



**ADDENDUM-1 TO TECHNICAL SPECIFICATION OF FUEL OIL UNLOADING SYSTEM  
4X270 MW BHADRADARI TPP**

SPECIFICATION NO.: PE-TS-411-166-A001

ADDENDUM NO # 1

DATE: 07/07/2015

Page 1 of 1

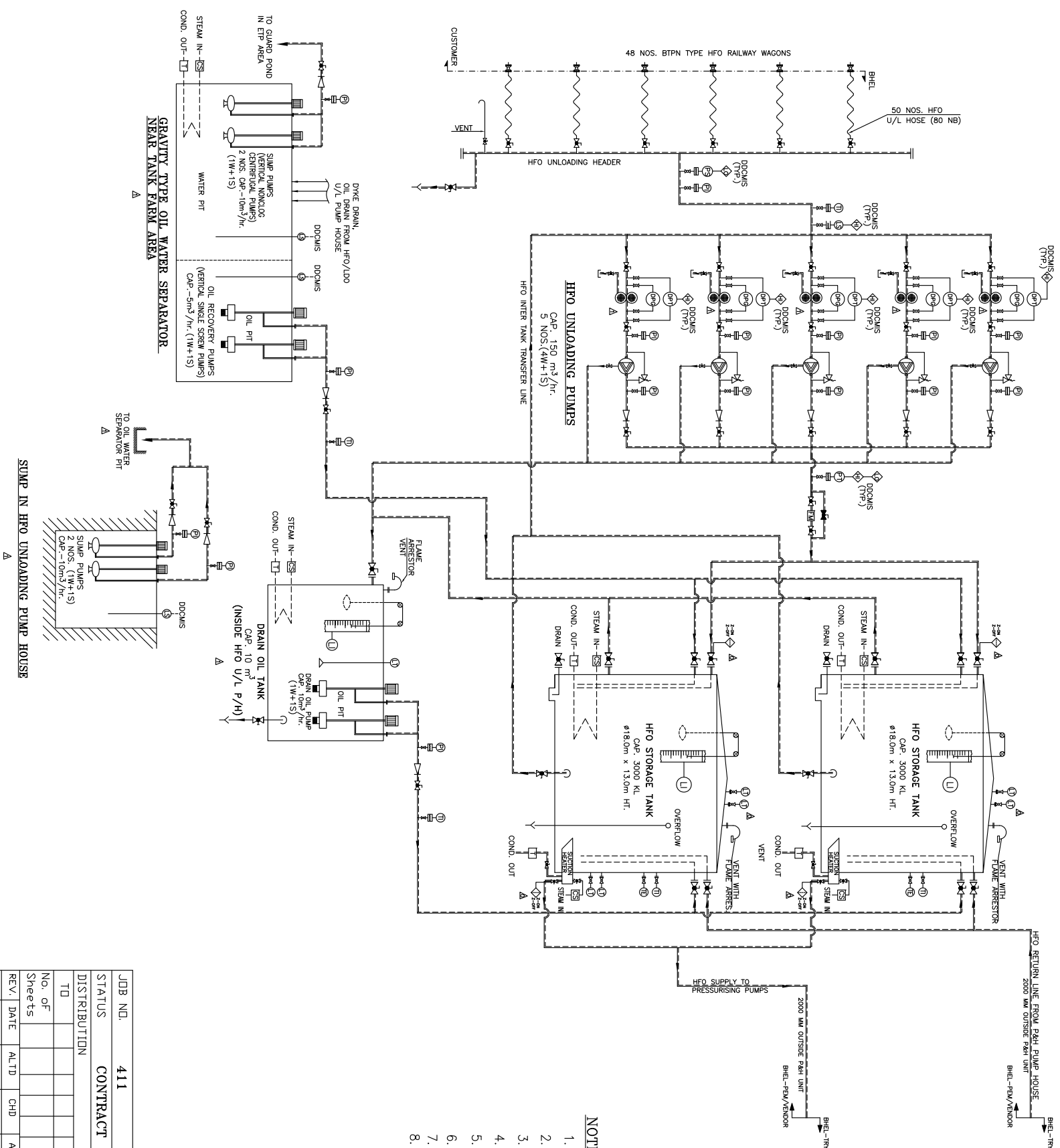
The following revisions w.r.t technical Specification no. **PE-TS-411-166-A001** for **Fuel oil unloading System** shall apply. Bidder to note that the following existing clauses/details as appearing in the specification stands deleted and clauses/details as mentioned in "Modified to or Read as" column shall be applicable and complied by the bidder. Other technical requirements as per technical specification no. PE-TS-411-166-A001 OF TENDER remains same.

**MODIFIED CLAUSES/PAGE NUMBERS.**

S.N	Vol. No.	Section/ Description	Clause no	Page no	Existing clause/details	Modified to or Read as
1.			1.6	280 of 348	New characteristics for strainers	Straining area for HFO & LDO strainers shall be 6:1.
2.				324 of 348	PID for steam & condensate	Bidder to refer revised P & ID for steam & condensate attached with this addendum. <b>Additional valves are required at following locations :</b> a. Manual valves at downstream & upstream of control valves for floor coil heater of HFO tanks b. Manual valve at downstream & upstream of control valves for suction heater of HFO tanks c. Bypass valve for control valves of suction heater for HFO tanks. d. Two(2) nos condensate flash tanks are envisaged. One no of capacity 6 m <sup>3</sup> near HFO unloading area and one no of capacity 2 m <sup>3</sup> near tank farm area is to be provided.
3.				322 & 323 of 348	PID for HFO & LDO system	PID for HFO & LDO system are revised generally. Bidder to consider the same and ignore the PIDs attached with technical spec.
4.				290 of 348	Annexure-III ( sub-vendor list)	<b>Bidder to consider sub-vendor list attached with this addendum and ignore the Annexure-III ( sub-vendor list) attached with tender spec.</b>

DRAWING NO. PE-DG-114-166-101

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LEGEND	
DI	D E S C R I P T I O N
PI	PRESSURE INDICATOR
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
DPG	DIFFERENTIAL PRESSURE GAUGE
DP	DIFFERENTIAL PRESSURE TRANSMITTER
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
LI	LEVEL INDICATOR
TI	TEMPERATURE INDICATOR
TE	TEMPERATURE ELEMENT
TS	SIGNAL TO OCS (LO OR HI)
CS	STEAM CONTROL VALVE
ST	STEAM TRAP
FM	CORIOLIS TYPE FLOWMETER
FS	SIMPLEX STRAINER
RV	RELIEF VALVE
NRV	NON RETURN VALVE
H	HOSE
CH	COIL HEATER
LD	LOCAL DRAIN
HT	HFO TRACED HFO PIPE
GV	GLOBE VALVE
NCV	NORMALLY CLOSED VALVE
LSW	LIMIT SWITCH

- NOTES:**
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS.
  2. VENTS AND DRAINS SHALL BE PROVIDED AT THE HIGHEST AND LOWEST POINTS RESPECTIVELY.
  3. THE PIPE SIZING SHALL BE DONE DURING DETAIL ENGINEERING BASED ON PIPE SIZING CRITERIA.
  4. ALL INSTRUMENTS ISOLATION VALVES SHALL BE GLOBE VALVE.
  5. ALL HFO LINES & DRAIN OIL LINES SHALL BE STEAM TRACED. HFO PUMPS & STRAINER ARE STEAM TRACED.
  6. TANK DRAIN VALVES ARE IN NORMALLY CLOSE CONDITION.
  7. FOR STEAM & CONDENSATE SYSTEM, REFER P & ID NO. PE-DG-411-166-A103.
  8. FOR LDO SYSTEM, REFER P & ID NO. PE-DG-411-166-A102.

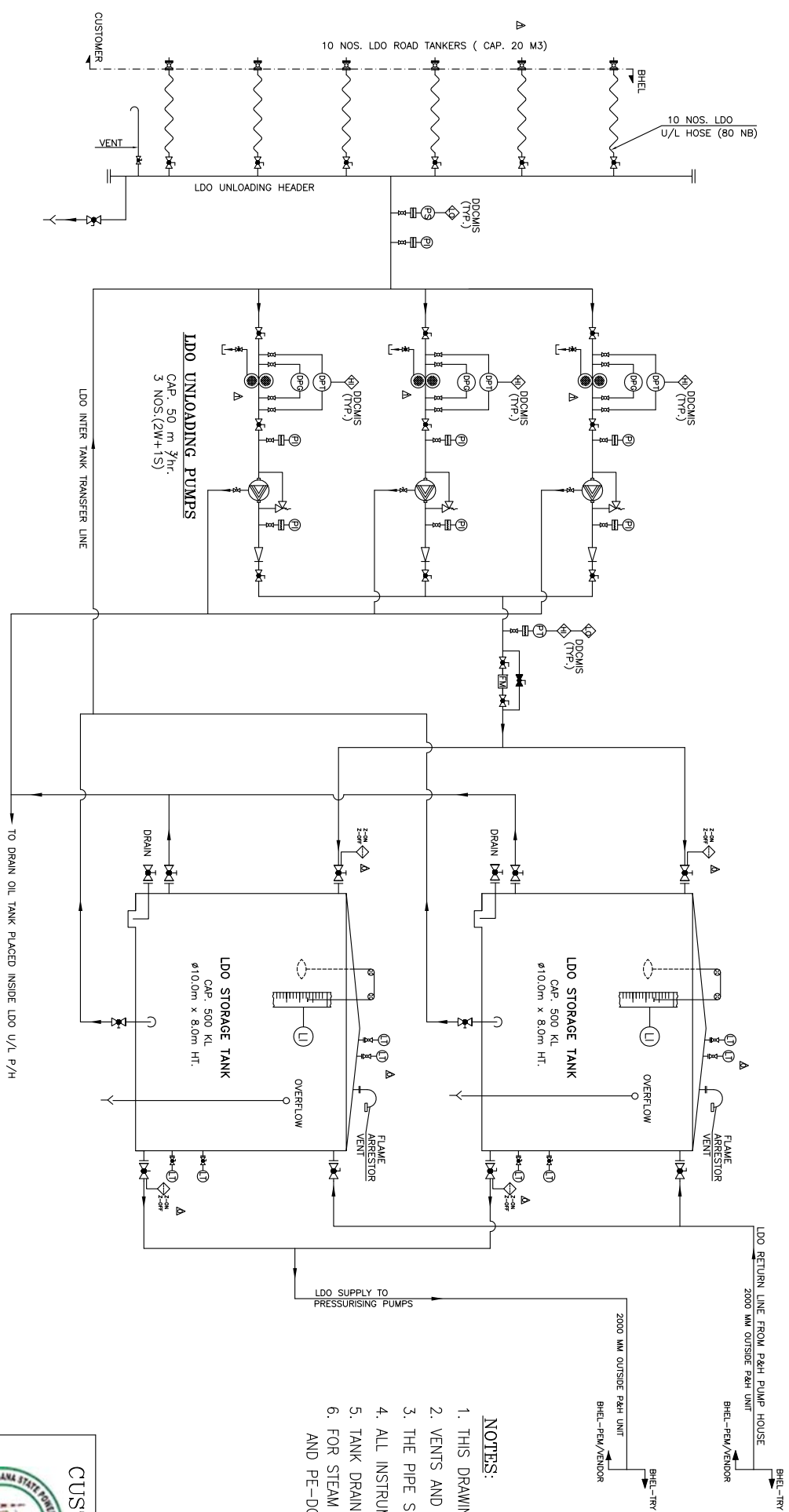
JOB NO.	411
STATUS	CONTRACT
DISTRIBUTION	
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No. of Sheets	
REV. DATE	ALTD CHD APPD
01 06.07.15	PK HK PK

<p>CUSTOMER</p>	<p>TELANGANA STATE POWER GENERATION CO. LTD.</p>																				
	<p>DESEIN PRIVATE LTD.</p>																				
<p>CONSULTANT</p>	<p>4X 270MW MANUGURU TPS</p>																				
<p>PROJECT</p>	<p>PROCESS &amp; INSTRUMENTATION DIAGRAM FOR HFO SYSTEM</p>																				
<table border="1"> <thead> <tr> <th>DEPT CODE</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DRR</td> <td>PK</td> <td>Sd/-</td> <td>13.10.2014</td> </tr> <tr> <td>DSSN</td> <td>PK</td> <td>Sd/-</td> <td>13.10.2014</td> </tr> <tr> <td>CHD</td> <td>HK</td> <td>Sd/-</td> <td>13.10.2014</td> </tr> <tr> <td>APPD</td> <td>PK</td> <td>Sd/-</td> <td>13.10.2014</td> </tr> </tbody> </table>	DEPT CODE	NAME	SIGN	DATE	DRR	PK	Sd/-	13.10.2014	DSSN	PK	Sd/-	13.10.2014	CHD	HK	Sd/-	13.10.2014	APPD	PK	Sd/-	13.10.2014	<p>DRAWING No. PE-DG-411-166-A101</p> <p>SHEET 01 OF 01 REV 01</p>
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CHD	HK	Sd/-	13.10.2014																		
APPD	PK	Sd/-	13.10.2014																		

DRAWING NO. PE-DG-114-DG-101A

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LEGEND	
DS	D E S C R I P T I O N
PI	PRESSURE INDICATOR
PT	PRESSURE TRANSMITTER
PG	DIFFERENTIAL PRESSURE GAUGE
PP	DIFFERENTIAL PRESSURE TRANSMITTER
LT	LEVEL TRANSMITTER
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H	HOSE
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LS	LIMIT SWITCH

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  5. TANK DRAIN VALVES ARE IN NORMALLY CLOSE CONDITION.
  6. FOR STEAM & CONDENSATE SYSTEM AND HFO SYSTEM, REFER P & ID NO. PE-DG-411-166-A103. AND PE-DG-411-166-A101 RESPECTIVELY.

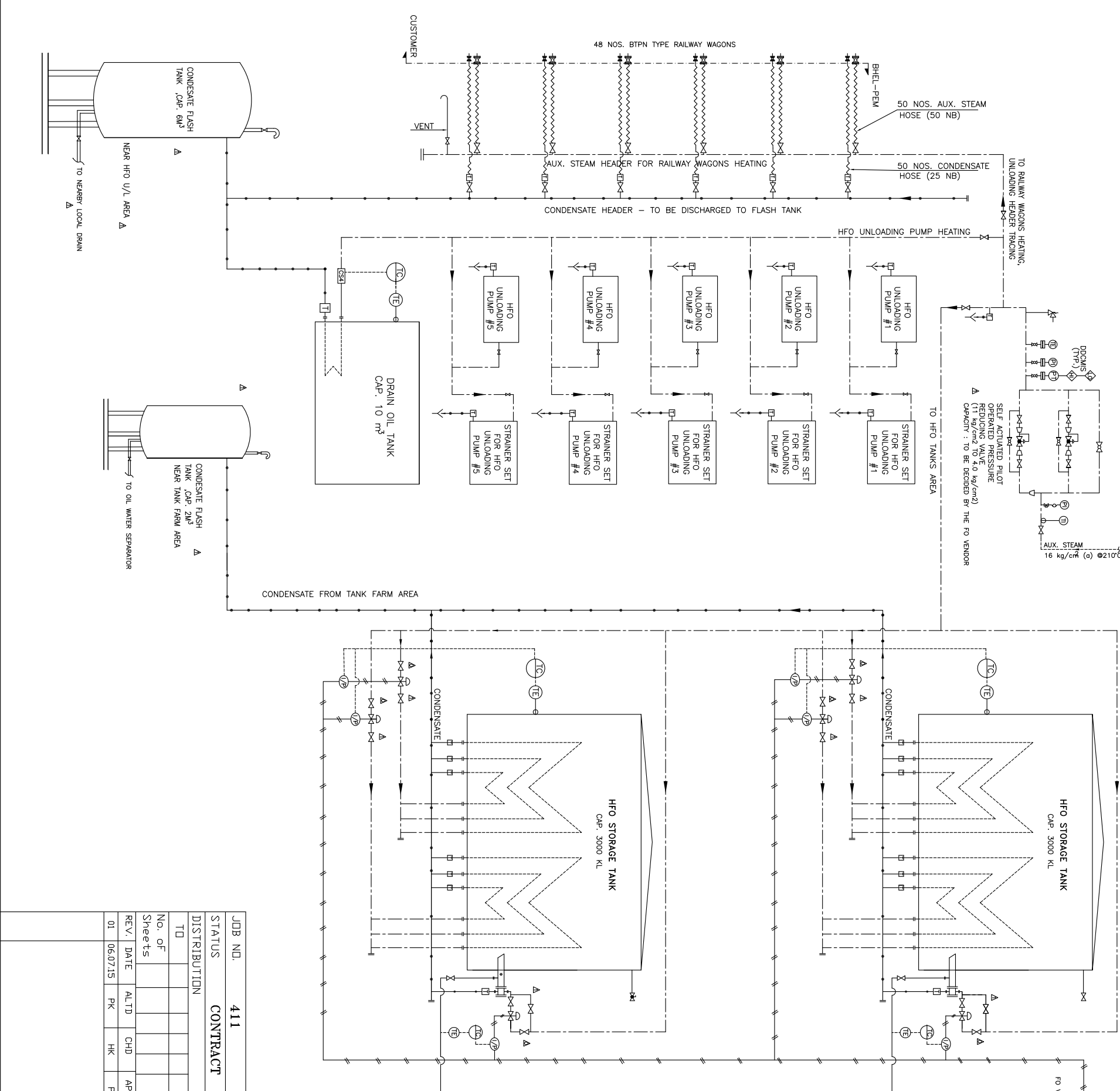
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CUSTOMER	TELANGANA STATE POWER GENERATION CO. LTD.		
CONSULTANT	DESEIN PRIVATE LTD.		
PROJECT	4X270MW MANUGURU TPS		
CLIENT LOGO			
PROJECT LOGO			
BHARAT HEAVY ELECTRICALS LTD, POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NEW DELHI			
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CHD	HK	Sd/-	13.10.2014
APPD	PK	Sd/-	13.10.2014

TITLE	PROCESS & INSTRUMENTATION DIAGRAM FOR LDO SYSTEM
DRAWING No.	PE-DG-411-166-A102
SHEET 01 OF 01	REV 01
DEPT. SIGN	SCALE
DATE	

DRAWING NO. PE-DG-411-166-A103

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LEGEND	
SYMBOL	DESCRIPTION
(TC)	TEMPERATURE CONTROLLER
(TE)	TEMPERATURE ELEMENT
(T)	STEAM TRAP
(T <sub>2</sub> )	TEMPERATURE ELEMENT
(P)	TEMPERATURE ELEMENT
(S)	SIGNAL TO DCS( LO OR HI)
(V)	GATE VALVE
(V <sub>2</sub> )	PNEUMATICALLY OPERATED CONTROL VALVE
(H)	HOSE
(C)	COIL HEATER
(D)	LOCAL DRAIN
(E)	ELECTRICAL SIGNAL
(L)	CONDENSATE LINE
(I)	INSTRUMENT AIR LINE
(S)	AUX. STEAM LINE
(C)	I/P CONVERTER
(V)	GLOBE VALVE

- NOTES:**
1. ALL STEAM/CONDENSATE LINES SHALL BE INSULATED.
  2. STEAM TRAPS FOR SUCTION HEATER & FLOOR COIL HEATER OF STORAGE TANKS SHALL BE OF IB TYPE. ALL OTHER STEAM TRAPS SHALL BE OF T TYPE.
  3. FOR STEAM LINES & TRACER LINES, TRAPS SHALL BE PROVIDED AT EVERY 40 TO 45 MTR.
  4. SHELL SURFACE OF F.O. STORAGE TANKS & ENTIRE DRAIN OIL TANK ARE INSULATED.
  5. AUX. STEAM WILL BE SUPPLIED TO AT 18KG/SQ. CM (g) & 210 °C. FURTHER IT SHALL BE REDUCED TO 4KG/SQ. CM (g) OR AS PER SYSTEM REQUIREMENT.
  6. PIPE SIZES FOR ALL STEAM LINES, TRACER LINES, CONTROL STATIONS, CONDENSATE LINES ETC. SHALL BE PROVIDED AS PER APPROVED CALCULATION.
  7. DRAIN FROM FLASH TANK SHALL BE DISCHARGED TO OIL WATER SEPARATOR.
  8. FOR OTHER DETAILS, REFER P & ID FOR HFO SYSTEM, PE-DG-411-166-A101.

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<b>PROJECT</b> 4X270MW MANUGURU TPS	<b>PROJECT</b> BHARAT HEAVY ELECTRICALS LTD, POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NEW DELHI																				
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<b>TITLE</b> P & ID FOR STEAM AND CONDENSATE FOR HFO HEATING & TRACING																					
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**TECHNICAL SPECIFICATION FOR  
FUEL OIL HANDLING SYSTEM  
SUB-VENDOR LIST  
ANNEXURE-III**

SPECIFICATION NO. PE-TS-411-166-A001

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**LIST OF MAKES OF SUB-VENDOR ITEMS  
FUEL OIL UNLOADING AND STORAGE SYSTEM**



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**SUB-VENDOR LIST - FUEL OIL UNLOADING AND STORAGE SYSTEM**

SL. NO	ITEM	SUB-VENDORS	PLACE	TECHNICAL LIMIT
<b>MECHANICAL</b>				
1	GATE, GLOBE AND CHECK (CARBON STEEL VALVES)	A.V. VALVES LTD	AGRA	
		ATAM VALVES PVT. LTD.	JALANDHAR	
		FLUIDLINE VALVES COMPANY PVT.LTD.	GHAZIABAD	
		M/S GM ENGINEERING	RAJKOT	
		INTERVALVE (INDIA) LTD.	PUNE	A) STEEL GATE VALVES: UPTO 50NB, #800 AND 65NB TO 150NB, #150 B) STEEL GLOBE VALVES: UPTO 50NB, #800 AND 65NB TO 100NB, #150 C)SUPPLIER NOT REGISTERED FOR NR VALVES
		LEADER VALVES LTD.	JALANDHAR	
		NITON VALVE INDUSTRIES PVT LTD	MUMBAI	
		NSSL LIMITED.	NAGPUR	
		STEEL STRONG VALVES (I) PVT.LTD.	MUMBAI	LIMIT AS PER VD FILE AS ATTACHED IN SHEET 2
		VENUS PUMPS AND ENGG. WORKS	KOLKATA	CC/CSS-GATE-BBT-UPTO600NB CL UPTO300,GATE-PSBT UPTO250NB CL 1500,GLV-BBT-UPTO300NB CL UPTO600,SCNRV-BBT-UPTO600NB CL UPTO150,SCNRV-BBT-UPTO300NB CL 300,SCNRV-PSBT-UPTO150NB CL UPTO900
		VALTECH INDUSTRIES	MUMBAI	CAST CARBON & ALLOY STEEL - VALVE/RATING/SIZE- GV/150/900,GV/300/400, GV/600/300 , GV/GLV/NRV/900/250 , GLV/300/300,GLV/150/350/ , SCNRV/150/700, SCNRV/300/350, SCNRV/600/250.
		V.K. VALVES PVT. LTD.,	JALANDHAR	
		WEIR BDK VALVES	NEW DELHI	
		AUDCO -L&T	CHENNAI / COIMBATORE	
		OSWAL INDUSTRIES		
		HITECH	AHMEDABAD	
		KSB WATER PUMPS / VALVES	COIMBATORE	
		KBL	KONDHAPURI	
		HAWA ENGINEERS	AHMEDABAD	
		BHEL	GOINDWAL	
FOURESS ENGG	MUMBAI	UPTO 600 NB, CL-300 & 300NB CL-600		
FOURESS ENGG	AURANGABAD			



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2	CS BALL VALVES	A.V. VALVES LTD	AGRA	
		AKAY INDUSTRIES PVT.LTD.	DHARWAD	
		BELGAUM AQUA VALVES PVT. LTD.	BELGAUN	
		ASIAN INDUSTRIAL VALVES & INSTRUMENTS.	CHENNAI	
		ATAM VALVES PVT. LTD.	JALANDHAR	(1) BALL VALVES: FCS/FSS - 1/2" TO 2" #800 & CCS/CSS - 2.1/2" TO 4" # 150 (2) BALL VALVES: GUN METAL VALVES SIZE 15 NB TO 80 NB - UPTO PN16.0
		DEMBLA VALVES LTD.	THANE	
		M/S GM ENGINEERING	RAJKOT	
		HAWA VALVES (INDIA) PVT. LTD.	THANE	SIZE UP TO 2" & #800 WITH MOC AS FCS & FSS AND FOR SIZE FROM 65 NB TO 150 NB & #150 WITH MOC AS CCS AND CSS.
		INTERVALVE (INDIA) LTD.	PUNE	STEEL BALL VALVES UPTO 50NB, #800 AND 65NB TO 150NB. #150
		LEADER VALVES LTD.	JALANDHAR	CAST STEEL UPTO 200 MM, CLASS 150/300.
		MICROFINISH VALVES PVT LTD.	HUBLI	
		NILON VALVES PRIVATE LIMITED	AHMEDABAD	
		SURYA VALVES AND INSTRUMENTS MFG CO.	CHENNAI	FOR CARBON STEEL/STAINLESS STEEL UPTO SIZE 200NB.
		UNIFLOW	CHENNAI	
		VALTECH INDUSTRIES	MUMBAI	FORGED CARBON & ALLOY STEEL BALL VALVES, SCREWED TYPE BALL VALVES RATING 800, SIZES UPTO 50 & CC& ALLOY STEEL BALL VALVES RATING 150 , SIZES 65 TO 200 FLANGED TYPE.
		VAAS AUTOMATION PVT. LTD.	DELHI	
		WEIR BDK VALVES- A UNIT OF WEIR INDIA PVT. LTD.	DELHI	
		PEC	NASHIK	(UPTO 400 NB CLASS 150 )
		L&T VALVES	COIMBATORE	
		L&T VALVES (AUDCO)	CHENNAI	
FLOW CHEM	AHMEDABAD	(UPTO 350 NB CLASS 150 )		
BELGUAM AQUA VALVES	BELGAUM	UPTO 200 NB, CL 150		
3	CS PLUG VALVES	FLOWSERVE (AUDCO)	CHENNAI	
		MICROFINISH	HUBLI	
		WEIR BDK	HUBLI	UPTO 150 NB CLASS 300 & UPTO 400 NB CLASS 150
		FISHER XOMOX	CHENNAI	
		LEADER VALVES LTD.	JALANDHAR	
4	SUMP PUMP (VERTICAL	DARLING PUMPS PVT. LTD	INDORE	
		FLOWMORE LTD.	GURGAON	



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SUB-VENDOR LIST  
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	<b>CENTRIFUGAL)</b>	SU MOTORS PVT. LTD.	MUMBAI	
		VARAT PUMP AND MACHINERY PVT. LTD.	KOLKATA	
		WPIL LIMITED	KOLKATA	
		SAM TURBO INDUSTRY LTD	COIMBATORE	
		KISHORE	PUNE	
		AQUA MACHINERY	AHMEDABAD	
		FLOWMORE PUMP	GHAZIABAD	
		M&P	PUNE	
		B & C ENGG( BECON WEIR)	CHENNAI	
5	<b>SCREW PUMPS</b>	ROTO PUMPS	NOIDA	
		TUSHACO	MUMBAI	
		UT PUMPS	FARIDABAD	
6	<b>API 5L ERW PIPE</b>	TISCO	JAMSHEDPUR	
		SURYA ROSHNI	BAHADURGARH	UP TO 400 NB
		JINDAL	GHAZIABAD	UP TO 350 NB
		MSL	RAIGAD	200 TO 500 NB
		SAIL	ROURKELA	
		RATNAMANI	KUTCH	UP TO 400 NB
7	<b>ASTM A 106, CS SEAMLESS PIPE</b>	ISMT	AHMED NAGAR	UP TO 150 NB
		MSL	RAIGAD	UP TO 350 NB
		JINDAL SAW LTD	NASHIK	
		REMI METAL GUJRAT LTD	BHARUCH	UP TO 150 NB HOT FINISH & UPTO 100NB COLD FINISH
		ISMT	BARAMATI	UP TO 200 NB
8	<b>CS ERW PIPE (IS 1239 / 3589)</b>	SURYA ROSHNI	BAHADURGARH	UPTO 400 NB ERW PIPES AS PER IS 1239/3589 AND SAW AS PER IS 3589
		JINDAL	GHAZIBAD/HISSA R	UP TO 350 NB
		MSL	RAIGAD	200-500 NB ERW PIPES AS PER IS 3589
		SAIL	ROURKELA	
		WELSPUN	ANJAR/BHARUCH	UPTO 400 NB ERW PIPES AS PER IS 1239/3589 AND SAW AS PER IS 3589
		INDUS TUBE	GAUTAM BUDDH NAGAR	UP TO 300 NB
		RATNAMANI	KUTCH /AHMEDABAD / CHHATRAL	UPTO 400 NB ERW PIPES AS PER IS 3589 AND SAW AS PER IS 3589
		TATA TUBE	JAMSHEDPUR	UPTO 150 NB ERW PIPES AS PER IS 1239
		PSL	CHENNAI/VIZAG/ KUTCH/DAMAN	SPIRAL WELD SAW AS PER IS 3589
		LALIT PROFILE	THANE	SPIRAL WELD SAW AS PER IS 3589
		SAMSHI PIPES INDUSTRIES	VADODARA	SPIRAL WELD SAW AS PER IS 3589





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		MUKUT PIPES	RAJPURA	LONGITUDINAL SAW (SINGLE SIDE WELD) AS PER IS 3589
		INDUS TUBES	G B NAGAR	UPTO 300 NB ERW PIPES AS PER IS 1239/3589
		MANN IND	INDORE	SPIRAL WELD SAW AS PER IS 3589
		SURENDRA ENGG	RAJPURA	SPIRAL WELD SAW AS PER IS 3589
		PRATIBHA PIPES & STRUCTURE PVT LTD	THANE	SPIRAL WELD SAW AS PER IS 3589
		JCO GAS PIPE	CHINDWARA	SPIRAL WELD SAW AS PER IS 3589
		NUKAT TANKS AND VESSELS	TARAPUR	LONGITUDINAL SAW (SINGLE SIDE WELD) AS PER IS 3589
		DADU PIPES	SIKRANDRABAD	UPTO 300 NB ERW PIPES AS PER IS 1239/3589
		APL APOLLO TUBES LTD	SIKRANDRABAD	IS3589 UPTO 250 NB
9	SUCTION HEATER	PARKAIRE	DELHI	
		MVS	DELHI	
		MELCON	DELHI	
		GASO ENERGY	PUNE	
		INDCON	DELHI	
		TEMASME	NOIDA	
10	PRESSURE REDUCING VALVE & DESUPERHEATER	CIRCOR (EARLIER MAZDA)	AHMEDABAD	
		SPIRAX MARSHALL	PUNE	
		LEADER VALVES LTD.	JALANDHAR	
		SPX CORPORATION, USA	M/S SPX FLOW TECHNOLOGY INDIA PVT. LTD, GUJARAT	
		CONTROL COMPONENT INDIA PVT. LTD.	NOIDA	
		DAUME REGELARMATUREN GMBH,	GERMANY	
		HOLTER REGELARMATUREN GMBH & CO.	GERMANY	
		INSTRUMENTATION LTD.	PALAKKAD	
11	STRAINERS (DUPLEX / SIMPLEX BASKET TYPE)	GENERAL MECHANICAL WORKS PVT LTD	VADODARA	
		GRAND PRIX	FARIDABAD	
		GUJARAT OTOFILT	VATVA , AHMEDABAD	
		FILTRATION ENGRS	MUMBAI	
		JAYPEE INDUSTRIES PVT. LTD.	NEW DELHI	
		MULTITEX FILTRATION ENGINEERS LIMITED,	NEW DELHI	
		OTOKLIN GLOBAL BUSINESS LIMITED	MUMBAI	
		BHATIA ENGINEERING CO.	NEW DELHI	SIMPLEX ONLY
		FILTRATION ENGINEERS (I) PVT. LTD.	MUMBAI	SIMPLEX ONLY
		SUNGOV ENGINEERING PVT. LTD.	CHENNAI	



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		SAROJINI ENTERPRISE	HOWRA	SIMPLEX ONLY
		SPX CORPORATION, USA	M/S SPX FLOW TECHNOLOGY INDIA PVT. LTD. (AHMEDABAD)	
		CONTROL COMPONENT INC.	USA	
		DRESSER VALVE INDIA PVT. LTD	COIMBATORE	
		DAUME REGELARMATUREN GMBH,	GERMANY	
		EMERSON PROCESS MANAGEMENT CHENNAI LIMITED	CHENNAI	
		FORBES MARSHALL ARCA PVT.LTD.	PUNE	
		WEIR VALVES & CONTROLS UK LTD.	UK	
		HOLTER REGELARMATUREN GMBH & CO.KG	GERMANY	
		INSTRUMENTATION LTD.	PALAKKAD	
		KOSO INDIA PRIVATE LIMITED,	NASHIK	
		LESLIE CONTROLS, INC	USA	
		MIL CONTROLS LTD.	THRISSUR	
		METSO SINGAPORE PTE. LTD.,	SINGAPORE	
		PARCOL S.P.A	ITALY	
		R.K.CONTROL INSTRUMENTS PVT. LTD.	THANE	
		RINGO VALVULAS S.L,	SPAIN	
		SEVERN GLOCON INDIA PVT. LTD.	CHENNAI	
		SHENJIANG VALVE CO. LTD.	CHINA	
		VALVITALIA S.P.A. ,	ITALY	
		WALDEMAR PRUSS ARMATURENFABRIK GMBH	GERMANY	
		SPIRAX MARSHALL	PUNE	MAIN CONTRACTOR COC +MANUFACTURER STANDARD TC SHALL BE SUBMITTED FOR ISSUING DESPATCH CLEARANCE
		UNIKLINGER	PUNE	
		LEADER	JULLANDHAR	
		CRECENT VALVE MFG CO LTD	MUMBAI	
		PENNANT ENGINEERING	PUNE	
		GOENKA ROCKWOOL (INDIA ) PVT.LTD.	RAIPUR	
		LLOYD INSULATIONS (INDIA) LTD.	NEW DELHI	
		MINWOOL ROCK FIBRES LTD.	RAJNANDGAON	
		POLYBOND INSULATION PRIVATE LIMITED,	BHILAI	
		ROCKWOOL (INDIA) PVT. LTD.	HYDERABAD	
		SHREERAM EQUITECH PRIVATE LIMITED	DURG	
		THERMOCARE ROCKWOOL INDIA PRIVATE LTD.	CHATTISGARH	
12	<b>CONTROL VALVE</b>			
13	<b>STEAM TRAP</b>			
14	<b>THERMAL INSULATION</b>			



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		LOPINUS ROCKWOOL	GWALIOR	
15	<b>STRUCTURAL STEEL / MS-PLATE</b>	SAIL		
		ESSAR STEEL		
		TISCO		
		RINL		
		JINDAL		
		M/S UTTAM VALUE STEEL (LLOYDS)		
		ISPAT		
		JSW		
		INDIAN IRON & STEEL CO. LTD		
16	<b>SAFETY RELIEF VALVE</b>	SPIRAX MARSHALL	PUNE	
		FISCHER SANMAR	CHENNAI	
		BHEL	TRICHY	
		KEYSTONE	BARODA	
		LEADER	JULLANDHAR	
17	<b>PAINT</b>	ASIAN PAINT		
		BERGER		
		KANSAI NEROLAC		
		JOTUN		
		SHALIMAR		
		JENSON & NICHOLSON (I) LTD		
		CDC CARBOLINE (I) LTD.		
		ADDISON PAINTS LTD		
		GRAND POLYCOAT		
		BOMBAY PAINTS		
		HEMPLE PAINTS (SINGAPORE)		
		AKZONOBEL COATINGS		
18	<b>FITTINGS (MS/SS)</b>	PIPE FIT ENGINEERS	VADODARA	
		GUJRAT INFRA PIPES	VADODARA	
		MS FITTINGS	KOLKATA	
		TUBE PRODUCT	VADODARA	
		SIDDARTH & GAUTAM	FARIDABAD	
		EBY	MUMBAI	
		NL HAZRA	KOLKATA	
		EXCEL METAL		
		INTERTECH		
		FITTECH		
		METAL LLOYDS	MUMBAI	
		TRUE FORGE	FARIDABAD	
19	<b>OIL HOSE</b>	D WREN & CO	KOLKATA	
		SUDEEP INDUSTRIES	KOLKATA	
		HYDROKRIMP	MUMBAI	
		PRESIDENCY RUBBER	KOLKATA	



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20	<b>STEAM AND CONDENSATE HOSE</b>	ALLZFLEX ENGINEERS	VADODARA	
		SUDEEP INDUSTRIES	KOLKATA	
21	<b>FLOWMETER (CORIOLIS TYPE)</b>	EMERSON PROCESS MANAGEMENT	CHENNAI	
		E&H	CHENNAI	
		KROHNE MARSHALL	PUNE	
22	<b>ALUMINUM CLADDING</b>	BHARAT ALUMINIUM COMPANY LTD	DELHI	
		CHONGQING LANREN ALUMINIUM CO. LTD., CHINA	CHINA	
		HINDALCO INDUSTRIES LTD	MUMBAI	
		NATIONAL ALUMINIUM COMPANY LTD.	ODISHA	
23	<b>METALLIC EXPANSION BELLOWS</b>	AEROSUN TOLA EXPANSION JOINT CO. LTD.,	CHINA	
		B. D. ENGINEERS	AHMEDABAD	
		FLEXICAN BELLOWS AND HOSES PVT. LTD.	BARODA	
		FLEXATHERM EXPANLLOW PVT. LTD.	VADODARA	
		LONESTAR INDUSTRIES	CHENNAI	
		MB METALLIC BELLOWS PVT. LTD.	CHENNAI	
		METALLIC BELOWS INDIA PVT. LTD.	CHENNAI	
		QINHUANGDAO NORTH METAL HOSE CO. LTD.,	CHINA	
TEDDINGTON ENGINEERED SOLUTIONS LTD.	UK			
<b>ELECTRICAL AND C&amp;I</b>				
24	<b>LEVEL TRANSMITTER (RADAR AND ULTRASONIC TYPE)</b>	K TEK (ABB)	FARIDABAD	
		E & H	AURANGABAD	
		MEGNETROL	BELGIUM	ONLY RADAR TYPE
		EMERSON PROCESS MGT	PAWANE	
		MOORE INDUSTRIES INTERNATIONAL INC.	USA	
		SIEMENS LIMITED	MUMBAI	
		SMART INSTRUMENTS LTD, BRAZIL	MUMBAI	LD-301 & T-301 TRANSMITTER FROM M/S SMART EQUIPMENTS BRAZIL.
		HONEYWELL AUTOMATION INDIA LIMITED	DELHI	
		TOSHNIWAL INDUSTRIES PVT. LTD.,	AJMER	
		V. AUTOMAT & INSTRUMENTS (P) LTD.	DELHI	
		YOKOGAWA INDIA LIMITED,	BANGALORE	
		SIEMENS MILTRONICS	CANADA	ONLY RADAR TYPE
		NIVELCO	HUNGARY	ONLY RADAR TYPE
HAWK	AUSTRALIA	ONLY RADAR TYPE		
25	<b>LT MOTORS</b>	CROMPTON GREAVES LIMITED	AHMEDNAGAR	
		KIRLOSKAR ELECTRIC COMPANY	BANGALORE /	



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	<b>LT MOTORS</b>		HUBLI	
		SIEMENS	MUMBAI	
		ABB	BANGALORE / FARADABAD	
		BHARAT BIJLEE	MUMBAI	
		JYOTI	VADODARA	
		MARATHON	KOLKATA	
		NGEF	BANDALORE / HUBLI	
		BHARAT ELECTRIC (BHEL)		
26	<b>PRESSURE / DP / TEMP.SWITCH</b>	LHP	SOLAPUR	
		SOR	USA	
		GIC(GAUGES BOURDON)	PANVEL	
		HERION	GERMANY	
		ITT BARTON	USA	
		DELTA CONTROL	UK	
		ASHCROFT	USA / GERMANY	
		TRAFAG	RANIPET	
		INDFOSS	GHAZIABAD	
		ASHCROFT	GANDHINAGAR	
SWITZER	CHENNAI	EXCEPT 9000 SERIES		
27	<b>LEVEL INDIATOR FLOAT AND BOARD TYPE</b>	FLOW STAR	FARIDABAD	
		SCIENTIFIC DEVICES	MUMBAI	
		GAUGES BOURDEN	PANVEL	
		PUNE TECHTROL	PUNE	
		SBEM	PUNE	
		LEVCON	KOLKATA	
		SIGMA	MUMBAI	
		CHEMTROL		
		DK INSTRUMENT	KOLKATA	
		V AUTOMAT	DELHI	
28	<b>PRESSURER / DP GAUGE / TEMPERATURE GAUGE (DIAL TYPE)</b>	H GURU (SI)	BANGALORE	
		H GURU INDUSTRIES	MUZAFFARPUR / RISHRA	
		AN INSTRUMENT	KOLKATA	
		GOA THERMOSTATIC	GOA	
		WAAREE	VAPI	
		MANOMETER	MUMBAI	
		GLUCK	MUMBAI	
		FORBES MARSHALL	HYDERABAD	
		ASHCROFT	GANDHINAGAR	
		WIKA	PUNE	
		GAGES BOURDON	MUMBAI / GOA	
		BAUMER TECHNOLOGIES INDIA PVT. LTD.	MUMBAI	



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		BOSE PANDA INSTRUMENTS PVT.LTD.	KOLKARA	ONLY PRESSURE AND DP GAUGE
		BUDENBERG GUAGE CO.LTD.	UK	ONLY TEMPERATURE GAUGE
		GOA INSTRUMENTS INDUSTRIES PVT.LTD.,	GOA	
29	<b>RTD /THERMOCOUPLE ASSEMBLY</b>	PYROELECTRIC	GOA	
		GIC(THERMAL INSTRUMENTS)	MAHARASHTRA	
		TEMPESENS	UDAIPUR	
		DETRIVE	MUMBAI	
		TECHNO INSTRUMENTS	GUJRAT	
		TEMPESENS INSTRUMENT (I) PVT LTD	UDAIPUR	
		TM TECNOMATIC SPA	ITALY	
		TOSHNIWAL INDUSTRIES PVT. LTD.,	AJMER	
		THERMAL INSTRUMENT INDIA PVT. LTD.	MUMBAI	
		BAUMER TECHNOLOGIES INDIA PVT. LTD.	MUMBAI	
		GOA INSTRUMENTS INDUSTRIES PVT.LTD.,	GOA	
30	<b>ELECTRICAL ACTUATORS</b>	ROTORK	BANGALORE	
		ROTORK	CHENNAI	
		AUMA	BANGALORE	
		LIMITORK	FARIDABAD	
31	<b>LEVEL SWITCH (FLOAT AND DISPLACER TYPE)</b>	TRAC	HYDERABAD	
		LEVCON	KOLKATA	
		DK INSTRUMENTS	KOLKATA	
		SBEM	PUNE	
		SBEM	PUNE	
		FLOW STAR	FARIDABAD	
		SIGMA	MUMBAI	
		V AUTOMAT	DELHI	
32	<b>TEMPERATURE TRANSMITTER</b>	EMERSON PROCESS MGT	PAWANE	
		MOORE	USA	
		ABB	FARIDABAD	
		YOKOGAWA	BANGLORE	MAKE YOKOGAWA, JAPAN
		ABB LIMITED	FARIDABAD	
		ENDRESS + HAUSER (INDIA) PVT. LTD.,	DELHI	
		MOORE INDUSTRIES INTERNATIONAL INC.	USA	
		SIEMENS LIMITED	MUMBAI	
		SMART INSTRUMENTS LTD, BRAZIL	MUMBAI	
		HONEYWELL AUTOMATION INDIA LIMITED	DELHI	
		TOSHNIWAL INDUSTRIES PVT. LTD.,	AJMER	
		YOKOGAWA INDIA LIMITED,	BANGALORE	



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33	<b>AIR FILTER REGULATOR</b>	PLACKA INSTRUMENT	CHENNAI	
		SHAVO NORGEN	MUMBAI	
		FISHER SANMAR	CHENNAI	
34	<b>SOLENOID VALVE</b>	AVCON	MUMBAI	
		ROTEX	BARODA/VV NAGAR	
		SMC	NOIDA	
		NUCON	HYDERABAD	
		ASCO	CHENNAI	
35	<b>LOCAL CONTROL PANEL</b>	PYROTECH	UDAIPUR	
		POSITRONICS	VADODARA	
		JACKSON	NOIDA	
		CONTROL DEVICE	KOLKATA	
		ROCKWELL AUTOMATION INDIA LTD	GHAZIABAD	
		SIEMENS LIMITED	DELHI	
		SCHNEIDER ELECTRIC INDIA PVT.LTD.	DELHI	
		JOSPER	NOIDA	
		I C A	MUMBAI	
		INDIAN SWITCH GEAR	VADODARA	
		SWITCHING CKT	KOLKATA	
36	<b>JUNCTION BOX</b>	PYROTECH	UDAIPUR	
		POSITRONICS	VADODARA	
		JACKSON	NOIDA	
		CONTROL DEVICE	KOLKATA	
		JOSPER	NOIDA	
		I C A	MUMBAI	
		AJMERA INDUSTRIAL & ENGINEERING WORKS	MUMBAI	
		FLEXPRO ELECTRICALS PVT. LTD.	GUJARAT	
		K.S.INSTRUMENTS PVT.LTD.	BANGALORE	
		SUCHITRA INDUSTRIES	BANGALORE	
		SHRENİK & COMPANY,	AHMEDABAD	
		HOFFMAN	BANGALORE	
		RITTAL	BANGALORE	
SWITCHING CKT	KOLKATA			
37	<b>CABLE LUGS (NON FLAME PROOF)</b>	3D	UMERGAON	
		DOWELL	MUMBAI	
		CHITRA	NASIK	
38	<b>CABLE GLANDS (NON FLAME PROOF)</b>	ARUP	KOLKATA	
		SUNIL	KOLKATA	
		QPIE	KOLKATA	
		COMMET	MUMBAI	
39	<b>CABLE GLAND,</b>	AJMERA	MUMBAI	



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	<b>LUGS, JB (FLAME PROOF)</b>	BALIGA	CHENNAI	
		FLEXPRO	NAVSARI	
40	<b>BATTERY CHARGER FOR PLC</b>	CHLORIDE POWER	KOLKATA	
		CHABBI	JALGAON	
		AMAR RAJA	TIRUPATI	
		STATCON	NOIDA	
		HBL POWER SYSTEM	HYDERABAD	
		JEMA ENERGY	SPAIN	
		MASS-TECH CONTROLS PVT.LTD.	MUMBAI	
		DUBAS	BANGALORE	
		CALDYNE	KOLKATA	
41	<b>DC LEAD ACID / NI- CD BATTERIES</b>	AMCO SAFT INDIA LTD	BANGALORE	NI-CD BATTERIES ONLY
		EXIDE INDUSTRIES LTD	DELHI	LEAD ACID BATTERIES ONLY.
		HBL POWER SYSTEMS LTD	HYDERABAD	NI/CD AND TUBULAR TYPE FOR LEAD ACID
		HOPPECKE BATTERIEN GMBH & CO.KG,	GERMANY	
		AMAR RAJA	TIRUPATI	
		SAFT	FRANCE/SWEDEN	
42	<b>CONTROL / POWER CABLE</b>	CORDS CABLE	BHIWADI	
		RADIANT CABLES	HYDERABAD	
		POLYCAB	DAMAN	
		KEI	BHIWADI	
		NICCO	KOLKATA	
		RAVIN CABLES	PUNE	
		INCAB	PUNE	
		HVPL	FARIDABAD	
		TORRENT CABLE	NADIAD	
		HAVELLS	ALWAR	
		PARAMOUNT	KHUSHKHERA	
		SRI RAM CABLES	BHIWADI	
		THERMOCABLES	HYDERABAD	
		TORRENT CABLE	NADIAD	
		UNIVERSAL CABLES	SATNA	
		GEMSCAB	BHIWADI	
DELTON	FARIDABAD			
43	<b>PLC BASED PANELS</b>	SIEMENS	NASIK	
		SCHNEIDER	NASIK	
		ROCKWELL	SAHIBABAD	
		GE INTELLIGENT PLATFORM	BANGALORE	
		HONEYWELL AUTOMATION INDIA LIMITED ,	PUNE	
		ABB	BANGALORE	
44	<b>OWS/PC</b>	HP/COMPAQ /DELL/HCL/IBM/LENOVO		



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45	<b>PRINTER</b>	HP/CANNON/EPSON/XEROX/IBM/L EXMARK		
46	<b>INSTRUMENT FITTINGS</b>	AURA INCORPORATED	DELHI	
		ASTEC VALVES & FITTINGS PVT. LTD.,	MUMBAI	
		ARYA CRAFTS & ENGINEERING PVT. LTD.	MUMBAI	
		COMFIT & VALVE PVT. LTD.	NANDASAN	
		FLUIDFIT ENGINEERS PVT. LTD.	MUMBAI	REGISTERED AS PER 22ND ELECTRICAL AND C&I MISCC MEETING DTD. 15.01.2014
		FLUID CONTROLS PVT. LTD.	MUMBAI	NAME CHANGED FROM M/S HYD-AIR VALVES PVT. LTD. TO M/S FLUID CONTROLS PVT. LTD. AS PER 25TH MISCC-ELECTRICAL AND C&I DTD. 20.02.2014
		HP VALVES & FITTINGS INDIA PVT. LTD.	CHENNAI	
		PRECISION ENGINEERING INDUSTRIES	MUMBAI	
		PANAM ENGINEERS,	MUMBAI	
		PERFECT INSTRUMENTATION CONTROL (INDIA) PVT. LTD.	MUMBAI	
		VIKAS INDUSTRIAL PRODUCTS	NOIDA	FINANCIAL LIMIT REVIEWED ON 05.06.2014
47	<b>CABLE TRAY SUPPORT SYSTEM - BOLTABLE</b>	AM-TECH ENGG.SERVICES	PUNE	
		INDUSTRIAL PERFORATION (I) PVT.LTD.	KOLKATA	
		INDMARK FORMTECH PVT. LTD.	PUNE	
		PREMIER POWER PRODUCTS (CAL) PVT. LTD.	KOLKATA	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL-PEM APPROVED GALVANIZERS.
		RATAN PROJECTS & ENGINEERING CO. PVT.LTD.	KOLKATA	
		STEELITE ENGINEERING LTD.	MUMBAI	
48	<b>CABLE TRAY SUPPORT SYSTEM- WELDED(GALV)</b>	ASSOCIATED POWER STRUCTURES PVT. LTD.	G. I. D. C., MAKARPURA, VADODARA-GUJARAT	WORKS ADDRESSES ARE APPLICABLE FOR MANUFACTURING AND GALVANISING.
		INDUSTRIAL PERFORATION (I) PVT.LTD.	DUM DUM KOLKATA-WEST BENGAL	
		INDMARK FORMTECH PVT. LTD.	MIDC BHOSARI PUNE- MAHARASHTRA	GALVANIZING UNIT LOCATED AT PHAS-3, E-11/1, MIDC, PUNE ,
		JAMNA METAL COMPANY	DSIDC, NARLA INDL. AREA DELHI	
		PREMIER POWER PRODUCTS (CAL) PVT. LTD.	KOLKATA,-WEST BENGAL	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL-PEM APPROVED GALVANIZERS.
		PATNY SYSTEMS (P) LTD	SARDAR PATEL	



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		PASSIVE INFRA PROJECTS PVT. LTD.	VAISHALI, PITAMPURA DELHI-	
		RUKMANI ELECTRICAL & COMPONENTS PVT LTD	KOLKATA-WEST BENGAL-INDIA	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL- PEM APPROVED GALVANIZERS.
		RATAN PROJECTS & ENGINEERING CO. PVT.LTD.	P.K. TAGORE STREET, MAIN BUILDING KOLKATA-WEST BENGAL	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL- PEM APPROVED GALVANIZERS. ADDITIONAL WORKS AT "SANKRAIL INDUSTRIAL PARK, BHAGABATIPUR MAUJA, DHULAGARH, HOWRAH- 711302" APPROVED
		RABI ENGINEERING WORKS PVT. LTD.	R.N. GUHA ROAD, DUM DUM, KOLKATA- WEST BENGAL	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL- PEM APPROVED GALVANIZERS.
		SARAL INDUSTRIES	INDUSTRIAL AREA-1 SULTANPUR ROAD RAE BARELI-UTTAR PRADESH	REGISTERED IN PERMANENT CATEGORY ALONG WITH GALVANIZER M/S SARAL PROJECTS AND PROCESSORS , ,
		UNITECH FABRICATORS AND ENGINEERS PVT LTD	M.B.RAOD , BIRATI KALABAGAN KOLKATA KOLKATA-WEST BENGAL	GALVANISATION TO BE DONE AT ITS OWN PLANT OR FROM BHEL- PEM APPROVED GALVANIZERS.
49	<b>CABLE TRAY SUPPORT SYSTEM- WELDED(UNGALV)</b>	RASHTRIYA ISPAT NIGAM LIMITED	AMBAWADI AHEMDABAD-	
		STEEL AUTHORITY OF INDIA LTD.	ISPAT BHAWAN LODI ROAD NEW DELHI-	
50	<b>CABLE TERM.&amp; JOINT KITS</b>	3M ELECTRO AND COMMUNICATION INDIA P.LTD	RAJENDRA PLACE, DELHI	
		HARI CONSOLIDATED PVT.LTD.,NEW DELHI	JHANDEWALAN, NEW DELHI-DELHI	HEAT SHRINKABLE TYPE ONLY.
		RAYCHEM RPG PRIVATE LIMITED	JANAKPURI NEW DELHI	
		YAMUNA CABLE ACCESSORIES PVT. LTD.	AMBALA ROAD, JAGADHRI YAMUNANAGAR- HARYANA	
51	<b>LIMIT SWITCH</b>	BCH	NEW DELHI	
		SIEMENS	NEW DELHI	
		JAIBALAJI	NEWDELHI	
52	<b>ANNUNCIATOR</b>	IIC	MUMBAI	
		MINILEC	AHEMDABAD	
		PROCON	CHENNAI	

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53	<b>INTERPOSING RELAY</b>	ECONIX	MUMBAI	
		PHEONIX	DELHI	
54	<b>SELECTOR SWITCH</b>	SCHENIDER	INDIA	
		SIEMENS	INDIA	
		L&T	INDIA	
		KAYCEE	INDIA	
55	<b>INDICATION LAMPS, PUSHBUTTON, AUX. CONTACTOR, AUX. RELAYS</b>	SCHENIDER	INDIA	
		SIEMENS	INDIA	
		ABB	INDIA	
		L&T	INDIA	
56	<b>TIMER</b>	BCH	INDIA	
		EAPL	INDIA	
57	<b>PNEUMATIC ACTUATOR/CYLINDER(METALLIC)</b>	SCHRADDER	MUMBAI	
		NUCON	HYDERABAD	
		ROTEX	MUMBAI	
		VAAS	CHENNAI	

The make of Sub-vendor items shall be generally as indicated above which is subject to customer / BHEL approval during detail engineering.

Make of any unlisted items shall be subject to customer / BHEL approval during detail engineering. For such items, bidder to furnish list of sub-vendors during detail engineering stage for Customer / BHEL's review and approval. Bidder shall furnish following supporting documentation within 1 month of placement of LOI. Thereafter no request for additional sub-vendor shall be entertained.

- Documentation to show that the equipment /system has been supplied for a plant of similar or higher capacity.
- Documentation in the form of certificate that the equipment/system has been operating satisfactorily for two years as on the scheduled date of bid opening.

The successful bidder will get the makes of all items approved from Customer/ Consultant during detail engineering within two months of placement of LOI. The complete list will be necessarily be submitted within one month of placement of LOI to ensure timely placement of order for BOIs

Bidder to assess the capability of their proposed sub-vendors in terms of preparation of drawings, calculations, documents, quality assurance, supply of material etc. as per project schedule before placing the order on them.

Dealers are not acceptable for any item of the package. Bidder shall procure all items including plates, structural, flanges; counter flanges etc. from approved sub vendor only.