FLOW COOLING WATER
BP 98	INB 30	1	FLANGED	68. FULL FLOW COOLING WATER
BQ 99	INB 30	1	FLANGED	69. FULL FLOW COOLING WATER
BR 100	INB 30	1	FLANGED	70. FULL FLOW COOLING WATER
BS 101	INB 30	1	FLANGED	71. FULL FLOW COOLING WATER
BT 102	INB 30	1	FLANGED	72. FULL FLOW COOLING WATER
BU 103	INB 30	1	FLANGED	73. FULL FLOW COOLING WATER
BV 104	INB 30	1	FLANGED	74. FULL FLOW COOLING WATER
BW 105	INB 30	1	FLANGED	75. FULL FLOW COOLING WATER
BX 106	INB 30	1	FLANGED	76. FULL FLOW COOLING WATER
BY 107	INB 30	1	FLANGED	77. FULL FLOW COOLING WATER
BZ 108	INB 30	1	FLANGED	78. FULL FLOW COOLING WATER
CA 109	INB 30	1	FLANGED	79. FULL FLOW COOLING WATER
CB 110	INB 30	1	FLANGED	80. FULL FLOW COOLING WATER
CC 111	INB 30	1	FLANGED	81. FULL FLOW COOLING WATER
CD 112	INB 30	1	FLANGED	82. FULL FLOW COOLING WATER
CE 113	INB 30	1	FLANGED	83. FULL FLOW COOLING WATER
CF 114	INB 30	1	FLANGED	84. FULL FLOW COOLING WATER
CG 115	INB 30	1	FLANGED	85. FULL FLOW COOLING WATER
CH 116	INB 30	1	FLANGED	86. FULL FLOW COOLING WATER
CI 117	INB 30	1	FLANGED	87. FULL FLOW COOLING WATER
CJ 118	INB 30	1	FLANGED	88. FULL FLOW COOLING WATER
CK 119	INB 30	1	FLANGED	89. FULL FLOW COOLING WATER
CL 120	INB 30	1	FLANGED	90. FULL FLOW COOLING WATER
CM 121	INB 30	1	FLANGED	91. FULL FLOW COOLING WATER
CN 122	INB 30	1	FLANGED	92. FULL FLOW COOLING WATER
CO 123	INB 30	1	FLANGED	93. FULL FLOW COOLING WATER
CP 124	INB 30	1	FLANGED	94. FULL FLOW COOLING WATER
CQ 125	INB 30	1	FLANGED	95. FULL FLOW COOLING WATER
CR 126	INB 30	1	FLANGED	96. FULL FLOW COOLING WATER
CS 127	INB 30	1	FLANGED	97. FULL FLOW COOLING WATER
CT 128	INB 30	1	FLANGED	98. FULL FLOW COOLING WATER
CU 129	INB 30	1	FLANGED	99. FULL FLOW COOLING WATER
CV 130	INB 30	1	FLANGED	100. FULL FLOW COOLING WATER
CW 131	INB 30	1	FLANGED	101. FULL FLOW COOLING WATER
CX 132	INB 30	1	FLANGED	102. FULL FLOW COOLING WATER
CY 133	INB 30	1	FLANGED	103. FULL FLOW COOLING WATER
CZ 134	INB 30	1	FLANGED	104. FULL FLOW COOLING WATER
DA 135	INB 30	1	FLANGED	105. FULL FLOW COOLING WATER
DB 136	INB 30	1	FLANGED	106. FULL FLOW COOLING WATER
DC 137	INB 30	1	FLANGED	107. FULL FLOW COOLING WATER
DD 138	INB 30	1	FLANGED	108. FULL FLOW COOLING WATER
DE 139	INB 30	1	FLANGED	109. FULL FLOW COOLING WATER
DF 140	INB 30	1	FLANGED	110. FULL FLOW COOLING WATER
DG 141	INB 30	1	FLANGED	111. FULL FLOW COOLING WATER
DH 142	INB 30	1	FLANGED	112. FULL FLOW COOLING WATER
DI 143	INB 30	1	FLANGED	113. FULL FLOW COOLING WATER
DJ 144	INB 30	1	FLANGED	114. FULL FLOW COOLING WATER
DK 145	INB 30	1	FLANGED	115. FULL FLOW COOLING WATER
DL 146	INB 30	1	FLANGED	116. FULL FLOW COOLING WATER
DM 147	INB 30	1	FLANGED	117. FULL FLOW COOLING WATER
DN 148	INB 30	1	FLANGED	118. FULL FLOW COOLING WATER
DO 149	INB 30	1	FLANGED	119. FULL FLOW COOLING WATER
DP 150	INB 30	1	FLANGED	120. FULL FLOW COOLING WATER
DQ 151	INB 30	1	FLANGED	121. FULL FLOW COOLING WATER
DR 152	INB 30	1	FLANGED	122. FULL FLOW COOLING WATER
DS 153	INB 30	1	FLANGED	123. FULL FLOW COOLING WATER
DT 154	INB 30	1	FLANGED	124. FULL FLOW COOLING WATER
DU 155	INB 30	1	FLANGED	125. FULL FLOW COOLING WATER
DV 156	INB 30	1	FLANGED	126. FULL FLOW COOLING WATER
DW 157	INB 30	1	FLANGED	127. FULL FLOW COOLING WATER
DX 158	INB 30	1	FLANGED	128. FULL FLOW COOLING WATER
DY 159	INB 30	1	FLANGED	129. FULL FLOW COOLING WATER
DZ 160	INB 30	1	FLANGED	130. FULL FLOW COOLING WATER
EA 161	INB 30	1	FLANGED	131. FULL FLOW COOLING WATER
EB 162	INB 30	1	FLANGED	132. FULL FLOW COOLING WATER
EC 163	INB 30	1	FLANGED	133. FULL FLOW COOLING WATER
ED 164	INB 30	1	FLANGED	134. FULL FLOW COOLING WATER
EE 165	INB 30	1	FLANGED	135. FULL FLOW COOLING WATER
EF 166	INB 30	1	FLANGED	136. FULL FLOW COOLING WATER
EG 167	INB 30	1	FLANGED	137. FULL FLOW COOLING WATER
EH 168	INB 30	1	FLANGED	138. FULL FLOW COOLING WATER
EI 169	INB 30	1	FLANGED	139. FULL FLOW COOLING WATER
EJ 170	INB 30	1	FLANGED	140. FULL FLOW COOLING WATER
EK 171	INB 30	1	FLANGED	141. FULL FLOW COOLING WATER
EL 172	INB 30	1	FLANGED	142. FULL FLOW COOLING WATER
EM 173	INB 30	1	FLANGED	143. FULL FLOW COOLING WATER
EN 174	INB 30	1	FLANGED	144. FULL FLOW COOLING WATER
EO 175	INB 30	1	FLANGED	145. FULL FLOW COOLING WATER
EP 176	INB 30	1	FLANGED	146. FULL FLOW COOLING WATER
EQ 177	INB 30	1	FLANGED	147. FULL FLOW COOLING WATER
ER 178	INB 30	1	FLANGED	148. FULL FLOW COOLING WATER
ES 179	INB 30	1	FLANGED	149. FULL FLOW COOLING WATER
ET 180	INB 30	1	FLANGED	150. FULL FLOW COOLING WATER
EU 181	INB 30	1	FLANGED	151. FULL FLOW COOLING WATER
EV 182	INB 30	1	FLANGED	152. FULL FLOW COOLING WATER
EW 183	INB 30	1	FLANGED	153. FULL FLOW COOLING WATER
EX 184	INB 30	1	FLANGED	154. FULL FLOW COOLING WATER
EY 185	INB 30	1	FLANGED	155. FULL FLOW COOLING WATER
EZ 186	INB 30	1	FLANGED	156. FULL FLOW COOLING WATER
FA 187	INB 30	1	FLANGED	157. FULL FLOW COOLING WATER
FB 188	INB 30	1	FLANGED	158. FULL FLOW COOLING WATER
FC 189	INB 30	1	FLANGED	159. FULL FLOW COOLING WATER
FD 190	INB 30	1	FLANGED	160. FULL FLOW COOLING WATER
FE 191	INB 30	1	FLANGED	161. FULL FLOW COOLING WATER
FF 192	INB 30	1	FLANGED	162. FULL FLOW COOLING WATER
FG 193	INB 30	1	FLANGED	163. FULL FLOW COOLING WATER
FH 194	INB 30	1	FLANGED	164. FULL FLOW COOLING WATER
FI 195	INB 30	1	FLANGED	165. FULL FLOW COOLING WATER
FJ 196	INB 30	1	FLANGED	166. FULL FLOW COOLING WATER
FK 197	INB 30	1	FLANGED	167. FULL FLOW COOLING WATER
FL 198	INB 30	1	FLANGED	168. FULL FLOW COOLING WATER
FM 199	INB 30	1	FLANGED	169. FULL FLOW COOLING WATER
FN 200	INB 30	1	FLANGED	170. FULL FLOW COOLING WATER
FO 201	INB 30	1	FLANGED	171. FULL FLOW COOLING WATER
FP 202	INB 30	1	FLANGED	172. FULL FLOW COOLING WATER
FQ 203	INB 30	1	FLANGED	173. FULL FLOW COOLING WATER
FR 204	INB 30	1	FLANGED	174. FULL FLOW COOLING WATER
FS 205	INB 30	1	FLANGED	175. FULL FLOW COOLING WATER
FT 206	INB 30	1	FLANGED	176. FULL FLOW COOLING WATER
FU 207	INB 30	1	FLANGED	177. FULL FLOW COOLING WATER
FV 208	INB 30	1	FLANGED	178. FULL FLOW COOLING WATER
FW 209	INB 30	1	FLANGED	179. FULL FLOW COOLING WATER
FX 210	INB 30	1	FLANGED	180. FULL FLOW COOLING WATER
FY 211	INB 30	1	FLANGED	181. FULL FLOW COOLING WATER
FZ 212	INB 30	1	FLANGED	182. FULL FLOW COOLING WATER
GA 213	INB 30	1	FLANGED	183. FULL FLOW COOLING WATER
GB 214	INB 30	1	FLANGED	184. FULL FLOW COOLING WATER
GC 215	INB 30	1	FLANGED	185. FULL FLOW COOLING WATER
GD 216	INB 30	1	FLANGED	186. FULL FLOW COOLING WATER
GE 217	INB 30	1	FLANGED	187. FULL FLOW COOLING WATER
GF 218	INB 30	1	FLANGED	188. FULL FLOW COOLING WATER
GG 219	INB 30	1	FLANGED	189. FULL FLOW COOLING WATER
GH 220	INB 30	1	FLANGED	190. FULL FLOW COOLING WATER
GI 221	INB 30	1	FLANGED	191. FULL FLOW COOLING WATER
GJ 222	INB 30	1	FLANGED	192. FULL FLOW COOLING WATER
GK 223	INB 30	1	FLANGED	193. FULL FLOW COOLING WATER
GL 224	INB 30	1	FLANGED	194. FULL FLOW COOLING WATER
GM 225	INB 30	1	FLANGED	195. FULL FLOW COOLING WATER
GN 226	INB 30	1	FLANGED	196. FULL FLOW COOLING WATER
GO 227	INB 30	1	FLANGED	197. FULL FLOW COOLING WATER
GP 228	INB 30	1	FLANGED	198. FULL FLOW COOLING WATER
GQ 229	INB 30	1	FLANGED	199. FULL FLOW COOLING WATER
GR 230	INB 30	1	FLANGED	200. FULL FLOW COOLING WATER
GS 231	INB 30	1	FLANGED	201. FULL FLOW COOLING WATER
GT 232	INB 30	1	FLANGED	202. FULL FLOW COOLING WATER
GU 233	INB 30	1	FLANGED	203. FULL FLOW COOLING WATER
GV 234	INB 30	1	FLANGED	204. FULL FLOW COOLING WATER
GW 235	INB 30	1	FLANGED	205. FULL FLOW COOLING WATER
GX 236	INB			

 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI – 17 QUALITY DEPARTMENT. QA 03		QUALITY PLAN FOR PIPING FABRICATION (NON – IBR) PROJECT NAME: - IPCL HALDIA TPP- BTG (3X150MW) BHEL CUSTOMER Nos: 7152, 7153, 7154.					QP NO : 7152 : QPC : 01 REV. NO : 00 DATE : 26.04.2011 Page 1 of 2				
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS
1	2	3	4	5	6	7	8	9	M	B	11
1.0 MATERIAL											
1.1	Pipes as per BHEL Drawing.	Correctness of material specn.	Major	Verification of material specn.	100%	Material Specification as per Col.2	HC*		P	V	
1.2	Fittings (Elbows, Reducers, Tees, Mitre Bends Etc) as per BHEL Drawing.	Correctness of material specn.	Major	Verification of material specn.	100%	Material Specification as per Col.2	HC*		P	V	HC*- History Card/ Register
1.3	Plates as per BHEL Drawing.	Correctness of material specn.	Major	Verification of material specn.	100%	Material Specification as per Col.2	HC*		P	V	
1.4	Branch Connections Pipes/Tubes//forgings as per BHEL Drawing.	Correctness of material specn.	Major	Verification of material specn.	100%	Material Specification as per Col.2	HC*		P	V	
2.0 IN PROCESS CONTROL.											
2.1	Welding.	Procedure & Performance Qualification	Major	Review of WPS and PQR @	Each Welder	As per ASME SEC.IX	Report		P	V	@ Review of WPS/PQR by BHEL.
2.2	Weld Profiles and Surface Defects.	Finish	Minor	Visual	100%	PFI ES 27 & ASME B 31.1 Cl : 136.4.2	Report		P	W	
2.3	NDE. a) Edge Preparation.	Liquid Penetrant Test	Minor	NDE	100%	ASME Sec.V & ASME B 31.1 Cl:136.4.4	NDT Report		P	V	
Prepared By:  VIVEKANANDA YELLU Engr / QA.			LEGEND: M : BHEL/BHEL Approved Vendor B : BHEL/BHEL Authorized Inspection Agency WPS – Welding procedure Specification PQR – Procedure Qualification Report				P: Perform V : Verification W: Witness IR – Inspection Report		Reviewed and Approved By :  G.PANNEER SELVAM. DGM/QA.		

DEVELOPMENT CONSULTANTS PRIVATE LIMITED Reviewed only for general conformance with Contract drawings and specifications. Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract documents			
ACTION: 2		DATE: 22/08/2011	
DISTRIBUTED BY: S. Pal			
1	Distributed	4	Approved except as noted. Resubmission required
2	Approved	5	Disapproved. See accompanying letter
3	Approved except as noted. Forward final drawing.	6	For information and record only
SEE COVERING LETTER			
Letter Ref. No		Date:	

 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI – 17 QUALITY DEPARTMENT. QA 03		QUALITY PLAN FOR PIPING FABRICATION (NON – IBR) PROJECT NAME: - IPCL HALDIA TPP- BTG (3X150MW) BHEL CUSTOMER Nos: 7152, 7153, 7154.						QP NO : 7152 : QPC : 01 REV. NO : 00 DATE : 26.04.2011 Page 2 of 2			
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS
1	2	3	4	5	6	7	8	9	M	B	11
2.3	b) Butt welds.	Radiograph Test	Major	RT Film Evaluation	# 10%	ASME Sec.V& ASME B 31.1 Cl:136.4.5		NDT Report	P	V	CS :Carbon steel. AS : Alloy steel. SS : Stainless steel
	c) Branch Welds and Attachment welds.	Liquid Penetrant Test/ Magnetic Particle Test	Minor	NDE	10% for CS 100% for SS	ASME Sec.V&ASME B31.1 CL 136.4.4 / Cl ; 136.4.3		-do-	P	W	
2.4	Bends.	Dimension, Angle of Bend, Arm length, Ovality, flatness, Radius of Bend, Thickness on tension axis	Major	Measurement	100%	BHEL Drawing.		HC*	P	W	NDE:Non destructive examination: # - Where rejection are observed in 10% lot ,another lot of 20%shall be taken, if there are rejection in 20% lot also, complete 100% lot shall be tested for respective NDE
2.5	HEAT TREATMENT as applicable for final Product.	Time & Temperature Control	Major	H.T. Charts Review	100%	ASME B31.1 CL 132		HC*	P	V	
3.0	FINAL INSPECTION.										
3.1	Dimensional Control.	Length, Thickness, Weld end diameter, Positions of attachments.	Major	Measurements & Visual	100%	AS PER BHEL DRAWING.		HC*	P	W	
3.2	Painting.	Painting & PFT	Minor	Visual & Measurements	100%	QP NO: 7152:QPC:11		HC* / Final I.R	P	V	
3.3	Identification.	Stenciling & hard stamping.	Minor	Visual	100%	AS PER BHEL STANDARD			P	V	
3.4	Documentation Review	Verification of Reports	Major	Visual	100%	QP NO: 7152:QPC:01		IR, Report , HC*	P	V	BHEL will Submit certificate of Compliance (COC)

Prepared By:  VIVEKANANDA YELLU Engr / QA.	LEGEND: M : BHEL/BHEL Approved Vendor B : BHEL/BHEL Authorized Inspection Agency WPS – Welding procedure Specification PQR – Procedure Qualification Report P: Perform V : Verification W: Witness IR – Inspection Report	Reviewed and Approved By :  G.PANNEER SELVAM. DGM/QA.
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BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE CHENNAI - 17
QUALITY DEPARTMENT.

QA 03

QUALITY PLAN FOR TANKS & VESSELS

PROJECT NAME: SINTEX INFRA PROJECTS LIMITED - 2 X 150 MW
BHEL CUSTOMER Nos: 7186, 7187.

CUSTOMER DOC.No: SHI-BTG-VM-Q-PC-002

QP NO : 7186 : QPC : 02
REV. NO : 02
DATE : 13.02.2013
Page 1 of 2

SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT CF RECORD	AGENCY		REMARKS
									M	B	
1	2	3	4	5	6	7	8	9	10		11

1.0	RAW MATERIAL										
1.1	Plates as per BHEL Drawing.	Correctness of material sepcn.	Major	Verification of material sepcn.	100%	Material Specification as per Col.2	**		P	V	** For IBR materials, material correctness is ensured through mill test certificates. For Non IBR materials, Material correctness is ensured through Material spec hard stamping LPT - Liquid Penetrant Test RT - Radiography Test
1.2	Dished Ends * as per BHEL Drawing	Dimension,	Major	Visual	Each Dish	Drawing	IR		P	V	
		NDT	Major	LPT on Knuckle area	100%	ASME Sec.V / ASME sec.VIII Divn.1 Appendix 8	IR		P	W	
			Major	Verification of material sepcn.	100%	Material Specification as per Col.2	**		P	V	
1.3	Branch Connections Pipes & Rounds as per BHEL Drawing.	Correctness of material sepcn.	Major								
2.0	IN PROCESS CONTROL										
2.1	Welding Procedure Qualification & Welders Performance Qualification	1. Procedure 2. Performance	Major	Review of WPS and PQR @	100%	ASME Sec. IX / IBR	Report		P	V	@ Review of WPS/PQR by BHEL.
2.2	Weld inspection	1. Weld edge preparation and fit-up. 2. Profile 3. Surface	Major	Visual & Measurement	100%	As per BHEL Drawing / ASME sec. VIII Divn.1 UW 31 - 33	History card		P	V	

Dished Ends * - 100 % RT on weld joints of dished ends, if applicable.

Prepared By :

VIVEKANANDA YELLU
SR.ENGR / QA.

LEGEND:

M : BHEL/BHEL Approved Vendor
B : BHEL/BHEL Authorized Inspection Agency
WPS - Welding procedure Specification
PQR - Procedure Qualification Report

P : Perform
V : Verification
W : Witness
IR : Inspection Report.

Reviewed and Approved

M.

SINTEX INFRA PROJECTS LTD VENDOR DRAWING REVIEW STATUS	
☒	Action-1: Approved
☐	Action-2: Approved except as noted on drawing revise drawing and resubmit for records.
☐	Action 3: Returned with comments. Resubmit for approval.
☐	Action 4: Not approved. Resubmit for review.
☐	Action 1: For Information / Noted & kept for records.
This document has been reviewed as noted with regard to general conformity with the contract specification and requirements. The Vendor / Contractor is responsible for correctness of design, calculation and details. Approval for correctness of design, calculation and details. Approval of this document does not relieve the Vendor / Contractor of his responsibility in carrying out the work correctly and fulfilling the complete requirements of the contract nor does it limit the Purchaser's rights under the Contract.	
Ref No	Date
	2/3/13



QA 03

BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE CHENNAI – 17
QUALITY DEPARTMENT

QUALITY PLAN FOR TANKS & VESSELS

PROJECT NAME: SINTEX INFRA PROJECTS LIMITED - 2 X 150 MW
BHEL CUSTOMER Nos: 7186, 7187.

CUSTOMER DOC.No: SHI-BTG-VM-Q-PC-002

QP NO : 7186 : QPC : 02

REV. NO : 02

DATE : 13.02.2013

Page 2 of 2

SL NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT CF RECORD	AGENCY M B	REMARKS
1	2	3	4	5	6	7	8	9	10	11

2.2	Contd.	4. NDE								
		a. Butt Welds	Major	RT On CS & LS Joints	Refer Remarks \$\$, #	ASME Sec V & ASME Sec VIII Divn.1- UW 51	NDT Report:	P	V	\$ - Quantum of RT
		b. Fillet Welds	Major	LPT	100%	ASME Sec V & ASME Sec VIII Divn.1 Appendix 8	-do-	P	W	1. For IBR Vessels both CS & LS –100% CS: Cir-Seam LS: Long-Seam
2.3	Heat Treatment (Note-2)	Stress Relieving	Major	Verification	HT Chart	ASME Sec VIII Divn.1- UW 40	HT Chart	P	V	2. For Non-IBR Vessels a) Longitudinal –100% b) Cirseam – 10% at random including T.Joints & other areas as identified by BHEL.
3.0	FINAL INSPECTION									
3.1	Dimension	Overall dimensions Viz., Length, OD, Position of stubs, Edge preparation, Ovality, Thickness	Major	Measurements & Visual	100%	BHEL Drawing	History card	P	W	# Where rejections are observed in 10% lot, another lot of 20% shall be taken, if there are rejection in 20 % lot also, complete 100% lot shall be tested for respective NDE
3.2	Pressure Test	Strength	Major	Hydraulic Test	100%	BHEL Drawing & No Leakage, Seepage	Report	P	W	
3.3	Painting	Painting & DFT	Major	Visual & Measurements	100%	QP NO: 7186:QPC:11	History card	P	V	
3.4	Identification	Stenciling and Hard stamping	Major	Visual	100%	As per BHEL Standard	History card	P	V	
3.5	Documentation Review	Verification of Reports	Major	Visual	100%	QP NO: 7186:QPC:02	IR, Report, History card	P	V	BHEL will Submit certificate of Compliance (COC)

Note : 1) In the case of Vessels coming under IBR Scope, necessary IBR Requirements shall be fulfilled and IBR documents to be submitted.
2) IBR Vessels are to be Stress Relieved, if the wall thickness > 19 mm or C > 0.25

Prepared By :

VIVEKANANDA YELLU
SR.ENGR / QA.

LEGEND:

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B : BHEL/BHEL Authorized Inspection Agency
WPS – Welding procedure Specification
PQR – Procedure Qualification Report
P : Perform
V : Verification
W : Witness
IR : Inspection Report.

Reviewed and Approved By :

M.S.MURALIDHARAN.
MGR/QA.