

		PROJECT : Patratu STPP (2X660 MW) PACAKGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017	
SL No.	ITEM	QP / INS CAT	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC AP PL SC HE DU LE	REMARKS
21.	DG set Control panel / Synchronising panel	I	14			L&T.	Mumbai / Coimbatore	A		
						GE	Bangalore	A		
						Siemens	Mumbai	A		
						C&S Electric	Noida / Hardwar	A		
						Schneider	Nasik	A		
						Unilec	Gurgaon	A		
						Switching Circuits	Kolkata	A		
						Tricolite	Sahibabad / Manesar	A		
						Hindustan Control & equipment Ltd	Kolkata	A		With fabrication & painting at unit II & MP Electrical Narendrapur
						Maktel	Vadodara	A		
						Jakson	Greater Noida	A		
						Vidyut Control	Gaziabad	A		
						Adlec Power	Rohad (Jhajjar)	A		
						Pyrotech	Udaipur	A		
22.	Industrial /welding receptacles & boxes	III				Anand Power Ltd.	Noida	A		
						Positronics	Vadodara	A		
						M/s Sterling Generators Pvt Ltd	Silvasa	A		For DG Set Control Panel only
						Contro & Schematics	Hyderabad	A		
						Schneider	Nasik	A		
						M/s BCH	Faridabad	A		



		PROJECT : Patratu STPP (2X660 MW) PACAKGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017	
SL No.	ITEM	QP / INS CAT	QP No:- 9578-001-QVE	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS	PLACE	SUB-SUPPLI ER APPL STATUS AS PER NTPC	SC AP PL SC HE DU LE	REMARKS
						M/s Ajmera	Mumbai	A		
						M/s. Sakthi & Crown	Chennai	A		
						Additionally Any make's model with VDE or CE or UL or CSA marking or BIS approved with CML no		Refer Note-3		
23.	Lighting mast with raise & lower type lantern carriage	I	15			M/s Bajaj	Pune	A		
						M/s Skipper-	Howrah	A		
						M/s. B.P. Project,	Hoogly	A		
24.	Lighting pole / steel tubular pole	I	16			BIS licensee as per IS 2713 with valid CML number		A		
25.	Lighting poles polygonal type	I				M/s Bajaj	Pune	A		
						M/s B.P. Projects	Hoogly	A		
26.	PVC conduit/hume pipe/lighting wire/GI pipes/HDPE pipe/Structural Steel	III				BIS licensee / ISI marked with valid CML number		A		
27.	GI steel rigid conduit/ epoxy conduit	III				BIS licensee with valid CML number		A		



		PROJECT : Patratu STPP (2X660 MW) PACAKGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017		
Sl. No.	ITEM	QP / INS CAT	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC AP PL SC HE DU LE	REMARKS	
28.	Trefoil clamps/Earthing & Lighting Protection Material/Sheet Steel/ FRP cable trench cover/drum lifting jack/Earth wire/ FRP/Aluminum Ladder/Dimmer & Passive Infrared Sensors	III				Main Contractor Approved Sources		Noted			
29.	FAN with regulators & Exhaust Fan	III				M/s Crompton		Noted			
						M/s Orient					
						M/s Khaitan					
						M/s Polar					
						M/s GEC					
						M/s Havells					
						M/s Bajaj					
30.	FQP of DG Set Installation.	I	G-01								
31.	FQP of Cables & Accessories	I	G-02								



		PROJECT : Patratu STPP (2X660 MW) PACKAGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL		REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017		
Sl. No.	ITEM	QP / INS CAT	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC AP PL SC HE DU LE	REMARKS
32.	FQP of Earthing	I	G-03							
33.	FQP of Station Lighting	I	G-04							

NB:

Under Sub Supplier approval status as per NTPC column:

A: mean that vendor for this item is acceptable to NTPC.

Under QP / INSPN CATEGORY column:

CAT-I : For these items the Quality Plans approved by NTPC & final acceptance will be on physical inspection & witness by NTPC

CAT-II : For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on basis of verification of documents as per approved QP

CAT-III : For these items Main supplier approves the Quality Plans. The final acceptance by NTPC shall be on basis of certificate of conformance by the main supplier.

@ : Vendors acceptance is subject to sub-QR clearance.

Note-1- Approval conditions attached to above identified vendors, as applicable shall be adhered to.

Note-2 – List of NTPC acceptable galvanizers



		PROJECT : Patratu STPP (2X660 MW) PACAKGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017	
		Sl. No.	ITEM	QP / INS CAT	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC

1. M/s M J Engg, Delhi	8. M/s National Galvanizer, Kolkata	16. M/s Radhakrishnan Shetty, Chennai	Additional galvanizer/s, if any, proposed by manufacturer through main contractor during detailed engineering shall be reviewed & assessed by NTPC as per the merits of the case.
2. M/s Jamna Metal, Delhi	9. M/s Unistar Galvanizer, Kolkata	17. Karamtara Mumbai	
3. M/s A.V. Engg, Kolkata	10. M/s B.P. Project. Kolkata	18. Poona Galvanizers Pune	
4. M/s Inar Profiles, Vishakapatnam	11. M/s Bajaj Pune	19. Ncha Galvanizer- Kolkata	
5. M/s Anand Udyog, Mumbai	12. M/s Electrocure Industries, Mumbai	20. Unitech galvanizers- Hoogly	
6. M/s Techno Engg, Chandigarh	13. M/s B.G. Shirke, Pune	21. Gurpreet galvanizers- Hyderabad	
7. M/S Steelite Engg, Mumbai	14. M/s Gurpreet Galvanizer, Hyderabad	22- DMP Projects- Kolkata	
	15. M/s Sigma, Mumbai		

Note-3 : VDE / CE / UL / CSA MARKING FOR PRODUCT QUALITY: SELF CERTIFICATION/VALID CERTIFICATION FROM THIRD PARTY AGENCY OR BIS APPROVAL LETTER WITH CML NO. FOR PRODUCT QUALITY SHALL BE SUBMITTED FOR NTPC's INFORMATION

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NTPC



Handwritten signature
(JATIN GAHLANAT)
BHEL

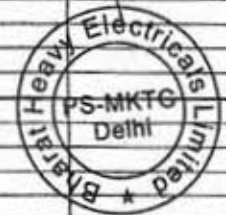
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PROJECT: PATRATU STPS EXPANSION PHASE - I (3X800MW) Package: EPC Sub Package: Switchyard No.: CS-9585-601-2			ANNEXURE - LIST OF ITEMS REQUIRING QUALITY PLAN APPROVAL AND ACCEPTABLE SUB-VENDOR AS PROPOSED BY M/S. BHEL						DOC.NO.: 9585-601-2 REV.NO.: 0 DATE: 03.04.2017	
S.No.	Item Description	QP/Insp Cat	QP#9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
1	400 kV Gas Insulated Switchyard (Item subject to Sub QR approval)	I	10			GE T&D	CHENNAI	A		
						HYOSUNG	KOREA	A		
						XIAN	CHINA	A		
						ABB	VADODARA	DR		
						SIEMENS	AURANGABAD	DR		
2	400kV Capacitor Voltage Transformers (Item subject to Sub QR approval)	I	50			GE	Hosur	A		
						ABB	Vadodara	A		
						BHEL	Bhopal	A		
						CGL	Nasik	A		
3	400 kV Surge Arrestors (Item subject to Sub QR approval)	I	60			OBLUM	Hyderabad	A		
						CGL	Nasik	A		
						LAMCO	Hyderabad	A		
4	400 kV Wave Trap	I	70			GE	Hosur	A		
						BPL	Palghat	A		
						BPEG	CHINA	A		
						QUALITY POWER	SANGLI	DR		
5	Bus Post Insulator	I	80			ADITYA BIRLA	Halol	A		
						IEC	Bhopal	A		
						MODERN INSULATORS	Abu Road	A		
						WSI	Chennai	A		
6	Disc Insulator	I	90			ADITYA BIRLA	RISHRA (WB)	A		
						BHEL	Bhopal	A		
						IEC	Bhopal	A		
						MODERN INSULATOR	ABU ROAD	A		
						WSI	Chennai	A		
7	Aluminium Tube	I	100			Alom Extrusions	Kolkatta	A		
						HINDALCO	ALUPURAM	A		
						HINDALCO	Renukut	A		
						Jindal AL Tube	Bangalore	A		
						SUDAL	Nasik	A		
8	ACSR Conductor	I	110			APAR	Silvassa	A		
						DIAMOND	Vadodra	A		
						GUPTA POWER INFRA	Bhubaneshwar	A		

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Engg. Div./QAI



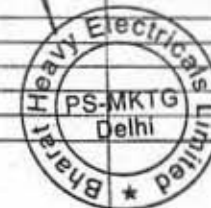
S.No.	Item Description	QP/Insp Cat	QP#9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
						ANVIL CABLES	JAMSHEDPUR	A		
						JSK	Silvassa	A		
						SHARAVATHY	Bangalore	A		
						DYNAMIC CABLES PVT LTD	JAIPUR	A		
						HUIL	GUWAHATI	DR		
						HUIL	GWALIOR	A		
						SHASHI CABLES	LUCKNOW	A		
9	1.1kV Grade Power, Control Cables	I	120							Refer Cabling List
10	Substation Automation System BCU, GRP, Energy Meter, Numerical Relays Switchyard Protection	I	130			ABB	Peenya	A		
	(item subject to Sub QR approval)					SIEMENS	Katwa	A		
						SCHNEIDER	Noida	A		
						GE	Chennai	A		
						DEL	Bhopal	A*		* Approved only for C&R panel
11	Components for Control & Relay Panels, Protection Panels, Islanding Scheme & Bay Control Unit									* : inspection category of the item shall be same as mentioned in MQP of SAS
a	Energy Meter	*				Conzerv	Bangalore	A		
	(item subject to Sub QR approval)					Elster	Mumbai	A		
						GEC Meters	UK	A		
						Landis & GYR	Switzerland	A		
						SENS	Udaipur	A		
b	EVENT LOGGER	*				GE T&D	UK / FRANCE	A		
						HATHWAY	UK	A		
c	TIME SYNCHRONIZING EQUIPMENT	*				ARBITER	USA	A		
						HOPF	GERMANY	A		
						HATHWAY	UK / USA	A		
						SERTEL	CHENNAI	A		
						SIEMENS	GERMANY	A		
						Manibus	Gandhinagar	A		
d	RELAY TEST KIT	*				OMICRON	USA/AUSTRALIA	A		
						DOBBLE	USA	A		
						MEGGER	UK	A		
e	DISTURBANCE RECORDER	*				GE T&D	USA	A		
						SIEMENS	GERMANY	A		
						ABB	FINLAND	A		

S.No.	Item Description	QP/Insp Cat	QP#9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
						HATHWAY	UK	A		
I	LARGE VIDEO SCREEN (LVS)	*				DELTA	Gurgaon	A		
						BARCO	Noida	A		
						Planner	USA	A		
6	RELAYS (Item subject to Sub QR approval) (NUMERICAL AND AUXILIARY)	*				ABB	Sweden / Bangalore	A		
						GE T&D	UK/CHENNAI	A		
						SCHNEIDER	UK/France	A		
						SIEMENS	GERMANY	A		
						SCHNEIDER	Noida/Chennai	DR		
12	Instrumentation Cable	I	140							Refer C&I List
13	BMK	I	150			BCH	FARIDABAD	A		
						CBS	Noida	A		
						Jakson	Noida	A		
						MAKTEL	VADODARA	A		
						Pyrotech	Udaipur	A		
						Schnelder	Nashik	A		
						Spaceage Switchgear	Gurgaon	A		
						Unilec Switchgear	Gurgaon	A		
						Industrial Switchgear & controls	Thane	DR		
						MILESTONES	GURGAON	DR		
						ULTIMA SWITCHGEARS	ROORKEE	DR		
						Samcom Industrial Controls	Thane	DR		
						RST Electricals	Sahibabad	DR		
						Nitya Electrocontrols Pvt Ltd	Noida	A		
						ENTERPRISING ENGINEERS	BHOPAL	DR		
						VIKAS POWER EQUIPMENTS PVT. LTD.	LUCKNOW	DR		
14	Lighting Pole	III	160							Refer Elect. Eq. List
15	Clamps & Connectors and Welding Sleeves	III				EMTT	Kolkata	A		
						EXALT	MUMBAI	A		
						KLEMMEN	Chennai	A		
						PEE VEE ENGG	Bangalore	A		
						Raychem	Vadodara	A		
						Vensun Techo Links	Chennai	DR		
						Premier Power Products	Chennai	DR		
						Deccan Engg Works	Bangalore	A		
16	Insulator Hardware	II	170			EMI	Mumbai	A		
						EMTT	Kolkata	A		

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S.No.	Item Description	QP/Insp Cat	QP#9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
						IAC	Kolkatta	A		
						ITPL	Mumbai	A		
						RUL	Kolkatta	A		
						TAG CORPORATION	CHENNAI	A		
						Raychem (Tyco)	Bangalore	DR		
17	LIGHTING MAST	III						A		Refer Elect. Eq. List
18	AC KIOSK	I	180			I COMM TEL	HYDERABAD	A		
						Isolloyd	Baddi	A		
						JINDAL MECTEC	GURGAON	A		
						U-FOAM	HYDERABAD	A		
						SVARN TELECOM	HARDWAR	A		
19	JB (All Types) / Lighting Panel	II	190			C&S	Noida	A		
						Jakson	Greaser Noida	A		
						MAKTEL	BARODA	A		
						Pyrotech	Udaipur	A		
						Schneider	Nashik	A		
						Space Switchgear	Gurgaon	A		
						TRICOLITE	SAHIBABAD	A		
						Unilec Switchgear	Gurgaon	A		
						DANISH	JAIPUR	DR		
						Nitya Electrocontrols	Noida	DR		
						MILESTONES	GURGAON	DR		
						ULTIMA SWITCHGEARS	ROORKEE	DR		
						ENTERPRISING ENGINEERS	BIHOPAL	DR		
						VIKAS POWER EQUIPMENTS PVT. LTD.	LUCKNOW	DR		
20	OPGW CABLE	I	200			SUZHOU FURUKAWA	NOIDA	A		Accessories under CAT-III from
						STERLITE TECHNOLOGIES	SILVASSA	A		
21	Leakage Current Analyser	III				ISA	ITALY	A		
						APPLIED TECHNO PRODUCTS PVT. LTD.	GURGAON	DR		
						Scope T&M	Pune	A		
						DOBLE ENGS	USA	A		
						JOISTS ENGINEERING CO. LTD.	DELHI	DR		
						HI-TECH SYSTEMS & SERVICES LTD.	KOLKATA	DR		
22	SF6 GAS FILLING AND EVACUATING PLANT, GAS RECYCLING & PURIFYING PLANT, GAS LEAKAGE DETECTOR	III				AI QUALITEK	USA	A		
						DIRO	GERMANY	A		
						ENERVAC	CANADA	A		
						VACUUM PLANT INDUSTRIES	PUNE	A		



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S.No.	Item Description	QP/Insp Cat	QP#9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
						WIKA	USA	A		
						Manik Motors	Hyderabad	DR		
23	OPERATIONAL ANALYSER WITH DCRM KIT	III				OMICRON	USA	A		
						DOBBLE	USA	A		
						SCOPE	PUNE	A		
						VIC	USA	A		
24	GS Flat / MS Flat / 40 MM Dia. M.S. Rod / M.S. Earth Rods/U Clamp / GI Earth Pipe / GI Pipe / GI Conduit (Including Bends) / PVC Pipes	III				Main Contractor Approved Sources				
25	Cable Tray, Bends, Coupler Plates	III								Refer Cabling List
26	Cable glands	III								Refer Cabling List
27	Cable Lugs	III								Refer Cabling List
28	Lighting Fixtures & Luminaries	III								Refer Elect. Eq. List
29	Industrial Receptacles	III								Refer Elect. Eq. List
30	GS Earthwire / Lighting Wire	III				Main Contractor Approved Sources				
31	Transmission Line Tower Accessories (Danger Plate, Vibration Dampers, Number Plate, Phase Plate, Circuit Plate, Hanger Rod, ACD, Bird Guard, J Bolt, U Bolt, D Shackle, Barbed Wire, etc.)	III				Main Contractor Approved Sources				
32	EOT Crane	I								Refer CHP List
33	Air Conditioning and Ventilation System	III								Refer AC Ventilation List
34	Fire Protection System	III								Refer Fire Protection List
35	AC for AC Kiosk	III								Refer AC Ventilation List
Note 1 SYSTEM SUPPLIERS/SUB-SUPPLIERS APPROVAL STATUS CATEGORY(SHALL BE FILLED BY NTPC) A-For this items proposed vendor is acceptable to NTPC To be indicated with letter "A" in the list along with condition of approval, if any DR-For these items "Detailed required for NTPC review To be identified with letter "DR" in the list										

S.No.	Item Description	QP/Insp Cat	QPR9591-001C QVE-Q	QP Sub- schedule	QP Approval Schedule	Proposed Sub-Supplier	Place	Sub-Supplier Approval status/ category	Sub-supplier details submission schedule	Remarks
NOTED- For these items vendors are approved by Main Supplier & accepted by NTPC without specific vendor approval from NTPC To be identified with "NOTED"										
2	QP / RESPN CATEGORY CAT-I For these items the Quality Plans approved by NTPC & final acceptance will be on physical inspection witness by NTPC CAT-II For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on basis of documents as approved QP CAT-III For these items Main supplier approves the Quality Plans. The final acceptance by NTPC shall be on basis of certificate of conformance by the main supplier.									
3	UNITS/WORKS : Place of manufacturing Place of Main Supplier of multi units/works									
4	For GIS at Sr. No. 1 above, BHEL will follow their Standard procedures & Corporate guidelines and shall comply with circulars / Instructions etc. issued by GOVT. / Relevant statutory bodies while tendering. However, for new vendors, BHEL shall take approval from NTPC prior to order placement.									

(ABHINAV GUPTA, BHEL)

(DIPLOTT, BHEL)

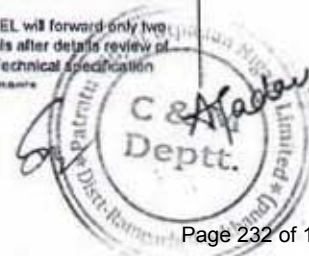
(SEVHIK, BHEL)

(Munesh Kalyan)

NTPC



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)					LIST OF ITEMS REQUIRING QP			REVISION NO : 00		
		PACKAGE : EPC PACKAGE					APPROVAL & ACCEPTABLE			DATE : 26.04.2017		
		CONTRACTOR : BHEL Ltd					VENDOR AS APPROVED BY					
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
1	DDC MIS / HMI System	I				SIEMENS	Gurgaon / Germany	#				# - Final acceptance subjected to system specific acceptance from NTPC Engg
2	Operator work stations	III				M/s BHEL (MAX DNA) Main Contractor approved Sources	Bangalore	# A				
3	Flame Monitoring System (SCANNER)	II				Forney	USA	A				Bought out item shall be finalised during detailed engineering
		II				ABB	Bangalore	A				
		II				Durag	Bangalore	A				
		II				BFI	Germany	A				
		II				BHELSCAN	Tridty	A				
4	HEA Ignitor	III				Fossil Power System Inc.	Canada	DR				
		III				Unison Industries	USA	A				
		II				Durag	Germany	A				
		II				Durag	Bangalore	A				Make Durag, Germany
		II				Ignition system INC	USA	A				
		II				Tesi	Italy	A				
		I				Hindustan Thermometer	Ambala	A				Conditional
		*				Hornworthy Peabody Combustion Inc.	UK	DR				
		*				Forney	USA	DR				
5	Furnace Flame viewing system (High Temperature CCTV Components)	II					USA / Sweden	A				
		II				Diamond Power						
		II				TLT Engg Pvt. Ltd.	Kolkata	A				M/s Dimanond Power, USA / Sweden make system
		II				Miron	UK	A				
		II				Toshniwal Industries	Almer	A				M/s Miron, UK make System
		II				Lenox	USA	A				
		II				Hi Tech System and Service	Kolkata	A				M/s Lenox, USA make System
		II				Durag	Germany	A				
		II				Durag	Bangalore	A				M/s Durag, Germany make System
		II				Sabota GmbH	Germany	A				
		II				Piper GmbH	Germany	A				
		*				Tempsons	Udaipur	DR				System integrator for Piper GmbH, Germany.
6	Coal Flow Monitoring System	II				PROMECON	GERMANY	A				
		II				SWR Engg	GERMANY	A				
		II				EU Tech	GERMANY	A				
		*				Transwelng	India	DR				
		*				Technomark Enggners & Consultant	India	DR				
		*				Stock Redeller	India	DR				
		*				Greenbank Engery Systems	UK	DR				M/s BHEL will forward only two proposals after details review pl. NTPC Technical specification



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P. P. P. P.

NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP			REVISION NO : 00			
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE			DATE : 26.04.2017			
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI-Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				Berthold	Germany	DR				requirements.
		*				EDIT	Germany	DR				
7	Acoustic pyrometers	II				M/s Scientific Environment Instrument Inc	USA	A				
		II				M/s Bonnenberg + Drescher GmbH,	Germany	A				
		II				Lucent	Delhi	A				M/s Scientific Environmental Instrument Inc., USA make system
		II				Hi Tech	Kolkata	A				M/s Bonnenberg + Drescher GmbH, Germany make system
		*				Hanasertech	Korea	DR				
8	Coal feeder control system	II				Stock	USA	A				
		II				Merick	USA	A				
		I				Stock Redeller	Bangalore	A				Main components from Stock, USA
		I				Merick	Bangalore	A				Main components from Merick USA
		I				BHEL	Trichy	A				
9	Acoustic Coal Flow Detector	III				Stock	USA	A				
		III				Merrick	USA	A				
		*				Stock Redeller	Bangalore	DR				
		*				Merrick	Bangalore	DR				
10	On line carbon in Ash Analyser	II				Greenbank Engery Systems	UK	A				
		II				ABB	Bangalore	A				
		II				Promecon	GERMANY	A				
		II				Berthold Technologies	Germany	A				
		*				M and W	Denmark	DR				M/s BHEL will forward only one proposal after details review of NTPC Technical specification requirements.
		*				EMERSON	India	DR				
		*				Yokogawa	Bangalore	DR				
		*				Forbes Marshall	Pune	DR				
11	Furnace Exit Gas Temperature Probe	III				Main Contractor approved Sources	India /UK/USA					
12	Boiler tube leak detection system	II				Procon	UK	A				
		II				Raman Instruments	Delhi	A				M/s Procon, UK make System
		II				Acoustic Monitoring International Inc.	USA	A				
		II				Hi Tech System and Service	Kolkata	A				M/s AMI, USA make System
		II				Instolech	South Africa	A				
		II				Rectusan	Korea	A				
		II				BHELSONIC	Trichy	A				
13	Coal bunker Level monitor	%				%						% - Type, vendor and inspection category will be decided during detail Engineering



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP			REVISION NO : 00			
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE			DATE : 26.04.2017			
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
14	Tube thickness Meter	III				Main Contractor approved sources		A				
15	POSITIVE DISPLACEMENT FLOW METER/ TRANSMITTER	III				BROOKS	USA	A			Sub QR	Calibration reports to be submitted.
		III				BOPP & ROUTHIER	GERMANY	A				
		III				OVAL	JAPAN	A				
		II				Teshnwal corporation Hyvac	Chennai	A				Up to 4 inch only
16	Coriolis Type Mass Flow meter	III				Main Contractor approved Sources		A			Sub QR	
17	Control Valve for Start Up System	II				CCI	USA/Switzerland/Korea	A				
		II				Tyco Sampell	Germany	A				
		II				EMERSON (Fisher)	USA/France/Japan	A				Reference list and performance feedback are to be submitted.
		*				Dressor Masonellan	France	DR				
		II				KOSO	Japan / Nasik	A				
		II				HORA	Germany	A				
		II				CCI	Tricity	A				
18	Control valves for Soot blower pressure reducing ,SH/ RH Attenuation,	II				CCI	USA/Sweden /Korea / Austria	A				
		II				Dressor Masonellan	France	A				
		II				HORA	Germany	A				
		II				EMERSON (Fisher)	USA/France /Japan	A				
		II				Spx Copes Vulcan	USA	A				only for SH / RH Attenuation, for Soot blower application Reference to list to be provided.
		II				KOSO	JAPAN	A				
		II				Tyco Sampell	Germany	A				
		II				Leslie	USA	A				
		I				Dressor	Colimbatore	A				Up to 2500 Class
		I				IL	Palakkad	A				Up to 2500 Class
		I				KSB MIL	Alwaye	A				
		I				KOSO	Nasik	A				
		I				EMERSON	Chennai	A				Up to 2500 Class
		I				Flow Serve	Bangalore	A				Up to 2500 Class
		I				CCI	Tricity	A				
		*				Copes Vulcan	UK	DR				
		*				Circor (Leslie)	Colimbatore	DR				
19	Control Valve for BFP Recirculation,	II				CCI	USA / Austria / Korea	A				
		II				EMERSON (Fisher)	USA/France/Japan	A				
		II				Dressor Masonellan	France	A				
		II				HORA	Germany	A				
		*				Sampell	Germany	DR				
		*				Leslie	USA	DR				M/s BHEL will forward only three proposals after details review of NTPC Technical specification
		I				CCI	Tricity	A				



M/s BHEL will forward only three proposals after details review of NTPC Technical specification

NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
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		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				KOSO	Japan / Nasik	DR				requirements.
		*				Nakikata	Japan	DR				
		*				Parcol Spa	USA	DR				
		*				Yamatake	Japan	DR				
		*				BOPP & ROUTHER	Germany	DR				
		*				KSB MIL	Alwaye	DR				M/s BHEL will forward only three proposals after details review of NTPC Technical specification requirements.
20	Control valve for feedwater flow Control	II				CCI	USA/Austria /Korea	A				
		II				Oressor Masonellan	France	A				
		II				HORA	Germany	A				
		II				EMERSON (Fisher)	USA/France /Japan	A				
		II				Sempell	Germany	A				
		II				KOSO	Japan	A				
		*				LESUE	USA	DR				
		*				CCI	Srioty	A				
		*				Parcol Spa	USA	DR				
		*				WEIR VALVES and Controls	UK	DR				
		*				KOSO	Nasik	DR				
		*				KSB MIL	Alwaye	DR				
		*				Emerson Process Management	Chennai	A				
		*				BOMABA Special valve solutions Pvt. Ltd.	Ahmedabad	DR				
		*				Suzhou delan enery science and technology co. Ltd.	China	DR				
21	Control Valve (other than Sr. No. - 17 to 20)	II				CCI	USA/Switzerland/Korea	A				
		II				Tyco Sempell	Germany	A				
		II				EMERSON (Fisher)	USA/France/Japan / Chennai	A				
		II				Oressor Masonellan	France	A				
		II				KOSO	Japan	A				
		II				HORA	Germany	A				
		II				CCI	Srioty	A				
		II				Spx Copes Vulcan	USA	A				
		II				Oressor	Colim-batore	A				
		II				II	Palakkad	A				
		II				KSB MIL	Alwaye	A				
		II				KOSO	Palakkad	A				
		II				EMERSON	Chennai	A				
		II				Flow Serve	Bangalore	A				
		II				Copes Vulcan	UK	A				
		II				Leslie	USA	A				
		II				Parcol Spa	Italy	A				
		II				KOSO	Nasik	A				

Bharat Heavy Electricals Limited

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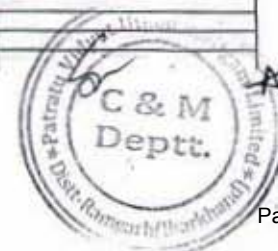
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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)					LIST OF ITEMS REQUIRING QP			REVISION NO : 00		
		PACKAGE : EPC PACKAGE					APPROVAL & ACCEPTABLE			DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd					VENDOR AS APPROVED BY					
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI-Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		II				Forbes Arca	Pune	A				Approved up to 4" and 300 Class. "DR" for Higher rating and Size. M/s BHEL will forward only three proposals after details review of NTPC Technical specification requirements,
		*				Daume Regelamaturean GmbH	Germany	DR				
		*				Metso Singapore PTE Ltd.	South Korea	DR				
		*				Severn Glocon	Chennai	DR				
		*				Spx Corporation	USA	DR				
		*				Ringo Valvulas SL	Spain	DR				
		*				Valitalia SPA	Italy	DR				
		*				R K Controls	Thane	DR				
		*				Circor (Leslie)	Coimbatore	DR				
		*				Spx Flow Technologies	USA	DR				
		*				Circor (Leslie)	Coimbatore	DR				
		*				Schenjeng valve co. Ltd.	China	DR				
		*				Spx Flow Technologies	Ahmadabad	DR				
		*				WEIR Valves and Controls	UK	DR				
		*				WALDEMAR PRUSS	Germany	DR				
		*				ARMATURENFABRIK GMBH						
		*				BOMABA Special valve solutions Pvt. Ltd.	Ahmedabad	DR				
		*				Suzhou delan enifery science and technology co. Ltd.	China	DR				
22	Temperature Transmitter	III				EMERSON	U.S.A/Pawane / Singapore	A			Sub QR	
	(Single and Dual Input)	III				Yokogawa	Japan	A				Final testing at M/S YIL, Bangalore is also acceptable
		III				Moore	USA	A				
		III				M System	JAPAN	A				
		III				ABB	GERMANY/ Bangalore	A				
		III				ENDRESS & HOUSER	Aurangabad	A				
		*				Krone		DR				
		*				Tokyo Kelco	Japan	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.
		*				Honeywell	Pune	DR				
		*				INOR	Sweden	DR				
		*				P & F	Bangalore	DR				
		*				Siemens		DR				
		*				Yamatake	JAPAN	DR				
		*				Yemari	JAPAN	DR				
		*				Foxboro		DR				
23	Conduits/Pipe(GI)					Refer Electrical List						
24	Electronic transmitters (pressure, DP,Flow)	III				EMERSON (Rosemount)	USA/ Pawane	A			Sub QR	
		III				FUJI ELECTRIC	France	A				
		III				YOKOGAWA	JAPAN	A				Testing and Calibration at M/s YIL Bangalore is also acceptable.



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		CONTRACTOR : BHEL Ltd					VENDOR AS APPROVED BY					
		CONTRACT NO : CS-9565-001-2										
No.	Major Equipment	QP Inspecti on Category	QP No. 9565-001-QV1 Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				YOKOGAWA	Bangalore	A				EJA- E series 110.430.530
		III				ABB	Bangalore	A				Model - 2600 T
		III				ABB	GERMANY / Italy	A				Model - 2600 T
		III				Siemens	France / Kalya	A				
		III				Honeywell	Pune	A				
		III				Laxson Automation	Daman	A				SMAR Make
		III				Baldota	Mumbai	A				SMAR Make
		*				ENDRESS & HOUSER	Aurangabad/ Germany	DR				
		*				CHINO	Ghaziabad	DR				
25	Thermocouples, RTD & Thermowells	III				HERAUS SENSOR	GERMANY	A			Sub QR	
		III				WISE Control	Korea	A				
		II				Tempsens	Udaipur	A				
		II				Pyroelectric	Goa	A				
		II				Detiv Instrumentation & Electronics Ltd	Mumbai	A				
		III				Minco	USA	A				
		III				OKAZAKI corporation	JAPAN	A				
		III				Yamari	JAPAN	A				
		III				Yamari	Singapore	A				For RTD Reference list and Performance feedback is to be submitted.
		III				ABB(SENSYCON)	Germany	A				
		III				EMERSON (Rosemount)	Germany	A				
		II				EMERSON (Rosemount)	Pawane	A				Imported from Emerson, Germany (make)
		II				Thermal Instruments(GIC)	Savantwadi	A				
		II				Techno Instruments	Ahmadabad	A				
		II				GOA Instrument Industries	GOA	A				For Thermowells only
		*				GOA Instrument Industries	GOA	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.
		*				Wika	Pune	DR				
		*				Toshnival Industries	Ajmer	DR				
		*				E & H	Aurangabad	DR				
		*				Nesslech	Vapi	DR				
		*				Industrial Instruments	Kolkata	DR				
		*				Exotherm	Thane	DR				
		*				Baumer Technologies	Vapi	DR				
		*				Elaind Engineering	Noida	DR				
		*				Siemens India	Gurgaon	DR				
		II				Jindal Electronics	Roorkee	A				For Generator turbine & Motor
26	Ultrasonic type level Transmitter	III				E & H	Aurangabad/ Germany	A			Sub QR	
		III				EMERSON	Pawane	A				
		III				SIEMENS MILTRONICS	CANADA	A				
		III				Nivelco	Hungary	A				
		*				Vega	Germany	DR				



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-5585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 5585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				Khrona	France / USA / Pune	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.
		*				Yokogawa	Bangalore	DR				
		*				PAF	Germany	DR				
		*				Magnetrol	Belgium	DR				
		*				ABB	Germany / India	DR				
		*				Forbes Marshall	Pune	DR			Sub QR	
27	Orifice plate assembly	III				Instrumentation Limited	Palghat	A				
		III				Microprecision	Palwal	A				
		III				Starmech	Pune	A				
		III				Flow Star	Faridabad	A				
		III				SEKO	Austria	A				
		III				MINCO India Pvt. Ltd.	GOA	A				Up to 32"
		III				MINCO India Flow Elements Pvt. Ltd.	GOA	A				Up to 28"
		III				WISE Control	Korea	A				
		III				T M Technomatic	Italy	A				
		*				IEPL	Hyderabad	DR				
		*				Engg. Specialites	Kolkata	DR				
		*				BALIGA	CHENNAI	DR				
		*				Pyroelectric	Mumbai	DR				
		*				Hydropneumatics	Mapusa	DR				
		*				Tansa Equipment Pvt. Ltd.	Thane	DR				
		*				Dynamic Fluid Vales Pvt. Ltd.	Belgaum	DR				
28	Pressure, DP Gauge	III				BUDENBERG	UK	A				
		III				ASHCROFT	USA/Germany/ India	A				
		III				Wika	GERMANY	A				
		III				WISE Control	Korea	A				
		III				Nagano KEIKI	Japan	A				
		III				H.Guru South India	Bangalore	A				Not for MS & FW application
		III				A.N. Instruments	Kolkata	A				Not for MS & FW application
		III				Gauge Bourdon	Panvel	A				
		III				Goa Thermostatic	GOA	A				Not for MS & FW application
		III				Wika	Pune	A				DR for MS & FW application
		III				Baumer	Vapi	A				DR for MS & FW application
		III				Precision mass products Pvt. Ltd.	Gandhinagar	A				Not for MS & FW application
		III				H.Guru	Rishra/Muzaffarpur	A				Not for MS & FW application
		*				US Gauge	USA	DR				
		*				Winters	USA	DR				
		III				Forbes Marshall	Hyderabad	A				
		*				Manometer	Mumbai	DR*				
		III				Walchandnagar Industries Ltd.	Dharwad	A				
		III				Nesstech	Vapi	A				
		*				Gauges Bourdon	UK	DR				QP Gauge for M/s Nesstech, Japan
		*				Fisher Mess	Germany	DR				



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No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				Protech Control	Kolkata	DR				
		*				New Scientific	Kolkata	DR				
		*				PTCI	Kolkata	DR				
29	Level gauge (Transperent & Reflex, Tubular type)	III				Main Contractor approved Sources		A				
30	Press, DP, Vacuum Switch	III				SOR	USA	A			Sub QR	
		III				DRESSOR (ASHCROFT)	USA/Germany	A				
		III				ITT BARTON	USA	A				
		III				HERION	GERMANY	A				
		III				BARKSDALE	GERMANY	A				
		*		*		Nagano KEIKI	Japan	DR				
		II				Switzer Process Instrument	Chennai	A				Up to 40kg/cm2 & not for Compound Switch and except 900 series
		II				Trafag	Gurgaon	A				Up to 40kg/cm2 & not for Compound Switch
		II				Switzer Process Instrument	Ghaziabad	A				Up to 40kg/cm2 & not for Compound Switch
		II				Delta control	UK	A				
		I				Gauges Bourdon (GIG)	Patvel	A				Up to 40kg/cm2 & not for Compound Switch
		I				ASHCROFT	Gandhinagar	A				
		*				Wika	Pune	DR				
		II				Gorgeion	France	A				
		II				United Electric	USA	A				
		*				SMC	Japan	DR				
		*				Neodyne	USA	DR				
		*				IMI NORGEN	Noida	DR				
		*				WISE Control	Korea	DR				
		*				Baumer	Vapi	DR				
		*				Vasu Tech	New Delhi	DR				
		III				Boh & Krich	Germany	DR				
31	Temperature Switch	III				SOR	USA	A			Sub QR	
		III				DRESSOR (ASHCROFT)	USA/Germany	A				
		III				ITT BARTON	USA	A				
		III				DELTA CONTROLS	UK	A				
		I				Switzer Process Instrument	Chennai	A				up to 200 Deg. C
		I				Switzer Process Instrument	Ghaziabad	A				up to 200 Deg. C
		II				Trafag	Gurgaon	A				up to 200 Deg. C
		I				ASHCROFT	Gandhinagar	A				
		*				Wika	Pune	DR				
		III				Gorgeion	France	A				
		III				United Electric	USA	A				
		*				SMC	Japan	DR				
32	Flow switch	III				UNIVERSAL FLOW METER	USA	A			Sub QR	
		III				Switzer	Chennai	A				



NTPC		PROJECT : Patratu STPS Phase-I (3 X600MW)				LIST OF ITEMS REQUIRING QP			REVISION NO : 00			
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No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QV1 Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				Levcon	Kolkata	A				
		III				DK Instrument	Kolkata	A				
		III				Khrone Marshal	Pune	A				
		III				Chemtrol	India	DR				
		III				V Automat	NewDelhi	DR				
		III				Gauges Bourdon	Panvel	A				
		III				Magnetrol	Belgium	A				
		III				Ashcroft	Germany	A				
		III				Auxitrol	UK	A				
		III				Mericoold	USA	A				
		III				Delta Control	UK	A				
		III				Merium	USA	A				
		*				Sunag Corporation		DR				
33	Condensing Pots	II				Main Contractor approved Sources		A				
34	Electric to Pneumatic converter	II				IMI NORGEN	India	A			Sub QR	Make : WATSON SMITH
		II				Fair child	USA	A				
		*				ABB	India	A				Subject to meeting the NTPC specification requirement
		*				SMC Pneumatics	Noida	DR				
		*				P & F	Bangalore	DR				
		*				Fairchild India Pvt. Ltd.	Noida	DR				
		*				FESTO	Bangalore	DR				
35	Conduits lead coated (Flexible)	III				Plica	Ghaziabad	A				Main contractor can propose additional vendor for this item
		III				Bansal laboratories	BHOPAL	A				
36	Intelligent Battery charger 24V DC & DCOB /BHMS	II				Chabbi Electricals	Jalgaon	A			Sub QR	Modules from EMERSON
		II				Elitech	Gurgaon	A				Modules from ELTEK
		II				MasTech	Jalgaon	A				Modules from ELTEK
		II				Emerson	India	A				
		II				MasTech (Selek Modules)	Jalgaon	A				BHMS from M/s USV, Germany
		*				HBL Power Systems	India	DR				
		*				Dobas	India	DR				
		*				Chabbi Electricals (Chabbi Modules)	Jalgaon	DR				
		*				Hitachi Hs Rel	Gandhinagar	DR				
		*				Statcon Power Controls Pvt. Ltd.	Noida	DR				
		*				Chloride Power Systems (caldyne)	India	DR				
		*				Amararaja	Tirupati	DR				
		*				Keltron Power Electronics	Trivendram	DR				
												M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.



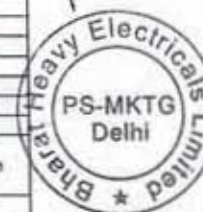
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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
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		-				Universal instrument manufacturing co P Ltd	India	DR				
		-				Hind Rectifier Ltd	India	DR				
37	Battery Health Monitoring System	III				Emerson	Mumbai	A				
		III				Eltek SGS Pvt Ltd	Gurgaon	A				
		-				B Tech Inc	USA	DR				
		III				Hitachi Hi Rel	Gandhinagar	A				
		-				Hopecke	Germany	DR				
		-				Hitachi Hi Rel	Gandhinagar	DR				
38	Battery(Ni-cd)	I				AMCO SAFT	Bangalore	A				
		II				SAFT	France/Sweden	A				
		I				HBL POWER	Hyderabad	A				
		II				Hopecke	Germany	A				
39	Socket weld fittings	III				BHEL Approved Sources						
40	Impulse pipe & tubes	II				Maharashtra Seamless	Raigarh	A				Carbon steel only
		II				Sumitomo/Kawasaki/Nippon	Japan	A				
		II				TPS TECHNITUBE	Germany	A				
		II				Veluric & manesmann	Germany	A				
		II				BHEL	Trichy	A				
		II				Trouvay and Cauvin	France	A				Makes shall be as per approved list (Sr. No. 41)
		II				ISMT	Ahamadnagar	A				Carbon steel only.
		II				Sandvik		A				For SS only.
		-				TUBACES	Spain	DR				
		-				Satzgitter Mannesmann International	Germany	DR				
		-				Jindal saw	India	DR				
		II				Rafanament Metal and Tubes	Ahamadabad	A				SS only
		II				Heavy metals and Tubes	Ahamadabad	A				SS and CS only.
		-				Shubhaxmi Metal and Tubes	Mumbai	DR				
41	Compression fittings	II				Parker	USA	A				
		III				Precision	Mumbai	A				
		III				Aslech	Mumbai	A				
		III				Fluid control Pvt. Ltd.	Pune	A				
		III				HP Valves and fittings	CHENNAI	A				Ferrules are to be hardened at Exim Holland for pressure above 9000 psi.
		III				Excel hydro	Mumbai	A				Ferrules are to be hardened at Exim Holland for pressure above 9000 psi.
		III				Swagelock	USA	A				
		III				Panam	Mumbai	A				
		III				Melpress	Kolkata	DR				
		-				AURA INC	New Delhi	DR				
		-				Prime Engineers		DR				
		-				Arya Craft		DR				



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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspection Category	QP No. 9585-001-QV1 Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				PMT Engineers	Ahmedabad	DR				
		*				Flowtech	Kolkata	DR				
		*				Parker Hannifin India Pvt Ltd		DR				
42	Instrument valves	III				BHEL	Trichy	A				
		II				Excel Hydro	Mumbai	A				
		II				Instrumentation Ltd.,	Palghat	A				
		III				Swagelok	USA	A				
		III				Parker	USA	A				
		II				HP Valves and fittings	CHENNAI	A				
		II				Fluid control Pvt. Ltd.	Pune	A				
		II				Baldota	Mumbai	A				
43	Valve manifolds	III				Excel hydro	Mumbai	A				
		III				SCHNEIDER	Germany	A				
		III				Anderson Greenwood	USA	A				
		III				Astech	Mumbai	A				
		III				HP Valves and fittings	CHENNAI	A				
		III				Fluid control Pvt. Ltd.	Pune	A				
		III				Microprecision	Faridabad	A				
		III				Parker	USA	A				
		III				Swagelok	USA	A				
		III				Baldota	Mumbai	A				
		*				Melpress Engg. works	Kolkata	DR				
		*				Flow tech	Kolkata	DR				
44	Local Instrument Endosure/Rack	I				Pyrotech	Udaipur	A				
		I				Instrumentation Limited	Kota	A				
		I				Sajas electrical	Trichurapalli	A				
		I				Prammen	Puddukottai	A				
		I				Chemlin	Pondicherry	A				
		*				Forbes Marshall	Pune	DR				
		*				Positronics	Vadodara	DR				
		*				Procon	Chennai	DR				
45	Instrument Cables	I				Paramount	Khushkhera	A				PVC,FRLS type,RQP
		I				Polycab	Daman	A				PVC,FRLS type,RQP
		I				Delton	Faridabad	A				PVC,FRLS type,RQP
		I				KEI	Bhiwadi	A				PVC,FRLS type
		I				Elkey Telelinks	Faridabad	A				PVC,FRLS type
		I				CORDS	Chopanki	A				PVC,FRLS type,RQP
		I				CORDS	Kaharani	A				PVC,FRLS type,RQP
		I				Nicoo	Kolkata	A				PVC,FRLS type
		II				TEW & C	USA	A				
		II				Habia cables	Sweden	A				
		II				Kerpen cables	Germany	A				
		II				Lapp cables	Germany	A				
		II				Thermo electra Bv	Netherlands	A				
		I				Universal Cable	Saina	A				PVC,FRLS type
		I				Thermocables	Hyderabad	A				PVC,FRLS type



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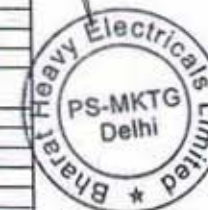
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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		I				Finolex Cable	Pune	DR *				
		I				Incab	Pune	DR *				
		I				Gupta Power Infrastructure Ltd.	Khursha	A				
		*				Lapp cables	India	DR				
		*				Lioni cable	Pune	DR				
		*				RR Kabel	Stvase	DR				
		*				Gemsab	Bhivadi	DR				
		*				KEC International	Mysore	DR				
		*				Advance cable Technologies	Bangalore	DR				
		*				Suyog Electricals Ltd.	Vadodara	DR				
		*				Special Cable	India	DR				
		*				CMI	Faridabad	DR				
		*				Govind Cables	Kolkata	DR				
		*				Associate Cables	Mumbai	DR				
		*				Radiant RSCC Specialty	Hyderabad	DR				
		*				APAR Industries	Banglore	DR				
		*				Tempsens Cable	Udaipur	DR				
		*				Mansfield cables co. Ltd.	Hyderabad	DR				
		*				Servet India Pvt. Ltd.	Neemrana	DR				
		*				TC Communication Pvt. Ltd.	Ghaziabad	DR				
46	Electrical actuator	II				Auma	Germany	A				
		II				Umitorque	USA	A				
		II				Rolorg	UK	A				
		II				Umitorque	Faridabad	A				
		II				Rolork	Chennai/ Bangalore	A				
		III				Nippon gear	Japan	A				
		II				Auma	Bangalore	A				
		III				Harold Beck	USA	A				
		III				Drehmo	Germany	A				
		I				Antrieb	Chennai	A				
		*				Lindco	USA	DR				
		*				Siemens	Germany	DR				
47	Electrical actuator for ID/FD/PA Blade pitch and Guide vane control	III				Harold Beck	USA	A				
		III				SIPOS Aktorik GmbH	Germany	A				
		*				ABB	Germany	DR				
48	Flow nozzle / Venturi assembly	II				Microprecision	Faridabad	A			Sub QR	
		II				SEIKO	Austria	A				
		II				TECHNOMATIC	Italy	A				
		II				Instrumentation Limited	Palghat	A				
		I				Starmach	Pune	A				
		II				WISE Control	Korea	A				



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 06		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QVI Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		I				MINCO India Flow Elements Pvt. Ltd.	GOA	A				
		*				SAMIL	Korea	DR				
		*				MINCO	GOA	DR				
		*				Engg. Specialities	Kolkata	DR				
		*				Pyroelectric	Mumbai	DR				
		*				Hydropneumatics	Mapusa / GOA	DR				
		*				ASIAN INDUSTRIAL VALVES	Chennai	DR				
		*				Dynafluid valves Pvt. Ltd.	Belgium	DR				
49	HIGH Temp. cable (PTFE/FEP)	II				Habia cables	Sweden	A				
		II				Lapp cables	Germany	A				
		II				Kerpen cables	Germany	A				
		II				TEW & C	USA	A				
		II				Thermo-Electra Bv	Netherlands	A				
		II				Habia cables	China	A				
		II				Thermocables	Hyderabad	A				
		II				Tempsens	Udaipur	A				
		*				Delton Cables	Faridabad	DR				
		*				RJ Cables	Roorkee	DR				
50	Fiber optic cable	II				HFCL	Goa	A				
		II				R&M	Switzerland	A				
		II				Aksh Fibre	Bhiwadi	A				
		II				Finolex	Pune/Goa	A				
		II				Birta Ericson	Rewa	A				
		II				Molex	UK	A				
		II				Corning	USA	A				
		II				Schneider	GOA	A				Previously known as D Link / Smartlink, Goa
		*				RPG Cables	India	DR				
		*				Uniflex Cables	India	DR				
		*				Terracom	India	DR				
51	Pneumatic Actuator (Power Cylinder e.g. FOR SADC)	II				Dong Woo Valve Control Co. LTD	Korea	A				
		II				Shin Hwa Engineering Co. LTD	Korea	A				
		I				Instrumentation Limited	Pelghat	A				
		I				Kellon	Cochin(Aleppy)	A				
		I				SMC Pneumatics	Noida	A				Up to 12 inch only
		I				Rotex	Mumbai	A				Conditional
		*				Emerson Process Management	Chennai	DR				
		*				MIL Controls	Alwaye	DR				
		*				Festo	Bangalore	DR				
		*				IMI Norgren	Noida	DR				
52	Level switch capacitance type	III				ENDRESS & HOUSER	Aurangabad	A			Sub QR	
		III				MAGNETROL	BELGIUM	A				
		III				SBEM	PUNE	A				
		III				PUNE TECHTROL	PUNE	A				



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				LEVCON	KOLKATA	A				
		III				Nivo Controls	Indore	A				
		*				V AUTOMAT	New Delhi	DR				
		*				D K Instrument	Kolkata	DR				
		*				Siemens	Germany	DR				
		*				ABB	Korea	DR				
		*				Rosemount	Korea	DR				
53	Transducer	II				AE	Mumbai	A				
		II				Southern Transducer	Chennai	A				
		II				Elsler	Mumbai	A				
		III				Camille Bauer	Germany	A				
		III				Metrawal	Germany	A				
		II				Rishab	Nasik	A				
		*				Pyrotech	Udaipur	DR				
		*				Masibus	Gandhinagar	DR				
		*				SIEMENS	Germany	DR				
54	Mini UPS up to 3.5 KVA	III				EMERSON	Mumbai	A				
		III				EMERSON	Pune	A				
		III				Hirachi Hi- Rot	Gandhinagar	A				
		III				APC	Bangalore	A				
		III				APLAB	Mumbai	A				
		III				Delta	Gurgaon	A				
		*				Powertronix	Bangalore	DR				
		*				DUBAS ENGG PVT.LTD., BANGALORE		DR				
		*				Grid power conversion Pvt Ltd.		DR				
		*				Schneider	Bangalore	DR				
55	Level switch- cond type	III				EMERSON (Solartron mobrey)	UK	A			Sub QR	
		II				Hi Tech	Kolkata	A				Levelstate, UK System
		III				Yarway	USA	A				
		III				LEVELSTATE	UK	A				
		II				Raman Instruments	Delhi	A				Emerson (Mobrey) System
		*				BHEL	Trichy	DR				
		*				IGEMA	Germany	DR				
56	Level switch - Float/Displacer Type	III				ENDRESS & HOUSER	AURANGABAD	A			Sub QR	
		III				MAGNETROL	BELGIUM	A				
		III				LEVCON	KOLKATA	A				
		III				SBEM	PUNE	A				
		III				Chemtrols samil	Mumbai	A				
		III				NAKATIYA	JAPAN	A				
		III				Sigma Industries	Mumbai	A				
		III				D K Instrument	KOLKATA	A				
		III				PUNE TECHTROL	PUNE	A				
		III				V AUTOMAT	NEW DELHI	A				
		*				WAREE	WAPI	DR				
		III				LEVELSTATE	UK	A				



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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-3										
No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				Gauges Bourdon (GIC)	Panvel	A				
		*				Nisan Scientific Process	Navi Mumbai	DR				
57	Air filter regulator	III				Fairchild	USA	A				
		III				Shayo Norgen	Mumbai	A				
		III				SMC Pneumatics	NOIDA	A				
		III				Emerson (Asco)	Chennai	A				
		III				Festo	Bangalore	A				
		III				Placks	Chennai	A				
		III				Divya Control Elements	Gujarat	DR				
58	Copper tubing/Brass connectors	III				Main Contractor approved Sources		A				
59	Coupling / Interposing relays	III				PARAMOUNT	BANGALORE	A				
		III				OMRON		A				
		III				OEN		A				
		III				Jyoti	Baroda	A				
		III				ELSTA	SWITZERLAND	A				
		*				Schneider	Germany	DR				
		*				Siemens	Germany	DR				
		*				Phoenix	Germany	DR				
		*				Finder		DR				
60	Solenoid valve	III				Rolex	Vadodara	A			Sub QR	
		III				Avcon	Mumbai	A				
		III				Herion	Germany	A				
		III				IMI NORGEN	GERMANY	A				
		III				Jafferson	Argentina	A				
		III				Asco	Chennai/USA	A				
		III				Festo	Bangalore	A				
		III				SMC	Noida	A				
		III				Parker	Brand Name	A				
		*				Schneider	Germany	DR				
		*				Neucon Industries Pvt. Ltd.		DR				
61	Lube oil control valve - Self Regulating	III				NUOVO PIGNONE	ITALY	A				
		III				EMERSON	CHENNAI	A				
		III				SAMSON	GERMANY / PUNE	A				
		III				Forbes marshall arco pvt. Ltd.	Pune	A				Approved up to 16", 900 Class.
62	Guided wave/Radar type level transmitter	III				Magnetrol	Belgium	A			Sub QR	
		III				Endress & Houser	Germany/ Aurangabad	A				
		III				Emerson Process Management	Sweden/ PAWANE	A				
		III				ABB(X-Tech)	USA	A				
		II				Supreme Technology	Thane	A				Make M/s Siemens, Canada
		*				Yokogawa	Japan	DR				
		*				ABB	India	DR				
		*				P & F	Bangalore	DR				



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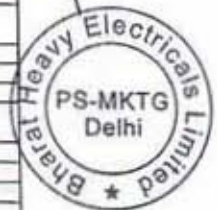
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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-5565-001-2										
No.	Major Equipment	QP Inspecti on Category	QP No. 5585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				Khrono	France	OR				
		*				HONEYWELL	Pune	OR				
		*				Vega	Germany / India	OR				
		*				Siemens	India	OR				
		*				SSEM	Pune	OR				
63	Maintenance and Calibration Equipment					Main Contractor will propose the vendors during detail Engineering.						
64	Temperature Gauge	III				BUDENBERG	UK	A				
		III				DRESSOR (ASHCROFT)	USA/Germany	A				
		III				Wika	GERMANY/ Pune	A				
		III				WISE Control	Korea	A				
		III				Nagano KEIKI	Japan	A				
		III				H.Guni South India	Bangalore	A				
		III				A.N. Instruments	Kolakkatta	A				
		III				NUOVA FIMA	ITALY	A				
		III				Goa Thermostatic	Goa	A				
		III				Goa Instrument Industries	Goa	A				
		III				Baumer	Vapi	A				
		III				Precision mass products Pvt. Ltd.	Gandhinagar	A				
		III				H Guni	Rishra/Muzaffarpur	A				
		III				Baumer	Vapi	A				
		III				Forbes Marshall	Hyderabad	A				
		III				Gauges Bourdon (GIC)	Panvel	A				
		*				Konica	Korea	OR				
		*				Pyroelectric	GOA	OR				
		*				Winers Gauge	USA	OR				
		*				Walchandnagar Industries Ltd.	Dharwad	OR				
		III				Nesstech	Vapi	A				
		*				US Gauge	USA	OR				
65	Furniture for computer (Chair, Almirah, Lock etc.)	III				Main contractor approved sources		A				
66	Terminal Block (Cage and Clamp type)	III				Weidmuller	Germany	A				
		III				Phoenix	Germany / India	A				
		III				Wago	Germany / India	A				
		III				Elmex	Vadodara	A				
67	FRP Junction Box for C&I system	III				BHEL Approved Sources		A				
68	PLC System (If applicable)	I				GE Intelligent platforms	Bangalore	A				
		I				ABB	Bangalore	A				
		I				Schneider	Nasik	A				
		I				Rockwell	Sahibabad	A				
		I				Siemens	Nasik	A				
		I				HONEYWELL	Pune	A				
69	SMART POSITIONER (Make)	#				ABB						

M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.

CE Mark only

- To be covered in Control Valve QP

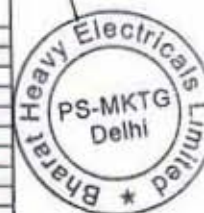


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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP			REVISION NO : 00			
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE			DATE : 26.04.2017			
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		#				Mgsolenien						
		#				Siemens						
		#				Smar						
		#				Yokogawa						
		#				EMERSON (Fisher Rosemount)						
		#				METSO						
		#				Yamatake						
		#				Moore						
70	ROTAMETER	III				IEPL	HYDRABAD	A			Sub QR	
		III				TRAC	HYDRABAD	A				
		III				PLACKA	CHENNAI	A				
		III				EUREKA	PUNE	A				
		III				SCIENTIFIC DEVICES	MUMBAI	A				UP TO 300 NB
		III				FLOW STAR	FARIDABAD	A				
		III				TOKYO KEISO	JAPAN	A				
		*				Flowtech Instrument Services	Vadodara	DR				
		*				Samil Chemtrol	MUMBAI	DR				
		*				Gauges Bourdon	Panvel	DR				
		*				Tansa Equipment Pvt. Ltd.	Thane	DR				
71	SINGLE AND MULTI POINT TEMPERATURE RECORDER (Microprocessor based)	III				YOKOGAWA INDIA	BANGALORE	A				Make Yokogawa, Japan
		III				CHINO CORPORATION	JAPAN	A				
		III				EUROTHERM	UK	A				
		III				EUROTHERM	INDIA	DR				
		III				YOKOGAWA	JAPAN	A				
		III				ABB	UK / GERMANY	A				
		III				FUJI	JAPAN	A				
		III				HONEYWELL	USA / NETHERLAND	A				
72	Reverse Rotation Indicator (RRI)	III				GE BENTLY NEVEDA	USA	A			Sub QR	ALL TSI VENDORS ARE ALSO ACCEPTABLE
		III				SHINKAWA	JAPAN	A				
		I				P & F	Bangalore	A				
73	Instrument Tube Fittings (Air)	III				Main contractor approved sources		A				
74	pH Conductivity Analyser	III				HACH	Switzerland / USA	A			Sub QR	
		III				YOKOGAWA	Bangalore / Japan	A				Make Yokogawa- Japan
		III				ABB	UK / USA	A				
		III				EMERSON	Pawane	A				
		*				Thermo orlon		DR				
		*				Forbes Marshall	Pune	DR				
75	PADO					Main Contractor will propose the vendors during detail Engineering.						
76	DEW Point Sensor / meter/ Moisture Measuring System	III				GE Sensing	USA / Ireland	A				Panametric brand
		III				Michell Instrument	UK	A				
		III				Shaw	UK	A				



NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-0555-001-2										
No.	Major Equipment	QP Inspection Category	QP No. 5555-001-QV1 Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				COSA XENTAUR	USA	A				through Spectrum automation (aridabad)
		*				VAISHALA	Sweden / Japan	DR				
		*				DWER	USA	DR				
		*				Endee	Mumbai	DR				
		*				Nivo Controls	Indore	DR				
		*				Bartec GMBH	Germany	DR				
77	Blank Panels / Cabinets	III				Rital	Bangalore	A				
		III				Hoffman	BANGALORE	A				
		III				Pyrotech	Udaipur	A				
		III				BHEL	Bangalore	A				
		III				Schneider	Bangalore	DR				
78	CCTV Components (IP)	*				Sony	Japan	DR				
		*				Siemens	Pondichery	DR				
	Integrators will be decided during detail Engineering.	*				Dv Tel	USA	DR				
		*				Honey Well	Gurgaon	DR				
		II				Bosch	Bangalore	A				With Bosch Software
		II				Axis	Sweden	A				With Bosch Software
		*				Palco	USA	DR				
		II				Axis	Sweden	A				With Milestone Software
79	Control Desk, Server / PC Rack for Unit Control room and Auxiliary control room.	I				Pyrotech works Space	Udaipur	A				
		I				Cosmes	Noida	A				
		I				Adarsh Control	Bangalore	A				
		*				Chemin Controls	Pondichery	DR				
		*				Harmony Systems	New Delhi	DR				
80	Digital Indicators	III				Masibus	Gandhi Nagar	A				For Non mosaic mounting
		III				ABB	Germany	A				
		III				Foxboro	UK	A				
		III				Yokogawa	Japan	A				
		III				Gossen / Metrowall / Camille Bauer	Germany	A				
		III				Siemens	Germany	A				
		III				Chino	Japan	A				
		III				Weigel Messgerate	Germany	A				
		III				Pyrotech	Udaipur	A				For Non mosaic mounting
		*				Chino Corporation	Mumbai	DR				
		*				Yokogawa	Bangalore	DR				For Non mosaic mounting and submit only two proposals
		*				Lektrotek	Pune	DR				
		*				Telechem	Chennai	DR				
81	Dust Emission Monitor	III				Land Instrument International	UK	A				Land Combustion Division
		III				Durag	Germany	A				
		III				Sick Mahak	Germany	A				
		III				Emerson Process Management	Ireland	A				
		III				Codel	UK	A				



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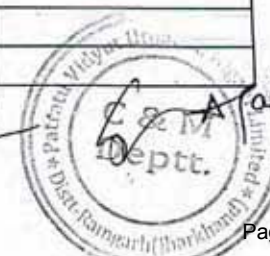
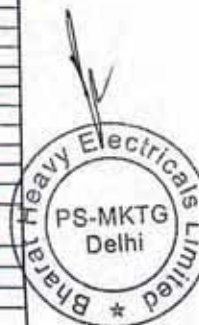
NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		II				Forbes Marshall	Pune	A				Main kit from M/s Codel, UK
82	Electrical Indicating Instruments (Mosaic Compatible)	III				Siemens	Germany	A				
		III				Gossen / Melrowall / Camille Bauer	Germany	A				
		III				Ganz	Germany	A				
		III				Wolpert Messgerate	Germany	A				
83	Flue Gas Analyser (CO)	III				Codel	UK	A			Sub QR	
		III				Emerson Process Management	Pawane	A				Analysar from M/s Emerson, Germany / USA.
		III				Land Instrument International	UK	A				Land Combustion Div
		III				Sick Mahhak	Germany	A				
		III				Siemens	Germany	A				
84	Flue Gas Analyser (CO2)	*				Codel	UK	DR			Sub QR	
		*				Sick Mahhak	Germany	DR				
		*				Kiwake Procal Ltd.		DR				
85	Flue Gas Analyser (SO2 and Nox)	III				Sick Mahhak	Germany	A			Sub QR	
		III				Emerson Process Management	Pawane	A				Analysar from M/s Emerson, Germany / USA.
		III				Siemens	Germany	A				
		III				Fuji Electric	Japan	A				
		*				Yokogawa	Japan	DR				
		*				Codel	UK	DR				
		*				ABB	Gloucestershire	DR				
86	Flue Gas Analyser (O2 Analyser (HT))	II				SECO	Chennai	A			Sub QR	Main Contractor Can propose additional vendor for this item
		III				Marathon Monitor	USA	A				
87	Flue Gas Analyser (O2 Analyser (LT))	III				Emerson (Rosemount)	Pawane	A			Sub QR	Make EMERSON, USA
		III				Forbes Marshall	Pune	A				Make Enotec, Germany : Model Oxitec 5000 series
		III				ICE	Mumbai	A				Make Ametek, USA
		III				Yokogawa	Bangalore	A				Make Yokogawa, Japan
		III				ABB	Bangalore	A				Make ABB, UK
		*				AMETEK (P and AI division)	Singapore	DR				
		*				Enotec	Germany	DR				
		*				Fuji Electric	Japan	DR				
		*				Teledyne	USA	DR				
88	Flue Gas Analyser Panel	I				Chemtrol	Goa	A			Sub QR	
		I				Emerson Process Management	Havi Mumbai	A				
		I				Pyrotech	Udaipur	A				
		I				Analytical Instrument Company	Kota	A				Analysar from M/s Fuji, Japan
		I				Yokogawa	Bangalore	DR				
		I				Adago	Mumbai	A				
		*				Marvel Engg Company	Chennai	DR				



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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-5585-001-2										
No.	Major Equipment	QP Inspect on Category	QP No. 5585-001-QVI-Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				Forbes Marshall Codel	Pune	DR				
						ICE(Asia) Private India	Mumbai	DR				
89	Graphic Interface Unit	III				Rockwell Automation		A				
		III				Digital Instruments and Control System (Proface)	Bangalore	A				Proface Brand
		III				Red Lion	USA	A				
		III				Schnieder Electric		A				
90	Hand Held Calibrator	III				Main contractor approved sources						Compatible with the Transmitter to be Supplied & Subject to meeting NTPC specification requirement
91	Hart Management System	III				Yokogawa	India	A				
		III				Emerson Process Mgmt	USA / Singapore / India	A				
		III				P & F	Germany / Bangalore	A				
		III				MTL	Chennai	A				
		*				Stahl	Germany	DR				
92	Impact Head Type Flow Element	II				Detrich / Emerson	USA	A			Sub QR	
		II				Midwest	USA	A				
		II				Veris Inc	USA	A				
		*				TM Technomatic SPA	Italy	DR				
93	Isolator	III				Main contractor approved sources						
94	Master Slave Clock System	II				Hopf	Germany	A				
		I				Sertel	Chennai	A				
		II				Hathway	USA	A				
		II				Moser Baer AG	Switzerland	A				
		II				Mein Berg	Germany	A				
		I				Sands	Chennai	A				
		I				Masibus	Gandhinagar	A				
		*				Signals & System	Chennai	DR				
95	Mosaic Tiles / Console Items	III				Pro-Plan	Germany	A				Earlier Boyko Strey
		III				Tew	Germany	A				Earlier Subklew
96	Network Components	III				Main contractor approved sources						
97	Online Mercury Analyser	III				Durag	Bangalore	A			Sub QR	Make Durag, Germany
		*				Maihak	Germany	DR				Main Contractor Can propose additional vendor for this item
		*				Thermo	USA	DR				
97	P A System (IP Based)	*				Commend	Austria	DR				
		*				Stanaphone Zenitel	Norway	DR				
		*				Armetel	Russia	DR				
		*				Industronic Industrie Electronic GmbH and Co. KG	Germany	DR				
		*				LARAON Enginners and Consultants Pvt. Ltd.	Gurgaon	DR				
		*				Aishan Technologies India Pvt. Ltd.	Bangalore	DR				

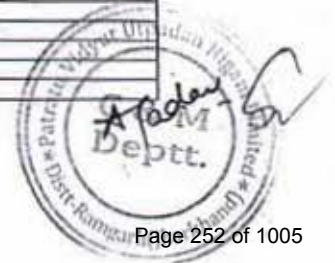


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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP			REVISION NO : 00			
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE			DATE : 26.04.2017			
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
98	Printer (Dot Matrix)	III				BHEL Approved Sources						Make
99	Printer (Inkjet)	III				BHEL Approved Sources						Make
100	Printer (Laser)	III				BHEL Approved Sources						Make
101	Semaphore Indicators	III				Subklew	Germany	A				
		III				K & N	Austria	A				
		III				ABB	Germany	A				
		III				Siemens	Germany	A				
102	Synchronising Relay	III				Siemens	Mumbai	A			Sub QR	
		III				Areva	Chennai	A				
		III				ABB	Bangalore	A				
103	Synchroscope	III				BHEL Approved Sources		A			Sub QR	
104	Ultrasonic Type Flow Meter (for Stack)	III				Mahak	Germany	A			Sub QR	
		III				Durag	Germany	A				
		III				Teledyne	USA	A				
		*				GE Sensing	USA	OR				
105	UPS / ACDB	I				EMERSON (DB Power)	Pune	A			Sub QR	Approved up to 105 kVA, 1Φ
		I				Merlin & Gerin	France	A				
		I				Gutur	Switzerland	A				
		I				AEG (Saft)	Germany	A				
		I				Hitachi Hirel	Gandhinagar	A				Approved up to 150 kVA, 1Φ
		I				Emerson (Tata Libert)	Ambamath	A				Approved up to 150 kVA, 1Φ
		I				Fuji Electric	Japan	A				
		*				Kellron	Kerala	OR				
		*				APC	India	OR				
		*				DUBAS ENGG.PVT.LTD., BANGALORE		OR				
		*				Grid power conversion Pvt Ltd.		OR				
106	Vibration Monitoring System for BOP	II / I				Shinkawa	Japan	A			Sub QR	
	Refer Note - 1	II / I				Bentley Nivega	USA	A				
		II / I				Vibrometer	Switzerland	A				
		II / I				Rockwell Automation	USA	A				
		II / I				SKF	USA	A				Refer Note - 1
		I				GE	Pune	A				GE Benby, USA make System
		I				Meggil	Bangalore	A				Vibromer, Switzerland make System
		I				Forbes Marshall	Pune	A				Shinkawa, Japan make System
		I				Rockwell Automation	Sahibabad	A				
		*				Emerson	Mumbai	OR				
		*				Burel and Kajer		OR				
		*				IRD Mechanalysis	Mumbai	OR				
107	Voltmeter	III				Rishabh	Nasik	A			Sub QR	
		III				AE	Mumbai	A				
		III				Yokogawa	Japan	A				
		*				MECO		OR				
108	Wathour Meters	III				LAT	Bangalore	A				



NTPC		PROJECT : Patratu STPS Phase-I (3 X500MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		III				Elster	Mumbai	A				
		III				Secure Meters	Udaipur	A				
		III				Yokogawa	Japan	A				
		III				GEC	UK	A				
		III				Schneider Electric	India	DR				
		III				Landis + Gyr	Kolkata	DR				
109	Wireless Solution (Microwave Tower Communication)	III				D Link	Goa	A				
		III				Sheetal	Pune	A				
		III				Pyrotech	Udaipur	A				
		III				Arya Communications	New Delhi	A				
		*				Lotus Wireless	Vishakhapatnam	DR				
		*				Avinton	Israel	DR				
		*				Prudent Automation Pvt. Ltd.	Hyderabad	DR				
		*				AMG Systems Ltd.	UK	DR				
110	Large Video Screen (LED Based)	III				Delta	Gurgaon	A				
		III				Barco	Noida	A				
		III				Planer System	USA	A				
		*				Christie	USA	DR				
		*				Eyevis	Germany	DR				
111	CJC Box (If applicable)					Main Contractor will propose the vendors during detail Engineering.						
112	3 D level Scanner for Solid Application	III				APM	ISRAEL	A				
113	Dust Sensor	III				BHEL Approved Sources		A				
114	Pulse jet Controller	III				Switching Circuit	Kolkata	A				
		III				Advance Concept	Kolkata	A				
		III				Control Devices	Kolkata	A				
		*				Vollcraft	Kolkata	DR				
		*				Micro System	Kolkata	DR				
115	Solid Mass Flow Meter	III				Schenk	Ranchi	A				
		III				ThermoFisher (Ramsay)	Nasik	A				
		III				Siemens Miltronics	Canada	A				
		III				Mutec	Germany	A				
		III				SWR	Germany	A				
116	Nuclear Density meter	III				E & H	Aurangabad	A				
		III				ThermoFisher Scientific	UK	A				
		*				Siemens	Germany	DR				
		*				EMERSON	USA	DR				
		*				GE Sensing	USA	DR				
		*				Berthold	Germany	DR				
117	Humidistat / Thermostat / Gysterstat / Airstat	III				BHEL Approved Sources		A			Sub QR	
118	Level Switch (RF Type)	II				EIP Enviro	Noida	A			Sub QR	
		II				FLOW STAR	Fardabad	A				
		II				Nivo Controls	Indore	A				
		*				BHEL		DR				



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		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 9585- 001-QV1 Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
119	Turbine supervisory Instruments along with vibration analysis system.	II				GE BENTLY	USA	A				
	Refer Note - 1	II				MEGGITT (VIBROMETER)	SWITZERLAND	A				
		II				SHINKAWA	JAPAN	A				
		I				GE	Pune	A				For GE Bently, USA System
		I				MEGGITT (VIBROMETER)	Bangalore	A				For Meggitt, Switzerland System
		I				Forbes Marshall	Pune	A				For Shinkawa, Japan system
		*				EMERSON	INDIA	DR				
		*				Bruel and Kjaer		DR				
		*				Rockwell Automation	Sahibabad	DR				
		*				SKF	USA / India	DR				
		*				BHEL EDN	Bangalore	DR				
120	SWAS (Sampling Handling System and Dry Panel)	I				Emerson Process Management	Navi Mumbai	A			Sub QR	
		I				Forbes Marshall	Pune	A				
		I				Lowe	UK	A				
		I				ABB	Bangalore	A				Conditional
		I				Yokogawa	Bangalore	DR				
		I				Analysar Instrument Co. Ltd.	Kota	DR				
		I				Steam Equipment	Pune	A				
		*				Flow Line Instrument	Bangalore	DR				
		*				Instrumentation Limited	Kota	DR				
		*				Chemin Controls	Pondichery	DR				
121	SWAS Analyser (Chloride)	III				ABB	UK	A			Sub QR	
		III				Orion	USA	A				Orion Brand
		*				OKK	Japan	DR				
122	SWAS Analyser (Conductivity)	III				Hach	Switzerland	A			Sub QR	Polymetron Brand
		III				Emerson Process Management	Navi Mumbai	A				
		III				Yokogawa	Japan	A				
		III				ABB	UK	A				
		*				Honeywell	USA	DR				
		*				OKK	Japan	DR				
		*				Orion	USA	DR				
123	SWAS Analyser (Dissolved Oxygen)	III				Orion	USA	A			Sub QR	Orion Brand
		III				Hach	Switzerland	A				Polymetron Brand
		III				Emerson Process Management	USA	A				
		III				ABB	UK	A				
		*				Honeywell	USA	DR				
		*				OKK	Japan	DR				
124	SWAS Analyser (Hydrazine)	III				Hach	Switzerland	A			Sub QR	Polymetron Brand
		III				Orion	USA	A				Orion Brand
		III				ABB	UK	A				



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No.	Major Equipment	QP Inspecti on Categor y	QP No. 5585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		*				DKK	Japan	DR				
		*				Rosemount Analytical Inc Irvine		DR				
125	SWAS Analyser (pH)	III				ABB	UK	A			Sub QR	
		III				Hach	Switzerland	A				Polymetron Brand
		III				Emerson Process Management	Navi Mumbai	A				
		III				Yokogawa	Japan	A				
		*				Honeywell	USA	DR				
		*				DKK	Japan	DR				
		*				Orion		DR				
126	SWAS Analyser (Phosphate)	III				Hach	USA	A			Sub QR	
		III				Hach	Switzerland	A				Polymetron Brand
		III				ABB	UK	A				
		*				DKK	Japan	DR				
		*				Orion	USA	DR				
		*				Rosemount Analytical Inc Irvine		DR				
127	SWAS Analyser (Silica)	III				Hach	USA	A			Sub QR	
		III				Hach	Switzerland	A				Polymetron Brand
		III				ABB	UK	A				
		*				DKK	Japan	DR				
		*				Orion	USA	DR				
		*				Rosemount Analytical Inc Irvine		DR				
128	SWAS Analyser (Sodium)	III				Hach	Switzerland	A			Sub QR	Polymetron Brand
		III				Orion	USA	A				Orion Brand
		III				ABB	UK	A				
		*				DKK	Japan	DR				
129	SWAS Analyser (Turbidity)	III				ABB	UK	A			Sub QR	
		III				Emerson	USA	A				
		III				WTW	Germany	A				
		III				E & H	Germany	A				
		*				DKK	Japan	DR				
130	Operator Testing Simulator					Main Contractor will propose the vendors during detail Engineering.						
131	Concentration Analyser					Main Contractor will propose the vendors during detail Engineering.						
132	Electromagnetic Flow Meter	II				Krohne Marshall	Pune	A			Sub QR	
		II				E & H	Aurangabad	A				
		II				Emerson	Pawane	A				
		III				Yokogawa	Japan / China	DR				Only Ref list and catalogues to be submitted.
		III				SIEMENS	Germany	DR				
133	Fiber Optic Generator End winding VMS	II				Vibro System INC	Canada	A				
		II				MC-Monitoring SA	Switzerland	A				Nola-6
134	H2 Gas Analyser Cabinet	II				ABB	Bangalore	A				H2 Gas Analyser Germany
		II				Adage Automation	Mumbai	A				H2 Gas Analyser siemens
												Germany Model Calomat-8
		II				Yokogawa	Bangalore	A				H2 Gas Analyser from Yokogawa
												Japan
		II				Siemens	India	A				H2 Gas Analyser siemens
												Germany



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No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
135	Sight Flow Indicator	III				BHEL Approved Sources		A				
136	Amonia Analyser	*				Sick Mathak	Germany	DR				
		*				Emerson Proccass Management	Pawane	DR				
		*				Siemens	Germany	DR				
		*				Fuji Electric	Japan	DR				
		*				Thermofisher	Mumbai	DR				
		*				Yokogawa	Banglore	DR				
		*				Dongwoo Optron		DR				
137	AAQMS	I				Environment SA India Pvt. Ltd.	Bangalore	A			Sub QR	Analysers for Environment SA, France : Multipoint Calibrator from M/s L N Industrial, Switzerland and Metrological Sensors from M/s LSI Lastem SRL, Italy.
		I				Chemtrols	GOA	A				Analysers for Teledyne API, USA: Metrological Sensors & SPM from M/s Metone Instruments, USA.
		I				Thermo Electron LLS India Pvt. Ltd.	Mumbai	A				Analysers for M/s Thermoenvrionmental Instruments Inc., USA & Metrological Sensors from M/s Metone Instruments, USA.
		*				Land Combustion	UK	DR				
		*				Thermofisher	India / USA	DR				
138	FOMS	*				SEPL	Pune	DR			Sub QR	
		*				AIGPL	Kota	DR				
		*				Nevco	Surat	DR				
		*				Thermofisher	Mumbai	DR				
		*				Themax	Pune	DR				
		*				Supreme Technology	Mumbai	DR				
139	RESIDUAL CHLORINE ANALYSER	III				E & H	GERMANY	A				
						EMERSON PROCESS	PAWANE	A				
						HACH	USA	A				
140	ORP ANALYZER	III				Emerson process	USA/Pawane	A				
						ABB	UK/USA	A				
						HACH	Switzerland	A				
						Yokogawa	Japan	A				
141	CL2 Leak detector	III				W&T	Germany	A				
142	Flame Scanner Cable	I				Thermocable	Hyderabad	A				
		I				Oellon cables	Faridabad	A				



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NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW)					LIST OF ITEMS REQUIRING QP					
		PACKAGE : EPC PACKAGE					APPROVAL & ACCEPTABLE			REVISION NO : 00		
		CONTRACTOR :BHEL Ltd					VENDOR AS APPROVED BY			DATE : 28.04.2017		
		CONTRACT NO : CS-8585-001-2										
No.	Major Equipment	QP Inspecti on Categor y	QP No. 8585- 001-QVI- Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
		I				Cords Cable	Bhilwadi / Koharani	A				

LEGENDS :

1.6 SYSTEM SUPPLIER / SUB SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)

A - For those items proposed vendor is acceptable to NTPC, subject to meeting the NTPC Specification requirement. To be indicated with letter "A" in the list alongwith the condition of approval, if any.

DR - For those items "Detailed Required" for NTPC review. To be identified with letter "DR" in the list.

NOTED : For these items vendors are approved by Main Supplier and accepted by NTPC without specific vendor approval from NTPC. To be identified with "NOTED"

2.9 QP INSPECTION CATEGORY :

CAT - I : For those items the Quality Plans are approved by NTPC and final acceptance will be on physical inspection witness by NTPC

CAT - II : For those items the Quality Plans are approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis of review of documents.

CAT-III:

UNITS/WORKS : Place of manufacturing- Place of main supplier of multi units/works.

* - Inspection category will be decided during vendor evaluation.

NOTE - 1 : EMPTY CABINETS, COMPUTERS, SIGNAL ISOLATOR/MULTIPLIER, MCB, TB, POWER SUPPLY ETC. SHALL ALSO BE ACCEPTABLE FROM INDEGENEOUS SOURCES AGREED BY NTPC IN QP. IF THE TOTAL INTEGRATED PANEL AND FAT IS CONDUCTED INDEGENEOUSLY ITEM TO BE TREATED AS CAT - I.

NOTE - 2 : Mandatory Sapre will be treated as CAT-III

NOTE - 3 : For the items not appearing in the preaward list, bidder and NTPC will mutually discussed in future.

NOTE - 4 : Intergration testing of DDCMIS shall be done with monitor connected to the LVS workstation. This would be tied up in the QAP/ATST. Dispatch of LVS can be allowed like a CAT-III item but only after successful testing of functionality as indicated in QP and completion of ATST of first unit.

NOTE - 5 : C&I items integral for skid, Fan, Motor, Pump etc Instrument shall be supplied as per OEM standard/ approved sources.

NOTE - 6 : for instrumentation cable quantity less than 1 km of each type inspection category is III and for less than 2.5 km of each type inspection category is CAT-II
FORMAT NO. : QS-01-QAI-P-1/F3-R0
Engg. Div/Q&I



PRASHANT P. PATIL
DGM (QA-C&I)



ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
1.	CEMENT	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
2.	CONSTRUCTION CHEMICALS - ADMIXTURES, PLASTISIZERS, RETARDERS WATER PROOFING COMPOUNDS GROUTS	III	-	SIKA INDIA LTD	-	N	
				CICO TECHNOLOGIES LTD	-	N	
				FOSROC CHEMICALS (I) PVT LTD	-	N	
				BASF	-	N	
3.	FALSE CEILING - GLASS REINFORCED GYPSUM SYSTEM, MINERAL FIBRE BOARD SYSTEM, PREPAINTED COIL COATED STEEL SYSTEM	III	-	SAINT GOBAIN	NEW DELHI	N	
				HUNTER DOUGLOUS	MUMBAI	N	
				TIGER STEEL	PUNE/MUMBAI	N	
				INTERARCH	NOIDA	N	
				LLOYD INSULATION	-	N	
				MG INDUSTRIES	FARIDABAD	N	
				ARM STRONG	NEW DELHI	N	
4.	PAINT AND PAINTING SYSTEM	III	-	BERGER	-	N	
				SHALIMAR PAINTS	-	N	
				JENSON AND NICHOLSON	-	N	
				KANSAI NEROLAC	-	N	
				AKZO NOBEL	-	N	
				ASIAN PAINTS	-	N	
5.	COLOUR COATED SHEET (FOR COIL)	I	-	UNION STEEL	KOREA	A	
				DONGBU STEEL	KOREA	A	
				BHUSHAN STEEL AND STRIPS LTD.	RAIGAD	A	
				ESSAR STEEL LTD	PUNE	A	
				NATIONAL STEEL AND AGRO	DHAR		

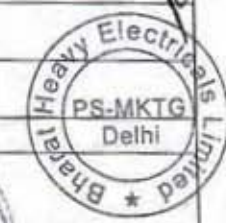
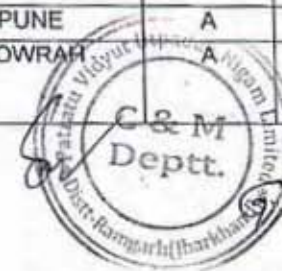


ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL			NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL		SUB SYSTEM: CIVIL WORKS			DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
				JSW STEEL COATED PRODUCTS LTD	KAMLESHWAR	A	Formerly JSW ISPAT Steel Ltd
				BHUSHAN STEEL LTD.	SAHIBABAD	A	
				JSW LTD	THANE	A	
				BHUSHAN POWER & STEEL LTD	SAMBALPUR (ODISHA)	A	
				TATA BLUESCOPE STEEL LTD	JAMSHEDPUR	A	*AL-ZN COIL FOR CLADDING
6.	PROFILERS FOR DECKING/ CLADDING SHEETS	I		UNIMET PROFILES LIMITED	DHARUHERA	A	
				MULTICOLOUR STEEL INDIA LIMITED	GURGAON	A	
				ISOLLOYD	SOLAN	A	
				NATIONAL STEEL AND AGRO	DHAR	A	
				ERA BUILD SYS	RUDRAPUR	A	
				TATA BLUE SCOPE	PUNE	A	HINJEWARI WORKS
				TATA BLUE SCOPE	BHIWADI	A	
				PENNNAR INDUSTRIES	ISNAPUR	A	FOR DECKING
				PENNNAR INDUSTRIES	TARAPUR	A	FOR CLADDING
				METALKRAFT FORMING INDUSTRIES PVT. LTD.	MEDAK (AP)	A	
				BHUSHAN POWER & STEEL LTD	SAMBALPUR (ODISHA)	A	
				ALFA STEEL BUILDING SOLUTIONS	HOSUR	A	
7.	ELECTROFORGED GRATING	II		INDIANA GRATING	PUNE	A	
				PREMIER POWER PRODUCTS (CALCUTTA) PVT LTD	HOWRAH	A	



mandatory



ANNEXURE-I

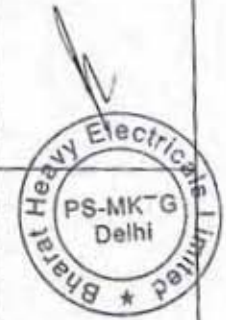
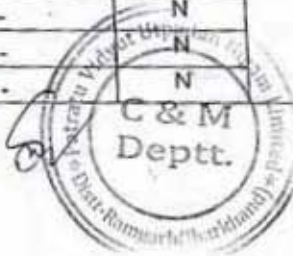
	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
				GREATWELD	PUNE	A	
				BHOLA RAM STEELS	PATNA	A	
				ANKIT ELECTROGRATING	RAIPUR	A	
				KANADE ANAND UDYOG	THANE	A	
				SUTTATTI ENTERPRISES	PUNE	A	
				PINAX STEEL INDUSTRIES	PATNA	A	
8.	GI PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
9.	PVC WATER STOP	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
10.	BITUMEN ASPHALT	III	-	ALL GOVERNMENT REFINARIES	-	-	
11.	PLASTIC/ PVC PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
12.	BITUMEN IMPREGNATED FIBER BOARD JOINT FILLER , BITUMEN SEALING COMPOUND	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
13.	CERAMIC / VITRIFIED TILES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
14.	ACID / ALKALI RESISTANCE TILES, AR BRICKS, AR CEMENT (POTASSIUM SILICATE BASED CEMENT MORTAR, PHENOLIC BASED RESIN CEMENT) AR BITUMASTIC	III	-	CARBORANDUM UNIVERSAL	CHENNAI	N	
				GOOD EARTH MINERALS	MORBI	N	
				PELICAN	BHIWADI	N	
				CAMBRIAN	ALWAR	N	
				KERATECH	VADODARA	N	
				CHAMPION CERAMICS	CHAMPA	N	
				SUNSHINE CERAMICS	CHAMPA	N	
				MAHAKOSHAL POTTRIES	KATNI	N	



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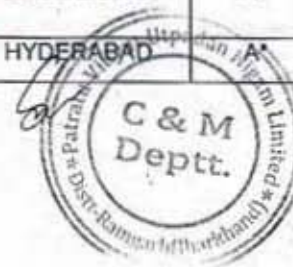
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ANNEXURE-1

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
				PERFECT ACID WARE	JABALPUR	N	
				BABA BAIDNATH REFRACTORIES	PURULIA	N	
15.	FIRE PROOF DOORS	III	-	NAVAIR INTERNATIONAL LTD.	NEW DELHI	N	Prototype tested from CBRI/CPRI
				SHAKTI MET DOOR	HYDERABAD	N	
				SUPER STEEL	DELHI	N	
				SIGNUM FIRE PROTECTION	NAGPUR	N	
				RADIANT SAFE DOORS	AHMEDABAD	N	
16.	PARTICLE BOARDS, PLYWOOD, MDF	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
17.	ALUMINUM SECTIONS	III	-	HINDALCO	-	N	
				INDALCO	-	N	
				BALCO (VEDANTA)	-	N	
				NALCO	-	N	
				ALOM EXTRUSIONS LTD	-	N	
				JINDAL	-	N	
18.	HIGH SOLID CONTENT LIQUID APPLIED URETHANE BASED ELASTOMERIC MEMBRANE FOR WATER PROOFING	III	-	STP	-	N	
				IWL INDIA LTD	-	N	
				LLOYDS	-	N	
				CICO TECHNOLOGIES LTD	-	N	
				MK PETRO	-	N	
19.	SANITARY ITEMS	III		PARRYWARE	-	N	
				HINDWARE	-	N	
				SEABIRD	-	N	
				ORIENT	-	N	

ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
				HINDUSTAN	-	N	
				CERA	-	N	
20.	CP BRASS TAP AND OTHER SANITARY FITTINGS	III	-	GEM	-	N	
				PARKO	-	N	
				JAQUAR	-	N	
				MARC	-	N	
21.	POLYTHENE WATER STORAGE TANKS	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
22.	RCC PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	-	
23.	STOP LOG GATES, TRASH RACK AND LIFTING BEAM	I		GENERAL MECHANICAL WORKS	BARODA	A	
				TRIVENI	NOIDA	A	
				MACMET	KOLKATA	A	
				PRADEEP STRUCTURES	HOWRAH	A	
				RED FAB	HYDERABAD	A	
				L&T	KANCHIPURAM	A	
				BSBK ENGG	NOIDA	A	
24.	PTFE BEARING / ELASTOMERIC BEARING	III		ALL CURRENT MORTH / RDSO APPROVED VENDORS		-	
25.	FABRIC EXPANSION COMPENSATOR	I		KELD ELLENTOFT INDIA LTD	CHENNAI	A	
				EAGLE BURGMANN KE PRIVATE LTD	CHENNAI	A	
				FRENZELIT EXPANSION JOINT PVT. LTD	BANGALORE	A	
26.	MINERAL WOOL FOR THERMAL	I		ROCKWOOL INDIA LTD.	HYDERABAD	A*	A*: subject to



ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
	INSULATION			PUNJSTAR INSULATION FIBRE COMPANY	BHILAI	A	carrying out K-value test at CBRI Roorkee / NTPC approved lab.
				LAPINUS	MALANPUR (MP)	A*	
				MINWOOL	RAJANANDGAON	A*	
				LLOYD INSULATION	BHILAI	A*	
				SHREERAM EQUITECH PVT. LTD.	DURG	A	
				GOENKA ROOKWOOL (I) PVT, LTD.	RAIPUR	A	
				U.P. TWIGA	BULEND SHAHAR	A	
27.	CHIMNEY ELEVATOR*	I		MEKASTER ENGG. & EQPT (P) LTD.,	HALOL, GUJARAT	A	
				ALIKRAFT ENGINEERS PVT. LTD.	SAVIL (VADODARA)	A	
				UNIVERSAL CONSTRUCTION MACHINERY & EQUIPMENTS	PUNE	A	
28.	GEOTEXTILE	III		GARWARE WALL ROPES Ltd	PUNE	N	
				TENCATE GEOSYNTHETICS ASIA	MALAYSIA	N	NON WOVEN
29.	GEOMEMBRANE (HDPE LINER)	II		D P WIRES PVT. LTD	RATLAM	A	
				CLIMAX SYTHETICS PVT. LTD	VADODARA	A	
				SHIVALIK AGROPOLY	PARWANOO	A	
30.	CI PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE			

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ANNEXURE-I

PROJECT: PATRATU STPP-I (3X800 MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
PACKAGE: EPC						REV. NO.	0
MAIN SUPPLIER: BHEL		SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
CONTRACT NO.: CS-9585-001-2							
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
31.	GALAVANISED STEEL STRUCTURES (FOR TRANSMISION LINE, LATTICE & PIPE)	I		VIJAY TRANSMISSION LTD	RAIPUR	A	Subject to clearance of Provenness criteria for Transmission Line Structures
				UNITECH POWER TRANSMISSION LTD	NAGPUR	A	
				ASSOCIATED POWER STRUCTURES	VADODARA	A	
				R.S. INFRAPROJECTS PVT. LTD	SURAJPUR	A	
				NEW MODERN TECHNOMECH	MAYURBHANJ (ORRISA)	A	
				GOOD LUCK STEEL TUBES	SIKANDRABAD	A	
				UNIQUE STRUCTURES & TOWERS LTD.	RAIPUR	A	
				VATCO ELEC-POWER PVT. LTD.	NAVIMUMBAI (GALVANISING AT SIGMA GALVANISER NAVI MUMBAI)	A	
				R.S. INFRAPROJECTS PVT. LTD	GHAZIABAD	A	
				ADVANCE STEEL TUBE ,	SAHIBABAD	A	
				SANGAM STRUCTURES LTD.	ALLAHABAD	A	
				RICHARDSON & CRUDDAS (1972) LTD	NAGPUR	A	
32.	HIGH PERFORMANCE MOISTURE COMPATIBLE CORROSION RESISTANT COATING SYSTEM	III		CECRI LICENSED SOURCES		-	
33.	MS PIPES (IS:3589, WELDED PIPES)	III		BIS APPROVED SOURCES HAVING VALID BIS LICENCE		-	





ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
34.	Factory Fabricated Steel Structure (Subject to clearance of Provenness criteria)	I		JSW SEVERFIELD	BELLARY	A	
				CAPACITE STRUCTURES Ltd.	Palghar	A	
				ATMASTCO PVT LTD	DURG	A	
				Corefab Projects Pvt Ltd	Bhilai	A	
				Indiana Gratings Pvt Ltd	PURANDAR	A	Acceptable for Columns & Beams (maximum single piece size up to 15 MT)
				JINDAL STEEL & POWER LTD.	RAIGARH	A	
				JINDAL STEEL & POWER LTD.	Angul	A	
				ALLIANCE INTEGRATED METALIKS LTD	RAJPURA	A	
				MIURA INFRASTRUCTURE LTD.	BHILAI	A	Acceptable upto maximum single piece weight of 30 MT
				BHEL	RANIPET	DR	
35.	PRE ENGINEERED BUILDINGS	I		INTERARCH	PANT NAGAR	A	
				DEVASHISH INFRASTRUCTURE PVT. LTD	VADODARA	A	
				EVEREST STEEL	ROORKEE	A	



G.V. Patra 05/04/17
 (B.H.E.L.)
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ANNEXURE-I

	PROJECT: PATRATU STPP-I (3X800 MW)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL				NTPC DOC NO	
	PACKAGE: EPC					REV. NO.	0
	MAIN SUPPLIER: BHEL	SUB SYSTEM: CIVIL WORKS				DATE	05.04.2017
	CONTRACT NO.: CS-9585-001-2						
SR. NO.	ITEM	QAP / INSP, CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
LEGENDS: 1. SYSTEM SUPPLIER/SUB-SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC) A – For these items proposed vendor is acceptable to NTPC. To be indicated with letter "A" in the list along with the condition of approval, if any. DR – For these items "Details required" for NTPC review. To be identified with letter "DR" in the list. 'N' NOTED – For these items vendors are approved by Main Supplier and accepted by NTPC without specific vendor approval from NTPC. To be identified with 'NOTED.' 2. QP/INSPN CATEGORY: CAT-I : For these items the Quality Plans are approved by NTPC and the final acceptance will be on physical inspection witness by NTPC. CAT-II : For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis review of documents as per approved quality plan. CAT-III : For these items Main Supplier approves the Quality Plans. UNITS/ WORKS : Place of manufacturing Place of Main Supplier of multi units/works. NOTE 1: For the items placed in CAT-III for Civil Works, the review and final acceptance shall be done by NTPC-EIC/ FQA on the basis of MTC / certificate of conformance in line with Indicative FQP / Technical Specifications.							

maidam
(Ajay maidam)
 NTPC



G.V. Rajasekhar
 05/04/17
 (G.V. RAJASEKHAR)
 MANAGER - COMMERCIAL
 BHEL - PSNR

THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patra STPS Phase-I (3 X 850MW)												
PACKAGE : EPC PACKAGE												
CONTRACTOR : BHEL Ltd												
CONTRACT NO : GS-9865-001-2												
LIST OF ITEMS REQUIRING QP												
APPROVAL & ACCEPTABLE												
VENDOR AS APPROVED BY												
REVISION NO : 00												
DATE : 28.04.2017												
No.	Major Equipment	QP Inspect on Category	QP No. 9865- 001-QP1 Subm Q	QP Subm SCH	QP Appr val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
1	DDC MIS / HMI System	I				SIEMENS	Gurgaon / Germany	#				# - Final acceptance subjected to system specific acceptance from NTPC Engg
2	Operator work stations	III				M/s BHEL (MAX DNA) Main Contractor approved Sources	Bangalore	#				
3	Flame Monitoring System (SCAUER)	II				Fornay	USA	A				
		II				ABB	Bangalore	A				
		II				Durag	Bangalore	A				
		II				BFI	Germany	A				
		II				BHELSCAN	Tridib	A				
		*				Fossil Power System Inc.	Canada	DR				
4	HEA Ignitor	III				Union Industries	USA	A				
		III				Durag	Germany	A				
		II				Durag	Bangalore	A				
		II				Ignition system INC	USA	A				
		II				Fest	Italy	A				
		I				Hindustan Thermomelt	Ambala	A				
		*				Hemvathy Peabody Combustion Inc.	UK	DR				Conditional
		*				Fornay	USA	DR				
5	Furnace Flame viewing system (High Temperature CCTV Components)	II				Diamond Power	USA / Sweden	A				
		II				TLT Engg Pvt. Ltd.	Kolkata	A				M/s Diamond Power, USA / Sweden make system
		II				Mifon	UK	A				
		II				Tooshival Industries	Alwar	A				M/s Mifon, UK make System
		II				Lencor	USA	A				M/s Lencor, USA make System
		II				Hi Tech System and Service	Kolkata	A				
		II				Durag	Germany	A				
		II				Durag	Bangalore	A				M/s Durag, Germany make System
		II				Sabota GmbH	Germany	A				
		II				Piper GmbH	Germany	A				
		*				Tempsons	Udaipur	DR				
6	Coal Flow Monitoring System	II				PHOMECON	GERMANY	A				
		II				SWR Engg	GERMANY	A				
		II				EU Tech	GERMANY	A				
		*				Transwelling	India	DR				
		*				Technomark Engineers & Consultant	India	DR				
		*				Stock Redeller	India	DR				
		*				Greenbank Engery Systems	UK	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical Specification

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PROJECT : Patratu STPS Phase-I (3 X 660MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00			
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017			
CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY							
CONTRACT NO : CS-9388-001-2											
No.	Major Equipment	QP Inspected on Category	QP No. 5555-Submision 001-QV Division Q	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub Or	Remark
7	Acoustic pyrometers	II			Berthold EDIT M/s Scientific Environment Instrument Inc	Germany Germany USA	DR DR A				
		II			M/s Boonenberg + Drescher GmbH	Germany	A				M/s Scientific Environmental Instrument Inc., USA make system
		II			Lucint	Delhi	A				M/s Boonenberg + Drescher GmbH, Germany make system
		II			Hi Tech	Kolkata	A				Main components from Stock, USA
		II			Harasentech	Korea	DR				Main components from Merck, USA
8	Coal feeder control system	II			Stock	USA	A				
		II			Merck	USA	A				
		I			Stock Redeller	Bangalore	A				
		I			Merck	Bangalore	A				
		I			BHEL	Trichy	A				
9	Acoustic Coal Flow Detector	III			Stock	USA	A				
		III			Merck	USA	A				
		*			Stock Redeller	Bangalore	DR				
		*			Merck	Bangalore	DR				
10	On line carbon in Ash Analyser	II			Greenbank Engery Systems	UK	A				
		II			ABB	Bangalore	A				
		II			Promicon	GERMANY	A				
		II			Berthold Technologies	Germany	A				
		*			M and W	Denmark	DR				
		*			EMERSON	India	DR				
		*			Yokogawa	Bangalore	DR				
		*			Forbes Marshall	Pune	DR				
11	Furnace Exit Gas Temperature Probe	III			Main Contractor approved Sources	India LUKUSA					M/s BHEL will forward only one proposal after details review of NTPC Technical specification requirements.
12	Boiler tube leak detection system	II			Procon	UK	A				
		II			Raman Instruments	Delhi	A				
		II			Acoustic Monitoring International Inc.	USA	A				M/s Procon, UK make System
		II			Hi Tech System and Service	Kolkata	A				
		II			Instolech	South Africa	A				
		II			Reclusan	Korea	A				
		II			BHELSONIC	Trichy	A				
13	Coal bunker Level monitor	%			%						% - Type, vendor and inspection category will be decided during detail Engineering.

2.04.26

P. P. K. I.

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 x200MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : CS-8888-001-2										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 26.04.2017	
NTPC															
No.	Major Equipment	QP Inspection Category	QP No. 9585- 001-QV Q	QP Submis- sion SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
14	Tube thickness Meter	III				Main Contractor approved sources	USA	A							
15	POSITIVE DISPLACEMENT FLOW METER/ TRANSMITTER	III				BROOKS	USA	A			Sub QR	Calibration reports to be submitted.			
		III				BOPP & ROUTHER	GERMANY	A							
		III				OVAL	JAPAN	A							
		II				Technical corporation Hyd2	China	A							
16	Coriolis Type Mass Flow meter	III				Main Contractor approved Sources		A			Sub QR	Up to 4 inch only			
17	Control Valve for Start Up System	II				CCI	USA/Switzerland/Korea	A							
		II				Tyco Sampel	Germany	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		*				Dressor Masonell	France	DR				Reference list and performance feedback are to be submitted.			
		II				KOSO	Japan / Nask	A							
		II				HOVA	Germany	A							
		II				CCI	Switzerland	A							
		II				CCI	USA/Sweden /Korea / Austria	A							
18	Control valves for Seal blower pressure reducing ,91/ RH Attemperation.	II					France	A							
		II				Dressor Masonell	Germany	A							
		II				HOVA	USA/France	A							
		II				EMERSON (Fisher)	Japan	A							
		II				Spex Copos Vulcan	USA	A				only for 91/ RH Attemperation. for Seal blower Application Reference to list to be provided.			
		II				KOSO	JAPAN	A							
		II				Tyco Sampel	Germany	A							
		II				Leslie	USA	A							
		I				Dressor	Comalco	A							
		I				IL	Palackad	A							
		I				KSB MIL	Alwaye	A							
		I				KOSO	Nask	A							
		I				EMERSON	Chennai	A							
		I				Flow Serve	Bangalore	A							
		I				CCI	Switzerland	A							
		*				Copos Vulcan	UK	DR							
		*				Circor (Leslie)	Colimbore	DR							
		II				CCI	USA / Austria / Korea	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		II				Dressor Masonell	France	A							
		II				HOVA	Germany	A							
		*				Sampel	Germany	DR							
		*				Leslie	USA	DR							
		I				CCI	Switzerland	A							
19	Control Valve for BFP Recirculation.	II													
		II				EMERSON (Fisher)	USA/France/Japan	A							
		II				Dressor Masonell	France	A							
		II				HOVA	Germany	A							
		*				Sampel	Germany	DR							
		*				Leslie	USA	DR							
		I				CCI	Switzerland	A							
		I				CCI	USA	A							

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 x200MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : CS-8888-001-2										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 26.04.2017	
NTPC															
No.	Major Equipment	QP Inspection Category	QP No.	QP Submis- sion Q	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
14	Tube thickness Meter	III				Main Contractor approved sources	USA	A							
15	POSITIVE DISPLACEMENT FLOW METER/ TRANSMITTER	III				BROOKS		A			Sub QR	Calibration reports to be submitted.			
		III				BOPP & ROUTHER	GERMANY	A							
		III				OVAL	JAPAN	A							
		II				Technical corporation Hyd2	China	A							
16	Coriolis Type Mass Flow meter	III				Main Contractor approved Sources		A			Sub QR	Up to 4 inch only			
17	Control Valve for Start Up System	II				CCI	USA/Switzerland/Korea	A							
		II				Tyco Sampel	Germany	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		*				Dressor Masonellan	France	DR				Reference list and performance feedback are to be submitted.			
		II				KOSO	Japan / Nask	A							
		II				HOVA	Germany	A							
		II				CCI	Switzerland	A							
		II				CCI	USA/Sweden /Korea / Austria	A							
18	Control valves for Seal blower pressure reducing ,91/ RH Attemperation.	II					France	A							
		II				Dressor Masonellan	Germany	A							
		II				HOVA	USA/France	A							
		II				EMERSON (Fisher)	Japan	A							
		II				Spex Copex Vulcan	USA	A				only for 91/ RH Attemperation. for Seal blower Application Reference to list to be provided.			
		II				KOSO	JAPAN	A							
		II				Tyco Sampel	Germany	A							
		II				Leslie	USA	A							
		I				Dressor	Colimbore	A							
		I				ICI	Polakkad	A							
		I				KSB MIL	Alwaye	A							
		I				KOSO	Nask	A							
		I				EMERSON	Chennai	A							
		I				Flow Serve	Bangalore	A							
		I				CCI	Bridly	A							
		*				Copex Vulcan	UK	DR							
		*				Circor (Leslie)	Colimbore	DR							
		II				CCI	USA / Austria / Korea	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		II				Dressor Masonellan	France	A							
		II				HOVA	Germany	A							
		*				Sampel	Germany	DR							
		*				Leslie	USA	DR							
		I				CCI	Switzerland	A							
19	Control Valve for BFP Recirculation.	II													
		II				EMERSON (Fisher)	Korea	A							
		II				Dressor Masonellan	USA/France/Japan	A							
		II				HOVA	France	A							
		II				Sampel	Germany	A							
		*				Leslie	Germany	DR							
		I				CCI	USA	DR							
		I				CCI	Switzerland	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							
		I				CCI	USA	A							



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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patra STPS Phase-I (3 X 250MW)												
PACKAGE : EPC PACKAGE												
CONTRACTOR : BHEL Ltd												
CONTRACT NO : GS-9865-001-2												
LIST OF ITEMS REQUIRING QP												
APPROVAL & ACCEPTABLE												
VENDOR AS APPROVED BY												
REVISION NO : 00												
DATE : 28.04.2017												
No.	Major Equipment	QP Inspect on Category	QP No. 9865- 001-QP1 Subm Q	QP Subm SCH	QP Appr val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
1	DDC MIS / HMI System	I				SIEMENS	Germany / Germany	#				# - Final acceptance subjected to system specific acceptance from NTPC Engg
2	Operator work stations	III				M/s BHEL (MAX DNA) Main Contractor approved Sources	Bangalore	#				
3	Flame Monitoring System (SCAUER)	II				Fornay	USA	A				
		II				ABB	Bangalore	A				
		II				Durag	Bangalore	A				
		II				BFI	Germany	A				
		II				BHELSCAN	Tridby	A				
		*				Fossil Power System Inc.	Canada	DR				
4	HEA Ignitor	III				Union Industries	USA	A				
		III				Durag	Germany	A				
		II				Durag	Bangalore	A				
		II				Ignition system INC	USA	A				
		II				Fest	Italy	A				
		I				Hindustan Thermomelt	Ambala	A				
		*				Hemvathy Peabody Combustion Inc.	UK	DR				Conditional
		*				Fornay	USA	DR				
		II				Diamond Power	USA / Sweden	A				
5	Furnace Flame viewing system (High Temperature CCTV Components)	II				TLT Engg Pvt. Ltd.	Kolkata	A				M/s Diamond Power, USA / Sweden make system
		II				Mifon	UK	A				
		II				Tooshival Industries	Alwar	A				M/s Mifon, UK make System
		II				Lencor	USA	A				M/s Lencor, USA make System
		II				Hi Tech System and Service	Kolkata	A				
		II				Durag	Germany	A				
		II				Durag	Bangalore	A				M/s Durag, Germany make System
		II				Sabota GmbH	Germany	A				
		II				Piper GmbH	Germany	A				
		*				Tempsons	Udaipur	DR				
6	Coal Flow Monitoring System	II				PHOMECON	GERMANY	A				
		II				SWR Engg	GERMANY	A				
		II				EU Tech	GERMANY	A				
		*				Transwelling	India	DR				
		*				Technomark Engineers & Consultant	India	DR				
		*				Stock Redeller	India	DR				
		*				Greenbank Engery Systems	UK	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical Specification

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PROJECT : Patratu STPS Phase-I (3 X 660MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00			
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017			
CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY							
CONTRACT NO : CS-9388-001-2											
No.	Major Equipment	QP Inspected on Category	QP No. 5555-Submision 001-QV Division Q	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub Or	Remark
7	Acoustic pyrometers	I			Berthold EDIT	Germany	DR				
		II			M/s Scientific Environment Instrument Inc	USA	A				
		II			M/s Boonenberg + Drescher GmbH	Germany	A				
		II			Lucent	Delhi	A				M/s Scientific Environmental Instrument Inc., USA make system
		II			Hi Tech	Kolkata	A				M/s Boonenberg + Drescher GmbH, Germany make system
8	Coal feeder control system	I			Harasentech	Korea	DR				
		II			Stock	USA	A				
		II			Marick	USA	A				
		I			Stock Redeller	Bangalore	A				Main components from Stock, USA
		I			Marick	Bangalore	A				Main components from Marick, USA
9	Acoustic Coal Flow Detector	I			BHEL	Trichy	A				
		III			Stock	USA	A				
		III			Marick	USA	A				
		I			Stock Redeller	Bangalore	DR				
		I			Marick	Bangalore	DR				
10	On line carbon in Ash Analyser	II			Greenbank Engery Systems	UK	A				
		II			ABB	Bangalore	A				
		II			Promicon	GERMANY	A				
		II			Berthold Technologies	Germany	A				
		I			M and W	Denmark	DR				
		I			EMERSON	India	DR				
		I			Yokogawa	Bangalore	DR				
		I			Forbes Marshall	Pune	DR				
11	Furnace Exit Gas Temperature Probe	III			Main Contractor approved Sources	India LUKUSA					M/s BHEL will forward only one proposal after details review of NTPC Technical specification requirements.
12	Boiler tube leak detection system	II			Procon	UK	A				
		II			Raman Instruments	Delhi	A				M/s Procon, UK make System
		II			Acoustic Monitoring International Inc.	USA	A				
		II			Hi Tech System and Service	Kolkata	A				
		II			Instolech	South Africa	A				
		II			Reclusan	Korea	A				
		II			BHELSONIC	Trichy	A				
13	Coal bunker Level monitor	%			%						% - Type, vendor and inspection category will be decided during detail Engineering.



19/11/17

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 x200MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : CS-8888-001-2										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 26.04.2017	
No.	Major Equipment	QP Inspection Category	QP No. 9585- 001-QV	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
14	Tube thickness Meter	III				Main Contractor approved sources	USA	A							
15	POSITIVE DISPLACEMENT FLOW METER/ TRANSMITTER	III				BROOKS		A			Sub QR	Calibration reports to be submitted.			
		III				BOPP & ROUTHER	GERMANY	A							
		III				OVAL	JAPAN	A							
		II				Technical corporation Hyd2	China	A							
16	Coriolis Type Mass Flow meter	III				Main Contractor approved Sources		A			Sub QR	Up to 4 inch only			
17	Control Valve for Start Up System	II				CCI	USA/Switzerland/Korea	A							
		II				Tyco Sampel	Germany	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		*				Dressor Masonell	France	DR				Reference list and performance feedback are to be submitted.			
		II				KOSO	Japan / Nask	A							
		II				HOA	Germany	A							
		II				CCI	Switzerland	A							
		II				CCI	USA/Sweden /Korea / Austria	A							
18	Control valves for Seal blower pressure reducing ,91/ RH Afteroperation.	II					France	A							
		II				Dressor Masonell	Germany	A							
		II				HOA	USA/France	A							
		II				EMERSON (Fisher)	Japan	A							
		II				Spex Copex Vulcan	USA	A				only for 91/ RH Afteroperation. for Seal blower Application Reference to list to be provided.			
		II				KOSO	JAPAN	A							
		II				Tyco Sampel	Germany	A							
		II				Leslie	USA	A							
		I				Dressor	Comalco	A							
		I				IL	Palackad	A							
		I				KSB MIL	Alwaye	A							
		I				KOSO	Nask	A							
		I				EMERSON	Chennai	A							
		I				Flow Serve	Bangalore	A							
		I				CCI	Switzerland	A							
		*				Copex Vulcan	UK	DR							
		*				Circor (Leslie)	Colimbore	DR							
		II				CCI	USA / Austria / Korea	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		II				Dressor Masonell	France	A							
		II				HOA	Germany	A							
		*				Sampel	Germany	DR							
		*				Leslie	USA	DR							
		I				CCI	Switzerland	A							
19	Control Valve for BFP Recirculation.	II													

M's BHEL will forward only those
proposals after detailed review of
MTPC Technical specification



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NTPC		PROJECT : Patratu STPS Phase-I (3 x210MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QP	QP Submittal Q SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub OR	Remark
		I				KOSO	Japan / Nask	DR				
		I				Nakazaki	Japan	DR				
		I				Parco Spa	USA	DR				
		I				Yamatake	Japan	DR				
		I				BOPP & ROUTHIER	Germany	DR				
		I				KSB MIL	Awaye	DR				
		I				CCI	USA/Austria	A				
		I				Dressor Masonellan	Korea	A				
		I				HORA	France	A				
		I				EMERSON (Fisher)	Germany	A				
		I				Sempell	USA/rance	A				
		I				KOSO	Japan	A				
		I				LESUE	USA	DR				
		I				CCI	Italy	A				
		I				Parco Spa	USA	DR				
		I				WEIR VALVES and Controls	UK	DR				
		I				KOSO	Nask	DR				
		I				KSB MIL	Awaye	DR				
		I				Emerson Process Management	Chennai	A				
		I				BOVAF Special valve solutions Pvt. Ltd.	Ahmedabad	DR				
		I				Suzhou delan edeey science and technology co. Ltd	China	DR				
		I				CCI	USA/Switzerland/Korea	A				
		I				Tyco Sempell	Germany	A				
		I				EMERSON (Fisher)	USA/rance/Japan / Chennai	A				
		I				Dressor Masonellan	France	A				
		I				KOSO	Japan	A				
		I				HORA	Germany	A				
		I				CCI	Italy	A				
		I				Six Copos Vulcan	USA	A				
		I				Cressor	Comblora	A				
		I				CCI	Palakkad	A				
		I				KSB MIL	Awaye	A				
		I				KOSO	Palakkad	A				
		I				EMERSON	Chennai	A				
		I				Flow Servis	Bangalore	A				
		I				Copos Vulcan	UK	A				
		I				Leslie	USA	A				
		I				Parco Spa	Italy	A				
		I				KOSO	Nask	A				

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Control Valve (other than Sr. No. - 17 to 20)

Mr's BHEL will forward only three proposals after details review of NTPC Technical specification requirements.

PS MKTO

Valhi

Electricals Limited

Bharat Heavy

3) Control Valve (other than Sr. No. - 17 to 20)

M/s BHEL will forward only three proposals after details review of NTPC Technical specification requirements.



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P.P/dt

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PROJECT : Patratu STPS Phase-I (3 X100MW)		LIST OF ITEMS REQUIRING QP										REVISION NO : 00	
PACKAGE : EPC PACKAGE		APPROVAL & ACCEPTABLE										DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd		VENDOR AS APPROVED BY											
CONTRACT NO : CS-9545-001-2													
No.	Major Equipment	QP Inspect Category	QP No. SSS- 001-QV	QP Subs Q	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub OR	Remark	
12	Temperature Transmitter (Single and Dual Input)	III	III	III	III	Yokogawa	Japan	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
13	Conductivity (G) Electronic Transmitters (pressure, DP Flow)	III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
14		III	III	III	III	Yokogawa	Japan	A					
15		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
16		III	III	III	III	Yokogawa	Japan	A					
17		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
18		III	III	III	III	Yokogawa	Japan	A					
19		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
20		III	III	III	III	Yokogawa	Japan	A					
21		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
22		III	III	III	III	Yokogawa	Japan	A					
23		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
24		III	III	III	III	Yokogawa	Japan	A					
25		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
26		III	III	III	III	Yokogawa	Japan	A					
27		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
28		III	III	III	III	Yokogawa	Japan	A					
29		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
30		III	III	III	III	Yokogawa	Japan	A					
31		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
32		III	III	III	III	Yokogawa	Japan	A					
33		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
34		III	III	III	III	Yokogawa	Japan	A					
35		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
36		III	III	III	III	Yokogawa	Japan	A					
37		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
38		III	III	III	III	Yokogawa	Japan	A					
39		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
40		III	III	III	III	Yokogawa	Japan	A					
41		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
42		III	III	III	III	Yokogawa	Japan	A					
43		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
44		III	III	III	III	Yokogawa	Japan	A					
45		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
46		III	III	III	III	Yokogawa	Japan	A					
47		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
48		III	III	III	III	Yokogawa	Japan	A					
49		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
50		III	III	III	III	Yokogawa	Japan	A					
51		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
52		III	III	III	III	Yokogawa	Japan	A					
53		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
54		III	III	III	III	Yokogawa	Japan	A					
55		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
56		III	III	III	III	Yokogawa	Japan	A					
57		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
58		III	III	III	III	Yokogawa	Japan	A					
59		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
60		III	III	III	III	Yokogawa	Japan	A					
61		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
62		III	III	III	III	Yokogawa	Japan	A					
63		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
64		III	III	III	III	Yokogawa	Japan	A					
65		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
66		III	III	III	III	Yokogawa	Japan	A					
67		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
68		III	III	III	III	Yokogawa	Japan	A					
69		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
70		III	III	III	III	Yokogawa	Japan	A					
71		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
72		III	III	III	III	Yokogawa	Japan	A					
73		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
74		III	III	III	III	Yokogawa	Japan	A					
75		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
76		III	III	III	III	Yokogawa	Japan	A					
77		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
78		III	III	III	III	Yokogawa	Japan	A					
79		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
80		III	III	III	III	Yokogawa	Japan	A					
81		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
82		III	III	III	III	Yokogawa	Japan	A					
83		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
84		III	III	III	III	Yokogawa	Japan	A					
85		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
86		III	III	III	III	Yokogawa	Japan	A					
87		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
88		III	III	III	III	Yokogawa	Japan	A					
89		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
90		III	III	III	III	Yokogawa	Japan	A					
91		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
92		III	III	III	III	Yokogawa	Japan	A					
93		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
94		III	III	III	III	Yokogawa	Japan	A					
95		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
96		III	III	III	III	Yokogawa	Japan	A					
97		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
98		III	III	III	III	Yokogawa	Japan	A					
99		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable	
100		III	III	III	III	Yokogawa	Japan	A					

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PROJECT : Patratu STPS Phase-I (3 X800MW)										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE				REVISION NO : 00	
PACKAGE : EPC PACKAGE										VENDOR AS APPROVED BY				DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd															
CONTRACT NO : CS-3555-001-2															
No.	Major Equipment	QP Inspect on Category	QP No. 1545-001-QV1	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark			
		III				YOKOGAWA	Bangalore	A				EJA-E series 110-430-530			
		III				ABB	Bangalore	A				Model - 2600 T			
		III				ABB	GERMANY / Italy	A				Model - 2600 T			
		III				Siemens	France / Kalyan	A							
		III				Honeywell	Pune	A							
		III				Lexson Automation	Daman	A				SMAR Make			
		III				Balboa	Mumbai	A				SMAR Make			
		*				ENDRESS & HOUSER	Aurangabad/ Germany	DR							
		*				CHINO	Chaplad	DR							
35	Thermocouples, RTD & Thermovint	III				HERAUS SENSOR	GERMANY	A			Sub QR				
		III				WISE Control	Korea	A							
		II				Tempens	Udaipur	A							
		II				Prolectric	Goa	A							
		II				Defive Instrumentation & Electronics Ltd	Mumbai	A							
		III				Minco	USA	A							
		III				OKAZAKI corporation	JAPAN	A							
		III				Yamari	JAPAN	A							
		III				Yamari	Singapore	A				For RTD Reference list and Performance feedback is to be submitted.			
		II				ABB(SENSECLON)	Germany	A							
		II				EMERSON (Rosemount)	Germany	A				Imported from Emerson, Germany (make)			
		II				EMERSON (Rosemount)	Pawane	A							
		II				Thermal Instruments(dit)	Savarnadi	A							
		II				Tectino Instruments	Mamadiabad	A							
		II				GOA Instrument Industries	GOA	A							
		*				GOA Instrument Industries	GOA	DR							
		*				Vitka	Pune	DR							
		*				Technical Industries	Almer	DR							
		*				E & H	Aurangabad	DR							
		*				Nesslech	Vapi	DR							
		*				Industrial Instruments	Kolkata	DR							
		*				Exotherm	Thane	DR							
		*				Baumer Technologies	Vapi	DR							
		*				Eland Engineering	Noida	DR							
		*				Siemens India	Gurgaon	DR							
		II				Jindal Electronics	Roorkee	A							
		III				E & H	Aurangabad/ Germany	A			Sub QR	For Generator Turbine & Motor			
		III				EMERSON	Pawane	A							
		III				SIEMENS MILTRONICS	CANADA	A							
		III				Niveco	Hungary	A							
		*				Vega	Germany	DR							
36	Ultrasonic type Level Transmitter														

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

NTPC		PROJECT : Patratu STPS Phase-I (3 X600MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-555-001-2										
No.	Major Equipment	Qp Category	Qp No.	Qp Submis- ion SCH	Qp Appro- val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
						Khrona	France / USA / Pura	DR				
						Yokogawa	Bangalore	DR				
						PAF	Germany	DR				
						Magnetrol	Belgium	DR				
						ABB	Germany / India	DR				
						Probes Marshall	Pune	DR				
						Instrumentation Limited	Palghat	A				
						Microprecision	Palghat	A				
						Siemens	Pune	A				
						Flow Star	Farsabad	A				
						SEICO	Austria	A				
						MINCO India Pvt. Ltd.	GOA	A				
						MINCO India Flow Elements Pvt. Ltd.	GOA	A				
						WISE Control	Korea	A				
						T M Technomatic	Italy	A				
						IEPL	Hyderabad	DR				
						Engg. Specialities	Kolkata	DR				
						BALIGA	CHENNAI	DR				
						Pyroelectric	Mumbai	DR				
						Hydro Pneumatics	Madras	DR				
						Tansa Equipment Pvt. Ltd.	Thane	DR				
						Dynamic Fluid Vales Pvt. Ltd.	Belgaum	DR				
						BUENBERG	UK	A				
						ASHCROFT	USA/Germany/ India	A				
						Wika	GERMANY	A				
						WISE Control	Korea	A				
						Nagano KEIKI	Japan	A				
						H Guna South India	Bangalore	A				
						A. N. Instruments	Kolkata	A				
						Gauge Bourdon	Panvel	A				
						Gota Thermocastic	GOA	A				
						Wika	Pune	A				
						Baumer	Vapi	A				
						Precision mass products Pvt. Ltd.	Gandhinagar	A				
						H Guna	Rajahmundry	A				
						US Gauge	USA	DR				
						Winters	USA	DR				
						Forbes Marshall	Hyderabad	A				
						Manometer	Mumbai	DR				
						Walchandnagar Industries Ltd.	Chennai	A				
						Nassitech	Vapi	A				
						Gauges Bourdon	UK	DR				
						Fisher Mass	Germany	DR				



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NTPC		PROJECT : Patratu STPS Phase-I (3 x200MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017		
		CONTRACTOR :BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QP	QP Submittal Q SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub OR	Remark
		I				KOSO	Japan / Nask	DR				
		I				Nakagata	Japan	DR				
		I				Parcol Spa	USA	DR				
		I				Yamatoka	Japan	DR				
		I				BOPP & ROUTHIER	Germany	DR				
		I				KSB MIL	Awaye	DR				
		I				CCI	USA/Austria	A				
		I				Dressor Masonellan	Korea	A				
		I				HORA	France	A				
		I				EMERSON (Fisher)	Germany	A				
		I				Sempell	USA/rance	A				
		I				KOSO	Japan	A				
		I				LESUE	USA	DR				
		I				CCI	Italy	A				
		I				Parcol Spa	USA	DR				
		I				WEIR VALVES and Controls	UK	DR				
		I				KOSO	Nask	DR				
		I				KSB MIL	Awaye	DR				
		I				Emerson Process Management	Chennai	A				
		I				BOVAF Special valve solutions	Abmedabad	DR				
		I				P.V. Ltd.						
		I				Suzhou delan edeey science and technology co. Ltd	China	DR				
		I				CCI	USA/Switzerland/Korea	A				
		I				Tyco Sempell	Germany	A				
		I				EMERSON (Fisher)	USA/rance/Japan / Chennai	A				
		I				Dressor Masonellan	France	A				
		I				KOSO	Japan	A				
		I				HORA	Germany	A				
		I				CCI	Italy	A				
		I				Six Copes Vulcan	USA	A				
		I				Cressor	Comblora	A				
		I					Palakkad	A				
		I				KSB MIL	Awaye	A				
		I				KOSO	Palakkad	A				
		I				EMERSON	Chennai	A				
		I				Flow Servis	Bangalore	A				
		I				Copes Vulcan	UK	A				
		I				Leslie	USA	A				
		I				Parcol Spa	Italy	A				
		I				KOSO	Nask	A				

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Control Valve (other than Sr. No. - 17 to 20)

PS MKTO

Valhi

Electricals Limited

Bharat Heavy

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3) Control Valve (other than Sr. No. - 17 to 20)

M/s BHEL will forward only three proposals after details review of NTPC Technical specification requirements.



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P.P/dt

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PROJECT : Patratu STPS Phase-I (3 X100MW)										LIST OF ITEMS REQUIRING QP				REVISION NO : 00	
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE				DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY					
CONTRACT NO : CS-9545-001-2															
No.	Major Equipment	QP Inspect Category	QP No. SSS- 001-QV	QP Subs Q	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub OR	Remark			
12	Temperature Transmitter (Single and Dual Input)	III	III	III	III	Yokogawa	Japan	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
13	Conductivity (G) Electronic Transmitters (pressure, DP Flow)	III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.			
14		III	III	III	III	Yokogawa	Japan	A							
15		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
16		III	III	III	III	Yokogawa	Japan	A							
17		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
18		III	III	III	III	Yokogawa	Japan	A							
19		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
20		III	III	III	III	Yokogawa	Japan	A							
21		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
22		III	III	III	III	Yokogawa	Japan	A							
23		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
24		III	III	III	III	Yokogawa	Japan	A							
25		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
26		III	III	III	III	Yokogawa	Japan	A							
27		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
28		III	III	III	III	Yokogawa	Japan	A							
29		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
30		III	III	III	III	Yokogawa	Japan	A							
31		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
32		III	III	III	III	Yokogawa	Japan	A							
33		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
34		III	III	III	III	Yokogawa	Japan	A							
35		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
36		III	III	III	III	Yokogawa	Japan	A							
37		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
38		III	III	III	III	Yokogawa	Japan	A							
39		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
40		III	III	III	III	Yokogawa	Japan	A							
41		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
42		III	III	III	III	Yokogawa	Japan	A							
43		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
44		III	III	III	III	Yokogawa	Japan	A							
45		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
46		III	III	III	III	Yokogawa	Japan	A							
47		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
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49		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
50		III	III	III	III	Yokogawa	Japan	A							
51		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
52		III	III	III	III	Yokogawa	Japan	A							
53		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
54		III	III	III	III	Yokogawa	Japan	A							
55		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
56		III	III	III	III	Yokogawa	Japan	A							
57		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
58		III	III	III	III	Yokogawa	Japan	A							
59		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
60		III	III	III	III	Yokogawa	Japan	A							
61		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
62		III	III	III	III	Yokogawa	Japan	A							
63		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
64		III	III	III	III	Yokogawa	Japan	A							
65		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
66		III	III	III	III	Yokogawa	Japan	A							
67		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
68		III	III	III	III	Yokogawa	Japan	A							
69		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
70		III	III	III	III	Yokogawa	Japan	A							
71		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
72		III	III	III	III	Yokogawa	Japan	A							
73		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
74		III	III	III	III	Yokogawa	Japan	A							
75		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
76		III	III	III	III	Yokogawa	Japan	A							
77		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
78		III	III	III	III	Yokogawa	Japan	A							
79		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
80		III	III	III	III	Yokogawa	Japan	A							
81		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
82		III	III	III	III	Yokogawa	Japan	A							
83		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
84		III	III	III	III	Yokogawa	Japan	A							
85		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
86		III	III	III	III	Yokogawa	Japan	A							
87		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
88		III	III	III	III	Yokogawa	Japan	A							
89		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
90		III	III	III	III	Yokogawa	Japan	A							
91		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
92		III	III	III	III	Yokogawa	Japan	A							
93		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
94		III	III	III	III	Yokogawa	Japan	A							
95		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
96		III	III	III	III	Yokogawa	Japan	A							
97		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
98		III	III	III	III	Yokogawa	Japan	A							
99		III	III	III	III	EMERSON	USA / Pawana / Singapore	A			Sub OR	Final testing at M/S YIL Bangalore is also acceptable			
100		III	III	III	III	Yokogawa	Japan	A							

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patra STPS Phase-I (3 X 850MW)										LIST OF ITEMS REQUIRING QP			
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE			
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY			
CONTRACT NO : GS-9865-001-2													
No.	Major Equipment	QP Category	QP No. 9865-001-QVI Sub Q	QP Submits 9865-001-QVI Sub SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark	
1	DDC MIS / HMI System	I				SIEMENS	Germany / Germany	#				# - Final acceptance subjected to system specific acceptance from NTPC Engrs	
2	Operator work stations	III				M/s BHEL (MAX DNA) Main Contractor approved Sources	Bangalore	#					
3	Flame Monitoring System (SCAUER)	II				Fornay	USA	A					
		II				ABB	Bangalore	A					
		II				Durag	Bangalore	A					
		II				BFI	Germany	A					
		II				BHELSCAN	Tridby	A					
		*				Fossil Power System Inc.	Canada	DR					
4	HEA Ignitor	III				Union Industries	USA	A					
		III				Durag	Germany	A					
		II				Durag	Bangalore	A					
		II				Ignition system INC	USA	A					
		II				Fest	Italy	A					
		I				Hindustan Thermomelt	Ambala	A					
		*				Hemvathy Peabody Combustion Inc.	UK	DR				Conditional	
		*				Fornay	USA	DR					
5	Furnace Flame viewing system (High Temperature CCTV Components)	II				Diamond Power	USA / Sweden	A					
		II				TLT Engg Pvt. Ltd.	Kolkata	A				M/s Dinanond Power, USA / Sweden make system	
		II				Mifon	UK	A					
		II				Toothwal Industries	Alwar	A				M/s Mirion, UK make System	
		II				Lencor	USA	A					
		II				Hi Tech System and Service	Kolkata	A				M/s Lenox, USA make System	
		II				Durag	Germany	A					
		II				Durag	Bangalore	A				M/s Durag, Germany make System	
		II				Sabota GmbH	Germany	A					
		II				Piper GmbH	Germany	A					
		*				Tempsons	Udaipur	DR				System integrator for Piper GmbH, Germany.	
6	Coal Flow Monitoring System	II				PHOMECON	GERMANY	A					
		II				SWR Engrs	GERMANY	A					
		II				EU Tech	GERMANY	A					
		*				Transwelling	India	DR					
		*				Technomark Engineers & Consultant	India	DR					
		*				Stock Redeller	India	DR				M/s BHEL will forward only two proposals after details review of NTPC Technical Specification	
		*				Greenbank Engery Systems	UK	DR					

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M/s BHEL will forward only two proposals after details review of NTPC Technical specification



PROJECT : Patratu STPS Phase-I (3 X 660MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00			
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 28.04.2017			
CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY							
CONTRACT NO : CS-9388-001-2											
No.	Major Equipment	QP Inspected on Category	QP No. 5555-Submision 001-QV Division Q	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub Or	Remark
7	Acoustic pyrometers	I			Berthold EDIT	Germany	DR				
		I			M/s Scientific Environment Instrument Inc	USA	A				
		II			M/s Boonenberg + Drescher GmbH	Germany	A				
		II			Lucint	Delhi	A				M/s Scientific Environmental Instrument Inc., USA make system
		II			Hi Tech	Kolkata	A				M/s Boonenberg + Drescher GmbH, Germany make system
8	Coal feeder control system	I			Harasentech	Korea	DR				
		II			Stock	USA	A				
		II			Marick	USA	A				
		I			Stock Redeller	Bangalore	A				Main components from Stock, USA
		I			Marick	Bangalore	A				Main components from Marick, USA
9	Acoustic Coal Flow Detector	I			BHEL	Trichy	A				
		III			Stock	USA	A				
		III			Marick	USA	A				
		I			Stock Redeller	Bangalore	DR				
		I			Marick	Bangalore	DR				
10	On line carbon in Ash Analyser	II			Greenbank Engery Systems	UK	A				
		II			ABB	Bangalore	A				
		II			Promicon	GERMANY	A				
		II			Berthold Technologies	Germany	A				
		I			M and W	Denmark	DR				
		I			EMERSON	India	DR				
		I			Yokogawa	Bangalore	DR				
		I			Forbes Marshall	Pune	DR				
11	Furnace Exit Gas Temperature Probe	III			Main Contractor approved Sources	India LUKUSA					M/s BHEL will forward only one proposal after details review of NTPC Technical specification requirements.
12	Boiler tube leak detection system	II			Procon	UK	A				
		II			Raman Instruments	Delhi	A				
		II			Acoustic Monitoring International Inc.	USA	A				M/s Procon, UK make System
		II			Hi Tech System and Service	Kolkata	A				
		II			Instolech	South Africa	A				
		II			Reclusan	Korea	A				
		II			BHELSONIC	Trichy	A				
13	Coal bunker Level monitor	%			%						% - Type, vendor and inspection category will be decided during detail Engineering.

24.04.17

P. P. K. I.

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 x200MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : CS-8888-001-2										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 26.04.2017	
NTPC															
No.	Major Equipment	QP Inspection Category	QP No. 9585- 001-QV	QP Submis- sion SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
14	Tube thickness Meter	III				Main Contractor approved sources	USA	A							
15	POSITIVE DISPLACEMENT FLOW METER/ TRANSMITTER	III				BROOKS	USA	A			Sub QR	Calibration reports to be submitted.			
		III				BOPP & ROUTHER	GERMANY	A							
		III				OVALL	JAPAN	A							
		II				Technical corporation Hyd2	China	A							
16	Coriolis Type Mass Flow meter	III				Main Contractor approved Sources		A			Sub QR	Up to 4 inch only			
17	Control Valve for Start Up System	II				CCI	USA/Switzerland/Korea	A							
		II				Tyco Sampel	Germany	A							
		II				EMERSON (Fisher)	USA/France/Japan	A							
		*				Dressor Masonellan	France	DR				Reference list and performance feedback are to be submitted.			
		II				KOSO	Japan / Nask	A							
		II				HOVA	Germany	A							
		II				CCI	Switzerland	A							
		II				CCI	USA/Sweden /Korea / Austria	A							
18	Control valves for Seal blower pressure reducing ,91/ RH Afteroperation.	II					France	A							
		II				Dressor Masonellan	Germany	A							
		II				HOVA	USA/France	A							
		II				EMERSON (Fisher)	Japan	A							
		II				Spex Copies Vulcan	USA	A				only for 91/ RH Afteroperation. for Seal blower Application Reference to list to be provided.			
		II				KOSO	JAPAN	A							
		II				Tyco Sampel	Germany	A							
		II				Leslie	USA	A							
		I				Dressor	Colimbore	A							
		I				IL	Palakkad	A							
		I				KSB MIL	Alwaye	A				Up to 2500 Class Up to 2500 Class			
		I				KOSO	Nask	A							
		I				EMERSON	Chennai	A							
		I				Flow Serve	Bangalore	A				Up to 2500 Class Up to 2500 Class			
		I				CCI	Sichy	A							
		*				Copies Vulcan	UK	DR							
		*				Circor (Leslie)	Colimbore	DR							
		II				CCI	USA / Austria / Korea	A							
19	Control Valve for BFP Recirculation.	II				EMERSON (Fisher)	USA/France/Japan	A							
		II				Dressor Masonellan	France	A							
		II				HOVA	Germany	A							
		*				Sampel	Germany	DR							
		*				Leslie	USA	DR							
		I				CCI	Shady	A				M/s BHEL will forward only their proposals after details review of MTPC Technical specification			

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M. J. J.

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NTPC

PROJECT : Patratlu STPS Phase-I (3 X800MW)
PACKAGE : EPC PACKAGE
CONTRACTOR : BHEL Ltd
CONTRACT NO : CS-958L001-2

REVISION NO : 00
DATE : 26.04.2017

LIST OF ITEMS REQUIRING QP
APPROVAL & ACCEPTABLE
VENDOR AS APPROVED BY

No.	Major Equipment	QIP Category	QIP No. on 85% 001-QIP	QIP Submittal SCH	QIP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
		I	*	KOSO		Japan / Nask	DR					
		I	*	Nakafra		Japan	DR					
		I	*	Pardot Spa		USA	DR					
		I	*	Yamatake		Japan	DR					
		I	*	BOPP & ROUTHIER		Germany	DR					
		I	*	KSB MIL		Awaye	DR					
		I	*	CCL		USA/Austria	A					
		II	*	Dressor Masonellan		Korea	A					
		II	*	HORA		France	A					
		II	*	EMERSON (Fisher)		Germany	A					
		II	*	Sempell		USAFrance	A					
		II	*	KOSO		Japan	A					
		I	*	LESUE		Germany	A					
		I	*	CCL		USA	DR					
		I	*	Pardot Spa		Italy	A					
		I	*	WEIR VALVES and Controls		UK	DR					
		I	*	KOSO		India	DR					
		I	*	KSB MIL		Awaye	DR					
		I	*	Emerson Process Management		Chennai	A					
		I	*	BOMABA Special valve solutions		Ahmedabad	DR					
		I	*	P-M Ltd.		China	DR					
		I	*	Sushou delan entry science and technology co. Ltd.		China	DR					
		II	*	CCL		USA/Switzerland/Korea	A					
		II	*	Tyco Sampull		Germany	A					
		II	*	EMERSON (Fisher)		USA/France/Japan/Ireland	A					
		II	*	Dressor Masonellan		Chennai	A					
		II	*	KOSO		France	A					
		II	*	HORA		Japan	A					
		II	*	CCL		Germany	A					
		II	*	Spx Copex Vulcan		Singapore	A					
		II	*	Dressor		USA	A					
		II	*	CCL		Combinators	A					
		II	*	KSB MIL		Palakkad	A					
		II	*	KOSO		Awaye	A					
		II	*	EMERSON		Palakkad	A					
		II	*	Flow Servo		Chennai	A					
		II	*	Copex Vulcan		Bangalore	A					
		II	*	Leslie		UK	A					
		II	*	Pardot Spa		USA	A					
		II	*	KOSO		Italy	A					
		II	*	KOSO		Nask	A					

3) Control Valve (other than Sr.
No. - 17 to 20)

Bharat Heavy
Electricals Limited
PS MKTO
Delhi

Bharat Heavy
Electricals Limited
PS MKTO
Delhi

4 Oct 26

~~19/11~~





THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patrauli STPS Phase-I (3 X800MW)										
PACKAGE : EPC PACKAGE										
CONTRACTOR : BHEL Ltd										
CONTRACT NO : CS-9545-001-2										
LIST OF ITEMS REQUIRING QP										
APPROVAL & ACCEPTABLE										
VENDOR AS APPROVED BY										
REVISION NO : 00										
DATE : 25.04.2017										
No.	Major Equipment	QP No. on 8555-001-QV	QP No. on 8555-001-QV	QP No. on 8555-001-QV	QP No. on 8555-001-QV	Country	SS Approval Status	SS Detail Sub SCH	SS Sub OR	Remark
Y						Pune	A			Approved up to 4" and 300 Class.
II						Germany	DR			M/s BHEL will forward only three proposals after details review of NTPC Technical specification requirements.
						South Korea	DR			
						China	DR			
						USA	DR			
						Spain	DR			
						Italy	DR			
						Thailand	DR			
						Comoros	DR			
						USA	DR			
						Comoros	DR			
						China	DR			
						Afghanistan	DR			
						UK	DR			
						Germany	DR			
						Ahmedabad	DR			
						China	DR			
✓ 2	Temperature Transmitter (Single and Dual Input)					U.S.A/Pakistan / Singapore	A		Sub OR	Final testing at M/S YIL, Bangalore is also acceptable
						Japan	A			
						USA	A			
						JAPAN	A			
						GERMANY/ Bangalore	A			
						Aurangabad	A			
						Japan	DR			
						Pune	DR			
						Sweden	DR			
						Bangalore	DR			
						JAPAN	DR			
						JAPAN	DR			
						USA/Pakistan	A			M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.
						France	A			
						JAPAN	A			
23	Conduits/Pipe (GI)									
✓ 3	Electronic transmitters (pressure, DP Flow)								Sub OR	
			</							



5-04-26

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PROJECT : Patratu STPS Phase-I (3 X800MW)										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE				REVISION NO : 00	
PACKAGE : EPC PACKAGE										VENDOR AS APPROVED BY				DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd															
CONTRACT NO : CS-3555-001-2															
No.	Major Equipment	QP Inspect on Category	QP No. 001-QVI	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
		III				YOKOGAWA	Bangalore	A				EJA-E series 110-430-630			
		III				ABB	Bangalore	A				Model - 2600 T			
		III				ABB	GERMANY / Italy	A				Model - 2600 T			
		III				Siemens	France / Kalyan	A							
		III				Honeywell	Pune	A							
		III				Lexson Automation	Daman	A				SMAR Make			
		III				Balboa	Mumbai	A				SMAR Make			
		*				ENDRESS & HOUSER	Aurangabad/ Germany	DR							
		*				CHINO	Chadabard	DR							
35	Thermocouples, RTD & Thermoview	III				HERAUS SENSOR	GERMANY	A			Sub QR				
		III				WISE Control	Korea	A							
		II				Tempsons	Udaipur	A							
		II				Prolectric	Goa	A							
		II				Defive Instrumentation & Electronics Ltd	Mumbai	A							
		III				Minco	USA	A							
		III				OKAZAKI corporation	JAPAN	A							
		III				Yamari	JAPAN	A							
		III				Yamari	Singapore	A				For RTD Reference list and Performance feedback is to be submitted.			
		II				ABB(SENSECLON)	Germany	A				Imported from Emerson, Germany (make)			
		II				EMERSON (Rosemount)	Germany	A							
		II				EMERSON (Rosemount)	Pawane	A							
		II				Thermal Instruments(dit)	Savarnadi	A							
		II				Tectino Instruments	Mamnadabad	A							
		II				GOA Instrument Industries	GOA	A							
		*				GOA Instrument Industries	GOA	DR							
		*				Vilva	Pune	DR							
		*				Technical Industries	Almer	DR							
		*				E & H	Aurangabad	DR							
		*				Nesslech	Vapi	DR							
		*				Industrial Instruments	Kolkata	DR							
		*				Exotherm	Thane	DR							
		*				Baumer Technologies	Vapi	DR							
		*				Eland Engineering	Noida	DR							
		*				Siemens India	Gurgaon	DR							
		II				Jindal Electronics	Roorkee	A							
		III				E & H	Aurangabad/ Germany	A			Sub QR	For Generator turbine & Motor			
		III				EMERSON	Pawane	A							
		III				SIEMENS MILTRONICS	CANADA	A							
		III				Nivelec	Hungary	A							
		*				Vega	Germany	DR							
36	Ultrasonic type Level Transmitter														

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P. H. H.

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 X600MW)											
PACKAGE : EPC PACKAGE											
CONTRACTOR :BHEL Ltd											
CONTRACT NO : CS-555-001-2											
LIST OF ITEMS REQUIRING QP											
APPROVAL & ACCEPTABLE											
VENDOR AS APPROVED BY											
REVISION NO : 00											
DATE : 28.04.2017											
No.	Major Equipment	QP Category	QP No.	QP Subm Q	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval Sub OR	Remark
						Khrona	France / USA / Pune	DR			
						Yokogawa	Bangalore	DR			
						PAF	Germany	DR			
						Magnetrol	Belgium	DR			
						ABB	Germany / India	DR			
						Forbes Marshall	Pune	DR			
						Instrumentation Limited	Palghat	A			
						Microprecision	Palghat	A			
						Siemens	Pune	A			
						Flow Star	Farsabad	A			
						SEICO	Austria	A			
						MINCO India Pvt. Ltd.	GOA	A			
						MINCO India Flow Elements Pvt. Ltd.	GOA	A			
						WISE Control	Korea	A			
						T M Technomatic	Italy	A			
						IEPL	Hyderabad	DR			
						Engg. Specialities	Kolkata	DR			
						BALIGA	CHENNAI	DR			
						Pyroelectric	Mumbai	DR			
						Hydro Pneumatics	Madras	DR			
						Tansa Equipment Pvt. Ltd.	Thane	DR			
						Dynamic Fluid Vales Pvt. Ltd.	Belgaum	DR			
						BUENBERG	UK	A			
						ASHCROFT	USA/Germany/ India	A			
						Wika	GERMANY	A			
						WISE Control	Korea	A			
						Nagano KEIKI	Japan	A			
						H Guna South India	Bangalore	A			
						A. N. Instruments	Kolkata	A			
						Gauge Bourdon	Panvel	A			
						Gota Thermocastic	GOA	A			
						Wika	Pune	A			
						Baumer	Vapi	A			
						Precision mass products Pvt. Ltd.	Gandhinagar	A			
						H Guna	Rajahmundry	A			
						US Gauge	USA	DR			
						Winters	USA	DR			
						Forbes Marshall	Hyderabad	A			
						Manometer	Mumbai	DR			
						Walchandnagar Industries Ltd.	Dharwad	A			
						Nassitech	Vapi	A			
						Gauges Bourdon	UK	DR			
						Fisher Mass	Germany	DR			



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PROJECT : Patratu STPS Phase-I (3 X400MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 28.04.2017	
CONTRACT NO : CS-9585-001-2				Country				SS Approval SCH	
No.	Major Equipment	Qp Inspected on Category	Qp No. 1585- 001-QV1 Q SCH	Qp Submis sion val SCH	Proposed Sub Supplier	SS Approval Status	SS Detail Sub SCH	Sub QR	Remark
✓ 30	Level gauge (Transparent & Reflex, Tubular type) ✓ 31 Press. DP, Vacuum Switch	III			Protect Control New Scientific PTCI Main Contractor approved Sources	DR DR OR A			
		III			SOIR	A		Sub QR	
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			HENION	A			
		III			BARKSDALE	A			
		III			NEPOMO KEIKI	DR			
		II			Switzer Process Instrument	A			Up to 40kg/cm ² & not for Compound Switch and except 900 series
		III			Trafag	A			Up to 40kg/cm ² & not for Compound Switch
		II			Switzer Process Instrument	A			Up to 40kg/cm ² & not for Compound Switch
		III			Gellia control	A			Up to 40kg/cm ² & not for Compound Switch
		I			Ganges Bourdon (GIG)	A			Up to 40kg/cm ² & not for Compound Switch
		I			ASHCROFT	A			Up to 40kg/cm ² & not for Compound Switch
		I			Wika	DR			M/s BHEL will forward only hup proposals after details review of NTPC Technical specification requirements.
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			Neodyne	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			
		I			Wika	DR			
		III			Gorgelon	A			
		III			United Electric	A			
		I			SMC	DR			
		I			IMI NORGEN	DR			
		I			WISE Control	DR			
		I			Baumel	DR			
		I			Vasu Tech	DR			
		I			Boh & Vrich	DR			
		III			SOIR	A			
		III			DRESSOR (ASHCROFT)	A			
		III			ITT BARTON	A			
		III			DELIA CONTROLS	A			
		I			Switzer Process Instrument	A			
		I			Switzer Process Instrument	A			
		II			Trafag	A			
		I			ASHCROFT	A			



PROJECT : Patratu STPS Phase-I (3 X800MW)										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE				REVISION NO : 00	
PACKAGE : EPC PACKAGE										VENDOR AS APPROVED BY				DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd															
CONTRACT NO : CS-3555-001-2															
No.	Major Equipment	QP Inspect on Category	QP No. 001-QVI	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark			
		III				YOKOGAWA	Bangalore	A				EJA-E series 110-430-530			
		III				ABB	Bangalore	A				Model - 2600 T			
		III				ABB	GERMANY / Italy	A				Model - 2600 T			
		III				Siemens	France / Kalyan	A							
		III				Honeywell	Pune	A							
		III				Lexson Automation	Daman	A				SMAR Make			
		III				Balboa	Mumbai	A				SMAR Make			
		*				ENDRESS & HOUSER	Aurangabad/ Germany	DR							
		*				CHINO	Chaplad	DR							
25	Thermocouples, RTD & Thermomats	III				HERAUS SENSOR	GERMANY	A			Sub QR				
		III				WISE Control	Korea	A							
		II				Tempens	Udaipur	A							
		II				Prolectric	Goa	A							
		II				Online Instrumentation & Electronics Ltd	Mumbai	A							
		III				Minco	USA	A							
		III				OKAZAKI corporation	JAPAN	A							
		III				Yamari	JAPAN	A							
		III				Yamari	Singapore	A				For RTD Reference list and Performance feedback is to be submitted.			
		II				ABB(SENSECLON)	Germany	A				Imported from Emerson, Germany (make)			
		II				EMERSON (Rosemount)	Germany	A							
		II				EMERSON (Rosemount)	Pawane	A							
		II				Thermal Instruments(dit)	Savarniwadi	A				For Thermowell only			
		II				Tectino Instruments	Ahmadnabad	A				Mrs BHEL will forward only two proposals after details review of NTPC Technical specification requirements.			
		II				GOA Instrument Industries	GOA	A							
		*				GOA Instrument Industries	GOA	DR							
		*				Vitka	Pune	DR							
		*				Technical Industries	Almer	DR							
		*				E & H	Aurangabad	DR							
		*				Nesslech	Vapi	DR							
		*				Industrial Instruments	Kolkata	DR							
		*				Exotherm	Thane	DR							
		*				Baumer Technologies	Vapi	DR							
		*				Eland Engineering	Noida	DR							
		*				Siemens India	Gurgaon	DR							
		II				Jindal Electronics	Roorkee	A							
		III				E & H	Aurangabad/ Germany	A				For Generator Turbine & Motor			
		III				EMERSON	Germany	A			Sub QR				
		III				SIEMENS MILTRONICS	Pawane	A							
		III				Niveco	CANADA	A							
		III				Vega	Hungary	A							
		*					Germany	DR							
26	Ultrasonic type Level Transmitter														

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 X600MW)												
PACKAGE : EPC PACKAGE												
CONTRACTOR : BHEL Ltd												
CONTRACT NO : CS-555-001-2												
LIST OF ITEMS REQUIRING QP												
APPROVAL & ACCEPTABLE												
VENDOR AS APPROVED BY												
REVISION NO : 00												
DATE : 28.04.2017												
No.	Major Equipment	QP Category	QP No.	QP Submittal	QP Approval	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval Sub.SCH	Sub QR	Remark
		Y				Khrona	France / USA /	DR				
		*				Yokogawa	France	DR				
		*				PAF	Bangalore	DR				
		*				Magmetrol	Germany	DR				
		*				ABB	Belgium	DR				
		*				Probes Marshall	Germany / India	DR				
		III				Instrumentation Limited	Pune	DR				
		III				Microprecision	Palghat	A				
		III				Siemens	Palghat	A				
		III				Flow Star	Pune	A				
		III				SEIKO	Farsabad	A				
		III				MINCO India Pvt. Ltd.	Austria	A				
		III				MINCO India Flow Elements Pvt. Ltd.	GOA	A				
		III				WISE Control	GOA	A				
		III				T M Technomatic	Korea	A				
		*				IEPL	Italy	A				
		*				Engg. Specialities	Hyderabad	DR				
		*				BALIGA	Kolkata	DR				
		*				Pyroelectric	CHENNAI	DR				
		*				Hydro Pneumatics	Mumbai	DR				
		*				Tansa Equipment Pvt. Ltd.	Mapusa	DR				
		*				Dynamic Fluid Vales Pvt. Ltd.	Thane	DR				
		III				BUENBERG	Belgium	DR				
		III				ASHCROFT	UK	A				
		III				Wika	USA/Germany/	A				
		III				WISE Control	India	A				
		III				Nagano KEIKI	GERMANY	A				
		III				H Guna South India	Korea	A				
		III				A. N. Instruments	Japan	A				
		III				Gauge Bourdon	Bangalore	A				
		III				Gota Thermocastic	Kolkata	A				
		III				Wika	Panvel	A				
		III				Baumer	GOA	A				
		III				Precision mass products Pvt. Ltd.	Pune	A				
		III				H Guna	Vapi	A				
		*				US Gauge	Gandhinagar	A				
		*				Winters	Rajahmundry	A				
		III				Forbes Marshall	USA	DR				
		*				Manometer	Hyderabad	A				
		III				Walchandnagar Industries Ltd.	Mumbai	DR				
		III				Nassitech	Chennai	A				
		*				Gauges Bourdon	Vapi	A				
		*				Fisher Mass	UK	DR				
		*					Germany	DR				



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PROJECT : Patratu STPS Phase-I (3 X400MW)												
PACKAGE : EPC PACKAGE												
CONTRACTOR : BHEL Ltd												
CONTRACT NO : CS-0585-001-2												
REVISION NO : 00												
DATE : 24.04.2017												
LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY												
No.	Major Equipment	QP Inspected on	QP No. 1585-001-QVI	QP Submis sion	QP Appro val	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark
30	Level gauge (Transparent & Reflex, Tubular type)	✓				Protech Control	Kolkata	DR				
31	Press. Dip. Vacuum Switch	✓				New Scientific	Kolkata	DR				
						PTCI	Kolkata	DR				
						Main Contractor approved Sources		✓				
						SOIR	USA	✓				
						DRESSOR (ASCHROFT)	USA/Germany	✓				
						ITT BARTON	USA	✓			Sub QR	
						HENON	GERMANY	✓				
						BARKSDALE	GERMANY	✓				
						Nagano KEIKI	Japan	DR				
						Switzer Process Instrument	Chennai	✓				Up to 40kg/cm2 & not for Compound Switch and except 900 series
						Trafag	Gurgaon	✓				Up to 40kg/cm2 & not for Compound Switch
						Switzer Process Instrument	Ghaziabad	✓				Up to 40kg/cm2 & not for Compound Switch
						Gellat control	UK	✓				Up to 40kg/cm2 & not for Compound Switch
						Gauges Bourdon (GIC)	Pune	✓				
						ASCHROFT	Gandhinagar	✓				
						Wika	Pune	DR				
						Gorgelon	France	✓				
						United Electric	USA	✓				
						SMC	Japan	✓				
						Neodine	USA	DR				
						IMI NORGEN	Noida	DR				
						Wise Control	Korea	DR				
						Baumet	Vapi	DR				
						Vasu Tech	New Delhi	DR				
						Bell & Koch	Germany	DR				
						SOR	USA	✓				
						DRESSOR (ASCHROFT)	USA/Germany	✓			Sub QR	
						ITT BARTON	USA	✓				
						DELTA CONTROLS	UK	✓				
						Switzer Process Instrument	Chennai	✓				
						Switzer Process Instrument	Ghaziabad	✓				up to 200 Deg. C
						Trafag	Gurgaon	✓				up to 200 Deg. C
						ASCHROFT	Gandhinagar	✓				
						Wika	Pune	DR				
						Gorgelon	France	✓				
						United Electric	USA	✓				
						SMC	Japan	DR				
32	Flow switch	✓				UNIVERSAL FLOW METER	USA	✓			Sub QR	
						Switzer	Chennai	✓				

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PROJECT : Patratu STPS Phase-I (3 X800MW)										LIST OF ITEMS REQUIRING QP			
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE			
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY			
CONTRACT NO : CS-3585-001-2													
No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QV	QP Submis SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark	
		III				Leicon	Kolkata	A					
		III				DK Instrument	Kolkata	A					
		III				Khrona Marshal	Pune	A					
		III				Chemtrol	India	DR					
		III				V Automat	NewDelhi	DR					
		III				Gauges Bourdon	Parvel	A					
		III				Magnetrol	Belgium	A					
		III				Ashcroft	Germany	A					
		III				Auzitrol	UK	A					
		III				Mercoild	USA	A					
		III				Delta Control	UK	A					
		III				Merum	USA	A					
		*				Sontag Corporation		DR					
33	Condensing Pits	III				Main Contractor approved Sources		A					
34	Electric to Pneumatic converter	III				IMI NORGEN	India	A			Sub QR	Make : WATSON SMITH	
		III				Fair child	USA	A				Subject to meeting the NTPC specification requirement	
		*				ABB	India	A					
		*				SMC Pneumatics	Noida	DR					
		*				P & F	Bangalore	DR					
		*				Fairchild India Pvt. Ltd.	Noida	DR					
		*				FESTO	Bangalore	DR					
35	Conduits lead coated (Flexible)	III				Plica	Chattisgarh	A				Main contractor can propose additional vendor for this item	
		III				Bansal laboratories	BHOPAL	A					
		II				Chabbi Electronics	Jalgaon	A			Sub QR	Modules from EMERSON	
30	Intelligent Battery charger 24V DC & DCDB /BHM5	II				Eitech	Gurgaon	A				Modules from ELTEK	
		II				WasTech	Jalgaon	A				Modules from ELTEK	
		II				Emerson	India	A					
		II				WasTech (Series Modules)	Jalgaon	A					
		*				HBL Power Systems	India	DR				BHMS from M5 USV, Germany	
		*				Dubas	India	DR					
		*				Chabbi Electronics (Chabbi Modules)	Jalgaon	DR					
		*				Huachi Hi Rel	Gandhinagar	DR					
		*				Statcom Power Controls Pvt. Ltd.	Noida	DR					
		*				Chloride Power Systems (calayna)	India	DR					
		*				Amara Raja	Tirupatt	DR					
		*				Keltron Power Electronics	Tiruvandam	DR				Mrs BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	



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PROJECT : Patraia STPS Phase-I (3 X800MW)		LIST OF ITEMS REQUIRING QP										
PACKAGE : EPC PACKAGE		APPROVAL & ACCEPTABLE										
CONTRACTOR :BHHEL Ltd		VENDOR AS APPROVED BY										
CONTRACT NO : CS-955-001-2												
No.	Major Equipment	QP Inspect on Category	QP No. 955-001-QV	QP Submis on SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
37	Battery Health Monitoring System	-				Universal Instrument manufacturing co P Ltd	India	DR				
		-				Hind Rectifier Ltd	India	DR				
		III				Emerson	Mumbai	A				
		III				Eltek SGS Pvt Ltd	Gurgaon	A				
		-				B Tech Inc	USA	DR				
		III				Hilachi Hi Rel	Gandhinagar	A				
		III				Hoscheko	Germany	DR				
		III				Hilachi Hi Rel	Gandhinagar	DR				
38	Battery(Ni-cd)	I				AMCO SAFT	Bangalore	A				
		II				SAFT	France/Sweden	A				
		I				HBL POWER	Hyderabad	A				
		II				Hoscheko	Germany	A				
39	Socket weld fittings	III				BHEL Approved Sources	Raigadh	A				Carbon steel only
	Impulse pipe & tubes	II				Maharashtra Seamless	Japan	A				
		II				Sumitomo Kawasaki Nippon	Japan	A				
		II				TPS TECHNITUBE	Germany	A				
		II				Velum & mannessmann	Germany	A				
		II				BHEL	Toddy	A				
		II				Trourey and Calvin	France	A				Makes shall be as per approved list (Sr. No. 41)
		II				ISMT	Ahamadnagar	A				Carbon steel only.
		II				Sandvik	Spain	A				For SS only.
		-				TURACES	Germany	DR				
		-				Selgitler Mannesmann International	Germany	DR				
		-				Jindal saw	India	DR				
		II				Rafanament Metal and Tubes	Ahamadabad	A				SS only
		II				Heavy metals and Tubes	Ahamadabad	A				SS and CS only.
		-				Shubhashmi Metal and Tubes	Mumbai	DR				
		III				Parker	USA	A				
		III				Precision	Mumbai	A				
		III				Asitech	Mumbai	A				
		III				Fluid control Pvt. Ltd.	Pune	A				
		III				HP Valves and fittings	CHENNAI	A				Ferruleless are to be hardened at Exim Holland for pressure above 9000 psi.
41	Compression fittings	III				Excel hydro	Mumbai	A				Ferruleless are to be hardened at Exim Holland for pressure above 9000 psi.
		III				Swagelok	USA	A				
		III				Penam	Mumbai	A				
		III				Malvotras	Kolkata	DR				
		-				AURA INC	New Delhi	DR				
		-				Prima Engineers		DR				
		-				Arya Craft		DR				



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NTPC		PROJECT : Patratu STPS Phase-I (3 x 600MW)				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE				REVISION NO : 00			
		PACKAGE : EPC PACKAGE				VENDOR AS APPROVED BY				DATE : 26.04.2017			
		CONTRACTOR : BHEL Ltd											
		CONTRACT NO : CS-9555-001-3											
No.	Major Equipment	QP Inspect	QP No. 9555-001-Q	QP Submis	QP Appro	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark	
46	Electrical actuator	I	I	I	I	Fluorlex Cable Incab	Pune	DR *				M/s BHEL will forward only two proposals after details review of NTPC Technical specification requirements.	
		I	I	I	I	Gupta Power Infrastructure Ltd.	Kharidha	A					
		I	I	I	I	Lapp cables	India	DR					
		I	I	I	I	Lion cable	Pune	DR					
		I	I	I	I	RR Kabel	Swasa	DR					
		I	I	I	I	Gemsrab	Bhavadi	DR					
		I	I	I	I	KEC International	Mysore	DR					
		I	I	I	I	Advance cable Technologies	Bangalore	DR					
		I	I	I	I	Soyga Electricals Ltd.	Vadodara	DR					
		I	I	I	I	Special Cable	India	DR					
		I	I	I	I	CMI	Fardabhd	DR					
		I	I	I	I	Ground Cables	Kolkata	DR					
		I	I	I	I	Associate Cables	Mumbai	DR					
		I	I	I	I	Radiant RSOC Specialty	Hyderabad	DR					
		I	I	I	I	APAR Industries	Banglore	DR					
		I	I	I	I	Tempsena Cable	Udaipur	DR					
		I	I	I	I	Manfield cables co. Ltd.	Hyderabad	DR					
		I	I	I	I	Servel India Pvt. Ltd.	Nearvada	DR					
		I	I	I	I	TC Communication Pvt. Ltd.	Ghaziabad	DR					
		I	I	I	I	Auma	Germany	A					
		I	I	I	I	Umbrage	USA	A					
		I	I	I	I	Reling	UK	A					
		I	I	I	I	Umbrique	Fardabad	A					
		I	I	I	I	Rollon	Chennai/ Bangalore	A					
		I	I	I	I	Nippon gear	Japan	A					
		I	I	I	I	Auma	Bangalore	A					
		I	I	I	I	Harold Beck	USA	A					
		I	I	I	I	Drehmo	Germany	A					
		I	I	I	I	Antrieb	Chennai	A					
		I	I	I	I	Lincoo	USA	DR					
		I	I	I	I	Siemens	Germany	DR					
		I	I	I	I	Harold Beck	USA	A					
47	Electrical actuator for IDFOIPA Blade pitch and Guide vane control	III	III	III	III	SIPROS Aktorik GmbH	Germany	A					
		III	III	III	III	ABB	Germany	DR					
		III	III	III	III	Microprecision	Fardabhd	A					
48	Flow nozzle / Venturi assembly	II	II	II	II	SEIKO	Austria	A					
		II	II	II	II	TECHNOMATICS	Italy	A					
		II	II	II	II	Insurg-epigen Limited	Palghat	A					
		II	II	II	II	Stamco	Pune	A					
		II	II	II	II	WISE Control	Korea	A					

For Low torque application such as SHWH vent, circulation isolation

Sub QR

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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

NTPC		PROJECT : Patratu STPS Phase-I (3 X800MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : CS-9585-001-2					LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY					REVISION NO : 00 DATE : 28.04.2017	
No.	Major Equipment	QP Inspecti on Category	QP No. 9585- 001-QV Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark	
		I				MINCO India Flow Elements Pvt. Ltd.	GOA	A					
		*				SAMEL	Korea	DR					
		*				MINCO	GOA	DR					
		*				Engg. Specialities	Kolkata	DR					
		*				Pyroelectric	Mumbai	DR					
		*				Hydropneumatics	Mapusa / GOA	DR					
		*				ASIAN INDUSTRIAL VALVES	Chennai	DR					
		*				Dynaford valves Pvt. Ltd.	Belgium	DR					
		*				Habia cables	Sweden	A					
49	HIGH Temp. cable (PTFE/PEP)	II				Lapp cables	Germany	A					
		II				Karpen cables	Germany	A					
		II				TEW & C	USA	A					
		II				Thermo-Electra Bx	Netherlands	A					
		II				Habia cables	China	A					
		II				Thermocables	Hyderabad	A					
		II				Tempents	Udaipur	A					
		*				Dellon Cables	Fardicahat	DR					
		*				RJ Cables	Roorkee	DR					
		II				HFCL	Goa	A					
		II				R&M	Switzerland	A					
		II				Akash Fibre	Bhimad	A					
		II				Finclax	Pune/Goa	A					
		II				Bida Ericson	Rewa	A					
		II				Mollex	UK	A					
		II				Coming	USA	A					
		II				Schneider	GOA	A					
		*				RPG Cables	India	DR					
		*				Unilux Cables	India	DR					
		*				Terraboom	India	DR					
		II				Dong Woo Valve Control Co. LTD	Korea	A					
51	Pneumatic Actuator (Power Cylinder e.g. FOR SADC)	II				Shin Hwa Engineering Co. LTD	Korea	A					
		I				Instrumentation Limited	Pahjalat	A					
		I				Kellon	Cochin(Malappu)	A					
		*				SMC Pneumatics	Noida	A					
		*				Rollax	Mumbai	A					
		*				Emerson Process Management	Chennai	DR					
		*				ML Controls	Alwaye	DR					
		*				Festo	Bangalore	DR					
		*				IMI Norman	Noida	DR					
		III				ENDRESS & HOUSER	Aurangabad	A					
		III				MAGNETROL	BELGIUM	A					
		III				SREM	PUNE	A					
		III				PUNE TECHTROL	PUNE	A					
52	Level switch capacitance type	III				Level switch capacitance type	Sub QR						

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PROJECT : Patrauli STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00				
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017				
CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY								
CONTRACT NO : CS-9555-001-2												
No.	Major Equipment	QIP Inspection Category	QIP No. 9555- 001-QVI Q	QIP Submittal SCH	QIP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub OR	Remark
53	Transducer	III	III	III	III	LEVCON	KOLKATA	A				
		III				Nivo Controls	Indore	A				
		III				V AUTOMAT	New Delhi	DR				
		III				D K Instrument	Kolkata	DR				
		III				Siemens	Germany	DR				
		III				ABB	Korea	DR				
		III				Rosemount	Korea	DR				
		III				AE	Mumbai	A				
		III				Southern Transducer	Chennai	A				
		III				Elster	Mumbai	A				
		III				Camille Bauer	Germany	A				
		III				Mettrowal	Germany	A				
		III				Rishab	Nashik	A				
		III				Pyrotech	Udaipur	DR				
		III				Mandus	Gandhinagar	DR				
		III				SIEMENS	Germany	DR				
		III				EMERSON	Mumbai	A				
		III				EMERSON	Pune	A				
		III				Niachi Hi-Rel	Gandhinagar	A				
		III				APC	Bangalore	A				
		III				APLAI	Mumbai	A				
		III				Della	Gurgaon	A				
		III				Powerback	Bangalore	DR				
		III				DUBAS ENGG PVT LTD.,						
		III				BANGALORE						
		III				Grid power conversion Pvt Ltd.						
		III				Schneider	Bangalore	DR				
		III				EMERSON (Solartron mobility)	UK	A				
		III				Hi Tech	Kolkata	A				
		III				Yarway	USA	A				
		III				LEVELSTATE	USA	A				
		III				Raman Instruments	Delhi	A				
		III				BHEL	Trichy	DR				
		III				IGEMA	Germany	DR				
		III				ENDRESS & HOUSER	AURANGABAD	A				
		III				MAGNETROL	BELGIUM	A				
		III				LEVCON	KOLKATA	A				
		III				SEEM	PUNE	A				
		III				Centronics ssmil	Madurai	A				
		III				NAKATTA	JAPAN	A				
		III				Sigma Industries	Mumbai	A				
		III				D K Instrument	KOLKATA	A				
		III				PURE TECHTROL	PUNE	A				
		III				V AUTOMAT	NEW DELHI	A				
		III				WAREE	WAPI	DR				
		III				LEVELSTATE	UK	A				
55	Level switch- cond type	III					Bangalore	DR				
		III					UK	A			Sub OR	Levelstate, UK System
		III					Kolkata	A				
		III					USA	A				
		III					UK	A				
		III					Delhi	A				
		III					Trichy	DR				
		III					Germany	DR				
56	Level switch- Float/Displacer Type	III					AURANGABAD	A			Sub OR	Emerson (Mobrey) System
		III					BELGIUM	A				
		III					KOLKATA	A				
		III					PUNE	A				
		III					Madurai	A				
		III					JAPAN	A				
		III					Mumbai	A				
		III					KOLKATA	A				
		III					PUNE	A				
		III					NEW DELHI	A				
		III					WAPI	DR				
		III					UK	A				



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PROJECT : Patratu STPS Phase-I (3 X800MW)												LIST OF ITEMS REQUIRING QP			
PACKAGE : EPC PACKAGE												APPROVAL & ACCEPTABLE			
CONTRACTOR : BHEL Ltd												VENDOR AS APPROVED BY			
CONTRACT NO : CS-9585-001-3															
No.	Major Equipment	QP Inspect on Category	QP No. 9585-001-QV Division Q	QP Submits SCH	QP Approve val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark			
57	Air filter regulator	III				Glueges Bourdon (GIC) Nikan Scientific Process Fairchild Mumbai Shayo Morgan NOIDA SMC Pneumatics Chennai Emerson (Asco) Bangalore Festo Chennai Pneuma Gubral	India	A							
58	Copper tubing/Brass connectors	III				Diya Control Elements Main Contractor approved Sources	INDIA	A							
59	Coupling / Interlocking relays	III				PARAMOUNT OMRON OEN Jyoti ELSTA Schneider Siemens Phoenix Finder Rexel Avcon Heron IMI NORGEN Jaffarson Asco Festo SMC Parker Schneider Neuson Industries Pvt. Ltd. NUOVO PIONONE	INDIA	A							
60	Solenoid valve	III				Relax Avcon Heron IMI NORGEN Jaffarson Asco Festo SMC Parker Schneider Neuson Industries Pvt. Ltd. NUOVO PIONONE	INDIA	A							
61	Lube oil control valve - Self Regulating	III				EMERSON SAMSON Forbes marshall arca pvt. Ltd. Magnetrol Endress & Houser Emerson Process Management ABB (K-Tech) Supreme Technology Yokogawa ABB P & F	INDIA	A							
62	Guided waveRadar type level transmitter	III				EMERSON SAMSON Forbes marshall arca pvt. Ltd. Magnetrol Endress & Houser Emerson Process Management ABB (K-Tech) Supreme Technology Yokogawa ABB P & F	INDIA	A							



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PROJECT : Patratu STPS Phase-I (3 X800MW) PACKAGE : EPC PACKAGE CONTRACTOR :BHHEL Ltd CONTRACT NO : CS-9585-001-3												LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 03 DATE : 28.04.2017	
NTPC																	
No.	Major Equipment	QP Inspect on Catagor y	QP No. 9585- 001-QVI sion Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark					
63	Maintenance and Calibration Equipment Temperature Gauge	III				Kircho HONEYWELL Vogel Siemens SBEM	France Pune Germany / India India Pune	DR DR DR DR DR									
		III				Main Contractor will propose the vendors during detail Engineering											
		III				BUDENBERG DRESSOR (ASHCROFT) Wika	UK USA/Germany GERMANY Pune	A A A									
		III				WISE Control Magnum KEMO H.Guru South India A.N. Instruments NUOVA FIMA	Korea Japan Bangalore Kolkata ITALY	A A A A A									
		III				Goa Thermotonic Goa Instrument Industries Baumer	Goa Goa Vapi	A A A									
		III				Precision mass products Pvt. Ltd. H.Guru Baumer	Gandhinagar Rajshree Muradpur Vapi	A A A									
		III				Forbes Marshall Gauges Bourdon (GIC) Konica	Hyderabad Pantel Korea	A A DR									
		•				Pyroelectric Wintera Gauge	GOA USA	DR DR									
		•				Walchandnagar Industries Ltd. Neattech US Gauge	Dhanuad Vapi USA	DR A A									
		•				Main contractor approved sources											
		III				Weldmuller	Germany	A									
		III				Phoenix	Germany / India	A									
		III				Wago	Germany / India	A									
		III				Emmer	Vadodra	A				CE Mark only					
		III				BHHEL Approved Sources											
		III				GE Intelligent platforms											
		I				ABB	Bangalore	A									
		I				Schneider	Nashik	A									
		I				Rockwell	Sahibabad	A									
		I				Siemens	Nashik	A									
		I				HONEYWELL	Pune	A									
		I				ABB		A									
64	Furniture for computer (Chair, Almsh, Lock etc.) Terminal Block (Cage and Clamp type)	III										M/s BHHEL will forward only two proposals after details review of NTPC Technical specification requirements.					
65	PLC Junction Box for C&I system PLC System (if applicable)	III										CE Mark only					
66	SMART POSITIONER (Make)	III										To be covered in Control Valve OP.					



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PROJECT : Patralu STPS Phase-I (3 X800MW) PACKAGE : EPC PACKAGE CONTRACTOR : BHEL Ltd CONTRACT NO : GS.0185-001-2										LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED BY				REVISION NO : 00 DATE : 28.04.2017	
No.	Major Equipment	QP Inspection Category	QP No.	QP Submis sion	QP Approval val	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark			
77	Blank Panels / Cabinets	III				COSA XENTAUR	USA	A				through Spectrum automation landed			
						VAISHALA	Sweden / Japan	DR							
						DWIER	USA	DR							
						Endee	Mumbai	DR							
						Nivo Controls	Indore	DR							
						Barlec GMBH	Germany	DR							
						Risal	Bangalore	A							
						Hoffman	BANGALORE	A							
						Pyrotech	Udaipur	A							
						BHEL	Bangalore	A							
						Schneider	Bangalore	DR							
						Sony	Japan	DR							
						Siemens	Pondichery	DR							
						Dv Tel	USA	DR							
						Henry Weil	Gurgaon	DR							
						Bosch	Bangalore	A				With Bosch Software			
						Axis	Sweden	A				With Bosch Software			
						Palco	USA	DR							
						Axis	Sweden	A				With Milestone Software			
78	Control Desk, Server / PC Rack for Unit Control room and Auxiliary control room.	I				Pyrotech works Space	Udaipur	A							
						Coimes	Hoda	A							
						Adarsh Control	Bangalore	A							
						Chemim Controls	Pondichery	DR							
						Harmony Systems	New Delhi	DR							
						Masibus	Gandhi Nagar	A				For Non mosaic mounting			
						ABB	Germany	A							
						Fabore	UK	A							
						Yokogawa	Japan	A							
						Gossen / Metrowatt / Camille Bauer	Germany	A							
						Siemens	Germany	A							
						Chino	Japan	A							
						Weigel Messgeräte	Germany	A							
						Pyrotech	Udaipur	A							
						Chino Corporation	Mumbai	DR							
						Yokogawa	Bangalore	DR							
						Leistritz	Pune	DR							
						Telechem	Chennai	DR							
						Land Instrument International	UK	A							
81	Quat Emission Monitor	III				Durag	Germany	A				For Non mosaic mounting			
						Sick Mithak	Germany	A				For Non mosaic mounting and submit only two proposals			
						Emerson Process Management	Ireland	A				Land Combustion Division			
						Codol	UK	A							



18-07-26

THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patrauli STPS Phase-I (3 X300MW)										LIST OF ITEMS REQUIRING QP				REVISION NO : 05	
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE				DATE : 24.04.2017	
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY					
CONTRACT NO : GS-1111-001-2															
No.	Major Equipment	QP Inspecti on Category	QP No. 9585-001-QVI Q	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark			
82	Electrical Indicating Instruments (Mosaic Compatible)	II				Forbes Marshall	Pune	A				Main kit from M/s Codel, UK			
		III				Siemens	Germany	A							
		III				Gossen / Metrowatt / Camille Bauer	Germany	A							
		III				Gatz	Germany	A							
83	Flue Gas Analyser (CO)	III				Wieland Messgeräte Codel	Germany UK	A			Sub QR	Analysar from M/s Emerson, Germany / USA.			
		III				Emerson Process Management	Pavane	A				Land Combination Div			
		III				Land Instrument International	UK	A							
		III				Sick Mahlak	Germany	A							
		III				Siemens	Germany	A							
84	Flue Gas Analyser (CO2)	*				Codel	UK	DR			Sub QR				
		*				Sick Mahlak	Germany	DR							
85	Flue Gas Analyser (SO2 and NOx)	III				Kilnake Procal Ltd.	Germany	DR			Sub QR	Analysar from M/s Emerson, Germany / USA.			
		III				Sick Mahlak	Germany	A							
		III				Emerson Process Management	Pavane	A							
		III				Siemens	Germany	A							
		III				Fuji Electric	Japan	A							
		*				Yokogawa	Japan	DR							
		*				Codel	UK	DR							
		*				ABB	Gloucestershire	DR							
86	Flue Gas Analyser (O2 Analyser (HT))	II				SECO	Chennai	A			Sub QR	Main Contractor Can propose additional vendor for this item			
87	Flue Gas Analyser (O2 Analyser (LT))	III				Marathon Monitor	USA	A			Sub QR	Make EMERSON, USA			
		III				Emerson (Rosemount)	Pavane	A				Make Emolec, Germany : Model			
		III				Forbes Marshall	Pune	A				Deltec 5000 series			
		III				ICE	Mumbai	A				Make Analtek, USA			
		III				Yokogawa	Bangalore	A				Make Yokogawa, Japan			
		III				ABB	Bangalore	A				Make ABB, UK			
		*				AMETEK (P and AI division)	Singapore	DR							
		*				Endtec	Germany	DR							
		*				Fuji Electric	Japan	DR							
		*				Teladine	USA	DR							
		*				Chemtrol	Goa	A			Sub QR				
88	Flue Gas Analyser Panel	I				Emerson Process Management	Havi Mumbai	A				Analysar from M/s Fuji, Japan			
		I				Pyrotech	Udaipur	A							
		I				Analytical Instrument Company	Kota	A							
		I				Yokogawa	Bangalore	DR							
		I				Adago	Mumbai	A							
		*				Marvel Engg Company	Chennai	DR							

18.02.16

Approved

C & E Dept.

Dist. Ramgarh

Biopark Electricals Limited

S-MKTG

Delhi

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PROJECT : Patratu STPS Phase-I (3 X600MW)										LIST OF ITEMS REQUIRING QP			
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE			
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY			
CONTRACT NO : CS-9555-001-2													
No.	Major Equipment	QP Inspect on Category	QP No. 5595-001-QV	QP Submis on	QP Approval	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark	
89	Graphic Interface Unit	III				Forbes Marshall Codel ICE(Asia) Private India Rockwell Automation	Pune Mumbai	DR DR					
		III				Digital Instruments and Control System (Proface)	Bangalore	A				Proface Brand	
		III				Red Lion	USA	A					
		III				Schneider Electric		A					
90	Hand Held Calibrator	III				Main contractor approved sources		A				Compatible with the Transmitter to be Supplied & Subject to meeting NTPC specification requirement	
91	Heart Management System	III				Yokogawa	India	A					
		III				Emerson Process Mgmt	USA / Singapore / India	A					
		III				P & F	Germany / Bangalore	A					
		III				MTL	Chennai	A					
		*				Stahl	Germany	DR					
92	Impact Head Type Flow Element	II				Deirtech / Emerson	USA	A			Sub QR		
		II				Midwest	USA	A					
		II				Veris Inc	USA	A					
		*				TM Technomatic SPA	Italy	DR					
93	Isolator	III				Main contractor approved sources							
94	Master Slave Clock System	I				Hopf	Germany	A					
		I				Serial	Chennai	A					
		II				Halfway	USA	A					
		II				Moser Baer AG	Switzerland	A					
		II				Mein Berg	Germany	A					
		I				Sands	Chennai	A					
		I				Mastbus	Ganghinagar	A					
		*				Signals & System	Chennai	DR					
95	Mosaic Tiles / Console Items	III				Pro-Plan	Germany	A				Earlier Byko Strey Earlier Subklew	
96	Network Components	III				Tew	Germany	A					
97	Online Mercury Analyzer	III				Main contractor approved sources							
		*				Durag	Bangalore	A			Sub QR	Make Durag, Germany Main Contractor Can propose additional vendor for this item	
		*				Mahak	Germany	DR					
		*				Thermo	USA	DR					
		*				Commend	Austria	DR					
		*				Stanphone Zenitel	Norway	DR					
		*				Amriel	Russia	DR					
		*				Industrie Electronic GmbH and Co. KG	Germany	DR					
		*				LARADN Engineers and Consultants Pvt. Ltd.	Gurgaon	DR					
		*				Aishan Technologies India Pvt. Ltd.	Bangalore	DR					



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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patratu STPS Phase-I (3 X500MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00			
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017			
CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY							
CONTRACT NO : CS-9585-001-2											
No.	Major Equipment	Qp Inspect on Category	Qp No. 9585-001-QM-Q SCH	Qp Submis on SCH	Qp Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval Sub OR	Remark
98	Printer (Dot Matrix)	III				BHEL Approved Sources					Make
99	Printer (Inkjet)	III				BHEL Approved Sources					Make
100	Printer (Laser)	III				BHEL Approved Sources					Make
101	Semaphore Indicators	III				K & N	Germany	A			
		III				ABB	Austria	A			
		III				Siemens	Germany	A			
		III				Siemens	Germany	A			
102	Synchronizing Relay	III				Siemens	Mumbai	A			
		III				Aeva	Chennai	A			
		III				ABB	Bangalore	A			
103	Synchroscope	III				BHEL Approved Sources					
104	Ultrasonic Type Flow Meter (for Stack)	III				Mahak	Germany	A			
		III				Ducap	Germany	A			
		III				TeleDyne	USA	A			
		I				GE Sensing	USA	DR			
105	UPS / ACDB	I				EMERSON (DB Power)	Pune	A			
		I				Merlin & Gerin	France	A			
		I				Gutur	Switzerland	A			
		I				AEG (Safi)	Germany	A			
		I				Hitachi Hirai	Gandhinagar	A			
		I				Emerson (Tala Ubert)	Ambanagar	A			
		I				Fuji Electric	Japan	A			
		I				Keltron	Kerala	DR			
		I				APC	India	DR			
		I				DUBAS ENGG PVT LTD.,		DR			
		I				BANGALORE		DR			
		I				Grid power conversion PM Ltd.		DR			
106	Vibration Monitoring System for BOP	II/I				Shinkawa	Japan	A			
		II/I				Banlay Nivada	USA	A			
		II/I				Vibrometer	Switzerland	A			
		II/I				Rockwell Automation	USA	A			
		II/I				SAF	USA	A			
		I				GE	Pune	A			
		I				Meggli	Bangalore	A			
		I				Forbes Marshall	Pune	A			
		I				Rockwell Automation	Sahababad	A			
		I				Emerson	Mumbai	DR			
		I				Burd and Kaser		DR			
		I				IRD Mechanalysis	Mumbai	DR			
107	Volimeter	III				Rishabh	Nashik	A			
		III				AE	Mumbai	A			
		III				Yokogawa	Japan	A			
		I				MECO		DR			
108	Watt-hour Meters	III				LAT	Bangalore	A			



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PROJECT : Patrauli STP's Phase-I (3 X200MW)				LIST OF ITEMS REQUIRING QP				REVISION NO:1.00			
PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 26.04.2017			
CONTRACTOR :BHIEL Ltd				VENDOR AS APPROVED BY							
CONTRACT NO : GS-3585-001-2											
No.	Major Equipment	QP Inspect on Category	QP No. 5555-001-QVI	QP Submis sion SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval Sub QR	Remark
109	Wireless Solution (Microwave Tower Communication)	III	III	III	III	Elster	Mumbai	A			
		III	III	III	III	Secure Meters	Udaipur	A			
		III	III	III	III	Yokogawa	Japan	A			
		III	III	III	III	GEC	UK	A			
		III	III	III	III	Schneider Electric	India	DR			
		III	III	III	III	Lands + Gyr	Kolkata	DR			
		III	III	III	III	D Link	Goa	A			
		III	III	III	III	Sheetal	Pune	A			
		III	III	III	III	Pyrotech	Udaipur	A			
		III	III	III	III	Aya Communications	New Delhi	A			
		*	*	*	*	Lotus Wireless	Vishakhapatnam	DR			
		*	*	*	*	Avion	Israel	DR			
		*	*	*	*	Prudential Automation Pvt. Ltd.	Hyderabad	DR			
		*	*	*	*	AMG Systems Ltd.	UK	DR			
110	Large Video Screen (LED Based)	III	III	III	III	Della	Gurgaon	A			
		III	III	III	III	Barco	Noida	A			
		III	III	III	III	Planet Systim	USA	A			
		*	*	*	*	Chratis	USA	DR			
		*	*	*	*	Eyevix	Germany	DR			
111	CJC Box (if applicable)	III	III	III	III	APM	ISRAEL	A			
112	3 O level Scanner for Solid Application	III	III	III	III	BHIEL Approved Sources		A			
113	Dust Sensor	III	III	III	III	Switching Circuit	Kolkata	A			
114	Pulse Jet Controller	III	III	III	III	Advance Concept	Kolkata	A			
		III	III	III	III	Control Devices	Kolkata	A			
		*	*	*	*	Voltcraft	Kolkata	DR			
		*	*	*	*	Micro System	Kolkata	DR			
		III	III	III	III	Schenk	Ranchi	A			
		III	III	III	III	Thermofstar (Ramsey)	Nasik	A			
		III	III	III	III	Siemens Altronica	Canada	A			
		III	III	III	III	Muzec	Germany	A			
		III	III	III	III	SWR	Germany	A			
		III	III	III	III	E & H	Aurangabad	A			
115	Solid Mass Flow Meter	III	III	III	III	Thermofisher Scientific	UK	A			
		*	*	*	*	Siemens	Germany	DR			
		*	*	*	*	EMERSON	USA	DR			
		*	*	*	*	GE Sensing	USA	DR			
		*	*	*	*	Benthold	Germany	DR			
		*	*	*	*	BHIEL Approved Sources		A			
116	Nuclear Density meter	III	III	III	III	Flow Endig	Noida	A			
		III	III	III	III	FLOW STAR	Pandhabad	A			
		III	III	III	III	Nivo Controls	Indore	A			
		*	*	*	*	BHIEL		DR			
117	Humidistat / Thermostat /	III	III	III	III	Flow Endig	Noida	A			
	Operated / Alarm	III	III	III	III	FLOW STAR	Pandhabad	A			
118	Level Switch (RF Type)	III	III	III	III	Nivo Controls	Indore	A			
		*	*	*	*	BHIEL		DR			



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PROJECT : Patra STPS Phase-I (3 X100MW)		LIST OF ITEMS REQUIRING QP										
PACKAGE : EPC PACKAGE		APPROVAL & ACCEPTABLE										
CONTRACTOR : BHEL Ltd		VENDOR AS APPROVED BY										
CONTRACT NO : CS-9385-001-2												
No.	Major Equipment	QP Inspection Category	QP No. 9385- 001-QP SCH	QP Submits SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
119	Turbine supervisory Instruments along with vibration analysis system.	II				GE BENTLY	USA	A				
	Refer Note - 1	II				MEGGITT (VIBROMETER)	SWITZERLAND	A				
		II				SHINKAWA	JAPAN	A				
		I				GE	Pune	A				For GE Bently, USA System
		I				MEGGITT (VIBROMETER)	Bangalore	A				For Meggit, Switzerland System
		I				Forbes Marshall	Pune	A				For Shinkawa, Japan system
		*				EMERSON	BIDIA	DR				
		*				Brüel and Kjaer		DR				
		*				Rockwell Automation	Sahibabad	DR				
		*				SKF	USA / India	DR				
		*				BHEL EDN	Bangalore	DR				
120	SWAS (Sampling Handling System and Dry Panel)	I				Emerson Process Management	Navi Mumbai	A			Sub QR	
		I				Forbes Marshall	Pune	A				
		I				Low	UK	A				Conditional
		I				ABB	Bangalore	A				
		I				Yokogawa	Bangalore	DR				
		I				Analysar Instrument Co. Ltd.	Kota	DR				
		I				Steam Equipment	Pune	A				
		*				Flow Line Instrument	Bangalore	DR				
		*				Instrumentation Limited	Kota	DR				
		*				Chemicon Controls	Pondichery	DR				
121	SWAS Analyser (Chloride)	III				ABB	UK	A			Sub QR	Orion Brand
		III				Orion	USA	A				
		*				DKK	Japan	DR				
		III				Hach	Switzerland	A				
122	SWAS Analyser (Conductivity)	III				Emerson Process Management	Navi Mumbai	A			Sub QR	Polymetron Brand
		III				Yokogawa	Japan	A				
		III				ABB	UK	A				
		*				Honeywell	USA	DR				
		*				DKK	Japan	DR				
		*				Orion	USA	DR				
123	SWAS Analyser (Dissolved Oxygen)	III				Orion	USA	A			Sub QR	Orion Brand
		III				Hach	Switzerland	A				Polymetron Brand
		III				Emerson Process Management	USA	A				
		III				ABB	UK	A				
		*				Honeywell	USA	DR				
		*				DKK	Japan	DR				
124	SWAS Analyser (Hydrazine)	III				Hach	Switzerland	A			Sub QR	Polymetron Brand
		III				Orion	USA	A				Orion Brand
		III				ABB	UK	A				



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NTPC		PROJECT : Patnati STPS Phase-I (3 X660MW)					LIST OF ITEMS REQUIRING QP					REVISION NO : 00	
		PACKAGE : EPC PACKAGE					APPROVAL & ACCEPTABLE					DATE : 28.04.2017	
		CONTRACTOR : BHEL Ltd					VENDOR AS APPROVED BY						
		CONTRACT NO : CS-5555-051-2											
No.	Major Equipment	QP Inspected Category	QP No. 5555-001-QV1	QP Submis sion ECH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Sub QR	Remark	
125	SWAS Analyser (pH)	III				ABB	Japan	DR					
126	SWAS Analyser (Phosphate)	III				Hach	UK	DR			Sub QR	Polymetron Brand	
127	SWAS Analyser (Silica)	III				Emerson Process Management	Switzerland	A					
128	SWAS Analyser (Sodium)	III				Yokogawa	Navi Mumbai	A					
129	SWAS Analyser (Turbidity)	III				Honeywell	Japan	DR					
130	Operator Testing Simulator	III				Orion	USA	DR			Sub QR	Polymetron Brand	
131	Concentration Analyser	III				Hach	Switzerland	A					
132	Electromagnetic Flow Meter	III				ABB	UK	DR					
133	Fiber Optic Generator End winding VMS	III				Orion	USA	A					
134	H2 Gas Analyser Cabinet	II				Rosemount Analytical Inc Irvine	Switzerland	DR			Sub QR	Polymetron Brand	
		II				Hach	USA	A					
		II				Hach	USA	A					
		II				ABB	UK	A					
		II				Orion	Japan	DR			Sub QR		
		II				Emerson	USA	A					
		II				WTW	Germany	A					
		II				E & H	Germany	A					
		II				Orion	Japan	DR					
		II				Krohne Marshel	Pune	A			Sub QR		
		II				E & H	Aurangabad	A					
		II				Emerson	Pawang	A					
		II				Yokogawa	Japan / China	DR					
		II				SIEMENS	Germany	DR					
		II				Vibro System INC	Canada	A					
		II				MC-Monitoring SA	Switzerland	A					
		II				ABB	Bangalore	A					
		II				Adage Automation	Mumbai	A					
		II				Yokogawa	Bangalore	A					
		II				Siemens	India	A					

Only Ref list and catalogues to be submitted.

Note-0

H2 Gas Analyser Germany

H2 Gas Analyser Siemens

Germany Model Cabonair 9

H2 Gas Analyser from Yokogawa

Japan

H2 Gas Analyser Siemens

Germany



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THIS IS A PART OF TECHNICAL SPECIFICATION NO. PE-TS-434-164-A001

PROJECT : Patra STPS Phase-I (3 X100MW)										LIST OF ITEMS REQUIRING QP				REVISION NO : 00	
PACKAGE : EPC PACKAGE										APPROVAL & ACCEPTABLE				DATE : 26.04.2017	
CONTRACTOR : BHEL Ltd										VENDOR AS APPROVED BY					
CONTRACT NO : CS-3585-001-2															
No.	Major Equipment	QP Inspecti on Categor	QP No. 8585- 001-QM Q	QP Submis Bon SCH	QP Appro val SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub-SCH	SS Approval SCH	Sub QR	Remark			
135	Sight Flow Indicator	I				BHEL Approved Sources		A							
136	Ammonia Analyser	*				Sick Mahak	Germany	DR							
		*				Emerson Process Management	Pawane	DR							
		*				Siemens	Germany	DR							
		*				Fuji Electric	Japan	DR							
		*				Thermofisher	Mumbai	DR							
		*				Yokogawa	Bangalore	DR							
		*				Dongwoo Option		DR							
137	AAQMS	I				Environment SA India Pvt. Ltd.	Bangalore	A			Sub QR	Analysers for Environment SA, France : Multipoint Calibrator from M/s L N Industrial, Switzerland and Metrollogical Sensors from M/s LSI Lastem SRL, Italy.			
		I				Chemiro's	GOA	A				Analysers for Teledyne API USA: Metrollogical Sensors & SPIA from M/s Melone Instruments, USA.			
		I				Thermo Electron LLS India Pvt. Ltd.	Mumbai	A				Analysers for M/s Thermoenviroental Instruments Inc., USA & Metrollogical Sensors from M/s Melone Instruments, USA.			
138	FOMS	*				Land Combustion	UK	DR							
		*				Thermofisher	India / USA	DR			Sub QR				
		*				SEPL	Pune	DR							
		*				AIPL	Kota	DR							
		*				Novco	Sural	DR							
		*				Thermofisher	Mumbai	DR							
		*				Thermax	Pune	DR							
139	RESIDUAL CHLORINE ANALYSER	III				Suprema Technology E & I	Mumbai	DR							
						EMERSON PROCESS	GERMANY	A							
						HACH	PAWANE	A							
140	ORP ANALYZER	III				Emerson process	USA	A							
						ABB	UK/USA	A							
						HACH	Switzerland	A							
141	CL2 Leak detector	III				Yokogawa	Japan	A							
						W&T	Germany	A							
142	Flame Scanner Cable	I				Thermocable	Hyderabad	A							
		I				Delton cables	Fardabad	A							



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P. P. P. P.

NTPC		PROJECT : Palatu STPS Phase-I (3 X800MW)				LIST OF ITEMS REQUIRING QP				REVISION NO : 00		
		PACKAGE : EPC PACKAGE				APPROVAL & ACCEPTABLE				DATE : 20.04.2017		
		CONTRACTOR : BHEL Ltd				VENDOR AS APPROVED BY						
		CONTRACT NO : CS-9585-001-2										
No.	Major Equipment	QP Inspected on	QP No.	QP Submis	QP Appro	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Sub QR	Remark
		Category	Q	SCH	val SCH							
		I				Cords Cable	Bhimadi / Kolarani	A				

LEGENDS :

1.0 SYSTEM SUPPLIER / SUB SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)

A - For those items proposed vendor is acceptable in NTPC, subject to meeting the NTPC Specification requirement. To be indicated with letter "A" in the list alongwith the condition of approval, if any.
DR - For those items "Detailed Required" for NTPC review. To be identified with letter "DR" in the list.

NOTED : For these items vendors are approved by Main Supplier and accepted by NTPC without specific vendor approval from NTPC. To be identified with "NOTED"

2.0 QP INSPECTION CATEGORY :

CAT - I : For those items the Quality Plans are approved by NTPC and final acceptance will be on physical inspection whereas by NTPC
CAT - II : For those items the Quality Plans are approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis of review of documents.

CAT-III:

UNITS/WORKS : Place of manufacturing. Place of main supplier of multi units/works.

* - Inspection category will be decided during vendor evaluation.

NOTE - 1 : EMPTY CABINETS, COMPUTERS, SIGNAL ISOLATOR/MULTIPLIER, MCB, TB, POWER SUPPLY ETC, SHALL ALSO BE ACCEPTABLE FROM INDEGENEOUS SOURCES AGREED BY NTPC IN QP. IF THE TOTAL INTEGRATED PANEL AND FAT IS CONDUCTED INDEGENEOUSLY ITEM TO BE TREATED AS CAT - I.

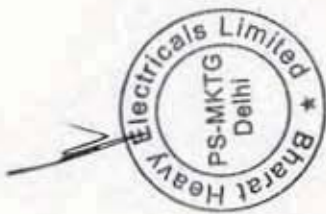
NOTE - 2 : Mandatory Sapre will be treated as CAT-III

NOTE - 3 : For the items not appearing in the proeward list, bidder and NTPC will mutually discussed in future.

NOTE - 4 : Intergration testing of DCMIS shall be done with monitor connected to the LVS workstation. This would be tied up in the QAP/ATST. Dispatch of LVS can be allowed like a CAT-III item but only after successful testing of functionality as indicated in QP and completion of ATST of first unit.

NOTE - 5 : C&I Items Integral for skid, Fan, Motor, Pump etc Instrument shall be supplied as per OEM standard/ approved sources.

NOTE - 6 : for instrumentation cable quantity less than 1 km of each type inspection category is III and for less than 2.5 km of each type inspection category is CAT-II
FORMAT NO. : QS-01-QALP-1/FS-R0



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BHEL-PEM SUB VENDOR LIST AS ON 4/5/2018

Sl No	Package Name	Supplier Name	Supplier Communication Address
1	Cold Junction Compensation Box (CJCB)	CREATIVE INSTRUMENTS & CONTROLS	NO-17/1, 1ST FLOOR, 11TH CROSS 1ST K BLOCK, RAJAJINAGAR, BANGALORE-560010 Phone- Pincode : Email : crinstruments@gmail.com
2	CONTROL VALVE	FORBES MARSHALL ARCA PVT.LTD.	A-34/35, MIDC ESTATE, H-BLOCK, PIMPRI, PUNE, Phone- 020-27442020, Pincode : 411018 Email : mnadgaundi@forbesmarshall.com
		INSTRUMENTATION LTD.	KANJIKODE WEST, PALALKKAD, PALAKKAD Phone- 2566127-130,2567128 Pincode : 678623 Email : icvldil@gmail.com;fa2@ilpgt.com
		Koso India Private Limited,	H 33 & 34, MIDC, Ambad, Nashik, Phone- 09650233433 Pincode : 422010, Email : jetmal.gour@koso.co.in
		BOMFA SPECIAL VALVE SOLUTIONS PVT LTD	Mr. K.M. Anklesaria/ R. M. Anklesaria Plot No: 285/2, Panchratna Estate, Near Ramol Bridge, Vatva Ahmedabad Phone- 079-40083825 Pincode : 382445 Email : info@bomafa-india.com
		KSB MIL CONTROLS LTD.	Mr.Jacob Cherian/Mr.Geo Jolly Meladoor, Annamanada P.O. MALA, Thrissur Phone- 0480-2695700 Pincode : 680741 Email : btiu.simon@ksb.com
		SUZHOU DELAN ENERGY SCIENCE & TECHNOLOGY CO., LTD.	No 566 Fangqiao Road Caohu Industrial Park, Xiangcheng Economic Development Zone, Suzhou Phone- 008618012776062 Pincode : 215143 Email : jeanielei@delan-valve.com
		Valvitalia S.P.A. ,	Mr. Salvatore Ruggeri Via Tortona 69, Rivanazzano (Pavia) Phone- +39-03839459875 Pincode : 27055 Email : dario.torluccio@valviatitalia.com
		R.K.CONTROL INSTRUMENTS PVT. LTD.	PLOT NO.A-250, OPP.POLICE STATION, WAGLE INDUSTRIAL ESTATE, THANE Phone- 25820943/2331 Pincode : 400604 Email : rkcipl@vsnl.com ; rkcinpvt@bol.net.in
		Mascot Valves Pvt. Ltd.	166-167 GIDC Naroda Ahmedabad Phone- 0792282 1619 Pincode : 382330 Email : dom.sales@mascotvalves.com
		EMERSON PROCESS MANAGEMENT CHENNAI LIMITED	147, KARAPAKKAM VILLAGE, CHENNAI Phone- 23722184, 23716242 Pincode : 600096 Email : jatinder.singh@emerson.com
		DRESSER VALVE INDIA PVT. LTD	Mr. Raj Raman/Mr. Rajkumar Moria S.F. No: 608,Chettipalayam Road, Echanari Post, Coimbatore Phone- +91-98451 19085 Pincode : 641021 Email : Anoop.Ramachandran@qe.com
		WALDEMAR PRUSS ARMATURENFABRIK GMBH	Mr. Winfried Dremhel Schulenburgelandstrasse 261, Hannover Phone- +49-511279260 Pincode : 30419 Email : dremhel@pruss.de; vogel@pruss.de
3	ELECTROMAGNETIC FLOW METER	Adept Fluidyne Pvt. Ltd.	Vinayak Gadre Plot No 4,S.No.17/1-B Kothrud Industrial Estate Pune Phone- 020 25464551 Pincode : 411038 Email : info@adeptfluidyne.com
		Electronet Equipments Pvt Ltd.	Plot No. 84, 85 & 86, Tiny Industrial Estate Kondhwa Budruk, Pune Phone- 020-2026932039 Pincode : 411048 Email : ho@eeplindia.com
		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com
4	FLOW ELEMENT	MICRO PRECISION PRODUCTS PVT. LTD.	K.P. CHANDHOK/ATUL CHANDHOK 4, LINK ROAD, FARIDABAD Phone- 9810265688 Pincode : 121002 Email : pal@microa1.com
		STAR-MECH CONTROLS (I) PVT.LTD.	SUSHILLOTAM, SUSHILLOTAM, 29/3A/3, SASANE NAGAR, HADAPSAR, PUNE Phone- 02026970450 Pincode : 411028 Email : marketing@starmech.net
		INSTRUMENTATION LTD.	KANJIKODE WEST, PALALKKAD, PALAKKAD Phone- 2566127-130,2567128 Pincode : 678623 Email : icvldil@gmail.com;fa2@ilpgt.com
		TM TECNOMATIC SPA	MR. ANTONIO NOVIELLO/Mrs. Enrica Bazzocc VIA DELLE INDUSTRIE, 36 CREMONA Phone- 39037221574 Pincode : 26100 Email : info@tmtecnomatic.com
5	FLOW ELEMENT - NOZZLE	DYNAFLUID VALVES AND FLOW CONTROLS (P) LTD.	Mr. Yogish M. Kulkarni Plot # 23, Udyambag, Belgaum Phone- 0831-4210386 Pincode : 590008 Email : yogish@dyna-fluid.com
		HYDROPNEUMATICS PVT. LTD.	Mr. DM Bichu G/B, Hill Crown Apts., College Road Mapusa Phone- 0832-2360364 Pincode : 403507 Email : ajayrc@hydropneumatics.co.in
		MINCO (INDIA) FLOW ELEMENTS PVT. LTD.	Mr. Raghavendra M. Kulkarni D2-49/50, Tivim Industrial Estate, Karaswada Mapusa Phone- 0832-2257059 Pincode : 403526 Email : qicflowelement@giconindia.com
		STAR-MECH CONTROLS (I) PVT.LTD.	SUSHILLOTAM, SUSHILLOTAM, 29/3A/3, SASANE NAGAR, HADAPSAR, PUNE Phone- 02026970450 Pincode : 411028 Email : marketing@starmech.net
		INSTRUMENTATION LTD.	KANJIKODE WEST, PALALKKAD, PALAKKAD Phone- 2566127-130,2567128 Pincode : 678623 Email : icvldil@gmail.com;fa2@ilpgt.com
		MINCO (INDIA) PRIVATE LIMITED	D/35,TIVIM INDUSTRIAL ESTATE, KARASWADA, MAPUSA, Goa, Phone- 9320197825, Pincode : 403526, Email : santoshkumar@general-gauges.com,
		MICRO PRECISION PRODUCTS PVT. LTD.	K.P. CHANDHOK/ATUL CHANDHOK 4, LINK ROAD, FARIDABAD Phone- 9810265688 Pincode : 121002 Email : pal@microa1.com
	FLOW ELEMENT - ORIFICE	MICRO PRECISION PRODUCTS PVT. LTD.	K.P. CHANDHOK/ATUL CHANDHOK 4, LINK ROAD, FARIDABAD Phone- 9810265688 Pincode : 121002 Email : pal@microa1.com
		TANSA EQUIPMENTS PVT. LTD.	Mr. Vardhan Tamhankar, Unit No35/36/41,Om Anand Industrial Est. Mohanjee Sundarjee Road,Raghunath Nagar, Thane Phone- 022-25832323 Pincode : 400604 Email : tansaindia@gmail.com

6		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com
		MINCO (INDIA) PRIVATE LIMITED	D/35,TIVIM INDUSTRIAL ESTATE, KARASWADA, MAPUSA, Goa, Phone- 9320197825, Pincode : 403526, Email : santoshkumar@general-gauges.com,
		CHEMTROLS INDUSTRIES PVT. LTD.	Mr. K. NANDAKUMAR AMAR HILL, SAKI VIHAR ROAD, POWAI, MUMBAI Phone- 022-67151261 Pincode : 400072 Email : manikandan@chemtrols.com
		STAR-MECH CONTROLS (I) PVT.LTD.	SUSHILLOTAM, SUSHILLOTAM, 29/3A/3, SASANE NAGAR, HADAPSAR, PUNE Phone- 02026970450 Pincode : 411028 Email : marketing@starmech.net
		INSTRUMENTATION LTD.	KANJIKODE WEST, PALALKKAD, PALAKKAD Phone- 2566127-130,2567128 Pincode : 678623 Email : icvldil@gmail.com;fa2@ilpgt.com
		HYDROPNEUMATICS PVT. LTD.	Mr. DM Bichu G/B, Hill Crown Apts., College Road Mapusa Phone- 0832-2360364 Pincode : 403507 Email : ajayrc@hydropneumatics.co.in
		Flow Star Engineering Pvt. Ltd.,	MR. KHALID AKHTAR/MR. TAPAN KUMAR JANA Plot No-7 F/2, Northern India Industrial 20/3, Mathura Road FARIDABAD Phone- 9818176380 Pincode : 121005 Email : khalid@flowstar.co.in
		INSTRUMENTATION ENGINEERS PVT LTD	SH.N.V.RAM GOPAL/MS. N.NIHARIKA PLOTS 1,2,3, PHASE-III, IDA, JEEDIMETLA HYDERABAD Phone- 9848407365 Pincode : 500055 Email : iedelhi@ieflowmeters.com
		MINCO (INDIA) FLOW ELEMENTS PVT. LTD.	Mr. Raghavendra M. Kulkarni D2-49/50, Tivim Industrial Estate, Karaswada Mapusa Phone- 0832-2257059 Pincode : 403526 Email : qicflowelement@qiconindia.com
		DYNAFLUID VALVES AND FLOW CONTROLS (P) LTD.	Mr. Yogish M. Kulkarni Plot # 23, Udyambag, Belgaum Phone- 0831-4210386 Pincode : 590008 Email : yogish@dyna-fluid.com
7	INSTRUMENT FITTINGS	Perfect Instrumentation Control (India) Pvt. Ltd.	MD Hussain Shaikh/Shahanawaz Khan Gala No. 168, Loheki Chwal,216/ 218, Maulana Azad Rd. Nagpada Junction Mumbai Phone- 91-9324383121 Pincode : 400008 Email : shahanawaz.khan@perfectinstrumentation.com
		Comfit & Valve Pvt. Ltd.	Mr. Jeetu Jain/Mr. Vinay Sosa Survey No. 23/1, Part 2, Ahmedabad-Mehsana Highway Laxmipura, Nandasan Phone- 02764-267036/37 Pincode : 382705 Email : marketing@com-fit.com
		Arya Crafts & Engineering Pvt. Ltd.	Mr.Sanjay Brahman/Mr.Shyam Vazirani 102, Vora Industrial Estate No.4 Navghar, Vasai Road (E) Dist.Thane, Mumbai Phone- +91-250-2392246 Pincode : 401210 Email : arya@aryaengg.com
		HP VALVES & FITTINGS INDIA PVT. LTD.	S. Harichandran/P.S. Pandi B-11, Mugappair Industrial Estate, CHENNAI Phone- 044 26252537 Pincode : 600037 Email : sales@hpvalvesindia.com
		PRECISION ENGINEERING INDUSTRIES	K. SITARAM/ K. SRINIVAS 7,SIDHAPURA INDUSTRIAL ESTATE S.V. ROAD,GOREGAON(W) MUMBAI Phone- 022 42631700 Pincode : 400 062 Email : peiks@vsnl.com
		AURA INCORPORATED	NIRAJ SHARAN/SUJIT KUMAR W-167A, GREATER KAILASH-II NEW DELHI Phone- 9810182430 Pincode : 110048 Email : niraj@aurainc.com
		FLUIDFIT ENGINEERS PVT. LTD.	Mr. Abbas Bhola Potia Building No. 2, Office No. 3,292, Bellasis Road,Mumbai Central (East) Mumbai Phone- 9920044113 Pincode : 400008 Email : ab@fluidfitengg.com
		VIKAS INDUSTRIAL PRODUCTS	S.R.SINGH/NAVEEN SINGH B - 2, SECTOR - 6, NOIDA Phone- +91-9810122070 Pincode : 201301 Email : naveensingh@vsnl.com
		Fluid Controls Pvt. Ltd.	Sophie Y. Moochhala/Mayur Rajput J.V.PATEL, I.T.I CMPD, B.MADHUKAR MARG, ELPHINSTONE ROADSTN.(WR), MUMBAI Phone- (022) 43338000 Pincode : 400013 Email : sales@fluidcontrols.com
		PANAM ENGINEERS	Mr. Santosh Shukla 203, Jaisingh Business,Parsiwada, Sahar road,Andheri(East), Mumbai, Phone- 9892179529, Pincode : 400099, Email : santosh@panamengineers.com,
8	INSTRUMENTS PIPE FITTINGS	VIKAS INDUSTRIAL PRODUCTS	S.R.SINGH/NAVEEN SINGH B - 2, SECTOR - 6, NOIDA Phone- +91-9810122070 Pincode : 201301 Email : naveensingh@vsnl.com
		AURA INCORPORATED	NIRAJ SHARAN/SUJIT KUMAR W-167A, GREATER KAILASH-II NEW DELHI Phone- 9810182430 Pincode : 110048 Email : niraj@aurainc.com
		PRECISION ENGINEERING INDUSTRIES	K. SITARAM/ K. SRINIVAS 7,SIDHAPURA INDUSTRIAL ESTATE S.V. ROAD,GOREGAON(W) MUMBAI Phone- 022 42631700 Pincode : 400 062 Email : peiks@vsnl.com
		Fluid Controls Pvt. Ltd.	Sophie Y. Moochhala/Mayur Rajput J.V.PATEL, I.T.I CMPD, B.MADHUKAR MARG, ELPHINSTONE ROADSTN.(WR), MUMBAI Phone- (022) 43338000 Pincode : 400013 Email : sales@fluidcontrols.com
		VIKAS INDUSTRIAL PRODUCTS	S.R.SINGH/NAVEEN SINGH B - 2, SECTOR - 6, NOIDA Phone- +91-9810122070 Pincode : 201301 Email : naveensingh@vsnl.com
		Fluid Controls Pvt. Ltd.	Sophie Y. Moochhala/Mayur Rajput J.V.PATEL, I.T.I CMPD, B.MADHUKAR MARG, ELPHINSTONE ROADSTN.(WR), MUMBAI Phone- (022) 43338000 Pincode : 400013 Email : sales@fluidcontrols.com
		PRECISION ENGINEERING INDUSTRIES	K. SITARAM/ K. SRINIVAS 7,SIDHAPURA INDUSTRIAL ESTATE S.V. ROAD,GOREGAON(W) MUMBAI Phone- 022 42631700 Pincode : 400 062 Email : peiks@vsnl.com
		AURA INCORPORATED	NIRAJ SHARAN/SUJIT KUMAR W-167A, GREATER KAILASH-II NEW DELHI Phone- 9810182430 Pincode : 110048 Email : niraj@aurainc.com

9	JUNCTION BOX	SUCHITRA INDUSTRIES	NO-2,OPP-27 AECS LAYOUT 2ND STG REJAMAHALVILAS EXTN 2ND STG BANGALORE Phone- Pincode : Email : suchitra.industriesblr@gmail.com
		K.S.INSTRUMENTS PVT.LTD.	S Raghavan No. 72, 3rd Main, 1st Stage Industrial Suburb, Yeshwanthpur Bangalore Phone- 9880385770 Pincode : 560022 Email : sales1@ksinstruments.net
		Shrenik & Company,	Mr. Mitesh Shah/Mr. Pulin Shah 39 A/3 ,Panchratna Industrial Estate, Sarkhej-Bavla Road Ahmedabad Phone- 9825024921 Pincode : 382213 Email : sales@pustron.com, pulin@sumip.com
		FLEXPRO ELECTRICALS PVT. LTD.	Mr. Dineshbhai Zaveri C-1/ 27&37, GIDC, Kabilpore, Navsari Phone- 02637-265140,265003 Pincode : 396424 Email : flexpro@flexproltd.com
		AJMERA INDUSTRIAL & ENGINEERING WORKS	JIGNESH MAHENDRA AJMERA DENA BANK BLDG.,SHREE NAGESH INDL. ESTATE,STATION ROAD, MUMBAI Phone- 022 67973578 Pincode : 400 088 Email : ajmera@ajmera.net, jmaimera@yahoo.com
10	LEVEL GAUGE	TOSHNIWAL BROTHERS PVT.LTD.	WORKS:TOSHNIWAL IND.PVT.LTD, INDUSTRIAL ESTATE MAKHUPURA, AJMER Phone- 441171 Pincode : 305002 Email : toshniwalprocess@gmail.com
		BLISS ANAND PVT. LTD.	Mr. Vikas Anand/ Mr.RGRajan 92B & 93 B, IMT MANESAR Gurgaon Phone- 0124-4366000 TO 9 Pincode : 122001 Email : sales@blissanand.com
		SIGMA INSTRUMENTS CO.	Gopal Kannan/R Gopinath 201, ANANDRAJ INDUSTRIAL ESTATE, OFF.LBS MARG, SONAPUR LANE, BHANDUP (W) MUMBAI Phone- +919821038162 Pincode : 400078 Email : sales@sigmainstruments.co.in
11	LEVEL SWITCH-CAPACITANCE TYPE	SIGMA INSTRUMENTS CO.	Gopal Kannan/R Gopinath 201, ANANDRAJ INDUSTRIAL ESTATE, OFF.LBS MARG, SONAPUR LANE, BHANDUP (W) MUMBAI Phone- +919821038162 Pincode : 400078 Email : sales@sigmainstruments.co.in
		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com
		V. AUTOMAT & INSTRUMENTS (P) LTD.	Mr. R. K. BASSI/Mr. PRAVEEN KUMAR F-61, OKHLA INDL.AREA, PH-1 NEW DELHI Phone- 9810005826 Pincode : 110 020 Email : sales@vautomat.com
		LEVCON INSTRUMENTS PVT. LTD.	Mr Shayak Gupta/Badal Jana Rajkamal', 7th floor, 13, Camac Street KOLKATA Phone- 0 33 2283 2766 Pincode : 700017 Email : b_jana@levcongroup.com
		Flow Star Engineering Pvt. Ltd.,	MR. KHALID AKHTAR/MR. TAPAN KUMAR JANA Plot No-7 F/2, Northern India Industrial 20/3, Mathura Road FARIDABAD Phone- 9818176380 Pincode : 121005 Email : khalid@flowstar.co.in
		Pune Techtrol Pvt. Ltd.	N.P.Khatan/Sudhakar Badiger S-18, MIDC Bhosari, Pune Phone- 9850560042 Pincode : 411 026 Email : ho@punetechtrol.com
		Baumer Technologies India Pvt. Ltd.	Mr. Shyam Warilani/Mr. V Suresh Babu 36, DAMJI SHAMJI INDUSTRIAL COMPLEX, OFF.-MAHAKALI CAVES ROAD, ANDHERI(E) MUMBAI Phone- +91 99589 25151 Pincode : 400093 Email : sales.in@baumer.com
12	LEVEL SWITCH-CONDUCTIVITY TYPE	Sapcon Instrument Pvt Ltd.	131, PALSHIKAR COLONY Contact Person- Mr. Ashwin (9826080207) INDORE Phone- +91-731-4085751, Pincode : 452004 Email : sales@sapconinstruments.com
		LEVCON INSTRUMENTS PVT. LTD.	Mr Shayak Gupta/Badal Jana Rajkamal', 7th floor, 13, Camac Street KOLKATA Phone- 0 33 2283 2766 Pincode : 700017 Email : b_jana@levcongroup.com
		BLISS ANAND PVT. LTD.	Mr. Vikas Anand/ Mr.RGRajan 92B & 93 B, IMT MANESAR Gurgaon Phone- 0124-4366000 TO 9 Pincode : 122001 Email : sales@blissanand.com
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		HI-TECH SYSTEMS & SERVICES LTD.	Mr. Vikash Agrawal/Mr. Tarun Debnath 119, PARK STREET , KOLKATA Phone- 033-22290045 Pincode : 700016 Email : sandeep@hitech.in
		RAMAN INSTRUMENTS PVT.LTD.	Mr. N R Shenoy/Mr G B Vijn 8, First Floor.Plot : 160A Bait-Ush-Sharaf, 29th Road,Bandra(W) MUMBAI Phone- 09892331381 Pincode : 400050 Email : ramanbpl@vsnl.com
		SIGMA INSTRUMENTS CO.	Gopal Kannan/R Gopinath 201, ANANDRAJ INDUSTRIAL ESTATE, OFF.LBS MARG, SONAPUR LANE, BHANDUP (W) MUMBAI Phone- +919821038162 Pincode : 400078 Email : sales@sigmainstruments.co.in
		SOR INC.	LARRY DEGARMO/Avdhesh Chandra, 14685 W. 105TH STREET LENEXA Phone- 09810905139, Pincode : 66215 Email : Ldegarmo@sorinc.com, avdhesh@sherman-india.com,
	LEVEL SWITCH-FLOAT TYPE	SOR INC.	LARRY DEGARMO/Avdhesh Chandra, 14685 W. 105TH STREET LENEXA Phone- 09810905139, Pincode : 66215 Email : Ldegarmo@sorinc.com, avdhesh@sherman-india.com,
		Pune Techtrol Pvt. Ltd.	N.P.Khatan/Sudhakar Badiger S-18, MIDC Bhosari, Pune Phone- 9850560042 Pincode : 411 026 Email : ho@punetechtrol.com
		D.K. INSTRUMENTS PVT.LTD.	N.SIKDAR/ SUMIT SIKDAR 76/2,SELIMPUR RD DHAKURIA Kolkata Phone- 033-2415-1310. Pincode : 700031 Email : dkinst@vsnl.net
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		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com

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		GENERAL INSTRUMENTS CONSORTIUM	Mr. Amarendra Kulkarni 194/195, Gopi Tank Road, Off. Pandurang Naik Marg, Mahim Mumbai Phone- 9323195251 Pincode : 400016 Email : amarendra@general-gauges.com
		Baumer Technologies India Pvt. Ltd.	Mr. Shyam Warilani/Mr. V Suresh Babu 36, DAMJI SHAMJI INDUSTRIAL COMPLEX, OFF.-MAHAKALI CAVES ROAD, ANDHERI(E) MUMBAI Phone- +91 99589 25151 Pincode : 400093 Email : sales.in@baumer.com
		SBEM PVT. LTD.	MR.N.K. BEDARKAR/MR. VISHWANATH KARANDIK 39, ELECTRONIC CO.OP. ESTATE, PUNE SATARA ROAD PUNE, Phone- 912041030100 Pincode : 411009 Email : newdelhi@sbem.co.in
		SIGMA INSTRUMENTS CO.	Gopal Kannan/R Gopinath 201, ANANDRAJ INDUSTRIAL ESTATE, OFF.LBS MARG, SONAPUR LANE, BHANDUP (W) MUMBAI Phone- +919821038162 Pincode : 400078 Email : sales@sigmainstruments.co.in
14	PRESSURE GAUGE/ DIFF.PRESSURE GAUGE	A.N. INSTRUMENTS PVT. LTD.	MARKETING DIVISION, 5th FLOOR, 59-B, CHOWRINGHEE ROAD, KOLKATA Phone- 24757784,22472509 Pincode : 700020 Email : anidel@bol.net.in
		H.GURU INDUSTRIES	Mr. G. D. Hazra/Mr. P. K. Mitra 10 B, HO-CHI-MINH SARANI, KOLKATA Phone- 033 2282 2463 / 1637 Pincode : 700071 Email : mguru@vsnl.net
		BOSE PANDA INSTRUMENTS PVT.LTD.	Mr. Partha Bose 44, Saheed Hemanta Kumar Bose, Sarani, Kolkata Phone- +91 33 2548 7220 Pincode : 700074 Email : parthabosebpi@gmail.com; bosepanda@vsnl.net
		PRECISION MASS PRODUCTS PVT. LTD.	Mr. Nishit Patel/Mr. Anuj Verma Plot No.2306, Phase II, GIDC Chhatral Kalol Phone- 9999464663 Pincode : 382729 Email : sales@precisionmass.com
		Baumer Technologies India Pvt. Ltd.	Mr. Shyam Warilani/Mr. V Suresh Babu 36, DAMJI SHAMJI INDUSTRIAL COMPLEX, OFF.-MAHAKALI CAVES ROAD, ANDHERI(E) MUMBAI Phone- +91 99589 25151 Pincode : 400093 Email : sales.in@baumer.com
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		FORBES MARSHALL (HYD) LTD.	MR SAILESH PATALAY/MR. M K SRINIVASAN PLOT NO.A-19/2, & T-4/2, IDA, NACHARAM, HYDERABAD Phone- 9849913704 Pincode : 500 076 Email : mksrinivasan@forbesmarshall.com
		GAUGE BOURDON INDIA PVT. LTD.	194/195, Gopi Tank Road, Off Pandurang Naik Marg, Mahim Mumbai, Phone- 011-41607463, Pincode : 400016, Email : qicdelhi@general-gauges.com,
		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com
		Nesstech Instruments Private Limited	26/2, G Type, Global Industrial Park Near Nahuli Railway Crossing, Valvada Vapi Phone- 9920576002 Pincode : 396105 Email : sales@nesstech.co.in
15	PRESSURE SWITCH/DIFF. PRESSURE SWITCH	SOR INC.	LARRY DEGARMO/Avdhesh Chandra, 14685 W. 105TH STREET LENEXA Phone- 09810905139, Pincode : 66215 Email : ldegarmo@sorinc.com, avdhesh@sherman-india.com,
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		Barksdale GmbH, Germany	Michael Weileder Dorn Assenheimer, Strasse 27 Reichelsheim Phone- +91-9999107840 Pincode : D-61203 Email : msingh@barksdale.de
		GENERAL INSTRUMENTS CONSORTIUM	Mr. Amarendra Kulkarni 194/195, Gopi Tank Road, Off. Pandurang Naik Marg, Mahim Mumbai Phone- 9323195251 Pincode : 400016 Email : amarendra@general-gauges.com
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		INDFOS INDUSTRIES LIMITED	B-20-21, INDUSTRIAL AREA, MEERUT ROAD, GHAZIABAD Phone- 0120-2712016 Pincode : Email : mktg@indfos.com
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		Kaustubha Udyog,	S.No. 36/1/1, Sinhgad Road, Vadgaon Khurd, Near Lokmat Press, Pune, Phone- 020-24393577, Pincode : Email : pressure@vsnl.com,
16	ROTAMETER	INSTRUMENTATION ENGINEERS PVT LTD	SH.N.V.RAM GOPAL/MS. N.NIHARIKA PLOTS 1,2,3, PHASE-III, IDA, JEEDIMETLA HYDERABAD Phone- 9848407365 Pincode : 500055 Email : iedelhi@ieflowmeters.com
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		EUREKA INDUSTRIAL EQUIPMENTS PVT.LTD.	Mr V. K. Pandit/Mr Ashish Shaha 17-20, Royal chambers, Paud Road Pune Phone- 9370469466 Pincode : 411038 Email : sales@eurekaflow.com

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		B.K.EQUIPMENTS PVT.LTD.	T. BALAKRISHNAN/S.VENKATESH 217 , ARCOT ROAD PORUR , CHENNAI Phone- 9444057761 Pincode : 600116 Email : bkequip@gmail.com
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18	TEMP. ELEMENT	PYRO ELECTRIC INSTRUMENTS GOA PVT.LTD.	M. D. BICHU/R. M. BICHU G.B, HILL CROWN APARTMENTS, COLLEGE ROAD, MAPUSA Phone- 9326114601 Pincode : 403507 Email : priyanka.marketing@pyro-electric.in
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		Nesstech Instruments Private Limited	26/2, G Type, Global Industrial Park Near Nahuli Railway Crossing, Valvada Vapi Phone- 9920576002 Pincode : 396105 Email : sales@nesstech.co.in
		Thermal Instrument India Pvt. Ltd.	Mr. Raghavendra M. Kulkarni 194/195, Gopi Tank Road Behind Citylight Cinema,Mahim Mumbai Phone- 09322664709 Pincode : 400016 Email : ramk@giconindia.com
		TOSHNIWAL INDUSTRIES PVT. LTD.,	Industrial Estate, Makhapura, Ajmer, Phone- 9352009000, Pincode : 305002, Email : info@tipl.com,
		GAUGE BOURDON INDIA PVT. LTD.	194/195, Gopi Tank Road, Off Pandurang Naik Marg, Mahim Mumbai, Phone- 011-41607463, Pincode : 400016, Email : gicdelhi@general-gauges.com,
		GOA INSTRUMENTS INDUSTRIES PVT.LTD.,	D2/5, Mapusa Industrial Estate, Mapusa, Goa, Phone- 09326054551, Pincode : 403507, Email : sumukh@goainstruments.com,
		SCIENTIFIC DEVICES (BOMBAY) PVT LTD,	Office no. 53, Shree Manoshi Complex, Plot No. 5 & 6, Sec-3, Ghansoli (East), Navi Mumbai, Phone- 9892230623, Pincode : 400 701, Email : sdbpl@vsnl.com
		Tempsens Instrument (I) Pvt Ltd	MR. V.P.RATHI/MR. HEMANT RATHI B-188A ROAD NO.5 , M.I.A UDAIPUR Phone- 09352420069 Pincode : 313003 Email : info@tempsens.com
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20	TEMPERATURE SWITCH	SOR INC.	LARRY DEGARMO/Avdshesh Chandra, 14685 W. 105TH STREET LENEXA Phone- 09810905139, Pincode : 66215 Email : ldegarmo@sorinc.com, avdshesh@sherman-india.com,
		TOSHNIWAL BROTHERS PVT.LTD.	WORKS:TOSHNIWAL IND.PVT.LTD, INDUSTRIAL ESTATE MAKHUPURA, AJMER Phone- 441171 Pincode : 305002 Email : toshniwalprocess@gmail.com
		DRESSER INDUSTRIES INC.	Mr. Nishit Patel/Mr. Anuj Verma Plot No.2306, Phase II, GIDC Chhatral Kalol Phone- 02764-233682 Pincode : 382729 Email : Nishit.patel@ashcroftindia.com
		INDFOS (INDIA) LIMITED	MR.L.C.VENKATRANGAN/MR.B.KANNAN New No.17, II Floor, Adwave Towers, Dr.Sevalia Shivaji Salai, T.Nagar Chennai Phone- +91 44 24353407 Pincode : 600017 Email : delhi@indfos.com

		SWITZER PROCESS INSTRUMENTS PVT. LTD.	Mr. V S Jayaprakash, No.127 & 128, SIDCO North Phase, Ambattur Estates CHENNAI Phone- 044-26252017/2018 Pincode : 600050 Email : marketing@switzerinstrument.com
21	TRANSMITTERS	ABB LIMITED	MR. RAJIV GOVIL 14, MATHURA ROAD, FARIDABAD Phone- 09971085678 Pincode : 121003 Email : vipin.swami@in.abb.com
		Pune Techtrol Pvt. Ltd.	N.P.Khatan/Sudhakar Badiger S-18, MIDC Bhosari, Pune Phone- 9850560042 Pincode : 411 026 Email : ho@punetechtrol.com
		V. AUTOMAT & INSTRUMENTS (P) LTD.	Mr. R. K. BASSI/Mr. PRAVEEN KUMAR F-61, OKHLA INDLAREA, PH-1 NEW DELHI Phone- 9810005826 Pincode : 110 020 Email : sales@vautomat.com
		Moore Industries International Inc.	Leonard.W. Moore/ Matt Moren 16650 Schoenborn St. North Hills Phone- +1 818 830 5548 Pincode : 91343 Email : mmoren@miinet.com
		PANAM ENGINEERS	Mr. Santosh Shukla 203, Jaisingh Business,Parsiwada, Sahar road,Andheri(East), Mumbai, Phone- 9892179529, Pincode : 400099, Email : santosh@panamengineers.com,
		TOSHNIWAL INDUSTRIES PVT. LTD.,	Industrial Estate, Makhupura, Ajmer, Phone- 9352009000, Pincode : 305002, Email : info@tipl.com,
		Endress + Hauser (India) Pvt. Ltd.,	Mr. Prakash Vaghela 215-216, DLF Tower 'A', Jasola District Centre, New Delhi, Phone- 9717593001, Pincode : 110025, Email : prakash.vaghela@in.endress.com,
		YOKOGAWA INDIA LIMITED,	PLOT NO.96, ELECTRONICS CITY COMPLEX, HOSUR ROAD, BANGALORE, Phone- 080-41586000, Pincode : Email : uday.shankar@in.yokogawa.com,
		SBEM PVT. LTD.	MR.N.K. BEDARKAR/MR. VISHWANATH KARANDIK 39, ELECTRONIC CO.OP. ESTATE, PUNE SATARA ROAD PUNE, Phone- 912041030100 Pincode : 411009 Email : newdelhi@sbem.co.in
		Honeywell Automation India Limited	Mr. Ritwij Kulkarni 917, INTERNATIONAL TRADE TOWER, NEHRU PLACE, NEW DELHI Phone- 9890200584 Pincode : 110019 Email : rajesh.chaudhary@honeywell.com
		EMERSON PROCESS MANAGEMENT (INDIA) PVT.LTD.	Mr. Amit Paithankar/Vikram Raj Singh 206-210,BALARAMA BUILDING 2ND FLR. BANDRA EAST MUMBAI Phone- 9619121500 Pincode : 400051 Email : vikramraj.singh@emerson.com
		SMART INSTRUMENTS LTD, BRAZIL	Agents: Digital Electronic Ltd. 74/11 'C' Cross Road MIDC Andheri (East) MUMBAI Phone- 28208477 Pincode : 400093 Email : corp@delbby.rpgms.ems.vsnl.net.in
		SIEMENS LIMITED	Dr. Armin Bruck/Sandeep Mathur 130, Pandurang Budhkar Marg Worli Mumbai Phone- 0124 383 7377 Pincode : 400018 Email : ankit.varshney@siemens.com
22	ULTRASONIC FLOW METERS	NIVO CONTROLS PVT. LTD.	Mr. Praveen Toshniwal 104-115, Electronic Complex, Indore Phone- 0731-4081305 Pincode : 452010 Email : sales@nivocontrols.com
		Adept Fluidyne Pvt. Ltd.	Vinayak Gadre Plot No 4,S.No.17/1-B Kothrud Industrial Estate Pune Phone- 020 25464551 Pincode : 411038 Email : info@adeptfluidyne.com
		FLEXIM Flexible Industriestechnik GmbH	Boxberger Str., 4, Berlin Berlin Phone- 0049 30 93 66 76 60 Pincode : 12681 Email : info@flexim.de
		Rockwin Flowmeter India Pvt. Ltd.	B-24, Site-IV, Sahibabad Industrial Area Ghaziabad, Phone- 9810129687 Pincode : 201010, Email : amiya@rockwin.com
		FLASH FORGE PVT LTD	Mr. Gautam Makker, 503, 'A'-wing, Delphi, Orchard Avenue Road, Powai Mumbai Phone- 022-42784300 Pincode : 400076 Email : hemendrapatil@f-f.co.in
		Electronet Equipments Pvt Ltd.	Plot No. 84, 85 & 86, Tiny Industrial Estate Kondhwa Budruk, Pune Phone- 020-2026932039 Pincode : 411048 Email : ho@eeplindia.com
		NIVUS GMBH	Mr. Marcus Fischer Im Taele 2, D - 75031 Eppingen Phone- 00491712233770 Pincode : Email : carolin.schuster@nivus.com

Note:

1. The above sub-vendor list is tentative & reference only. However Sub-Vendor List is subject to BHEL/end user approval without any commercial/ delivery implication.
2. New Sub-Vendor if proposed by Vendor during contract stage shall subject to BHEL/ end user approval without any commercial/ delivery implication.



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ANNEXURE-III
FUNCTIONAL GUARANTEES AND LIQUIDATED DAMAGES



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FUNCTIONAL GUARANTEES, LIQUIDATED DAMAGES FOR SHORTFALL IN PERFORMANCE AND GUARANTEE TESTS

The term "Performance Guarantees" wherever appears in this Sub-Section shall have the same meaning and shall be synonymous to "Functional Guarantees". Similarly the term "Performance Tests" wherever appears in this Sub-Section shall have the same meaning and shall be synonymous to "Guarantee Test(s)".

The term "BMCR" (Boiler Maximum Continuous Rating) appearing in the Technical Specification shall mean the maximum continuous steam output of Steam Generator (as defined Cl. No. 1.02.00 Sub-section A-02, Part-B) at super heater outlet at rated parameters.

The term "TMCR" (Turbine maximum continuous rating) appearing in the technical specification shall mean 800 MW electrical power output at generator terminals (power at generator terminals as per clause indicated in this sub-section) under rated steam parameters, 0% cycle make-up and 160 mmHg (abs) condenser pressure unless used in conjunction with a different cycle make-up and/or a different condenser pressure and /or a different throttle steam pressure.

1.00.00

PERFORMANCE GUARANTEES

1.00.01

General Requirements

- a) The Contractor shall guarantee that the equipment offered shall meet the ratings and performance requirements stipulated for various equipment covered in these specifications.
- b) The guaranteed performance parameters furnished by the bidder in his offer, shall be without any tolerance values whatsoever and all margins required for instrument inaccuracies and other uncertainties shall be deemed to have been included in the guaranteed figures.
- c) The Contractor shall conduct performance test and demonstrate all the guarantees covered herein, during performance guarantee/acceptance test. The various tests which are to be carried out during performance guarantee/acceptance test are listed in this Sub-section. The guarantee tests shall be conducted by the Contractor at site in presence of Employer on each unit individually.
- d) All costs associated with the tests including cost associated with the supply, calibration, installation and removal of the test instrumentation, shall be included in the bid price.
- e) It is the responsibility of the contractor to perform the Performance



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Guarantee/Acceptance test as specified in this subsection. The performance tests will be performed using only the normal number of Employer supplied operating staff. Contractor, vendor or other subcontractor personnel shall only be used for instructional purposes or data collection. At all times during the Performance Tests the emissions and effluents from the Plant shall not exceed the Guaranteed Emission and Effluent Limits.

- f) The Contractor shall make the plant ready for the performance guarantee tests.
- g) All instruments required for performance testing shall be of the type and accuracy required by the code and prior to the test, the contractor shall get these instruments calibrated in an independent test Institute approved by the Employer. All test instrumentation required for performance tests shall be supplied by the contractor and shall be retained by him upon satisfactory completion of all such tests at site. All calibration procedures and standards shall be subjected to the approval of the Employer. The protecting tubes, pressure connections and other test connections required for conducting guarantee test shall conform to the relevant codes.
- h) Tools and tackles, thermowells (both screwed and welded) instruments/devices including flow devices, matching flanges, impulse piping & valves etc. and any special equipment, required for the successful completion of the tests, shall be provided by the contractor free of cost.
- i) The Performance / Acceptance test shall be carried out as per the agreed procedure. The PG test procedure including demonstration tests shall be submitted within 90 days of the date of Notification of Award and finalization of the PG test procedure shall be done within 180 days from the date of Notification of Award. After the conductance of Performance test, the contractor shall submit the test evaluation report of Performance test results to Employer promptly but not later than one months from the date of conductance of Performance test. However, preliminary test reports shall be submitted to the Employer after completing each test run.

The P&G test procedures shall be submitted for equipments/ system & subsystem under Contractor's scope for all Guarantees under category I, II & III as mentioned below, as per latest International codes / standard including correction curves, meeting the specification requirements along with sample calculations & detailed activity plan of preparation (including test instrumentation), conductance and evaluation of Guarantees.
- j) The contractor shall submit for Employer's approval the detailed Performance Test procedure containing the following:



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- a) Object of the test.
 - b) Various guaranteed parameters & tests as per contract.
 - c) Method of conductance of test and test code.
 - d) Duration of test, frequency of readings & number of test runs.
 - e) Method of calculation.
 - f) Correction curves.
 - g) Instrument list consisting of range, accuracy, least count, and location of instruments.
 - h) Scheme showing measurement points.
 - i) Sample calculation.
 - j) Acceptance criteria.
 - k) Any other information required for conducting the test.
- k) In case during performance guarantee tests it is found that the equipment/system has failed to meet the guarantees, the Contractor shall carry out all necessary modifications and/or replacements to make the equipment/system comply with the guaranteed requirements at no extra cost to the Employer and re-conduct the performance guarantee test(s) with Employer's consent. However if the specified performance guarantee(s) are still not met but are achieved within the Acceptable Shortfall Limit specified at clause 1.01.02 of this subsection, Employer will accept the equipment/system/plant after levying liquidated damages as per clause 1.01.02 of this sub-section. If, however, the demonstrated guarantee(s) continue to be more than the stipulated Acceptable Shortfall Limit, even after the above modifications/replacements within ninety (90) days or a reasonable period allowed by the Employer, after the tests have been completed, the Employer will have the right to either of the following:
- i) **For Category-I Guarantees**

Reject the equipment/system/plant and recover from the Contractor the payments already made

OR



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Accept the equipment/system/plant after levying Liquidated Damages as specified hereunder. The liquidated damages, for shortfall in performance indicated in clause 1.01.02 for this sub-section are on per unit basis and shall be levied separately for each unit, except for the rate indicated for auxiliary power consumption for station auxiliaries which is on station basis. The liquidated damages shall be prorated for the fractional parts of the deficiencies. The performance guarantees coming under this category shall be called 'Category - I' Guarantees.

ii) For Category-II Guarantees

Reject the equipment/plant/system and recover from the Contractor the payments already made. The performance guarantees under this category shall be called 'Category - II ' Guarantees. Conformance to the performance requirements under Category -II is mandatory.

iii) For Category-III Guarantees

Reject the equipment / system/plant & recover from the Contractor the payments already made.

OR

Accept the equipment/system after assessing the deficiency in respect of the various ratings, performance parameters and capabilities and recover from the contract price an amount equivalent to the damages as determined by the EMPLOYER. Such damages shall, however be limited to the cost of replacement of the equipment(s) / system(s) replacement of which shall remove the deficiency so as to achieve the guarantee performance. These parameters/capacities shall be termed as category - III, guarantees.

1.00.02 GUARANTEE UNDER CATEGORY –III

A. EFFLUENT TREATMENT PLANT

The Bidder shall guarantee that the equipment offered shall meet the rating and performance requirements stipulated for various equipment covered in this specifications.

The guaranteed performance parameters furnished by the bidder in his offer, shall be without any tolerance values and all margins required for instrument inaccuracies and other uncertainties shall be deemed to have been included in the guaranteed figures.

The bidder shall demonstrate all the guarantees covered herein during demonstration test / PG test.

The various tests which are to be carried out during demonstration tests are listed in the specification. The guarantee tests shall be conducted by the bidder at site in presence of BHEL/ CUSTOMER. All costs associated with the tests shall be included in the bid price.

In case during demonstration test /PG test, it is found that the equipment/system has failed to meet the guarantees, the bidder shall carry out all necessary modifications and/or replacements to make the equipment/system comply with the guaranteed requirements at no extra cost to the BHEL/ CUSTOMER and re-conduct the demonstration test(s) / PG test with BHEL/ CUSTOMER's consent.

Bidder to demonstrate following parameters at site during demonstration test:

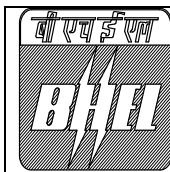
1. TUBE SETTLER / LAMELLA CLARIFIER

A. Lamella Clarifier shall be guaranteed for design effluent capacity meeting the effluent quality as mentioned below.

B. Effluent quality at the outlet of Tube settler/ Lamella Clarifier shall be guaranteed for the following:

Effluent Turbidity : 10 NTU at design flow

Effluent Oil & grease : 5 ppm (maximum)



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2. Guarantees for RO plant for Waste water

- A. ULTRA FILTRATION SYSTEM:
SDI of UF permeate shall be less than 3.
- B. Reverse Osmosis (RO) Plant:
TDS of RO permeate shall not be more than 50 ppm at 36 degree C.

B. CRANE, MONORAIL, HOIST ETC

The parameters/capabilities to be demonstrated for following systems/ equipment shall be:

- 1. EOT Cranes: Over load tests, travel and hoist speed checks as per relevant India Standards (Latest edition).
- 2. HOT cranes, monorails etc.: Over load test, travel and speed checks, functional and performance tests as per relevant India Standards (Latest edition).

C. NOISE

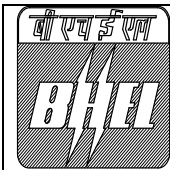
Noise

All the plant, equipment and systems covered under this specification shall perform continuously without exceeding the noise level over the entire range of output and operating frequency specified in General Technical Requirement, Part-C Section-VI of the technical specifications.

Noise level measurement shall be carried out using applicable and internationally acceptable standards. The measurement shall be carried out with a calibrated integrating sound level meter meeting the requirement of IEC 651 or BS 5969 or IS 9779.

Sound pressure shall be measured all around the equipment at a distance of 1.0 m horizontally from the nearest surface of any equipment/ machine and at a height of 1.5 m above the floor level in elevation.

A minimum of 6 points around each equipment shall be covered for measurement. Additional measurement points shall be considered based on the applicable standards and the size of the equipment. The measurement shall be done with slow response on the A - weighting scale. The average of A-weighted sound pressure level measurements expressed in decibels to a reference of 0.0002 micro bar shall not exceed the guaranteed value. Corrections for background noise shall be considered in line with the applicable standards. All the necessary data for determining these corrections, in line with the applicable standards, shall be collected during the tests.



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ANNEXURE IV

DRAWING/DOCUMENTS REQUIRMENT & DISTRIBUTION SCHEDULE



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After award of LOI, the drawing documents listed in MDL are minimum drawing/ documents, which shall be submitted by the bidder for BHEL and Customer approval. However, any additional drawing/ document if found necessary for completion of the engineering, the same shall be submitted by bidder without any commercial & delivery implication to BHEL.

The bidder has to submit the revised drawing/document along with the compliance sheet indicating enumerate reply to all BHEL and customer comments or observations. Without compliance sheet the submission of the drawings/documents will not be considered and the delay on this account will be solely on bidder's side only. Bidder to comply with the observations of the BHEL and CUSTOMER without price & delivery implication.

Every revised submission incorporating BHEL/Customer comments shall be resubmitted within 7 days by bidder.

Bidder to further note that the submitted drawings/ revised drawing, should be complete in all respects. Any incomplete drawing submitted shall be treated as non-submission with delays attributable to bidder's account. For any clarification/ discussion required to complete the drawings, the bidder shall himself depute his personal to BHEL's / Customer's office for across the table discussions/ finalizations/ submissions of drawings.

- (a) List and schedule of drawings/documents to be submitted after award of contract shall be as per MDL.
- Bidder to note that drawings/documents submission shall be through web based Document Management System. Bidder would be provided access to the DMS for drawings/documents approval and adequate training for the same. Detailed methodology would be finalized during the kick-off meeting. Bidder to ensure following at their end.
 - Internet explorer version – Minimum Internet Explorer 7
 - Internet speed – 2 mbps (Minimum preferred)
 - Pop ups from our external DMS IP (124.124.36.198) should not be blocked
 - Vendor's internal proxy setting should not block DMS application's link
 - o (<http://124.124.36.198/wrenchwebaccess/login.aspx>)
 - DMS user manuals to be used by BHEL PEM vendors for uploading, viewing, revising, commenting and tracking documents on PEM's DMS have been uploaded on PEM internet website (www.bhelpem.com) under the Vendor session.
 - For quick access bidder may refer the link <http://bhelpem.com/DMSManuals/DMSManuals.html>
- Bidder shall submit soft copy/hard copy/CD ROMs of all the finally approved drawings and O&M Manuals as required by Customer/Customer consultant/BHEL-site/BHEL-PEM. The exact number of hard copies/CD ROMs of these documents to be submitted shall be notified to the bidder at the time of detailed engineering and bidder shall submit the same without any commercial/delivery implications to BHEL/Customer.
- All the drawing documents along with the O&M manual (of all the revisions) are necessarily to be submitted in soft copies in addition to hard copies.
- Bidder to submit soft copies of all the drawing and document along with quality plans for BHEL review and approval.
- Editable copy of all the drawings and documents shall be provided.
- The date of submission of drawing documents shall be considered as the date of submission of hard and soft copies whichever is later.
- All the drawings shall be prepared on computer auto cad and other documents (like datasheet etc.) on MS office software. Bidder not complying to the requirement shall not be considered. For the execution of the contract regular meeting (generally once in 15 days or as per project requirement) is required.
- Vendor to come for meeting with the concerned dealing persons as per BHEL or customer requirement in a short notice.



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- Bidder to submit instrument schedule, cable schedule and valve schedule in MS- Excel format during detailed engineering.
- Bidder to also furnish the auto cad copy/MS-Excel/MS-word (as applicable) of the following documents after award of contract. However, any other auto cad copy/MS-Excel/MS-word of any other document as per the insistence of BHEL and customer will also be submitted by the bidder without any delivery and commercial implication to BHEL and customer.
 - P&IDs.
 - Equipment lay out.
 - Equipment Cable tray layout.
 - Civil assignment drawings.
 - Piping layout drawing.

Other requirements

- Engineering for this project is to be carried out in Integrated Intelligent Engineering environment at BHEL end. The engineering platform on which BHEL is doing the project is based on Smart Plant Suite. This is being done to have automated interface checking and thereby minimising rework at site. The engineering for packages placed in TG Hall will essentially be done using Intelligent P&ID, Intelligent Electrical, Intelligent Instrumentation and 3D modelling. For other BOPs i.e. those outside TG hall, though the same level of integration is preferable but 3D modelling is necessarily to be done and review model in compatible format is to be provided to BHEL on stages to be agreed.

Hence in line with above, bidder is required to prepare PIDs, Electrical drawings and all layout drawings using intelligent software with capability for transfer of data to and from corresponding Software being used by PEM.

- The data of models of facilities will be made available to BHEL as per the BHEL schedule for importing into BHEL model for interface checking and raising of integrated plant model. Layout and PID/electrical drawings will be extracted from the model.
- Standard write up on format compatibility of the BHEL's engineering platform for this project is attached as File formats supported by SPPID, SPI, SPEL & SP3D (Refer Section-D1).

- **e-Learning Package/ Module:**

E-learning packages shall be supplied for the equipment / system for the complete system along with associated electrical and C&I system. Bidder to refer Section-II for detail.

- Data/Reports other than listed drawings/documents will also be made available to BHEL as and when required for import into BHEL model.
- Successful bidder shall furnish detailed erection manual for each of the equipment as well as complete system supplied under this contract at least 3 months before the scheduled erection of the concerned equipment / component or along with supply of concerned equipment / component whichever is earlier.
- Document approval by customer under Approval category or information category shall not absolve the vendor of their contractual obligations of completing the work as per specification requirement. Any deviation from specified requirement shall be reported by the vendor in writing and require written approval. Unless any change in specified requirement has been brought out by the vendor during detail engineering in writing while submitting the document to customer for approval, approved document (with implicit deviation) will not be cited as a reason for not following the specification requirement.
- In case vendor submits revised drawing after approval of the corresponding drawing, any delay in approval of revised drawing shall be to vendor's account and shall not be used as a reason for extension in contract completion. However, in case changes are necessitated due to any constraints at customer end, delay in review/ approval of such revised drawing beyond one month will be to customer's account.



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MASTER DRAWING LIST OF EFFLUENT TREATMENT PLANT

SI No	DOCUMENT / DRAWING NO.	DRAWING / DOCUMENT TITLE	SCHEDULE OF SUBMISSION FROM LOI	SIZE
	MECHANICAL			
1.	PE-V6-434-164-A001	P&ID FOR EFFLUENT TREATMENT PLANT*	4	A0
2.	PE-V6-434-164-A002	LAYOUT OF EFFLUENT TREATMENT PLANT *	4	A0
3.	PE-V6-434-164-A003	PROCESS DESIGN & SIZING CALCULATIONS, PRESSURE DROP CALCULATIONS AND WATER BALANCE DIAGRAM OR ETP*	4	A4
4.	PE-V6-434-164-A004	HYDRAULIC FLOW DIAGRAM AND CALCULATION*	4	A1 AND A4
5.	PE-V6-434-164-A005	THICKNESS CALCULATION OF VESSELS AND TANKS*	6	A4
6.	PE-V6-434-164-A006	SUB VENDOR LIST AND INSPECTION CRITERIA*	6	A4
7.	PE-V6-434-164-A007	CONTROL WRITE UP*	6	A4
8.	PE-V6-434-164-A008	TECHNICAL DATA SHEET AND GA DRG OF VERTICAL CENTRIFUGAL PUMPS ALONG WITH MOTOR	8	A4
9.	PE-V6-434-164-A009	TECHNICAL DATA SHEET AND GA DRG OF HORIZONTAL CENTRIFUGAL PUMPS ALONG WITH MOTOR	8	A4
10.	PE-V6-434-164-A010	TECHNICAL DATA SHEET AND GA DRG OF SCREW PUMPS ALONG WITH MOTOR	8	A4
11.	PE-V6-434-164-A011	TECHNICAL DATA SHEET AND GA DRG FOR METERING PUMPS ALONG WITH MOTOR	8	A4
12.	PE-V6-434-164-A012	TECHNICAL DATA SHEET AND GA DRG OF BLOWERS ALONG WITH MOTOR	8	A4
13.	PE-V6-434-164-A013	GA DRAWING OF PRESSURE VESSELS	10	A2
14.	PE-V6-434-164-A014	GA DRAWING OF ATMOSPHERIC TANKS	10	A3
15.	PE-V6-434-164-A015	GA DRAWING OF LAMELLA CLARIFIER / TUBE SETTLER INCLUDING FLASH MIXER, FLOCCULATION TANK	10	A3



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16.	PE-V6-434-164-A016	DATASHEET AND GA DRG OF BASKET STRAINER AND SIMPLEX STRAINER	10	A4
17.	PE-V6-434-164-A017	GA DRAWING FOR ULTRA FILTRATION SYSTEM (SKID MOUNTED)	10	A3
18.	PE-V6-434-164-A018	GA DRAWING FOR RO MODULE SYSTEM (SKID MOUNTED)	10	A3
19.	PE-V6-434-164-A019	DATASHEET AND GA DRG OF SAFETY ITEMS	10	A4
20.	PE-V6-434-164-A020	DATASHEET AND GA DRG OF AGITATORS AND MIXERS ALONG WITH MOTOR	10	A4
21.	PE-V6-434-164-A021	DATASHEET AND GA DRG OF BUTTERFLY VALVE MANUAL AND PNEUMATIC	10	A4
22.	PE-V6-434-164-A022	DATASHEET AND GA DRG OF DIAPHRAGM VALVE MANUAL AND PNEUMATIC	10	A4
23.	PE-V6-434-164-A023	DATASHEET AND GA DRG OF GLOBE VALVE	10	A4
24.	PE-V6-434-164-A024	DATASHEET AND GA DRG OF PRV, SRV & NEEDLE VALVE	10	A4
25.	PE-V6-434-164-A025	DATASHEET AND GA DRG OF GATE VALVE MANUAL, PNEUMATIC AND MOTORIZED	10	A4
26.	PE-V6-434-164-A026	DATASHEET AND GA DRG OF NRV	10	A4
27.	PE-V6-434-164-A027	VALVE SCHEDULE	10	A4
28.	PE-V6-434-164-A028	PIPING SCHEDULE	10	A4
29.	PE-V6-434-164-A029	PAINTING SCHEDULE	10	A4
30.	PE-V6-434-164-A030	MECHANICAL GA OF OIL WATER SEPARATOR	12	A1
31.	PE-V6-434-164-A031	CIVIL INPUT DRAWING OF INDUSTRIAL SHED	12	A1
32.	PE-V6-434-164-A032	CIVIL INPUT DRAWING OF FOUNDATION OF EQUIPMENT INSIDE AND OUTSIDE OF INDUSTRIAL SHED	12	A1
33.	PE-V6-434-164-A033	GA DRG OF MCF	10	A1
34.	PE-V6-434-164-A034	GA DRG OF DEGASSER TOWER	10	A1
35.	PE-V6-434-164-A035	GA DRAWING OF CLARIFIER MECHANISM	10	A1
36.	PE-V6-434-164-A036	MECHANICAL GA DRG OF STILLING CHAMBER, FLASH MIXER FOR CLARIFIER	12	A1



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37.	PE-V6-434-164-A037	MECHANICAL GA DRG OF CLARIFIER AND OUTLET CHANNEL	12	A1
38.	PE-V6-434-164-A038	MECHANICAL GA of Gravity Filter	12	A1
39.	PE-V6-434-164-A039	MECHANICAL GA AND DATASHEET OF CENTRIFUGE	12	A1
40.	PE-V6-434-164-A040	MECHANICAL GA of WASTE WATER SERVICE SUMP (WSWS)	12	A1
41.	PE-V6-434-164-A041	MECHANICAL GA of CENTRAL MONITORING BASIN (CMB)	12	A1
42.	PE-V6-434-164-A042	MECHANICAL GA DRG OF ETP FILTERED WATER STORAGE TANK	12	A1
43.	PE-V6-434-164-A043	GA AND DATASHEET OF PP FILTER NOZZLES (GRAVITY FILTER)	12	A1
44.	PE-V6-434-164-A044	MECHANICAL GA DRG OF RCC SUMPS INSIDE ETP AREA	12	A1
45.	PE-V6-434-164-A045	MECHANICAL GA DRG OF RCC SUMPS OUTSIDE ETP AREA	12	A1
46.	PE-V6-434-164-A046	PIPING LAYOUT INSIDE ETP AREA ALONG WITH DETAILS OF SUPPORTS	16	A1
47.	PE-V6-434-164-A047	YARD PIPING LAYOUT ALONG WITH DETAILS OF SUPPORTS	16	A0
48.	PE-V6-434-164-A048	PG test procedure for ETP	20	A4
49.	PE-V6-434-164-A050	O & M MANUAL	20	A4
50.	PE-V6-434-164-A051	3D MODELLING OF ETP SYSTEM	10	A0
	ELECTRICAL			
51.	PE-V6-434-164-A101	ELECTRICAL LOAD LIST	8	A4
52.	PE-V6-434-164-A103	CABLE TRAY/TRENCH & CONDUIT ROUTING DIAGRAM INCLUDING JB LOCATION OF INSIDE AND OUTSIDE ETP	12	A0
53.	PE-V6-434-164-A104	EARTHING LAYOUT OF INSIDE AND OUTSIDE ETP	12	A0
	CONTROL AND INSTRUMENTATION			
54.	PE-V6-434-164-A201	LIST OF DRIVES, JB GROUPING AND I/O LIST	10	A4



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55.	PE-V6-434-164-A205	INSTRUMENT SCHEDULE	10	A4
56.	PE-V6-434-164-A206	DATASHEET OF ANALYSERS	10	A4
57.	PE-V6-434-164-A207	DATASHEET OF TRANSMITTERS	10	A4
58.	PE-V6-434-164-A208	DATASHEET OF LOCAL INSTRUMENTS	10	A4
59.	PE-V6-434-164-A209	DATASHEET OF SOLENOID VALVE	10	A4
60.	PE-V6-434-164-A210	DATA SHEET AND GA FOR JUNCTION BOXES	10	A4
61.	PE-V6-434-164-A211	CABLE SCHEDULE AND INTERCONNECTION DIAGRAM	12	A4
62.	PE-V6-434-164-A212	INSTRUMENT INSTALLATION DRAWINGS/ HOOK UP DIAGRAM FOR INSTRUMENTS	12	A4
63.	PE-V6-434-164-A213	CONTROL VALVE DATA SHEET, DIMENSION DRAWING, CV & NOISE CALCULATION, CV TEST REPORT & BOQ	10	A4
	QAP			
64.	PE-V6-434-164-A301	QAP FOR VERTICAL CENTRIFUGAL PUMP	9	A4
65.	PE-V6-434-164-A302	QAP FOR HORIZONTAL CENTRIFUGAL PUMP	9	A4
66.	PE-V6-434-164-A303	QAP FOR VERTICAL SCREW PUMP	9	A4
67.	PE-V6-434-164-A304	QAP FOR METERING PUMP	9	A4
68.	PE-V6-434-164-A305	QAP FOR BLOWER	9	A4
69.	PE-V6-434-164-A306	QAP FOR PRESSURE VESSEL	9	A4
70.	PE-V6-434-164-A307	QAP FOR ATMOSPHERIC TANK	9	A4
71.	PE-V6-434-164-A308	QAP FOR BUTTERFLY VALVE MANUAL AND PNEUMATIC	9	A4
72.	PE-V6-434-164-A309	QAP FOR DIAPHRAGM VALVE MANUAL AND PNEUMATIC	9	A4
73.	PE-V6-434-164-A310	QAP FOR GLOBE VALVE	9	A4
74.	PE-V6-434-164-A311	QAP FOR PRV, SRV & NEEDLE VALVE	9	A4
75.	PE-V6-434-164-A312	QAP FOR GATE VALVE	9	A4
76.	PE-V6-434-164-A313	QAP FOR NRV	9	A4
77.	PE-V6-434-164-A314	QAP FOR MS/CS PIPES	9	A4



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78.	PE-V6-434-164-A315	QAP FOR SS PIPES	9	A4
79.	PE-V6-434-164-A316	QAP FOR HDPE PIPES	9	A4
80.	PE-V6-434-164-A317	QAP FOR CPVC PIPES	9	A4
81.	PE-V6-434-164-A318	QAP FOR PVC PIPES	9	A4
82.	PE-V6-434-164-A319	QAP FOR UPS	9	A4
83.	PE-V6-434-164-A321	QAP FOR MOTOR	9	A4
84.	PE-V6-434-164-A322	QAP FOR LAMELLA CLARIFIER / TUBE SETTLER	9	A4
85.	PE-V6-434-164-A323	QAP FOR AGITATOR	9	A4
86.	PE-V6-434-164-A324	QAP / ICL OF ETP (FOR BALANCE OF ITEMS)	9	A4
87.	PE-V6-434-164-A325	QAP FOR CONTROL VALVE	9	A4
88.	PE-V6-434-164-A326	QAP FOR OIL WATER SEPARATOR	9	A4
89.	PE-V6-434-164-A327	QAP FOR CENTRIFUGE	9	A4
	MANDATORY SPARE			
90.	PE-V6-434-164-A401	MANDATORY SPARES LIST FOR MECHANICAL, ELECTRICAL & CONTROL AND INSTRUMENTATION ITEMS	14	A4

*BASIC ENGINEERING DOCUMENTS

DRAWING/DOCUMENT SUBMISSION FOR ELECTRIC HOIST AND CHANI PULLEY BLOCK

The successful bidder shall submit the following drawings / documents during detail engineering for customer's approval /information:

A) ELECTRIC HOIST

Sl. No.	BHEL DRG.NO	DRAWING TITLE	SCHEDULE OF SUBMISSION FROM LOI	SIZE
1	PE-V0-434-164-A100	Manufacturing Quality Plan with Sub vendor list	8	A4
2	PE-V0-434-164-A101	GA Drawing for Electric Hoist, DSL arrangement and painting details	8	A4
3	PE-V0-434-164-A102	Schematic Circuit Diagram	8	A4
4	PE-V0-434-164-A103	Mechanism Sizing Calculation	8	A4
5	PE-V0-434-164-A104	Detailed BOM/BOQ for EH	10	A4
6	PE-V0-434-164-A105	O & M Manual including Erection procedure	20	A4



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7	PE-V0-434-164-A106	Mandatory spare parts list	10	A4
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B) MANUAL HOIST (CHAIN PULLEY BLOCK):

Sl. No.	BHEL DRG.NO	DRAWING TITLE	SCHEDULE OF SUBMISSION FROM LOI	SIZE
1	PE-V0-434-164-A200	Manufacturing Quality Plan	8	A4
2	PE-V0-434-164-A201	GA Drawing for Chain Pulley Block with detail BOM with painting details	8	A4
3	PE-V0-434-164-A202	O & M Manual including Erection procedure	20	A4



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DRAWING/DOCUMENTS DISTRIBUTION SCHEDULE