

SIEMENS**BHEL / NTPC Limited**
Patratu Stage I, 3x800 MW, SST5-6000 USC, India

Technical Offer				
Ref. No.	Section	Title	Rev. No.	Date
IN1141: Var.A.2.3.4; PG SU PRO EUS, CW.	15.1.0	Sub-Supplier-Steam-Turbine	00	Oct.2016
The information given in this section is not subject to verification and non fulfillment of it or incorrectness/incompleteness of such information is not subject to any kind of rights or remedies of the Customer whatsoever.				

Sl No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
15F	HP SHAFT SEALING RING	III	162304	Siemens AG Energy Sector Rosswag Kind & Co KST Stellba Metal Ravne	Germany Germany Germany Germany Switzerland Slovenia	N (for all)
16	IP OUTER CASING CASTING	II	111110	Buderus Guss Siempelkamp Heidenheimer Giesserei Friedrich Wilhelm Hütte Cividale Ergocast	Germany Germany Germany Germany Italy Germany	A A A A A A
17	IP OUTER CASING M/C	II	111345	MCE-MAP Siemens AG Energy Sector G.M.W. Präzisions GmbH Leipert	Austria Germany Germany Germany	A (for all)
18	IP INNER CASING CASTING	II	112100	Voestalpine Giesserei Sande Stahlguss	Austria Germany	A DR
19	IP INNER CASING M/C	II	112330	MCE-MAP Siemens AG EnergySector Horst Jung Leipert Ludwig Lehner Hans Richter GmbH	Austria Germany Germany Germany Germany Germany	A A A* A A* A*

Siemens Power & Gas



Page: 5 of 13

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
20	IP ROTOR FORGING	II	121101	Saarschmiede S.d.F.Terni Doosan JSW (Japan steel works) JCFC (Japan Casting&Forging Corp.) Schmiedewerke Gröditz Doosan IMGB Buderus Edelstahl Pilsen Steel	Germany Italy Korea Japan Japan Germany Romania Germany Czech Rep.	A A DR A A DR DR DR DR
21	IP TURBINE SHAFT W/C	I	121390	Siemens AG Energy Sector Franco Tosi PG-P1 Charlotte	Germany Italy USA	A A DR
22	IP TURBINE ROTOR	I	121390	Siemens AG Energy Sector PG-P1 Charlotte	Germany USA	A DR
27	IP JOINT BOLTS	I		Stahlberg Zapp Mechanical	Germany Poland	A A
28	IP TURBINE ASSLY	II	199410	Siemens AG Energy Sector	Germany	A
28A	IP THREADED RING	III	148341 oder 148351 gepanzert	Siemens AG Energy Sector Rosswag Kind & Co Stellba Deloro Metal Rayne	Germany Germany Germany Switzerland Germany Slovenia	N (for all)



Siemens Power & Gas

Page: 6 of 12

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
28B	IP ANGLE SEALING RING	III	148344	Siemens AG Energy Sector Rosswag Kind & Co Stellba Delorox Metal Ravne	www.edelstahl-rosswag.de www.kind-co.de/kc_2010/index.html www.stellba.ch/cms/index.php?lang=de www.stellite.de	Germany Germany Germany Switzerland Germany Slovenia N (for all)
28C	IP INLET CONNECTIONS IP INLET INSERT	II	188300	Siemens AG Energy Sector Rosswag Kind & Co Stellba Deloro Metal Ravne	www.edelstahl-rosswag.de www.kind-co.de/kc_2010/index.html www.stellba.ch/cms/index.php?lang=de www.stellite.de	Germany Germany Germany Switzerland Germany Slovenia N (for all)
28D	IP SHAFT SEALING	III	162304	Siemens AG Energy Sector Rosswag Kind & Co Stellba Deloro Ubruek Metal Ravne Cress	www.edelstahl-rosswag.de www.kind-co.de/kc_2010/index.html www.stellba.ch/cms/index.php?lang=de www.stellite.de www.ubroek.nl	Germany Germany Germany Switzerland Germany Netherlands Slovenia N (for all)
29	LP TURBINE SHAFT FORGING	II	121151	Saarschmiede S.d.F.Terni Doosan JSW (Japan steel works JCFC (Japan Casting&Forging Corp.) Schmiedewerke Groeditz Doosan IMCB	www.saarschmiede.com www.fucineterni.it www.doosanheavy.com www.jsw.co.jp www.jcfc.jp www.stahl-groeditz.de	Germany Italy Korea Japan Japan Germania Romania A A DR A A DR DR

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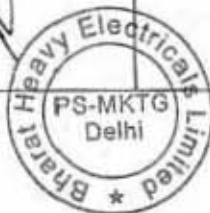
Page: 7 of 12

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
30	LP TURBINE SHAFT M/C	II I	121370	Siemens AG Energy Sector Siemens AG Energy Sector	Germany USA	A DR
31	LP TURBINE ROTOR	I	121370	Siemens AG Energy Sector Siemens AG Energy Sector	Germany USA	A DR
32	LP INNER CASING-I Casted Design	I	115130	Buderus Guss Siempelkamp Heidenheimer Giesserei Torgelow Eisengiesserei	Germany Germany Germany Germany	A A A A
	LP INNER CASING-I Fabricated Design	I	115130	PT Siemens Indonesia T+S Prämaab Popeci Dalian Heavy Bor-Pol Zhoule	www.technologie-plus-service.de www.praemab-burg.de http://shzhoule.com/en	Indonesia Germany Germany Romania China Poland China A A A A* DR A DR
	LP INNER CASING-(M/C)	I	113365	Siemens AG Horst Jung GmbH MCE-MAP Siemens AG Energy Sector Rothenpieler Leipert	www.horst-jung.com www.mce-map.com	Germany Germany Austria Germany Germany Germany A A* A A A
34	LP INNER CASING-1&2 ASSLY	I	199405	Siemens AG Energy Sector	Germany	A
35	LP OUTER CASING (FRONT WALL, GIRDER, UPPER PART)	I	111220	Prämaab T&S (Technologie+Service) PT Siemens Indonesia BOR-POL Ltd.	www.praemab-burg.de www.technologie-plus-service.de	Germany Germany Indonesia Poland A A A A

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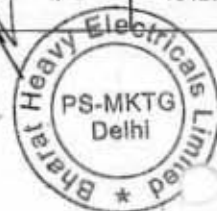
Page: 8 of 13

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
36	GUIDE BLADE CARRIER (GUIDE BLADE RINGS)	I	161201	SET PTSI Coupe Foundries Ergocast Akdas Ningbo Riyue Foundry	Hungary Indonesia Great Britain Germany Turkey China	A A A A DR DR
37	LPT COMPENSATORS FOR CAP	II I	TLV 1501	Eickhoff Ha-Tec	www.iag-gmbh.de www.hatecgmbh.de	Germany Germany A A*
38	LP CROSS OVER PIPE	I	TLV 0805	T&S (Technologie+Service) Eickhoff EHR (Essener Hochdruck Rohrleitungsbau) Ha-Tec	www.technologie-plus-service.de www.iag-gmbh.de www.essener-hochdruck.de	Germany Germany Germany A A A
39	LP STATIONARY/ MOVING BLADES FROM BAR	II	131120	Böhler Einsal Metalravne WTB	Austria Germany Slovenia China	N N N DR
	LP STATIONARY BLADES FROM BAR (M/C)	I	132300	SET Leistritz-Nürnberg Präwest Energietechnik Einsal ZEMA WTB	www.turbblade.com	Hungary Germany Germany Germany Italy China A A A A A
40	LP CAST BLADES (CASTED)	II	131300	Zollern ESCO	Germany Belgium	A A
41	LP BLADES (HOLLOW)	II	131260	Binder	Switzerland	A

Siemens Power & Gas



Page: 9 of 13

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
42	LP MOVING BLADES FROM BARS			Metal Raven Böhler Einsatz	Slovenia Germany Germany	A A A
43	LP FORGED BLADES (DROP)	II	132150	WTB Böhler Leitritz Remscheid Sumitomo Pietro Rosa C-Blade Leitritz ATC	www.turblade.com www.boehler-edelstahl.com www.leitritz.com China Austria Germany Japan Italy Italy USA	A A A A A A A
			132373	WTB Böhler Leitritz Remscheid Sumitomo Pietro Rosa C-Blade Leitritz ATC FHI MIC Hong Yuan Forging	www.turblade.com www.boehler-edelstahl.com www.leitritz.com China Austria Germany Japan Italy Italy USA Germany Germany China	A A A A A A A A* A* DR



- Confidential -

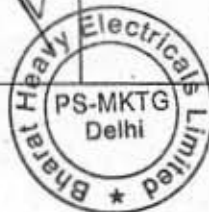
Siemens Power & Gas

Page: 10 of 13

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
43	LP FORGED BLADES (DROP) M/c	II	132370	Pietro Rosa Sumitomo WTB Menegazzi Leistritz ATC Böhler Leistritz Remscheid C-Blade FHI MIC	Italy Japan China Italy USA Austria Germany Italy Germany Germany	A A A A A A A A A*
		I				A*
			132371	Pietro Rosa Sumitomo WTB Menegazzi Leistritz ATC Böhler Leistritz Remscheid C-Blade FHI MIC	Italy Japan China Italy USA Austria Germany Italy Germany Germany	A A A A A A A A A*
						A*
	LP SHAFT SEALING RING	III	162304	Siemens AG Energy Sector Rosswag Kind & Co Stellba Deloro Ubruek Cross	Germany Germany Switzerland Germany Netherlands	N (for all)
				www.edelstahl-rosswag.de www.kind-co.de/kc_2010/index.html www.stellba.ch/cms/index.php?lang=de www.stellite.de www.ubroek.nl		



Siemens Power & Gas

Page: 11 of 13

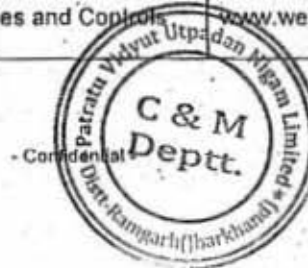
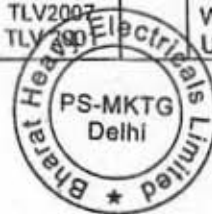
Page 116 of 1005

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
44	COUPLING BOLTS & NUTS (HP/IP/LP)	I	TLV	Stahlberg (solid bolts) Pilgrim (from Barh)	Germany	A A
45	BRG. SHELL FOR JOURNAL BRG (Forging)	II	TLV 2660 TLV	Eurobearings John Crane Bearing Technology Waukesha	Italy Germany	N (for all)
46	BEARING SHELL & THRUST PAD M/C	II	TLV 2660 TLV	Eurobearings John Crane Bearing Technology Waukesha	Italy Germany USA, GB	N (for all)
47A	BEARING PEDESTAL WITH COVER (Casting)	II	TLV	BuderusGuss Ergocast Coupe Foundries Akdas Ningbo RiyueFoundry Siemens Eroemueotechnika Schuler Guss	Germany Germany Great Britain Turkey China Hungary Germany	N N N N N N
47B	BEARING PEDESTAL WITH COVER (M/C)			Siemens EroemueotechnikaKFT AGL Eurobearings	Hungary Germany Italia	N N N
48	ELECTRO HYDRAULIC ACTUATOR (STEAM VALVES)	II	TLV 2100	Bosch Rexroth AG Thiele GmbH	Germany Germany	A A*
	SERVOMOTOR & VALVE FOR CRH-NRV	II	TLV2005/ TLV2007 TLV2000	Sempel AG Weir Valves and Controls USA Inc.	Germany US	A A

Siemens Power & Gas



Page: 12 of 13

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SI No.	Item	Inspection Category	Siemens QP No.	Sub Supplier Name	Place	Remarks
69	THERMAL INSULATION	II		Tapp Isolation	Germany	N
70	PRESSED LP DIFFUSOR			Zhoule Bor-Pol	China Poland	DR A

Remarks

A: Approved

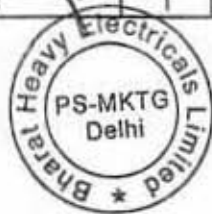
A*: vendor experience with m/s Siemens Germany to be furnished for similar or higher rating turbine. In case of casting & forging new suppliers, the creep data to be furnished for review along with vendor experience.

N: The m/s Siemens proposed vendor is accepted by NTPC based on m/s Siemens experience with the vendor for similar and higher rating items

DR: vendor details including experience to be furnished



SUB VENDOR LIST FOR TG VALVES (TRICHY)						
PROJECT: PATRATU STPS (3 X 800 MW)						
PACKAGE: EPC						
CONTRACT NO: 9585-001-02						
Sno	Item Description	QP CAT	Proposed Sub Supplier	Place	BARH-Approval status / Cat	Remarks
1	HP BY PASS SYSTEM (SUB-QR ITEM)	I	BHEL	Trichy	DR	
		I	CCI	Sweden / Switzerland	A	
		I	Sempell AG	Germany	A	
		I	Hora	Germany	A	
		I	Welland & Tuxhorn	Germany	DR	
		I	Bopp & Reuther	Germany	A	
2	ACTUATORS		REFER C&I LIST ENCLOSED TO THE LOA/NOA			
3	CONVENTIONAL VALVES GATE GLOBE & NRV - ALL CLASS RATINGS	I	BHEL	Trichy	A	
		I	Meiwa (TOA)	Japan	A	TOA valves are offered thro M/S Meiwa
		I	Velan	Canada	A	
		I	Kokusai (OKANO)	Japan	A	OKANO valves are offered thro M/S Kokusai
		I	Babcock power Espana	Spain	A	
		I	Flow serve (Edward Valve)	USA	DR	Edward Valves are offered thro M/S Flowserve
		I	CRIS	France	DR	
		I	TYCO (Ramondi, Dewrance)	Chennai	A	(Ramondi & Dewrance are now with M/S Tyco) AS PER NTPC APPROVED RATING & SIZE
		I	Xomax Sanmar	Viralimalai	A	AS PER NTPC APPROVED RATING & SIZE
		I	L&T (Audco)	Chennai, Coimbatore	A	AS PER NTPC APPROVED RATING & SIZE
		I	Leader Valves	Jalandar	A	AS PER NTPC APPROVED RATING & SIZE
		I	Fouress	Aurangabad	A	AS PER NTPC APPROVED RATING & SIZE
		I	Niton Valve	Mumbai, Aurangabad	A	AS PER NTPC APPROVED RATING & SIZE
4	CRH-7,8,9 - DEAERATOR PEGGING VALVES	I	BHEL	Trichy	A	
		I	Babcock power Espana	Spain	A	
		I	Petrol Valve	Italy	A	
		I	L&T (Audco)	Chennai	DR	
		I	Leader	Jalandar	DR	
		I	Niton Valve	Mumbai	DR	
5	Extraction QCNRV's & CRHNRV's	I	BHEL	Trichy	DR	
6	Angle Valves / Angle Drain Valves	I	BHEL	Trichy	DR	



Atadaw
Amit Yadaw
Mgt. / PS-MKTG.
BHEL

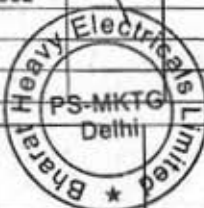
	Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator					Ref No.: 9585-001-02 Revision No.: 00 Date: 05.04.2017				
	SN	ITEM	QP/INS-PN CAT *	QP No. xxxx-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S/ CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS

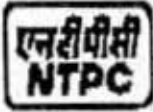
1	BFP-PUMP CASING (OUTER) / BFP DISCHARGE COVER/ CASING COVER/ DISCHARGE NOZZLE	I	QVM-Q-301			PYUNG SAN METAL	KOREA	N			
		I				UMETOKU CO., LTD.,	JAPAN	N			
		I				MURABAYASHI	JAPAN	N			
		I				CFFP,	HARDWAR	N			
		I				RING MILL SPA,	ITALY	N			
		I				FOMAS	ITALY	N			
		I				HYUNJIN MATERIALS	JAPAN	N			
		I				HYUNJIN MATERIALS	KOREA	N			
		I				MYSKO	KOREA	N			
2	BFP PUMP CASING (INNER)	I	QVM-Q-301			HIMET	KOREA	N			
		I				WON KANG Material	KOREA	N			
		I				KOMATSU CASTEX	JAPAN	N			
		I				SIMPLEX CASTING Ltd	BHILAI	N			
		I				VOIST ALPINE	AUSTRIA	N			
		I				UP STEEL	MUZAFFAR NAGAR	N			
3	BFP SHAFT	I	QVM-Q-301			UMETOKU CO, LTD	JAPAN	N			
		I				DAIDO STEEL	JAPAN	N			
		I				KUSAKAWA TEKKOU	JAPAN	N			
		I				CFFP	HARDWAR	N			
		I				NISHO IWAI	JAPAN	N			
		I				FOMAS	ITALY	N			
		I				FORGIA RAPIDA	ITALY	N			
		I				MURABAYASHI(MIYAZ AKI TEKKOU)	JAPAN	N			
4	BFP BALANCE DRUM SPRING DISC	I	QVM-Q-301			FIRTH VICKERS		N			
		I				TAYLOR FORGING		N			

ENGINEERING DIV / QAI-NTPC,NOIDA

Page 1 of 20

BHEL

		Project : PATRATU STPP(3X800MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL				Ref No.: 9585-001-02			
		Package : EPC						Revision No.: 00			
		Contractor : BHEL, Hyderabad		Contract No.:		SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Date: 05.04.2017	
SN	ITEM	QP/INS-PN CAT *	QP No. xxxx-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S/ CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS
5	BFP IMPELLERS/DIFFUSERS	I				FIRTH RIXON RINGS LTD(FORMERLY AURORA FORGINGS)	UK	N			
		I				BHEL	HYDERABAD	N			
		I	QVM-Q-301			YPC LTD.,	KOREA	N			
		I				EBARA METAL	JAPAN	N			
		I				Jingsung (formerly komatsu)	JAPAN	N			
6	BFP SUCTION BRANCH/RING SECTION/SUCTION	I	QVM-Q-301			UP STEEL	MUZAFFARNAGAR	N			
		I				WEIR PUMPS LTD	UK	N			
		I				HINDUSTAN UDYOG LTD	KOLKATA	N			
		I				PTC	LUCKNOW	N			
7	BFP SPUN CAST / FORGED TUBES (IMPELLER & CASING WEAR RINGS) ***	I	QVM-Q-301			FIRTH VICKERS	UK	N			
		I				PAHLADRAI STEEL FORGINGS	KANPUR	N			
		I				FIRTH RIXON RINGS LTD(FORMERLY AURORA FORGINGS)	UK	N			
		I				RELY METPRO	S AFRICA	N			
		I				TAYLOR FORGING	UK	N			
8	BOILER FEED PUMP	I	QVM-Q-301			MHI	JAPAN	A			SUB-QR ITEM
		I	QVM-Q-301			BHEL	HYDERABAD	DR			SUB-QR ITEM
9	BP PUMP CASING	I	QVM-Q-302			HIMET	KOREA	N			
		I				EBARA METAL	JAPAN	N			
		I				KOMATSU CASTEX	JAPAN	N			
		I				WON KANG Material	KOREA	N			
ENGINEERING DIV / QAI-NTPC,NOIDA   BHEL											

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator					Ref No.: 9585-001-02		
									Revision No.: 00		
									Date: 05.04.2017		
SN	ITEM	QP/INS-PN CAT *	QP No. XXXX-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S / CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS
		I				SIMPLEX CASTING LTD	BHILAI	N			
		I				VOIST ALPINE,	AUSTRIA	N			
		I				UP STEEL	MUZAFFAR NAGAR	N			
		I				SUNG-SHIN M-TECH	KOREA	N			
		I				ISGEC	MUZAFFAR NAGAR	N			
		I				SUNG-SHIN M-TECH	KOREA	N			
		I				SIMPLEX CASTING	BHILAI/RAIPUR	N			
10	BP IMPELLER	I	QVM-Q-302			YPC LTD.,	JAPAN	N			
		I				*EBARA METAL	JAPAN	N			
		I				Jingsung (formerly komatsu)	JAPAN	N			
11	BP SHAFT (FORGING)	I	QVM-Q-302			MURABAYASHI (MIYAZAKI TEKKOU)	JAPAN	N			
		I				UMETOKU CO., LTD.	JAPAN	N			
		I				DIADO STEEL	JAPAN	N			
		I				KUSAKAWA TEKKOU	JAPAN	N			
		I				FOMAS	ITALY	N			
		I				VISHNU FORGE	BANGALORE	N			
		I				NISSOIWAI	JAPAN	N			
		I				FORGIA RAPIDA	ITALY	N			
		I				KUSAKAWA IRON WORKS	JAPAN	N			
12	BP WEAR RINGS(FORGED TUBES)	I	QVM-Q-302			FIRTH VICKERS	UK	N			
						PAHLADRAI STEEL FORGINGS	KANPUR	N			
						FIRTH RIXON RINGS LTD(FORMERLY	UK	N			
ENGINEERING DIV / QAI-NTPC,NOIDA						BHEL					

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02		Revision No.: 00	
								Date: 05.04.2017			
SN	ITEM	QP/INS-PN CAT *	QP No. xxxx-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S / CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS
						AURORA FORGINGS)					
						RELY METPRO	S AFRICA	N			
13	BOOSTER PUMP(TD)	I	QVM-Q-302			MHI	JAPAN	A			
						BHEL	HYDERABAD	A			MHI DESIGN
14	CEP PUMP CASING	I	QVM-Q-303			FIRTH VICKERS		N			
		I	QVM-Q303			WAKATSUKI KOUSAKUSYO	JAPAN	N			
		I	QVM-Q-303			ABB-ABL-LTD	SHAHBAD	N			
		I				SIMPLEX	BHILAI	N			
		I				UPPAL FERROCAST	HYDERABAD	N			
		I				HYUSONG IND	KOREA	N			
						KIMURA CASTINGS	JAPAN	N			
						EBARA METAL	JAPAN	N			
						FUJIMOTO	JAPAN	N			
						CHUZOU					
15	BELL MOUTH (SUCTION BELL)	I	QVM-Q-303			HYOSUNG INDUSTREIS CO.	KOREA	N			
		I				KIMURA CASTING	JAPAN	N			
		I				EBARA METAL	JAPAN	N			
		I				WAKATSUKI KOUSAKUSYO	JAPAN	N			
		I				ABB-ABL-LTD	SHAHBAD	N			
		I				SIMPLEX	BHILAI	N			
		I				UPPAL FERROCAST	HYDERABAD	N			
16	STAGE (DELIVERY) BOWL	I	QVM-Q-303			HIMET	KOREA	N			
		I				WON KANG Mat.	KOREA	N			
		I				EBARA METAL	JAPAN	N			
		I				ABB-ABL-LTD	SHAHBAD	N			
ENGINEERING DIV / QAI-NTPC,NOIDA						Page 4 of 20					
						BHEL					

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		I				SIMPLEX	BHILAI	N			
		I				UPPAL FERROCAST	HYDERABAD	N			
						SUNG-SHIN M-TECH	KOREA	N			
						YPC LTD	KORA	N			
17	CEP IMPELLR	I	QVM-Q-303			YPC LTD.,	JAPAN	N			
		I				JINGSUNG (formerly komatsu)	JAPAN	N			
		I				EBARA METAL	JAPAN	N			
		I				KOMASTSU METAL ENGG.	JAPAN	N			
18	CEP SHAFT (FORGING)	I	QVM-Q-303			UMETOKU CO. LTD.,	JAPAN	N			
		I				MURABAYASHI	JAPAN	N			
		I				SANDVIK	SWEDEN	N			
		I				VISHNU FORGE	BANGALORE	A			
		I				CFFP	HARDWAR	N			
		I				FORGIA RAPIDA	ITALY	N			
		I				FOMAS	ITALY	N			
19	CEP WEAR RINGS	I	QVM-Q-303			FIRTH VICKERS	UK	N			
						PAHLADRAI STEEL FORGINGS	KANPUR	N			
						FIRTH RIXON RINGS LTD (FORMERLY AURORA FORGINGS)	UK	N			
						RELY METPRO	S AFRICA	N			
20	CONDENSATE EXTRACTION PUMP	I	QVM-Q-303			MHI	JAPAN	A		SUB-QR ITEM	
						BHEL	HYDERABAD	DR		SUB-QR ITEM	
21	JOURNAL BEARING(BFP	III				YAMATO METAL	JAPAN	N			

ENGINEERING DIV / QAI-NTPC,NOIDA

Page 5 of 20

BHEL

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02		Revision No.: 00	
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	AND BP)	III				KONGO COLMET MFG. CO. LTD.	JAPAN	N			
		III				OSAKA ASAHI METAL MFG. CO. LTD.,	JAPAN	N			
		III				GLYCO METAL LTD.	UK	N			
		III				COLHERENE	UK	N			
		III				MITCHEL,	UK	N			
		III				WAUKESHAH (GLACIER)	UK	N			
		I				MITCHEL	BANGALORE	DR			
						DAE DONG METAL IND.	KOREA	DR			
22	JOURNAL BEARING CUM THRUST BEARING FOR CEP	III				HARADA (JAPAN)	JAPAN	N			
		III				KINGSBURY	USA	N			
		III				MITCHEL	UK	N			
		III				WAUKESHAH (GLACIER)	UK	N			
		I				MITCHEL INDIA	BANGLORE	DR			
23	HYDRAULIC COUPLING	I	QVM-Q-304			VOITH	GERMANY	A			
		I				VOITH	HYDERABAD	DR			
24	CONNECTING COUPLING between Motor & HC BFP BP & CEP.	I	QVM-Q-305			SEISA	JAPAN	N			
		I				DIADO PRECISION INDUSTRIES	JAPAN	N			
		I				NIPPON PILLAR	JAPAN	N			
		I				EAGLE INDUSTRY	JAPAN	N			
		I				FLEXIBOX,	UK	N			
		I				EUROFLEX TRANSMISSION,	HYDERABAD				
ENGINEERING DIV / QAI-NTPC,NOIDA						Page 6 of 20		BHEL			

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
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		I				EUROFLEX LTD.	UK	N			
		I				BIBBY TRANSMISSION (TURBOFLEX)	UK	N			
25	SUCTION STRAINERS FOR CEP, BP & BFP	I	QVM-Q-307			GUJRAT OTTOFIT	AHMEDABAD	A			
		I				MULTITEX	DELHI/NOIDA	A			
26	THRUST BEARING (BFP, BP & CEP)	III				DAIDO METAL	JAPAN	N			
		III				ROLLS ROYCE MARINE JAPAN (MITCHEL BRGS)	UK	N			
		III				WAUKESHAW (GLACIER)	UK	N			
		III				KINGSBURY	USA	N			
		III				MITCHELL BRGS	UK	N			
		I				MITCHEL BRGS	BANGLORE	DR			
						DAE DONG METAL IND.	KOREA	DR			
27	MECHANICAL SEALS (BFP, BP & CEP)	III				NIPPON PILLAR	JAPAN	N			
		III				FLOWERVE	USA	N			
		III				FLOW SERVE SANMAR	CHENNAI	N			FOR BP & CEP ONLY
		III				EAGLE BURMANN INDIA	MUMBAI	N			-DO-
		III				EAGLE BURUGMAN	JAPAN/GERMANY	N			
28	TURBINE OUTER CASING & STOP VALVE BODY CASING	I	QVM-Q-308			VOIST ALPINE	AUSTRIA	A			
		I				SANDE-STAH	GERMANY	A			
		I				CFFP,	HARDWAR	A			
		I				UP STEELS	MUJAFARNAGAR	A			
		I				STAR WIRES	BALLABGARH	A			
ENGINEERING DIV / QAI-NTPC,NOIDA Page 7 of 20 BHEL											

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
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						KOLHAPUR STEELS	KOLHAPUR	DR			
						JSC ENERGOMASH	UKRAIN	DR			
29	INTERMEDIATE PIECE VALVE COVER & CHAMBER	I	QVM-Q-308			SANDE-STAHl	GERMANY	A			
						VOIST ALPINE	AUSTRIA	A			
						CFFP	HARDWAR	A			
						UP STEELS	MUZAFFARNAGAR	A			
						STARWIRE	BALLABGARH	A			
						KOLHAPUR STEELS	KOLHAPUR	A			
						PRAKASH SPECTRO	VIJAYAWADA	DR			
30	GUIDE BLADE CARRIER	I	QVM-Q-308			VOIST ALPINE	AUSTRIA	A			
		I				SANDE STAHLGUSS GMBH,	GERMANY	A			
		I				STAR WIRES	BALLABGARH	A			
		I				KOLHAPUR STEEL	KOLHAPUR	A			
		I				KCP	CHENNAI	A			
		I				PRAKASH SPECTRO	VIJAYAWADA	DR			
		I				UP STEELS	MUZAFFARNAGAR	A			
31	STEAM CHAMBER	I	QVM-Q-308			VOIST ALPINE	AUSTRIA	A			
		I				CFFP	HARDWAR	A			
		I				KOLHAPUR STEEL	KOLHAPUR	DR			
		I				SANDESTAHI	GERMANY	A			
		I				UP STEELS	MUZAFFARNAGAR	A			
		I				UTOSTROJ STEEL	GERMANY	A			
32	ROTOR FORGINGS (TURBINE)	I	QVM-Q-308			CFFP	HARDWAR	A			
		I				SAAR SCHMIED	GERMANY	A			
		I				SDF	ITALY	A			

ENGINEERING DIV / QAI-NTPC,NOIDA

Page 8 of 20

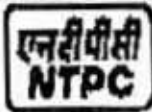
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		I				EDELSTAHLWERKE	GERMANY	A			
		I				GROEDITZ	GERMANY	DR			
		I				PILSON STEEL (VHS,SKODA)	CZECHSLOVAKIA	A			
		I				JCFC	JAPAN	A			
		I				JSC ENERGOMASH	UKRAIN	DR			
		I				JSW	JAPAN	A			
		I				KOBE STEEL	JAPAN	A			
		I				CRUIST FORGE	FRANCE	A			
33	PRECISION BLADE FORGINGS	I	QVM-Q-308			PETRO ROSA	GERMANY	A			
		I				FINE FORGE	HYDERABAD	A			
		I				C BLADE	ITALY	A			
		I				WUXI	CHINA	A			AS PER NTPC APPROVAL CONDITIONS
		I				AZAD ENGG	HYDERABAD	A			FOR MACHINING ONLY
34	BAR STOCK FOR BLADES	I	QVM-Q-308			WALZWERK EINSL	GERMANY	A			
		I				BOEHLER	AUSTRIA	A			
		I				BGH	GERMANY	A			
		I				BREITENFIELD	AUSTRALIA	A			
		I				STARWIRE	BALLABHGARH	A			
35	DRAWN PROFILE FOR GUIDE BLADES (DRIVE TURBINE)	I	QVM-Q-308			FIAT	ITALY	A			
		I				LEISTRITZ	GERMANY	A			
		I				BOEHLER	AUSTRIA	A			
36	GEAR BOX	I	QVM-Q-308			TRIVENI ENGG	MYSORE	A			
		I				FLENDER	FRANCE	A			
		I				GRAFFENSTADEN	FRANCE	A			
ENGINEERING DIV / QAI-NTPC,NOIDA Page 9 of 20 BHEL											

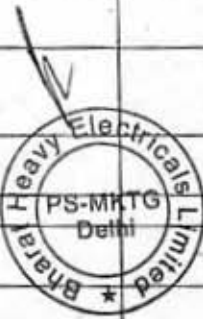
Page 129 of 1005

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02		Revision No.: 00	
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44	JOP	I				WEST FALIA INDIA	BANGALORE	A			
		II				TUSHACO PUMP	DAMAN	A			
		II				DYNAMIC TECHNOLOGIES	BANGALORE	DR			
		II				ALLWEILER	GERMANY	A			
45	FOUNDATION FRAME FOR BFP, BP & DRIVE TURBINE & MOTOR	I				BHEL	HYDERABAD	A			
46	LUBE OIL SYSTEM	I				BHEL	HYDERABAD	A			
47	OIL COOLERS	I				BHEL	HYDERABAD	A			
48	TUBE SHEET FORGING (HP HEATER)	I				M/s RINGMILL S.P.A.,	ITALY	A			
		I				M/s FORGIATURA MORANDINI SRL,	ITALY	A			
		I				M/s FORGE MONCHIERI S.R.L.	ITALY	A			
		I				M/s TAEWOONG COMPANY LIMITED	KOREA	A			
		I				M/s BAY-FORGE LIMITED,	CHENNAI	DR			
		I				M/s CFFP	HARDWAR	A			
49	STEEL FORGING (OTHER THAN H.P HEATER TUBE SHEETS)	II				M/s GOLDEN IRON & STEEL WKS.	DELHI	A			
		II				M/s THE PUNJAB STEEL WORKS,	DELHI	A			
		II				M/s ACME FORGINGS PVT LTD.,	RAJKOT	A			
		II				M/s CHAUDHRY HAMMER WORKS (P)	GHAZIABAD	A			
ENGINEERING DIV / QAI-NTPC,NOIDA						 					

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		II				LTD.					
		II				M/s GHAZIABAD ISPAT UDYOG LTD.,	GHAZIABAD	A			
		II				METAL FORGING	DELHI	DR			
		II				SANGHVI FORGING & ENGINEERING	BARODA	DR			
		II				C.D. Industries	GHAZIABAD	DR			
		II				KISSAN DIE-TECH	GHAZIABAD	DR			
		II				CHW Forge Private Limited	GHAZIABAD	DR			
50	HEMI HEAD	I				M/s VOEST ALPINE GIESSEREI LINZ GMBH, LTD.,	GERMANY	A			
		I				M/s EDMONTON EXCHANGER & MFG. LTD.,	CANADA	A			
		I				M/s DILLING-GTS VENTES,	GERMANY	A			
		I				M/s CEREC,	FRANCE	A			
		I				M/s CEREC,	VADODARA	DR			
		I				M/s KONIG & CO. GMBH,	GERMANY	A			
		I				M/s ANTONIUS VESSEL HEADS B.V.,	FRANCE	DR			
		I				M/s RICHARDSON & CRUDDAS (1972) LTD.,	MUMBAI	A			
		I				M/s J BOWN & CO.(DUKINFIELD) LIMITED	U.K				
ENGINEERING DIV / QAI-NTPC, NOIDA						 					

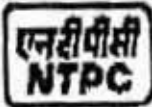
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						STEEL FORCE	BELGIUM	DR			
						MAHENDRA DISHED ENDS	THANE	DR			
						ICEM ENGINEERING PVT LTD	THANE	DR			
						GEUM CHANG HEAD CO	KOREA	DR			
51	DISHED ENDS	I				M/s DYNAMIC DISH INDIA (PVT) LTD.,	HYDERABAD	DR			
		I				M/s METAL ENGINEERS,	HYDERABAD	A			
		I				M/s SATYA FABRICATORS PVT LTD.,	HYDERABAD	A			
		I				MAHENDRA DISH ENDS	THANE	DR			
		I				M/s CEREC,	FRANCE	A			
		I				M/s CEREC,	VADODARA	DR			
		I				M/s THE ANUP ENGINEERING LTD	INDIA	A			
		I				M/s KONIG & CO. GMBH,	GERMANY	A			
		I				M/s ICEM ENGINEERING COMPANY LTD.	THANE	DR			
52	SMALL FORGING	II				M/s GOLDEN IRON & STEEL WKS.	DELHI	A			
		II				M/s THE PUNJAB STEEL WORKS,	DELHI				
		II				M/s ACME FORGINGS	RAJKOT				
ENGINEERING DIV / QAI-NTPC, NOIDA						Page 13 of 20					BHEL



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						PVT LTD., M/s CHAUDHRY HAMMER WORKS (P) LTD.	GHAZIABAD	A			
						M/s GHAZIABAD ISPAT UDYOG LTD.,	GHAZIABAD	A			
						METAL FORGING	DELHI	DR			
						SANGHVI FORGING & ENGINEERING	BARODA	DR			
						C.D. Industries	GHAZIABAD	DR			
						KISSAN DIE-TECH	GHAZIABAD	DR			
						CHW Forge Private Limited	GHAZIABAD	DR			
53	STAINLESS STEEL TUBE (STRAIGHT) WELDED	I				M/s. Neotiss Limited (formerly VALLOUREC HEAT EXCHANGER TUBES LTD.,)	HYDERABAD	A			FOR LP HEATER ONLY
		I				M/s RATNADEEP METAL&TUBES P.LTD	AHMEDABAD	A			FOR LP HEATER ONLY
		I				M/s RATNAMANI METALS & TUBES LTD.,	AHMEDABAD/ KUTCH	A			
		I				M/s HEAVY METAL & TUBES LIMITED,	AHMEDABAD	A			
		I				M/s REMI	TARAPUR	A			FOR LP HEATER ONLY
		I				M/s PLYMOUTH TUBE COMPANY,	USA	A			
54	STAINLESS STEEL TUBE (U TUBE) WELDED (ABOVE 17	I				M/s RATNAMANI METALS & TUBES	AHMEDABAD/ KUTCH	A			
ENGINEERING DIV / QAI-NTPC,NOIDA						 					

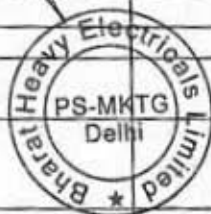
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	BWG)					LTD., M/s. Neotiss Limited (formerly VALLOUREC HEAT EXCHANGER TUBES LTD.,)	Patancheru, Hyderabad	DR			
		I				M/s. REMI	Tarapur	DR			
		I				M/s. Shinhan Metal	South Korea	DR			
		I				M/s PLYMOUTH TUBE COMPANY,	USA	A			
55	STAINLESS STEEL TUBE (U TUBE) WELDED (UP TO 17 BWG)	I				M/s RATNAMANI METALS & TUBES LTD.,	AHMEDABAD/ KUTCH	A			
		I				M/s PLYMOUTH TUBE COMPANY,	USA	A			
		I				M/s VALLOUREC HEAT EXCHANGER TUBES LTD. (FORMERLY CST VALINOX)	HYDERABAD	A			
		I				REMI	TARAPUR	DR			
		I				SHINHAN	KOREA	DR			
56	SAFETY RELIEF VALVE (TUBE SIDE AND SHELL SIDE)	I				M/s TYCO	USA	A			
		I				M/s DRESSER	USA	A			
		I				M/FAINGER LESSER	GERMANY	A			
		I				BHEL-HPBP-TRICHY	TRICHY	DR			
		I				PENTAIR VALVES & CONTROLS	VADODARA	DR			
		I				KSB MIL CONTROL LIMITED	CHENNAI				
ENGINEERING DIV / QAI-NTPC,NOIDA						Page 15 of 20					

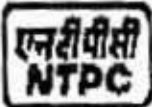


		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
								Revision No.: 00			
								Date: 05.04.2017			
SN	ITEM	QP/ INS- PN CAT *	QP No. xxxx-110	QP SUB- MISSIO N SCH ED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S/ CAT	SS DETAIL SUB- SCH ED ULE	SC APPL SCH EDU LE	REMARKS

		I				ASIAN INDUSTRIAL VALVES AND INSTRUMENTS	CHENNAI	DR			
57	LP HEATER	I				BHEL	HYDERBAD	A			SUB-QR ITEM
58	HP HEATER	I				BHEL	HYDERBAD	DR			SUB-QR ITEM
		I				SPX	USA	A			SUB-QR ITEM
		I				BHI	SOUTH KOREA	A			SUB-QR ITEM
		I				TEI	USA	A			SUB-QR ITEM
		I				SHANGHAI	CHINA	A			SUB-QR ITEM
		I				HOLTEC	USA	A			SUB-QR ITEM
		I				BHEL	HYDERBAD	A			
59	DRAIN COOLER	I				BHEL	HYDERBAD	A			
60	VALVES GATE, GLOBE, CHECK ½ TO 10" (UPTO 2500 CL)	II				TOA VALVES	JAPAN	A			
		II				DEUTSCHE BABCOCK	GERMANY	A			
		II				DRESSER	USA	A			
		I				BHEL	TRICHY	A			
		I				FLOSTEER ENGINEERS PVT. LTD.,	AHMEDABAD	DR			
		I				JOSHUAMPALA ENGINEERING PRIVATE LI	SATARA	DR			
		I				SKILT FABRICATORS PVT.LTD,	MUMBAI	DR			
		I				VALVE TECH INDUSTRIES	NAVI MUMBAI	DR			
		I				CHEMTECH INDUSTRIAL VALVES	THANE	DR			
61	VALVES (GATE, GLOBE, NRV) ½ TO 10" FOR LP	I				L&T	CHENNAI/COIMBATORE				

		Project : PATRATU STPP(3X800MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
		Package : EPC						Revision No.: 00			
		Contractor : BHEL, Hyderabad		Contract No.:					Date: 05.04.2017		
SN	ITEM	QP/INS-PN CAT	QP No. XXXX-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S / CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS
	APPLICATIONS	I				BHEL	TRICHY	A			
		I				FOURESS	AURANGABAD	A			Up to 2"x800# Upto 10x600#
		I				WEIR BDK	HUBLI	A			Up to 2"x800# Upto 10x600#
		I				FLOSTEER ENGINEERS PVT. LTD.,	AHMEDABAD	DR			
		I				JOSHJAMPALA ENGINEERING PRIVATE LI	SATARA	DR			
		I				SKILT FABRICATORS PVT.LTD,	MUMBAI	DR			
		I				VALVE TECH INDUSTRIES	NAVI MUMBAI	DR			
		I				CHEMTECH INDUSTRIAL VALVES	THANE	DR			
62	CCS GLOBE VALVES UPTO 300 NB AND 150 CLASS	I				KBL	KONDAPURI	A			
		I				FOURESS ENGG	AURANGABAD	A			
		I				WEIR BDK	HUBLI	A			
		I				KSB	COIMBATORE	A			
		I				LEADER ENGG	JALLANDHAR	A			
		I				SKILT	MUMBAI	DR			
		I				BHEL	TRICHY	A			
		I				FLOSTEER ENGINEERS PVT. LTD.,	AHMEDABAD	DR			
		I				JOSHJAMPALA ENGINEERING PRIVATE LI	SATARA	DR			
		I				VALVE TECH	NAVI MUMBAI	DR			
ENGINEERING DIV / QAI-NTPC,NOIDA						Page 17 of 20					



		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
								Revision No.: 00			
								Date: 05.04.2017			
SN	ITEM	QP/INS-PN CAT *	QP No. xxxx-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S/ CAT	SS DETAIL SUB-SCHEDU LE	SC APPL SCHEDU LE	REMARKS
		I				INDUSTRIES CHEMTECH INDUSTRIAL VALVES	THANE	DR			
63	DEARATOR # FABRICATOR BASED ON BHEL HYD DESIGN	I				BHEL #BHEL #VRK #Thandav Lakshmi Engineering works # Jay Engg # Sai Sarag # Premier Engg	HYDERABAD VISHAKAPATNAM HYDERABAD VISHAKAPATNAM Trichy Hyderabad Hyderabad	A DR DR DR DR DR DR			SUB-QR ITEM
64	DEARATOR SPRAY VALVES	III				NEWTERA (COCHRANE ENVIRONMENTAL SYSTEM (CRANE)) STERLING KCD VALUE TREK ENGINEERS VIJAYA TOOLING ENGINEERS	USA USA USA HYDERABAD HYDERABAD	A A DR DR DR			
65	DEARATOR TRAY ASSEMBLY	III				NEWTERA (COCHRANE ENVIRONMENTAL SYSTEM (CRANE)) STERLING KCD VRK INDUSTRIES PREMIER ENGG	USA USA USA HYDERABAD HYDERABAD	A A DR DR DR			
ENGINEERING DIV / QAI-NTPC,NOIDA						Page 18 of 20			BHEL		

		Project : PATRATU STPP(3X800MW) Package : EPC Contractor : BHEL, Hyderabad Contract No.:		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator				Ref No.: 9585-001-02			
								Revision No.: 00			
								Date: 05.04.2017			
SN	ITEM	QP/ INS- PN CAT *	QP No. xxxx-110	QP SUB- MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S / CAT	SS DETAIL SUB- SCHEDU LE	SC APPL SCHEDU LE	REMARKS
		I				VALUE TREK	HYDERABAD	DR			
		I				Pavan Engg	Hyderabad	DR			
		I				VIJAY TOOLING	HYDERABAD	DR			
66	LT MOTORS UPTO 200 KW(REFER NOTE-1)	I				BHARAT BULEE	MUMBAI	A			UPTO 160KW
		I				KEC	BANGALORE/ HUBLI*	A			* UPTO 90 KW
		I				MARATHON	KOLKATA	A			
		I				CGL	AHMEDNAGAR	A			
		I				ABB	FARIDABAD*/ BANGALORE	A			* UPTO 55 KW
						LAXMI HYDRAULICS	SOLAPUR	A			* UPTO 120 KW
						SIEMENS INDIA	INDIA	DR			
67	SAFETY RELIEF VALVE	I				BHEL,	TIRICHY	A			
						PENTAIR VALVES & CONTROLS	VADODARA	DR			
						KSB MIL CONTROL LIMITED	CHENNAI	DR			
						ASIAN INDUSTRIAL VALVES AND INSTRUMENTS	CHENNAI	DR			

A- Proposed vendor is acceptable to NTPC, N: BHEL/ MHI approved vendors indicated as "N" are accepted in NOTED category by NTPC for this project based on BHEL/MHI experience with the vendor for the items & DR – "Details required" for NTPC review.

2 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 as per QP.

CAT-III : For those items main supplier approves Quality Plan. The final acceptance by NTPC shall on the basis of Certificate of Conformance by main supplier.

ENGINEERING DIV / QAI-NTPC,NOIDA



Page 19 of 20



BHEL

	Project : PATRATU STPP(3X800MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL						Ref No.: 9585-001-02		
	Package : EPC								Revision No.: 00		
	Contractor : BHEL, Hyderabad		SUB SYSTEM: BFP, Drive Turbine, Heaters (HP, LP) Drain Cooler and Deaerator						Date: 05.04.2017		
Contract No.:											
SN	ITEM	QP/INS-PN CAT *	QP No. xxxx-110	QP SUB-MISSIO N SCHED ULE	QP APPL SCHE DULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATU S / CAT	SS DETAIL SUB- SCHEDU LE	SC APPL SCHEDU LE	REMARKS

NOTE 1: a) Less than 30 KW

Acceptance of Motor less than 30 KW is based on COC of the manufacturer & the contractor confirming as follows:

It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage & frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud & gland plate and tested in accordance with approved drawing /data sheets.

b) 30 KW and above

Acceptance of Motor rating between 30 KW & 50 KW is based on NTPC review of Routine Test inspection report as per IS 325 by main contractor along with COC of the manufacturer & the contractor confirming as follows:

« It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage & frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud & gland plate, space heater and tested in accordance with approved drawing /data sheets.

FOR HT MOTORS REFER SEPARATE VENDOR LIST FINALIZED FOR BHEL BHOPAL.

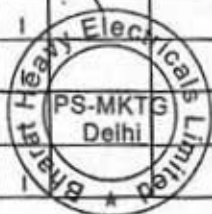
NOTE 2 : IF BOOSTER PUMPS SHAFT AND CEP SHAFT ARE MADE FROM ROLLED BARS THEN VENDORS SHALL BE AS PER BHEL APPROVED VENDOR LIST.

NOTE 3 : FOR VALVES OF SIZE ½ INCH AND BELOW SHALL BE PROCURED FROM BHEL APPROVED SOURCES.

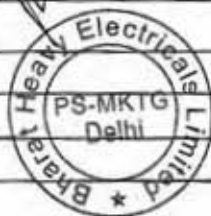


ENGINEERING DIV / QAI-NTPC,NOIDA	Page 20 of 20	
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NTPC	PROJECT: : PATRATU EPC (3X)				LIST OF ITEMS REQUIRING QUALITY PLAN		PACKAGE:	EPC
							SUB-PKG.:	
							REV. NO.	00
							DATE:	12.04.2017
SI. NO.	ITEM	QP_CAT	QP_NO	QP_SCH	PROPOSED SUB_SUPPLIER	PLACE	APPRL_STA TUS/ CAT	REMARK
1.00	LUBE OIL PUMP	I			MATZ ENGINEERS	AHEMDABAD	A	
		I			Della PD Pumps Pvt.Ltd.	Vapi	DR	
		I			Del Pd Pumps & Gears	Surandenagar,Gujarat	DR	
		I			TUSHACO PUMPS	DAMAN	A	
2.00	SELF CLEANING STRAINER	I			MULTITEX	NOIDA	A	
		I			GEA BGR ENERGY SYSTEM	CHENNAI	A	
		I			FILTRATION ENGINEERS (I) PVT.	MUMBAI	DR	Approved upto 800 NB size
3.00	GM VALVES (UPTO 100 NB)	III			BHEL APPROVED SOURCES			VENDOR APPROVAL BY NTPC NOT ENVISAGED.
4.00	METELUC BELLOWS	I			Qinhuangdao North Metal Hose Co. Ltd.,	CHINA	DR	
		I			FLEXICON BELLOWS & HOSES	BARODA	A*	A* AS PER APPROVAL CONDITIONS
		I			LONESTAR INDUS.	CHENNAI	A*	A* AS PER APPROVAL CONDITIONS
		I			MB METTALIC BELLOWS (I) P LTD	CHENNAI	A*	A* AS PER APPROVAL CONDITIONS
		I			METTALIC BELLOWS (I) P LTD	CHENNAI	A*	A* AS PER APPROVAL CONDITIONS
					FLEXATHERM EXPANLOW PVT.	VADODARA	DR	
					BD ENGINEERING	AHMEDABAD	DR	
		I			TEDDINTON ENGINEERED	UK	DR	
5.00	THERMAL INSULATION (ROCKWOOL MATRESSES/ P-	I			Minsulate Manufacturing Co.	Jamshedpur	DR	
		I			GOENKA Rockwool	RAIPUR	A	
					LLOYD INSULATION (I) LTD	BHILAI,JAMSHEDPUR, AURANGABAD	A	
					ROCKWOOL INDIA THERMOCARE	MEDAK, AP	A	
					ROCKWOOL INDIA	RAJNANDGAON	DR	



NTPC	PROJECT: : PATRATU EPC (3X)				LIST OF ITEMS REQUIRING QUALITY PLAN		PACKAGE:	EPC
							SUB-PKG.:	
							REV. NO.	00
							DATE:	12.04.2017
SI. NO.	ITEM	QP_CAT	QP_NO	QP_SCH	PROPOSED SUB SUPPLIER	PLACE	APPRL_STA TUS/ CAT	REMARK
		I			SHREERAM EQUITECH PRIVATE	DURG	DR	
		I			Polybond Insulation Private Limited,	BHILAI	DR	
		I			Dhanbad Rockwool Insulation Pvt.Ltd.	Dhanbad	DR	
		I			Hitec Rockfibre Pvt.Ltd.	RAJNANDGAON	Dr	
6.00	BALL VALVES (NON FIRE SAFE TYPE)	I			MICROFINISH VALVES	HUBLI	A	UPTO 400NB, #300
		I			VAAS AUTOMATION	CHENNAI	DR	
		I			BELGAUM AQUA VALVES PVT. LTD.	BELGAUN	A	50 NB CLASS 800 200NB CLASS 150
		I			A.V. VALVES LTD	AGRA	DR	
		I			ATAM VALVES PVT. LTD.	JALANDHAR	DR	
		I			VALTECH INDUSTRIES	MUMBAI	DR	
		I			M/S GM ENGINEERING	RAJKOT	DR	
		I			INTERVALVE (INDIA) LTD.	PUNE	DR	
		I			DEMBLA VALVES LTD.	THANE	DR	
		I			UNIFLOW	CHENNAI	DR	
		I			WEIR BDK	HUBLI	A	UPTO 400 NBX150#
		I			LEADER	JALANDHAR	A	UPTO50MM-CLASS800, CCS- 50TO100MM-CLASS 150
		I			NILON VALVES PRIVATE LTD	AHMEDABAD	DR	
		I			HAWA VALVES (IDIA) PVT. LTD.	NAVI MUMBAI	DR	
		I			HAWA ENGINEERS	AHMEDABAD	DR	
		I			CRESCENT VALVES	AHMEDABAD	DR	
		I			MICON VALVES	MUMBAI	DR	
		I			MEVADA ENGINEERING	MUMBAI	DR	

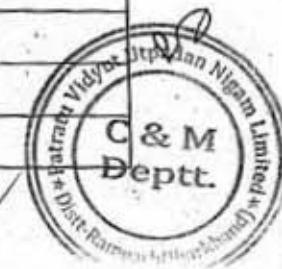
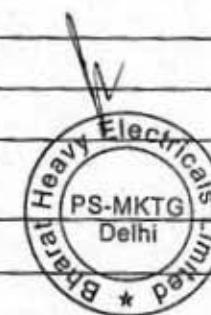


NTPC	PROJECT: : PATRATU EPC (3X)				LIST OF ITEMS REQUIRING QUALITY PLAN		PACKAGE:	EPC
							SUB-PKG.:	
							REV. NO.	00
							DATE:	12.04.2017
SI. NO.	ITEM	QP_CAT	QP_NO	QP_SCH	PROPOSED SUB_SUPPLIER	PLACE	APPRL_STA TUS/ CAT	REMARK
		I			DELVAL FLOW CONTROLS	SATARA	DR	
7.00	STEAM TRAPS	III			BHEL APPROVED SOURCES			VENDOR APPROVAL BY NTPC NOT ENVISAGED.
8.00	AIR TRAPS	III			BHEL APPROVED SOURCES			VENDOR APPROVAL BY NTPC NOT ENVISAGED.
9.00	BUTTERFLY VALVES (STEAM SERVICES)	I			FOURESS ENGG. NENGFA WEIYE TIELING VALVE JOINT STOCK CO. LTD.	BANGALORE	A	UPTO 2600NB
		I				CHINA	DR	
		I			IL	PALGHAT	A	UPTO 2200NB
		I			SHENJIANG VALVES CO.	CHINA	DR	
10.00	AIR RELEASE VALVES	III			BHEL APPROVED SOURCES			BHEL APPROVED SOURCES
11.00	CHEMICAL DOSING (LP)	I			TECHNO CONSULTANT	MUMBAI	A	
		I			SWELLORE	AHEMDABAD	A	
		I			VK PUMPS	NASHIK	A	
		I			POWER PIPING COMPANY	Trichy	A	
		I			PSI	CHENNAI	A	

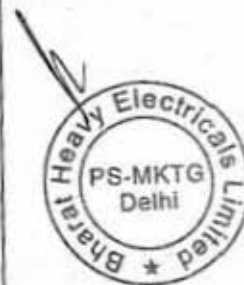


NTPC	PROJECT: : PATRATU EPC (3X		LIST OF ITEMS REQUIRING QUALITY PLAN			PACKAGE: EPC		
	CONTRACTOR: BHEL-PEM					SUB-PKG.: 00		
	CONTRACT NO.: 9585-001-2					REV. NO. 00		
						DATE: 12.04.2017		
SI. NO.	ITEM	QP_CAT	QP_NO	QP_SCH	PROPOSED SUB_SUPPLIER	PLACE	APPRL_STA TUS/ CAT	REMARK
		I			ENPRO INDUSTRIES PVT.LTD.	PUNE	DR	
		I			ROCKWIN FLOWMWTER INDIA PVT LTD	GHAZIABAD	DR	
		I			POSITIVE METERING PUMPS (I) PVT. LTD.	NASIK	A	
		I			TECNO STRENGTH PVT.LT.	HYDERABAD	DR	
		I			MR SYSTEMS	HOWRAH	DR	
12.00	COLTCS(Not Applicable)							
13.00	SPRING LOADED BYPASS VALVE	I			WEIR VALVES & CONTROLS UK LTD.	U.K.	A	UP TO NB 450, 2000#
		I			SEMPELL GmbH	GERMANY	A	UP TO NB 450, 2260#
		I			STRACK GmbH,	GERMANY	A	UP TO NB 450, 4500#
		I			BHEL -Trichy Valves	Trichy	DR	
14.00	ALUMINIUM SHEET /COILS	III			NATIONAL ALUMINIUM COMPANY LTD.	BHUBNESHWAR	N	
		III			BHARAT ALUMINIUM COMPANY LTD	DELHI	N	
		III			HINDALCO INDUSTRIES LTD	MUMBAI	N	
		III			Jindal Aluminium	Bangalore	DR	
		III			CHONGGING LANREN ALUMINIUM CO. LTD.	CHINA	DR	
15.00	THERMAL INSULATION CERAMIC FIBRE	I			(LLOYD INSULATIONS (INDIA) LTD.	NALAGARH BADDI	DR	
		I			Simond Fibre Tech Ltd.	Rajkot	DR	
		I			Sri Ceramic Fibre Pvt.Ltd.	Indore	DR	
		I			UNIFRAX INDIA	LAKHTAR	DR	

PS-MKTG
Delhi



0	PROJECT: PATRATU (3 X 800 MW)		LIST AND STATUS OF ITEM REQUIRING QP AND SUB-SUPPLIER APPROVAL		NTPC DOC NO: CS-9585-001-2		
NTPC	SUB-PACKAGE:EPC SUB-PACKAGE:				REV. NO. 0		
	MAIN SUPPLIER: BHEL				DATE 12.04.2017		
	CONTRACT NO.: CS-9585-001-2				ANNEXURE		
SR. NO.	ITEM	GAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS	REMARKS
1	TG & AUX INCLUDING GENERATOR	I		LARSEN & TOUBRO	MUMBAI	A	NOTE-1
		I		POWER MECH	VIJAYWADA	A	NOTE-1
		I		INDWELL CONSTRUCTIONS LTD	VIJAYWADA	A	NOTE-1
		I		BROTHERS ENGINEERS	CHENNAI	A	NOTE-1
		I		PE ERECTORE	KOLKATA	A	NOTE-1
		I		ALSTOM POWER INDIA LTD	DELHI	A	NOTE-1
		I		TATA PROJECTS LTD	HYDERABAD	A	NOTE-1
		I		UNIVERSAL ERECTORS	MUMBAI	A	NOTE-1
		I		BSES LTD	MUMBAI	A	NOTE-1
		I		ENGINEOUS ERECTORS	CHENNAI	A	NOTE-1
		I		SPIC GEL	CHENNAI	A	NOTE-1
		I		VABSUN ERECTORS	HYDERABAD	DR	NOTE-1
		I		DPC ENGINEERING PROJECTS	CHENNAI	DR	NOTE-1
		I		RELIANCE INFRASTRUCTURE	MUMBAI	DR	NOTE-1
		I		SUNIL HI TECH	NAGPUR	A	NOTE-1
		I		VASAVI POWER SERVICES LTD	HYDERABAD	DR	NOTE-1
		I		TEXCEL	CHENNAI	A	NOTE-1
		I		MACWELL CONSTRUCTIONS	VIJAYWADA	DR	NOTE-1
		I		UNIVERSAL ERECTORS	AHMEDABAD	DR	NOTE-1
		I		EDAC ENGINEERS	CHENNAI	DR	NOTE-1
		I		KARPARA PROJECT ENGG	SURAT	DR	NOTE-1
		I		PCP INTERNATIONAL	CHANDIGARH	DR	NOTE-1
		I		UB ENGINEERING	PUNE	DR	NOTE-1
		I		MECH ENGINEERS & ERECTORS	TELANGANA	DR	NOTE-1
		I		ALPHA	JAMNIPALI	DR	NOTE-1
		I		ESSAR PROJECTS (I) LTD.	MUMBAI	DR	NOTE-1
2	GENERATOR & AUXILIARIES	I		SAME AS SL. NO. 1			



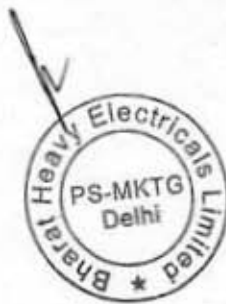
26
G.V. Patra... 12/04/17

SRL. NO.	ITEM	QAP / IMP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS	REMARKS
3	C&I OF ST & TG	I		NOTE-2			
4	HP PIPING	I		NOTE-2			
5	LP PIPING	I		NOTE-2			
6	BOILER FEED PUMP	I		NOTE-2			
7	HEATERS, DEAERATORS	I		NOTE-2			
8	CEP	I		NOTE-2			
9	HT MOTORS	I		NOTE-2			
10	CRANES-EOT & MISC	I		NOTE-2			
11	PASSANGER CUM GOODS ELEVATOR	I		NOTE-2			
12	TANKS & VESSELS CABLEING	I		NOTE-2			
13	DC SYSTEM 220/24 V - BATTERY	I		NOTE-2			
14	BATTERY CHARGER	I		NOTE-2			
15	HYDROGEN GENERATION PLANT	I		NOTE-2			

NOTE-1: Additional sub-contractors may be considered as per MOM provision. Organizational, financial and technical aspects will be taken care by BHEL before award of the jobs to the sub-contractors. Mobilisation of manpower, tools, tackles to suit the requirements of the job schedule shall be tied up by BHEL in consultation with NTPC site before award for which the details of sub-contractors shall be forwarded to GM-Site.

NOTE-2: BHEL approved sub-contractors for erection - would mean NTPC approval not required. However, mobilisation of manpower, tools, tackles to suit the requirements of the job schedule shall be tied up by BHEL in consultation with NTPC site.

NOTE-3: BHEL will follow their standard procedure, corporate guidelines and shall comply with circulars/ instructions etc. issued by Government/ relevant statutory bodies while tendering. However for new vendor, BHEL shall take approval from NTPC prior to order placement.



G.V. Rajasekhara 12/04/17
(G.V. RAJASEKHARA)
(BHEL-PSNR)

		PROJECT: PATRATU STPP (3X800MW))		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL		ANNEXURE- DOC. No. CS-9585-001-2 Revision No. : 00 DATE: 05/04/2017 PAGE : 1 OF 7	
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
1	LOW PRESSURE PIPING L1 LEVEL VENDOR (REFER NOTE 2)	1		RAUNAQ INTERNATIONAL	FARIDABAD	A	Jatin
		1		BRIDGE & ROOF CO	KOLKATA	A	
		1		TECHNOELECTRIC ENGG	KOLKATA	A	
		1		TECHNO FAB ENGG	NEW DELHI	A	
		1		UNITECH MACHINES LTD	GURGAON	A	
		1		THERMOSYSTEMS	HYDERAABAD	A	
		1		IOTL	MUMBAI	A	
		1		BHEL PIPING CENTRE	CHENNAI	A	
2	AIR CONDITIONING SYSTEM L1 LEVEL VENDOR (REFER NOTE 1& 2)	1		GMW	BARODA	DR	Jatin
		1		VOLTAS	MUMBAI	A	
		1		STERLING & WILSON	KOLKATA	A	
		1		ADVANCE VENTILATION	DELHI	A	
		1		ROOTS COOLING SYSTEM	NOIDA	A	
		1		GEMINI SHREEWAS (ENGRS) PVT LTD	CHENNAI	DR	
3	VENTILATION SYSTEM L1 LEVEL VENDOR (REFER NOTE 1& 2)	1		INDUSTRIAL PROJECT & PRODUCTS LTD	BAWAL	DR	Jatin
		1		VOLTAS	MUMBAI	A	
		1		STERLING & WILSON	KOLKATA	A	
		1		ROOTS COOLING SYSTEM	NOIDA	A	
		1		SK SYSTEMS PVT LTD	DELHI	A	
		1		C DOCTOR	KOLKATA	A	
		1		HYDERABAD POLLUTION	HYDERABAD	A	
		1		ADVANCE VENTILATION	DELHI	A	
		1		PACK PLAST ENGG	KOTA	A	

FORMAT NO.: QS-01-QAI-P-01/F3-R0



 PROJECT: PATRATU STPP (3X800MW)) PACKAGE : EPC PACKAGE SUPPLIER : BHEL CONT. NO.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL			ANNEXURE- DOC. No. CS-9585-001-2		
					Revision No. : 00		
					DATE: 05/04/2017		
					PAGE : 2 OF 7		
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
4	COMPRESSED AIR SYSTEM L1 LEVEL VENDOR (REFER NOTE 1& 2)	1		INDUSTRIAL PROJECT & PRODUCTS LTD	BAWAL	DR	
		1		TAP ENGINEERING	CHENNAI	DR	
		1		ELGI EQUIPMENTS	COIMBATORE	A	
		1		ATLAS COPCO	PUNE	A	
		1		INGERSOLL RAND	AHMEDABAD	A	
5	PLATE HEAT EXCHANGER	1		TRANSTER INDIA	PUNE	A	HT PLATES & GASKETS FROM TRANSTER, SWEDEN/USA. HT PLATES FROM HIKASA, JAPAN
		1		TRANSTER INDIA	PUNE	A	ACCEPTABLE FOR INDIGENOUSLY PRESSED HT PLATE SIZE UPTO 2107 MM LENGTH X 940 MM WIDTH X 0.6MM THICKNESS OF SS316 MATERIAL. GASKET AS PER APPROVAL CONDITION.
		1		KELVION INDIA PVT LTD (FORMLY GEA ECOFLEX INDIA)	PUNE	A	HT PLATES & GASKETS FROM GEA ECOFLEX, GERMANY
		1		KELVION INDIA PVT LTD (FORMLY GEA ECOFLEX INDIA)	PUNE	A	ACCEPTABLE FOR INDIGENOUSLY PRESSED HT PLATE SIZE UPTO 1736 MM LENGTH X 745 MM WIDTH X 0.5MM THICKNESS. GASKETS AS PER APPROVAL CONDITION.
		1		ALPHA LAVAL		A	HT PLATES & GASKETS FROM ALPHA LAVAL, SWEDEN

FORMAT NO.: QS-01-QAI-P-01/F3-R0

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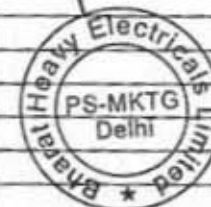
 PROJECT: PATRATU STPP (3X800MW) PACKAGE : EPC PACKAGE SUPPLIER : BHEL CONT. NO.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL			ANNEXURE- DOC. No. CS-9585-001-2		
					Revision No. : 00		
					DATE: 05/04/2017		
					PAGE : 3 OF 7		
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
		I		ALPHA LAVAL	SATARA	A	ACCEPTABLE FOR INDIGENOUSLY PRESSED HT PLATES OF SIZE UPTO 2250MM LENGTH X 750MM WIDTH X 0.6MM THICKNESS.
		I		IDMC	ANAND	A	HT PLATES & GASKETS FROM SONDEX, DENMARK
		I		HISAKA	JAPAN	A	
		I		SONDEX INDIA	VADODARA	A	HT PLATES FROM SONDEX, DENMARK
6	HORIZONTAL CENTRIFUGAL PUMP (UP TO 1000 CUM/HR)	I		KIRLOSKAR BROS LTD.	KIRLOSKARWADI	A	
		I		MATHER & PLATT	PUNE	A	
		I		MATHER & PLATT	KOLHAPUR	A	
		I		SAM TURBO	COIMBATORE	A	
		I		FLOWMORE	GHAZIABAD	A	
		I		FLOWMORE	GHAZIABAD	A	
		I		BEST AND CROMPTON	CHENNAI	A	
		I		JYOTI	VADODARA	A	
		I		WPIL	GHAZIABAD	A	
		I		KISHORE PUMPS	PUNE	A	UPTO 500M3/HR
		I		KSB	PUNE	A	
7	FUEL OIL UNLOADING SYSTEM L1 LEVEL VENDOR (REFER NOTE 1 & 2)	I		RAUNAQ INTERNATIONAL LTD	FARIDABAD	A	
		I		GMW	VADODRA	A	
		I		UNITECH MACHINES LTD	GURGAON		
		I		TECHNO ELECTRIC	KOLKATA		

FORMAT NO.: QS-01-QAI-P-01/F3-R0



		PROJECT: PATRATU STPP (3X800MW)) PACKAGE : EPC PACKAGE SUPPLIER : BHEL CONT. NO.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL		ANNEXURE- DOC. No. CS-9585-001-2 Revision No. : 00 DATE: 05/04/2017 PAGE : 4 OF 7	
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
8	COOLING TOWER- IDCT L1 LEVEL VENDOR (REFER NOTE 1 & 2)			ENGG			
		1		XICON INTERNATIONAL	THANE	DR	
		1		NEW FIRE ENGINEERS	NEW DELHI	DR	
		1		SHALCOT	NOIDA	A	
		1		THERMOSYSTEMS	HYDERABAD	A	
		1		L&T	CHENNAI	A	
		1		NBCC	NEW DELHI	A	
		1		GEA COOLING TOWER	CHENNAI	A	
		1		HAMMON SHRIRAM	UMBERGAON	A	
		1		PAHARPUR COOLING TOWERS	NEW DELHI	A	
9	CW TREATMENT SYSTEM L1 LEVEL VENDOR (REFER NOTE 1 & 2)	1		FANS AS	CZECK	A	
		1		PAL TECH COOLING TOWER	GURGAON	A	
		1		DRIPLEX	NEW DELHI	A	
		1		THERMAX	PUNE	A	
		1		ION EXCHANGE	MUMBAI	A	
		1		TRIVENI ENGG	NOIDA	A	
10	CONDENSATE POLISHING PLANT L1 LEVEL VENDOR (REFER NOTE 1 & 2)	1		VASU CHEMICALS	MUMBAI	DR	
		1		CHEMBOND	MUMBAI	DR	
		1		DRIPLEX	HARIDWAR	A	
		1		ION EXCHANGE	MUMBAI	A	
11	(SUBMERSIBLE TYPE) 50 M3/HR, 20 MWC	1		BGR ENERGY	CHENNAI	A	
		1		THERMAX	PUNE	A	
		1		KISHORE PUMPS	PUNE	A	
		1		KSB	PUNE	A	
		1		KIRLOSKAR BROS LTD.	KIRLOSKARWADI	A	
		1		AQUA MACHINERY	AHMEDABAD	A	
		1		DARLING PUMPS	INDORE	A	

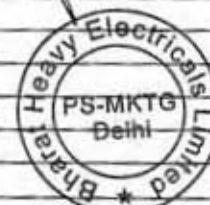
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		PROJECT: PATRATU STPP (3X800MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL		ANNEXURE-	
		PACKAGE : EPC PACKAGE				DOC. No. CS-9585-001-2	
		SUPPLIER : BHEL				Revision No. : 00	
		CONT. NO.: CS-9585-001-2				DATE: 05/04/2017	
						PAGE : 5 OF 7	
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
		I		WPIL MBH	GHAZIABAD	A	
					AHMEDABAD		
13	WATER PRE TREATMENT PLANT & LIQUID EFFLUENT TREATMENT PLANT L1 Level Vendor (Refer Note 1 & 2)	I		DRIPLEX	NEW DELHI	A	
		I		TRIVENI	NOIDA	A	
		I		BRIDGE & ROOF	KOLKATA	A	
		I		GEO MILLER	NEW DELHI	A	
		I		MCNALLY BHARAT	KOLKATA	A	
		I		VA TECH WABAG	PUNE	A	
		I		GANNON DUNKERLEY	NEW DELHI	A	
		I		UEM INDIA	NOIDA	A	
		I		ION EXCHANGE	MUMBAI	A	
		I		PARAMOUNT	VADODARA	DR	
		I		THERMAX	PUNE	DR	
		I		PBI ASSOCIATES	PUNE	DR	
		I		SHRI RAM EPC	CHENNAI	DR	
		I		CLEAR WATER	NEW DELHI	DR	
		I		AQUA DESIGN	CHENNAI	DR	
		I		VEOLIA INDIA PVT LTD	CHENNAI	DR	
14	DM PLANT (CONVENTIONAL ION EXCHANGE BASED) L1 Level Vendor (Refer Note 1 & 2)	I		THERMAX	PUNE	A	
		I		ION EXCHANGE	MUMBAI	A	
		I		DRIPLEX	NEW DELHI	A	
		I		PARAMOUNT	VADODARA	DR	
		I		AQUA DESIGN	CHENNAI	DR	
		I		V A TECH WABAG	PUNE	DR	
		I		AQUA TECH SYSTEMS	PUNE	DR	
		I		DOSHION	AHMEDABAD	DR	

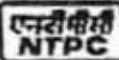
FORMAT NO.: QS-01-QAI-P-01/F3-R0

ENGG. DIV./QA&I



Appendix B, Page 127 of 278

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BHEL, RS

 PROJECT: PATRATU STPP (3X800MW) PACKAGE : EPC PACKAGE SUPPLIER : BHEL CONT. NO.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL			ANNEXURE-		
					DOC. No. CS-9585-001-2		
					Revision No. : 00		
					DATE: 05/04/2017		
						PAGE : 6 OF 7	
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS
15	DM PLANT (RO+MB PLANT) L1 Level Vendor (Refer Note 1 & 2)	I		TRIVENI ENGG	NOIDA	DR	
		I		WIPRO	MUMBAI	DR	
		I		TRIVENI	NOIDA	A	
		I		ION EXCHANGE	MUMBAI	A	
		I		DRIPLEX	NEW DELHI	A	
16	SEWAGE TREATMENT PLANT L1 Level Vendor (Refer Note 2)	I		VA TECH WABAG	PUNE	A	
		I		ION EXCHANGE	MUMBAI	A	
		I		TRIVENI	NOIDA	A	
		I		DRIPLEX	NEW DELHI	A	
		I		DECCAN	PUNE	A	
		I		THERMAX	PUNE	A	
		I		GEO MILLER	NEW DELHI	A	
17	CHLORINATION SYSTEM	TO BE PROPOSED AT LATER STAGE				A	

NOTE-1: Subject to Sub-QR clearance by Engg as per Technical Specification

NOTE 2: Comprehensive L-2 list of sub-vendors shall be finalized with the finally selected L-1 vendor but prior to order finalization on L-1 vendor by the Bidder.

FORMAT NO.: QS-01-QAI-P-01/F3-R0

1/1



ENGG. DIV./QA&I



 PROJECT: PATRATU STPP (3X800MW)) PACKAGE : EPC PACKAGE SUPPLIER : BHEL CONT. NO.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB- SUPPLIER APPROVAL		ANNEXURE-			
				DOC. No. CS-9585-001-2			
				Revision No. : 00			
				DATE: 05/04/2017			
				PAGE : 7 OF 7			
SL.NO.	ITEM	QP/INSPN CAT	QP NO.	PROPOSED SUBVENDORS BY MAIN CONTRACTOR	PLACE	SUB-SUPPLIER APPROVAL STATUS/ CATEGORY	REMARKS

1. SYSTEM SUPPLIER / SUB-SUPPLIER STATUS CATEGORY (SHALL BE FILLED BY NTPC).

A – For those items proposed vendor accepted to NTPC. To be indicated with letter "A" in the list along with condition of approval, if any.

DR - for those items "Details Required" for NTPC review.

Noted: For those items accepted by NTPC without specific sub-vendor approval from NTPC and indicated as "NOTED" in the list.

2. 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 will be done by NTPC. The final acceptance by NTPC shall be on the basis of review of documents as per QP.

CAT III: For those items Main Supplier approves quality plans. The final acceptance by NTPC shall be on the basis of certificate of conformance by Main Supplier.

Shakti
(Katy) NTPC
Hmang



Jatin
Main Contractor
(*Jatin Grahawat*)
BHEL, PSM

Appendix B, Page 129 of 278

129

FORMAT NO.: QS-01-QAI-P-01/F3-R0

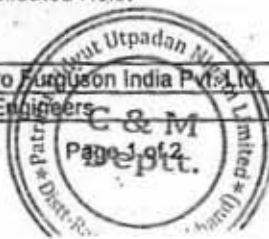
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ENGG. DIV/QA&I

PROJECT: PATRATU STPP (3 X 800 MW)			LIST AND STATUS OF ITEM REQUIRING QP AND SUB-SUPPLIER APPROVAL		NTPC DOC NO:		CS-9585-001- 2	
PACKAGE: EPC PACKAGE					REV. NO.		0	
MAIN SUPPLIER: BHEL					DATE		10-Apr-17	
CONTRACT NO.: CS-9585-001- 2					ANNEXURE			
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS	REMARKS	
1	Mill Reject Handling System Level Vendor (Refer Note 1 & 2)	L1	I	Macawber Beekay	Delhi	A		
			I	Xiamen Longking	China	A		
			I	Shanghai Sinojin New Energy Investment Company	China	DR		
			I	H V Equipments	Noida	A		
2	TG Hall EOT Cranes (Refer Note 1) & Lifting Beam		I	Mukand	Thane	A/DR	Approved Upto 300 Tons	
			I	WMI Konecranes	Pune	A/DR	Approved Upto 300 Tons	
			I	Anupam Industries	V U Nagar	A/DR	Approved Upto 300 Tons	
			I	Unique Industries Handlers	Nasik	A/DR	Approved Upto 300 Tons	
			I	HEC	Ranchi	A/DR	Approved Upto 285 Tons	
3	Misc EOT Cranes (Sub-vendors indicated at SI no 2 are also acceptable)		I	Tuobro Furguson India Pvt. Ltd	Kolkata	A/DR	Approved Upto 25 Tons	
			I	FAFCO	Vadodara/Mumbai	A/DR	Vadodara works approved - upto 150 Tons, Mumbai - Upto 200 Tons	
			I	Grip Engineers	Hyderabad	A/DR	Approved Upto 50 Tons	
			I	Reva Industries	Faridabad	A/DR	Approved Upto 45 Tons	
			I	Cranex	Sahibabad	A/DR	Approved Upto 35 Tons	
			I	Electromech	Pune	DR		
			I	Rockwell Hoisto	Bahadurgarh	DR		
			I	Techno	Ahmedabad	DR		
			I	Mangla Hoist	Greater Noida	DR		
			I	Brady & Morris	Ahmedabad	DR		
			I	GMW	Vadodara	DR		
			I	Terex	Pune	DR		
			I	Meeka Machinery	Ahmedabad	DR		
			I	Safex	Ahmedabad	DR		
			I	Unicom	Noida	DR		
			I	Henan Weihua	China	DR		
			4	Misc Electric Hoists		I	Alpha Services	Bhiwadi
I	Century Crane Engineers	Ballabgarh				A/DR	Approved Upto 30 Tons	
I	Brady & Morris	Ahmedabad				A/DR	Approved Upto 10 Tons	
I	Consolidated Hoist	Pune / Satara				A/DR	Approved Upto 35 Tons at Satara & Upto 15 Tons at Pune works	
I	Tuobro Furguson India Pvt. Ltd	Kolkata				A/DR	Approved Upto 5 Tons	
			I	Grip Engineers	Faridabad	A/DR	Approved Upto 20 Tons	







		I	Techno	Ahmedabad	DR	
		I	Tractel Tirfor India Pvt. Ltd	Palwal	A/DR	Approved Upto 15 Tons
		I	Rockwell Hoisto	Bahadurgarh	DR	
		I	Universal Hoisto Fabrik	Thane	A/DR	Approved Upto 20 Tons
		I	Global Technologies	Hyderabad	DR	
		I	Mangla Hoist	Greater Noida	A/DR	Approved Upto 10 Tons
		I	Safex	Ahmedabad	DR	
		I	Meeka Machinery	Ahmedabad	DR	
		I	Reva Industries	Faridabad	A/DR	Approved Upto 25 Tons
		I	Eddy Cranes	Pune	A/DR	Approved Upto 14 Tons
		I	Alpha Services	Bhiwadi	A/DR	Approved Upto 15 Tons
		I	Century Crane Engineers	Ballabhgarh	A/DR	Approved Upto 25 Tons
		I	Grip Engineers	Hyderabad	A/DR	Approved Upto 40 Tons
5	Chain Pulley Block	I	Techno	Ahmedabad	DR	
		I	Brady & Morris	Ahmedabad	DR	
		II	Century Crane Engineers	Ballabhgarh	A/DR	Approved Upto 15 Tons
		I	Universal Hoisto Fabrik	Thane	DR	
		II	Tractel Tirfor India Pvt. Ltd	Kalyani	A/DR	Approved Upto 20 Tons
		I	Tuobro Furguson India Pvt. Ltd	Kolkata	DR	
6	Fire Tender	I	Wadia Bodybuilders	Ahmedabad	A	
		I	Ambala Coach	Ambala	A	
		I	Brijbasi Hi Tech	Mathura	DR	
		I	Vijay Fire	Umbergaon	A	

Note 1 : Subject to Sub-QR clearance by Engg as per Technical Specification

Note 2 : Comprehensive L-2 list of sub-vendors shall be finalized alongwith the finally selected L-1 vendor but prior to order finalization on L-1 vendor by the Bidder.

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 alongwith the condition of approval, if any.

DR – For these 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. 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 QP.

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



	PROJECT: PATRATU STPP (3 X 800 MW)		LIST AND STATUS OF ITEM REQUIRING QP AND SUB-SUPPLIER APPROVAL		NTPC DOC NO:		CS-9585-001- 2	
	PACKAGE: EPC PACKAGE				REV. NO.		0	
	MAIN SUPPLIER: BHEL				DATE		05-Apr-17	
	CONTRACT NO.: CS-9585-001- 2				ANNEXURE			
SR. NO.	ITEM	QAP / INSP, CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS	REMARKS	
1	Coal Handling Plant L1 Level Vendor (Refer Note 1 & 2) & Limestone/ Gypsum Handling Plant L1 Vendor (Refer Note2)	I		BHEL - ISG	Bangalore	A		
2	Ash Handling System L1 Level Vendor (Refer Note 1 & 2)	I		DCIPS	Kolkata	A		
		I		MBE	Kolkata	A		
		I		Macawber Beekay	Delhi	A		
		I		Mcgale Pneumatic	Nagpur	DR		
		I		UCC	USA / India	DR		
		I		BHEL-ISG	Bangalore	DR		
		I		Indure	Delhi	A		
2a	Dry Bottom Ash Handling System L1 Level Vendor (Refer Note 1 & 2)	I		Magaldi System	Italy	DR		
		I		Clyde Bergman	India	DR		
		I		China Datang Technological & Engineering Co.	China	DR		
		I		Nari Futong Science and Technology Development Co. Ltd.	China	DR		

Note 1 : Subject to Sub-QR clearance by Engg as per Technical Specification

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2. QP/INSPN CATEGORY:

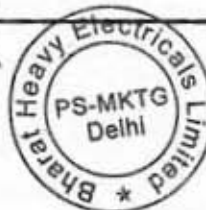
CAT-I : For these items the Quality Plans are approved by NTPC and the final acceptance will be on physical inspection witness by NTPC.

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 QP.

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

PROJECT: PATRATU STPP (3 X 800 MW)		LIST AND STATUS OF ITEM REQUIRING QP AND SUB-SUPPLIER APPROVAL		NTPC DOC NO:		CS-9585-001- 2	
PACKAGE: EPC PACKAGE				REV. NO.		0	
MAIN SUPPLIER: BHEL				DATE		05-Apr-17	
CONTRACT NO.: CS-9585-001- 2				ANNEXURE			
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS	REMARKS
1	Fire Protection & Detection System L1 Level Vendor (Refer Note 1 & 2)	I		Lloyd Insulations	Delhi	A	
		I		Minimax GmbH	Germany	A	
		I		Tyco Fire & Security	Bangalore	A	
		I		Hitek Engineering	Mumbai	A	
		I		UTC Fire & Security	Gurgaon	A	
		I		Unitech Machines	Gurgaon	A	
		I		Mehta & Associates	Ahmedabad	A	
		I		Sureland	China	A	
		I		Consilium Middle East	UAE	A	
		I		Sterling & Wilson	Kolkata	A	
		I		Mx Systems International	Mumbai	A	
		I		Aginco Fire Protection	Chennai	DR	
		I		Thermosystems	Hyderabad	A	
		I		BHEL - Hyderabad	Hyderabad	A	
		I		Technofab	Faridabad	A	
I		Mather & Platt	Pune	A			
Note 1 : Subject to Sub-QR clearance by Engg as per Technical Specification							
Note 2 : Comprehensive L-2 list of sub-vendors shall be finalized alongwith the finally selected L-1 vendor but prior to order finalization on L-1 vendor by the Bidder.							
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 alongwith the condition of approval, if any.							
DR – For these items "Detailed required" for NTPC review. To be identified with letter "DR" in the list.							
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 QP.							
CAT-III : For these items Main Supplier approves the Quality Plans. The final acceptance by NTPC shall be on the basis certificate of conformance by the main supplier.							

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Handwritten signature: Jatin
(Jatin Gahlawat)
(BHEL, PS-MKTG)

		PROJECT :PATRATU STPP (3X800 MW) PACAKGE : EPC Sub Package: Elevators 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:- 9585-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL - SCHEDULE
1)	ELEVATOR	I				ECE	GHAZIABAD	A			
		I				TECHNO	AHMEDABAD	A			
		I				OTIS	MUMBAI	A			
		I				KONE	CHENNAI	A			
		I				OMEGA	AHMEDABAD	A			
		I				SAMIL ELTEC	KOREA	A			
						JOHNSON	CHENNAI / NAGPUR	DR			
						SCHINDLER	MUMBAI	DR			




Jatin
24/4/17

(JATIN GAHLAWAT)
BHEL

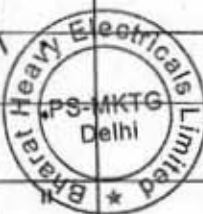
NTPC		PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX			REF NO. :
							REV NO.:
							DATE 05.04.17
Sl No.	Item	QP Insp.Cat.	NTPC QP No. QVE-Q	Vendor/ Manufacturer Name	Place	SC_APP L_STAT US	Remarks
1	STATOR FRAME FABRICATION	I		BHEL-HEEP	HARDWAR	A	
2	STATOR FRAME MACHINING	I		BHEL-HEEP	HARDWAR	A	
3	SPRING BASKET	I		BHEL-HEEP	HARDWAR	A	
4	CORE BAR	I		BHEL-HEEP	HARDWAR	A	
5	STATOR LAMINATION	I		BHEL-CSU	JAGDISHPUR	A	
6	FLUX TRAP	I		BHEL-HEEP	HARDWAR	A	STAMPINGS FROM CSU JAGDISHPUR
7	RIPPLE SPRING	II		KREMPAL GMBH	GERMANY	A	NO SEP QP
7	RIPPLE SPRING	*		SIEMENS LIMITED	INDIA	DR	
8	TENSION BOLT FOR STATOR CORE (INSULATED)	II		BHEL-HEEP	HARIDWAR	A	
9	STATOR CORE ASSLY	I		BHEL-HEEP	HARDWAR	A	
10	FLAT SPRINGS AND BASKET ASEMBLY	I		BHEL-HEEP	HARDWAR	A	
11	BUS BAR CONNECTION TUBES	II		LUVATA PORI	FINLAND	A	NO SEPARATE QP
11	BUS BAR CONNECTION TUBES	II		BUNT METAL	AUSTRIA	A	
11	BUS BAR CONNECTION TUBES	II		KME GERMANY GMBH & CO. KG	GERMANY	A	
11	BUS BAR CONNECTION TUBES	*		HAEGANG ALLOY CO. LTD.	KOREA	DR	
12	SOLID COPPER CONDUCTOR (FOR STATOR BAR)	I		PEARL INSULATIONS	BANGLORE	A	
12	SOLID COPPER CONDUCTOR (FOR STATOR BAR)	I		MAHENDRA INDUSTRIES	BANGLORE	A	

R. S. Sharma



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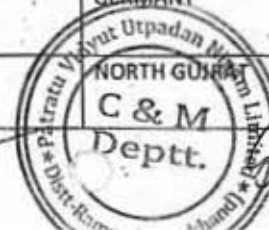
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12	SOLID COPPER CONDUCTOR (FOR STATOR BAR)	II		VONROLL	SWITZERLAND	A	NO SEP QP
12	SOLID COPPER CONDUCTOR (FOR STATOR BAR)	II		GEBAUER & GRILLER	AUSTRIA	A	NO SEP QP
13	HOLLOW SS CONDUCTOR (STATOR BAR)	II		FINE TUBES LTD.	ENGLAND	A	NO SEP QP
13	HOLLOW SS CONDUCTOR (STATOR BAR)	II		SIEMENS AG	GERMANY	DR	
14	MICA SPLITTING INSULATING TAPE	II		ISOVOLTA (I) PVT. LTD.,	NASIK	A	NO SEP QP
14	MICA SPLITTING INSULATING TAPE	*		LAKSHMANAN ISOLA PVT LTD	BANGLORE	DR	
15	OVER HANG SUPPORT RING	II		ROECHLING ENGINEERING PLASTICS	GERMANY	A	NO SEP QP
15	OVER HANG SUPPORT RING	II		POWER & COMPOSITE TECHNOLOGIES	USA	A	NO SEP QP
15	OVER HANG SUPPORT RING	*		KOMPOZYTY SP.Z.O.O	POLAND	DR	
15	OVER HANG SUPPORT RING	*		NANTONG DAWNTINE ELECTRICAL	CHINA	DR	
16	STATOR SLOT WEDGE (RAW MATERIAL)	II		PERMALI WALLACE PRIVATE	BHOPAL	A	NO SEP QP
16	STATOR SLOT WEDGE (RAW MATERIAL)	II		MICAPLY	BHOPAL	A	NO SEP QP
16	STATOR SLOT WEDGE (RAW MATERIAL)			LAMTUF PLASTICS LTD	HYDERABAD	DR	
16	STATOR SLOT WEDGE (RAW MATERIAL)			THE BOMBAY BURMAH TRADING CORP	RUDRAPUR	DR	
17	WATER SUPPLY HOSE (INSULATED)			DR SCHNABEL GMBH & CO KG LIMBURG	GERMANY	A	NO SEP QP



05.04.17

NTPC	PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX					REF NO. :
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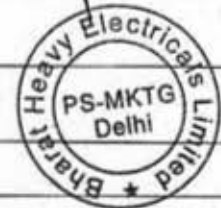
17	WATER SUPPLY HOSE (INSULATED)	II		CRANE RESISTOFLEX	USA	A	NO SEP QP
17	WATER SUPPLY HOSE (INSULATED)	I		MIL INDUSTRIES LIMITED	CHENNAI	A	
18	FIELD LEAD CORE BAR	II		KME	GERMANY	DR	NO SEP QP
19	CONTACT BOLT (RAW MATERIAL)	II		SOCIETA METALLURGICA	ITALY	A	NO SEP QP
19	CONTACT BOLT (RAW MATERIAL)	II		BUNT METAL	AUSTRIA	A	NO SEP QP
19	CONTACT BOLT (RAW MATERIAL)	*		KME	GERMANY	DR	
20	HEADER FOR STATOR (ASSEMBLY)	I		BHEL-HEEP	HARDWAR	A	
21	ETS MATERIAL	II		THYSSEN KRUPP ELECTRICAL STEEL	NASIK	A	NO SEP QP
21	ETS MATERIAL	II		ARCELOR MITTAL INTERNATIONAL	LUXAMBOURG	A	NO SEP QP
21	ETS MATERIAL	II		THYSSENKRUPP MATERIAL TRADING	GERMANY	A	NO SEP QP
21	ETS MATERIAL	II		VOESTALPINE	AUSTRIA	DR	
21	ETS MATERIAL	II		ALLOVERZE	GERMANY	A	NO SEP QP
22	BAFFLE RING & BAFFLE RING CARRIER MACHINING	I		BHEL-HEEP	HARDWAR	A	
23	CORE PRESS RING	II		BHEL-HEEP	HARDWAR	A	NO SEP QP
24	HEADER TUBES	II		BHEL APPROVED SOURCE		A	NO SEP QP
25A	SS WATER BOX FOR STATOR BARS (TOP PART)	*		INVESTMENT & PRECISION	BHAVNAGAR (GUJARAT)	DR	
25A	SS WATER BOX FOR STATOR BARS (TOP PART)	II		ZOLLERN GMBH & CO	GERMANY	DR	NO SEP QP
25A	SS WATER BOX FOR STATOR BARS (TOP PART)	II		SIEMENS AG	GERMANY	A	NO SEP QP
25A	SS WATER BOX FOR STATOR BARS (TOP PART)	I		PTC	NORTH GUJARAT	DR	



05.04.17

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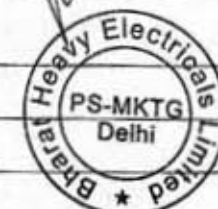
25B	SS WATER BOX FOR STATOR BARS (BOTTOM PART)	II		WERNER GIETZNAUER	GERMANY	A	NO SEP QP
25B	SS WATER BOX FOR STATOR BARS (BOTTOM PART)	*		SIEMENS LIMITED	INDIA	DR	
25B	SS WATER BOX FOR STATOR BARS (BOTTOM PART)	II		SIEMENS AG	GERMANY	A	NO SEP QP
26	STATOR WINDING BAR	I		BHEL-HEEP	HARDWAR	A	
27	STATOR WINDING ASSEMBLY	I		BHEL-HEEP	HARDWAR	A	
28	GENERATOR SHAFT FORGING	II		BUDERUS EDELSTAHL	GERMANY	A	
28	GENERATOR SHAFT FORGING	II		JSW	JAPAN	A	
28	GENERATOR SHAFT FORGING	II		SAARSCHMIEDE	GERMANY	A	
28	GENERATOR SHAFT FORGING	II		JCFC	JAPAN	A	
28	GENERATOR SHAFT FORGING	II		CHINA FIRST HEAVY INDUSTRIES	CHINA	A	
28	GENERATOR SHAFT FORGING	*		CHINA NATIONAL ERZHONG GROUP	CHINA	DR	
28	GENERATOR SHAFT FORGING	*		UMP TRADING (Manufacturer: JSC ENERGOMASHPETSTAL UKRAINE)	SWITZERLAND	DR	
28	GENERATOR SHAFT FORGING	*		SHAANXI SENWELL	CHINA	DR	
28	GENERATOR SHAFT FORGING	*		SHEFFIELD FORGEMASTERS	UK	DR	
28	GENERATOR SHAFT FORGING	II		SDF-TURNI	ITALY	A	
28	GENERATOR SHAFT FORGING	*		S C DOOSAN	KOREA	DR	
29	GENERATOR SHAFT MACHINING	I		BHEL-HEEP	HARDWAR	A	
30	CURRENT CARRYING BOLTS FOR ROTOR	I		BHEL HEEP	HARDWAR	A	



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NTPC	PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX				REF NO. :
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31	ROTOR COIL FORMING	I		BHEL HECP	HARDWAR	A	
32	ROTOR SLOT ANGLE	I		SAHNEY KIRKWOOD PVT. LTD.	NEW DELHI	A	
32	ROTOR SLOT ANGLE	II		ABB SWITZERLAND LTD.	SWITZERLAND	A	NO SEP QP
32	ROTOR SLOT ANGLE	II		VON ROLL ISOLA	FRANCE	A	NO SEP QP
32	ROTOR SLOT ANGLE	II		POWER & COMPOSITE TECHNOLOGIES	USA	DR	
33	FIELD LEAD CORE BAR MACHINING	I		BHEL-HEEP	HARDWAR	A	
34	RETAINING RING MACHINING	I		BHEL-HEEP	HARDWAR	A	
35	RETAINING RING	II		SAARSCHMIEDE	GERMANY	A	NO SEP QP
35	RETAINING RING	II		ENERGIETECHNIK	GERMANY	A	NO SEP QP
35	RETAINING RING	II		JSW	JAPAN	A	NO SEP QP
35	RETAINING RING	*		AUBERT & DUVAL	FRANCE	DR	
35	RETAINING RING	*		DEYANG WANXIN	CHINA	DR	
36	FAN BLADE FOR COMPRESSOR M/C	I		BHEL-HEEP	HARDWAR	A	
37	FAN BLADE FOR COMPRESSOR (RAW MATERIAL) HW10786 -X20Cr 13	I					Refer ST List for same grade material for blade bars
38	ROTOR WINDING ASSLY.(GEN.)	I		BHEL HECP	HARDWAR	A	
39	GENERATOR ROTOR -FINAL	I		BHEL-HEEP	HARDWAR	A	
40	BEARING SHELL FORGING (GENERATOR)	I		BHEL-CFFP	HARDWAR	A	
41	BEARING COMPLETE (EXCITER)	*		SIEMENS LIMITED	INDIA	DR	
41	BEARING COMPLETE (EXCITER)	II		RENK AG	GERMANY	A	
41	BEARING COMPLETE (EXCITER)	II		ZOLLERN	BRAZIL	A	
41	BEARING COMPLETE (EXCITER)	II		EURO BEARINGS	ITALY	A	



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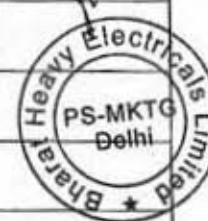
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42	HIGH PRESSURE HOSES FOR BEARING PEDESTAL	*		ORIENTAL ENGINEERING WORKS	YAMUNANAGAR	DR	
42	HIGH PRESSURE HOSES FOR BEARING PEDESTAL	II		PARKER HANNIFINE	GERMANY	A	THROUGH PARKER HANNIFINE INDIA. NO SEP QP
42	HIGH PRESSURE HOSES FOR BEARING PEDESTAL	*		HYDRAULIC TECHNIK	GERMANY	DR	THROUGH SMT , HARIDWAR
43	END SHIELD FABRICATION & MACHINING	I		BHEL-HEEP	HARDWAR	A	
44	SHAFT SEAL ASSEMBLY	I		BHEL-HEEP	HARDWAR	A	
45	BEARING ASSEMBLY	I		BHEL-HEEP	HARDWAR	A	
46	COMPRESSOR HUB M/C & ASSEMBLY	I		BHEL-HEEP	HARDWAR	A	
47	HYDROGEN COOLER	I		BHEL-HEEP	HARIDWAR	A	
47	HYDROGEN COOLER	*		LORD VISHWAKARMA HEAT EXCHANGER	KANKHAL (HARIDWAR)	DR	
47	HYDROGEN COOLER	*		LAXMI ENGINEERING INDUSTRIES	BHOPAL	DR	
47	HYDROGEN COOLER	*		FITWELL CORPORATION	BHOPAL	DR	
48	DC LEAD ASSLY	I		BHEL-HEEP	HARDWAR	A	
49	TUBES FOR COOLERS (BRASS / COPPER TUBES)	II		MULTIMETALS	KOTA	A	NO SEP QP
49	TUBES FOR COOLERS (BRASS/ COPPER TUBES)	II		METAL ALLOYS	JAMNAGAR	A	NO SEP QP
49	TUBES FOR COOLERS (BRASS/ COPPER TUBES)	*		MEHTA TUBES	VAPI	DR	
49	TUBES FOR COOLERS (BRASS/ COPPER TUBES)	*		ITM	MUMBAI	DR	



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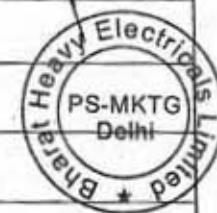
50	FINNING OF COOLER TUBES	I		LAXMI ENGINEERING INDUSTRIES	BHOPAL	A	
50	FINNING OF COOLER TUBES	I		LORD VISHWAKARMA HEAT EXCHANGE	HARDWAR	A	
50	FINNING OF COOLER TUBES	I		FITWELL CORPORATION	BHOPAL	A	
51	TERMINAL BOX FABRICATION AND MACHING	I		BHEL-HEEP	HARDWAR	A	
52	CONFORMABLE ROPE	II		BIW	GERMANY	A	NO SEP QP
52	CONFORMABLE ROPE	II		TEXPLAS	HARDWAR	A	NO SEP QP
52	CONFORMABLE ROPE	II		SUMICA	HARDWAR	A	NO SEP QP
53	INSULATING BOLTS (RAW MATERIAL)	II		BHEL APPROVED SOURCES		A	NO SEP QP
54	PW FITER, FINE FILTER, OIL FILTER	II		HYDAC (INDIA) PVT. LTD.	INDIA	DR	
54	PW FITER, FINE FILTER, OIL FILTER	II		BOLL & KIRCH FILTERBAU GMBH	GERMANY	A	NO SEP QP
54	PW FITER, FINE FILTER, OIL FILTER	II		L&Z VERFAHRENSTECHNIK GMBH	GERMANY	DR	NO SEP QP
54	PW FITER, FINE FILTER, OIL FILTER	*		SIEMENS LIMITED	INDIA	DR	
55	P W TANK INCLUDING PW PIPING	I		BHEL-HEEP	HARDWAR	A	
56	VAPOUR EXHAUSTER	II		CB DOCTOR	AHEMDABAD	A	
56	VAPOUR EXHAUSTER	II		S.K SYSTEM	DELHI	A	
56	VAPOUR EXHAUSTER	II		AIR LINK	MATHURA	A	
56	VAPOUR EXHAUSTER	II		DUSTECH	FARIDABAD	A	
57	ION EXCHANGER	I		THERMAX LTD.	PUNE	A	
57	ION EXCHANGER	*		SIEMENS LIMITED	INDIA	DR	



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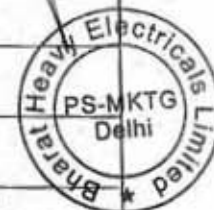
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57	ION EXCHANGER	*		CHEM PROCESS	AHMEDABAD	DR	
57	ION EXCHANGER	*		H K ENTERPRISES	AHMEDABAD	DR	
58	PW PUMP & FILTER UNIT PIPING	I		BHEL-HEEP	HARDWAR	A	
59	PW COOLER FOR STATOR	I		BHEL-HEEP	HARDWAR	A	
59	PW COOLER FOR STATOR	I		ALFA LAVAL (INDIA) LIMITED	PUNE	A	
59	PW COOLER FOR STATOR	I		I.D.M.C. LTD	GUJRAT	DR	
59	PW COOLER FOR STATOR	I		TRANter INDIA PVT. LIMITED	PUNE	A	
59	PW COOLER FOR STATOR	I		KELVION INDIA (GEA)	PUNE	A	
59	PW COOLER FOR STATOR	*		HRS PROCESS SYSTEMS LIMITED	PUNE	DR	
60	TERMINAL BUSHING	*		SIEMENS LIMITED	INDIA	DR	
60	TERMINAL BUSHING	II		TRENCH FRANCE SAS	FRANCE	A	NO SEP QP
60	TERMINAL BUSHING	II		HSP HOCHSPANNUNGSGERAETE GMBH	GERMANY	A	NO SEP QP
60	TERMINAL BUSHING	*		SUZHOU JIU & ZHENG ELECTRIC CO	CHINA	DR	
62	HYDROGEN DRIER (REFRIGERANT TYPE)	I		JINDAL ELECTRONICS	ROORKEE	A	
62	HYDROGEN DRIER (REFRIGERANT TYPE)	I		MELLCON ENGS PVT	NEW DELHI	A	
62	HYDROGEN DRIER (REFRIGERANT TYPE)	I		SPAN	ROORKEE	A	
63	SEAL OIL COOLER	I		ALFA LAVAL (INDIA) LIMITED	PUNE	A	
63	SEAL OIL COOLER	I		BHEL-HEEP	HARDWAR	A	
63	SEAL OIL COOLER	I		TRANter INDIA PVT. LIMITED	PUNE	A	
63	SEAL OIL COOLER	I		KELVION INDIA (GEA)	PUNE	A	
63	SEAL OIL COOLER	*		I.D.M.C. LTD	GUJRAT	DR	



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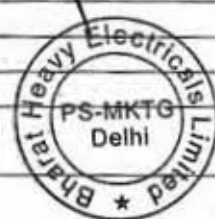
63	SEAL OIL COOLER	*		HRS PROCESS SYSTEMS LIMITED	PUNE	DR	
64	SEAL OIL PUMP	I		TUSHACO PUMPS	DAMAN	A	
64	SEAL OIL PUMP	I		UT PUMPS	FARIDABAD	DR	
64	SEAL OIL PUMP	*		ALEKTON	CHENNAI	DR	
64	SEAL OIL PUMP	*		HUANGSHAN	CHINA	DR	
64	PRIMARY WATER PUMP	I		KSB INDIA	PUNE	A	
64	PRIMARY WATER PUMP	I		SULZER INDIA	NAVI MUMBAI	A	
64	PRIMARY WATER PUMP	*		WPIL LTD.	GHAZIABAD	DR	
65	H2/CO2/N2/ CYLINDER	II		BPCL	ALLAHABAD	A	
65	H2/CO2/N2/ CYLINDER	II		EVEREST KANTO	BOMBAY	A	
65	H2/CO2/N2/ CYLINDER	II		SARJU IMPEX LTD	GUJRAT	A	
65	H2/CO2/N2/ CYLINDER	*		RAMA CYLINDER	GUJRAT	DR	
66	SEAL OIL UNIT & PIPING	I		BHEL-HEEP	HARDWAR	A	
66	SEAL OIL STORAGE TANK	I		BHEL-HEEP	HARDWAR	A	
67	GAS UNIT & PIPING	I		BHEL-HEEP	HARDWAR	A	
68	CO2 VAPOURISER	I		BHEL-HEEP	HARDWAR	A	
69	GENERATOR ASSEMBLY AT WORKS INCLUDING TERMINAL BUSHING	I		BHEL-HEEP	HARDWAR	A	
70	SILVER BEARING COPPER HOLLOW STRIPS (ROTOR COIL)	II		BUNT METAL	AUSTRIA	A	NO SEP QP
70	SILVER BEARING COPPER HOLLOW STRIPS (ROTOR COIL)	II		BOASHIDA SWISS METAL	SWITZERLAND	A	NO SEP QP
71	MULTI CONTACT BAND	III		MULTI CONTACT BAND	GERMANY	A	NO SEPARATE QP
72	WEDGES FOR ROTOR (DAMPER +SLOT)	II		KM EUROPA	GERMANY	A	NO SEP QP
72	WEDGES FOR ROTOR (DAMPER +SLOT)	II		BOASHIDA SWISS METAL	SWITZERLAND	A	NO SEP QP



05.04.17

NTPC	PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX				REF NO. :
							REV NO.:
							DATE 05.04.17
Sl No.	Item	QP Insp.Cat.	NTPC QP No. QVE-Q-	Vendor/ Manufacturer Name	Place	SC_APP L_STAT US	Remarks

72	WEDGES FOR ROTOR (DAMPER +SLOT)	*		ORIENTAL COPPER	THAILAND	DR	For Damper Wedge Only
72	WEDGES FOR ROTOR (DAMPER +SLOT)	II		LUVATA (OUTO KUMPU PORI)	FINLAND	A	NO SEP QP
72	WEDGES FOR ROTOR (DAMPER +SLOT)	II		BUNT METAL	AUSTRIA	A	NO SEP QP
73	LT MOTORS	II		REFER TO BHEL PEM LIST		A	
74	GENERATOR WORKS RUN TEST	I		BHEL HECP	HARDWAR	A	
75	RUBBER ITEM	III		BHEL APPROVED SOURCES		A	
76	EXCITER SHAFT MACHINING	I		BHEL-HECP	HARDWAR	A	
77	EXCITER STATOR MAIN	I		BHEL-HECP	HARDWAR	A	
78	EXCITER STATOR PILOT	I		BHEL-HECP	HARDWAR	A	
79	EXCITER ROTOR BALANCING	I		BHEL-HECP	HARDWAR	A	
80	RECTIFIER WHEEL MACHING & ASSLY	I		BHEL-HECP	HARDWAR	A	
81	DC LEAD ASSLY FOR EXCITER	I		BHEL-HECP	HARDWAR	A	
82	EXCITER ASSLY (MAIN & PILOT)	I		BHEL-HECP	HARDWAR	A	
83	EXCITER AIR COOLER	I		BHEL-HECP	HARIDWAR	A	
83	EXCITER AIR COOLER	I		LORD VISHWAKARMA HEAT EXCHANGER	KANKHAL (HARIDWAR)	DR	
83	EXCITER AIR COOLER	I		LAXMI ENGINEERING INDUSTRIES	BHOPAL	DR	
83	EXCITER AIR COOLER	I		FITWELL CORPORATION	BHOPAL	DR	
84	EXCITER TEST RUN	I		BHEL-HECP	HARDWAR	A	
85	FORGING FOR MAGNETIC HUB, CENTERING RING, INTERMEDIATE RING, CARRIER HUB, COMPRESSOR HUB, DIODE WHEEL	II		BHEL-CFFP	HARDWAR	A	



NTPC	PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX				REF NO. :
							REV NO.:
							DATE 05.04.17
Sl No.	Item	QP Insp.Cat.	NTPC QP No. QVE-Q-	Vendor/ Manufacturer Name	Place	SC_APP L_STAT US	Remarks

86	Machining of MAGNETIC HUB, CENTERING RING, INTERMEDIATE RING, CARRIER HUB, DIODE WHEEL	II		BHEL-HEEP	HARDWAR	A	
87	MAGNET (MATERIAL ONLY)	II		THYSEEN KRUPP MAGNETTECHNIC	GERMANY	A	NO SEP QP
87	MAGNET (MATERIAL ONLY)	II		HANGZHOU PERMANENT MAGNET GROU	CHINA	A	NO SEP QP
87	MAGNET (MATERIAL ONLY)	*		SIEMENS LIMITED	INDIA	DR	
87	PERMANENT MAGNET & SHOE ASSLY FOR EXCITER	I		BHEL-HEEP	HARDWAR	A	
88	MAIN EXCITER ARMATURE WINDING	I		BHEL-HEEP	HARDWAR	A	
89	BALANCING RING	II		SCHMOLZ+BICKENBECH	GERMANY	A	NO SEP QP
89	BALANCING RING	II		RV ENGG	BALLABHGARH	A	NO SEP QP
90	BED PLATE FABRICATION	II		BHEL APPROVED SOURCE		A	
91	EXCITER CORE PRESS RING	*		SOUTHERN ALLOY FOUNDERIES PVT LTD	CHENNAI	DR	
91	EXCITER CORE PRESS RING	*		RATAN ENGINEERING	NEW DELHI	DR	
91	EXCITER CORE PRESS RING	II		SCHMOLZ+ BICKENBECH	GERMANY	A	NO SEP QP
91	EXCITER CORE PRESS RING	II		RV ENGG	BALLABHGARH	A	NO SEP QP
92	EXCITER FRAME (MAIN & PILOT)	I		BHEL-HEEP	HARDWAR	A	
93	RC BLOCK	I		ZENTRONICS SYSTEMS	HYDERABAD	DR	
93	RC BLOCK	I		SIEMENS LIMITED	INDIA	DR	
94	EXCITER SHAFT FORGING	II		ALL SUPPLIERS OF GENERATOR SHAFT FORGING		A	NO SEP QP
94	EXCITER SHAFT FORGING	I		BHEL CFFP	HARIDWAR	A	
94	EXCITER SHAFT FORGING	I		BHARAT FORGE	PUNE	A	



NTPC	PROJECT: PATRATU 3X800 MW PACKAGE: TG CONTRACTOR: BHEL HARIDWAR CONTRACT NO.: 9595 001-110		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL SUB SYSTEM: TG & AUX				REF NO. :
							REV NO.:
							DATE 05.04.17
Sl No.	Item	QP Insp.Cat.	NTPC QP No. QVE-Q-	Vendor/ Manufacturer Name	Place	SC_APP L_STAT US	Remarks
94	EXCITER SHAFT FORGING	*		MACKEIL ISPAT	KOLKATA	DR	
94	EXCITER SHAFT FORGING	*		OFAR S.P.A	ITALY	DR	

NOTE 1: IN ADDITION TO ABOVE SOURCES BHEL MAY PROCURE ITEMS FROM SIEMENS, SIEMENS APPROVED SOURCES . BHEL TO SUBMIT DOCUMENTS IN SUPPORT OF SIEMENS APPROVED SOURCE.

NOTE 2: LT MOTORS UPTO 30 KW SHALL BE ACCEPTED BASED ON COC OF MANUFACTURER TC AND CONTRACTOR CONFIRMING AS FOLLOWS: IT IS HEREBY CONFIRMED THAT ABOVE MENTIONED MOTOR/ MOTORS WAS/ WERE MANUFACTURED TAKING CARE OF NTPC SPECIFIC REQUIREMENTS REGARDING AMBIENT TEMP, VOLTAGE FREQUENCY VARIATION , HOT STARTS, PULL OUT TORQUES, STARTING KVA/ KW, TEMP RISE, DISTANCE BETWEEN CENTRE OF STUD GLAND PLATE, SPACE HEATER AND TESTED IN ACCORDANCE WITH APPROVED DRAWING/ DATA SHEETS AND LT MOTORS ABOVE 30 KW ACCEPTANCE SHALL BE BASED ON NTPC REVIEW OF ROUTINE TEST INSPECTION REPORT AS PER IS 325 BY MAIN MOTOR/ MOTORS WAS/WERE MANUFACTURED TAKING CARE OF NTPC SPECIFIC REQUIREMENTS REGARDING AMBIENT TEMP, VOLTAGE FREQUENCY AND TESTED IN ACCORDANCE WITH APPROVED DRAWINGS/ DATA SHEETS AND LT MOTORS. FOR > 50KW, SEPARATE QP TO BE SUBMITTED

NOTE 3: QP/ INSPECTION CAT-I QP APPROVAL AND INSPECTION BY NTPC; QP/ INSPECTION CAT-II QP APPROVAL BY NTPC, NO PHYSICAL INSPECTION BY NTPC. ACCEPTANCE BASED ON REVIEW OF CONTRACTOR INSPECTION REPORT/ TC. : QP/INSPECTION CAT-III NO QP APL AND INSPECTION BY NTPC, ACCEPTANCE BASED ON REVIEW OF COC BY BHEL.

NOTE 4: A* MEANS SUPPLY EXPERIENCE OF COMPARABLE UNIT TO BE FURNISHED TO NTPC

NOTE 5: * - Inspection category will be decided during vendor evaluation.

**** LOCATION TO BE INFORMED LATER**

R. Sharma



05.04.17

PROJECT: Patratu Stage I
Package: STEAM TURBINE GENERATOR
CONTRACTOR: SIEMENS AG
CONT_NO:

LIST OF ITEMS REQUIRING QUALITY PLAN
AND SUBCONTRACTOR APPROVAL
SUB SYST GENERATOR AND AUX

Ref No: IN1141 000
Revision No: 00
Date: 12-10-2016

SR NO	ITEM	QP /INS-PN CAT	QP NO. 3530-110	QP SUB-MISSION SCHEDULE	QP APPL SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATUS / CAT	SS DETAIL SUB-SCHEDULE	SS APPL SCHEDULE	APPROVAL STATUS
12	OVER HANG SUPPORT RING	II				ROCHLING	HAREN				A
13	RIPPLE SPRING	II				KREMPEL	WEHINGE N/GERMANY				A
14	STATOR WINDING ASSEMBLY INCL RIPPLE SPRING & O/H SUPPORTS	I				SIEMENS AG	MUELHEIM				A
15	GENERATOR SHAFT FORGING	II				SDF TURNI	ITALIA				A
		II				SAARSCHMIEDE	VOLKINGEN				A
16	GENERATOR SHAFT MACHINING	I				SIEMENS AG	ERFURT				A
17	INSERT RING	II				SIEMENS AG	ERFURT				A
18	RETAINING RING	I				SIEMENS AG	ERFURT				A
19	MICA FLEECE&SPLITTING INSULATION TAPE	II				VON ROLL	OSTERREICH				A
		II				ISOVOLTA	SCHWIEZ				A
20	SILVER BEARING COPPER HOLLOW STRIPS (ROTOR COIL)	II				BUNTMETALL	OSTERREICH				A
21	FIELD LEAD CORE BAR FOR ROTOR AND EXCITOR	II				SIEMENS AG	ERFURT				A
22	TENSION BOLT FOR ROTOR	II				LAUMEN	MULHEIM				A
		II				HELLER	ARNSTADT				A
		II				STAHLBERG	LANGENFELD				A

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Page 2 of 5

SIEMENS AG Signature

PROJECT: Patratu Stage I
Package: STEAM TURBINE GENERATOR
CONTRACTOR: SIEMENS AG
CONT_NO:

LIST OF ITEMS REQUIRING QUALITY PLAN
AND SUBCONTRACTOR APPROVAL
SUB SYST GENERATOR AND AUX

Ref No: IN1141 000
Revision No: 00
Date: 12-10-2016

SR NO	ITEM	QP /INS -PN CAT	QP NO. 3530-110	QP SUB-MISSION SCHEDULE	QP APPL SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATUS / CAT	SS DETAIL SUB-SCHEDULE	SS APPL SCHEDULE	APPROVAL STATUS
23	CURRENT CARRYING BOLTS FOR ROTOR	II				GEILTZENAU	DUISBURG/GERMANY				A
24	ROTOR COIL FORMING	II				SIEMENS AG	MUELHEIM				A
25	WEDGES FOR ROTOR	II				BUNTMETALL KMH	OSTERREICH/GERMANY				A
26	ROTOR SLOT ANGLE	II				VON ROLL	GERMANY				A
		II				MICAFIL	SCHWEIZ				A
27	ROTOR WINDING ASSLY (GEN) INCL ROTOR SLOT ANGLE	II				SIEMENS AG	MUELHEIM				A
28	GENERATOR ROTOR-FINAL	I				SIEMENS AG	MUELHEIM				A
29	FAN BLADE FOR COMPRESSOR	II				STORK TURBO	HOLLAND				A
		II				MF-ENERGY	CZECHIA				A
		II				SET	UNGARN				A
30	COMPRESSOR HUB ASSEMBLY	II				SIEMENS AG	ERFURT				A
31	TERMINAL BUSHING (CONDENSER TYPE)	II				HSP	KOELN				A
32	TERMINAL BOX	II				ENERGY EN	SOUTH KOREA				A*
		II				TURBOCARE	POLAND				A
		II				ANDITZ	UNGARN				A
33	END SHIELD FABRICATION MACHINING	II				TURBOCARE	POLLAND				A

ENGINEERING DIV / QAI

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Siemens Power & Gas

Revision: 00; Date: 20.10.2016
Page 3 of 5

Page 172 of 1005

PROJECT: Patratu Stage I
Package: STEAM TURBINE GENERATOR
CONTRACTOR: SIEMENS AG
CONT_NO:

LIST OF ITEMS REQUIRING QUALITY PLAN
AND SUBCONTRACTOR APPROVAL
SUB SYST GENERATOR AND AUX

Ref No: IN1141 000
Revision No: 00
Date: 12-10-2016

SR NO	ITEM	QP /INS-PN CAT	QP NO. 3530-110	QP SUB-MISSION SCHEDULE	QP APPL SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATUS / CAT	SS DETAIL SUB-SCHEDULE	SS APPL SCHEDULE	APPROVAL STATUS
33	END SHIELD FABRICATION MACHINING	II				ENERGY EN	SOUTH KOREA				A*
		II				ANDITZ	UNGARN				A
34	BEARING SHIELD	II				GLEITLAGER TECHNIK	ESSEN				A
35	SHAFT SEALING AND BEARING SHIELD	II				GLEITLAGER TECHNIK	ESSEN				A
		II				DIETERMANN	VIERSSEN				A
36	WATER BOX FOR STATOR BAR	II				SIEMENS AG	ERFURT				A
37	HIGH PRESSURE HOSES FOR BEARING PEDESTAL	II				ITO	OBERHAUSEN				A
38	INSULATING HOSE LINE FOR PRIMARY WATER	II				CRANE RESISTOFLEX	PFORZHEIM				A
		II				DR SCHNABEL	PFORZHEIM / GERMANY				A
39	P W TANK INCLUDING P W PIPING	II				EICKHOFF	MULHEIM				A
40	CARBON & CARBON BRUSH HOLDER	II				CARLS	ESSEN				A
		II				SCHUNK	WETTERNBERG				A
41	HYDROGEN COOLER	II				KELVION	HERNE				A
42	GENERATOR ASSEMBLY	I				SIEMENS AG	MUELHEIM				A

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R. S. S. S.



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Revision: 00; Date: 20.10.2016
Page 4 of 5

		PROJECT: Patratu Stage I		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL			Ref No: IN1141		000		
		Package: STEAM TURBINE GENERATOR					Revision No: 00				
		CONTRACTOR: SIEMENS AG		SUB SYST GENERATOR AND AUX			Date: 12-10-2016				
SR NO	ITEM	QP /INS- -PN CAT *	QP NO. 3530-110	QP SUB- MISSION SCHEDU -LE	QP APPL SCHED ULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL STATUS / CAT	SS DETAIL SUB- SCHED ULE	SS APPL SCHED ULE	APPROVAL STATUS
43	GENERATOR TEST FIELD RUN (FINAL)	I				SIEMENS AG	MUELHEIM				A
44	ROTOR FLUX DENSITY MONITORING					SUPPLIER SHALL BE PROPOSED DURING DETAIL EXECUTION PHASE					
45	FLAT SPRING(FRAME)	II				TURBOCARF	POLAND				A
		II				ANDRITZ	UNGARN				A
		II				ENERGYEN	SOUTH KOREA				A

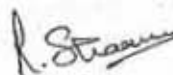
A* DETAIL EXPERIENCE REQUIRED. *- SIEMENS WILL FURNISH THE NAME OF THREE REGULAR SUPPLIER AND LOCATION PRIOR TO AWARD TO SUB VENDOR. A MEANS APPROVED.



ENGINEERING DIV / QAI

Page 5 of 5

Siemens Power & Gas



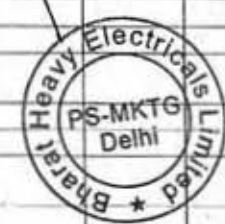
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Revision: 00, Date: 20.10.2016
Page 5 of 5

एनटीपीसी NTPC		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE				REF. NO.: CS-9585-001-02		
		PACKAGE: STEAM GENERATOR ISLAND							REV. NO.: 00		
		CONTRACTOR: BHEL			SUB-SYSTEM: BHEL RANIPET, ISG						
		CONTRACT NO.: CS-9585-001-02							DATE: 04.04.2017		
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL/ STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
1	HVR TRANSFORMER AND EC PANEL	I				BHEL	JHANSI/ BHOPAL	A			SUB-QR ITEM
2	BUSHING INSULATOR	II				BHEL EPD	BANGALORE	A			
3	SHAFT INSULATOR	II				BHEL EPD	BANGALORE	A			
4	SUPPORT INSULATOR	II				BHEL EPD	BANGALORE	A			
5	ASH LEVEL INDICATOR	II				FLOWSTAR	FARIDABAD	A			
		II				NIVO CONTROLS	INDORE	A			
		II				EIP ENVIROLEVEL	NOIDA	A			
		@				BHEL	RANIPET	DR			
6	ESP CONTROLLER (ARECA, INTELLUR AP, STATCON)	III				ADVANCED ELECTRONICS (ALS)	BANGALORE	A			
		III				SYSTEM AIDS	BANGALORE	A			
		III				VASANTHA ADVANCED SYSTEM	COIMBATORE	A			
		-III				EM ELECTRONICS	BANGALORE	A			
7	INTELLURAP STATCON & IOS PANEL	I				CHEMIN CONTROLS	PONDICHERY	A			
		I				BHEL EPD	BANGALORE	A			
		I				CONTROL AND SCHEMATICS	HYDERABAD	A			
		I				PRAMEEN INDUSTRIES	PUDUKOTT	A			
		I				CONTROL AND SWITCHGEAR	HYDERABAD	A			
		I				INDUSTRIAL CONTROL AND APPLIANCES	MUMBAI	A			
		@				SAJAS ELECTRICAL	TRICHY	DR			
		@				SHIBSHA INSTRUMENTS	CHENNAI	DR			
		@				COMPUTER CONTROL OPERATIONS	PONDICHERRY	DR			
		@				KEAS CONTROL SYSTEMS INDIA PVT. LTD.	COIMBATORE	DR			
8	OPACITY MONITOR	III				SICK	GERMANY	A			Minor items like canopy etc will be manufactured in India and supplied by Indian Representatives
		III				DURAG	GERMANY	A			Minor items like canopy etc will be



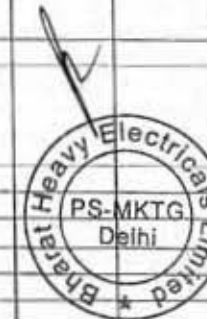
एनटीपीसी NTPC		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE				REF. NO.: CS-9585-001-02		
		PACKAGE: STEAM GENERATOR ISLAND							REV. NO.: 00		
		CONTRACTOR: BHEL									
		CONTRACT NO.: CS-9585-001-02							DATE: 04.04.2017		
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL/ STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
											manufactured in India and supplied by Indian Representatives
		III				CODEL	UK	A			THROUGH FORBES MARSHALL –PUNE Mincr Items like canopy etc will be manufactured in India and supplied by Indian Representatives
		III				LAND COMBUSTION	UK	A			Mincr Items like canopy etc will be manufactured in India and supplied by Indian Representatives
						DURAG INDIA INSTRUMENTATION PVT. LTD.	BENGALURU	DR			
9	HEATER (PANEL TYPE HOPPER HEATERS)	I				HTD HEAT TRACE INDIA	HYDERABAD	A			
		II				HOT FOIL EHS INC	USA	A			
		II				HTD HEAT TRACE	USA	A			For panel type hopper heaters, the mounting accessories will be manufactured in India and will be supplied by the Indian representatives
		II				THERMON	USA	A			
		I				THERMOPADS	HYDERABAD	A*			*APPROVED SUBJECT TO SUCCESSFUL EXECUTION OF TRIAL ORDER
		I				THERMON	PUNE	A			
10	ELEVATOR	I				ECE	GHAZIABAD	A			
		I				TECHNO	AHMEDABAD	A			
		I				OTIS	MUMBAI	A			
		I				KONE	CHENNAI	A			
		I				OMEGA	AHMEDABAD	A			
		I				SAMIL ELTEC	KOREA	A			

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Page 2 of 6

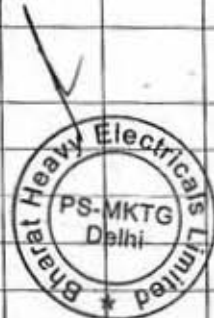
ENGINEERING DIV/ QA&I



153

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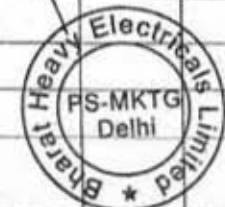
		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE				REF. NO.: CS-9585-001-02		
		PACKAGE: STEAM GENERATOR ISLAND							REV. NO.: 00		
		CONTRACTOR: BHEL			SUB-SYSTEM: BHEL RANIPET, ISG			DATE: 04.04.2017			
		CONTRACT NO.: CS-9585-001-02									
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL. STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
11	LT MOTORS (REFER NOTE 1)	I				KEC	BANGALORE/HUBLI	A			HUBLI UPTO 90 KW, RQP
		I				SIEMENS	MUMBAI	A			RQP
		I				CGL	AHMEDNAGAR	A			RQP
		I				MARATHON	KOLKATA	A			RQP
		I				BBL	MUMBAI	A			RQP
		I				ABB	FARIDABAD/ BANGALORE	A			FARIDABAD UPTO 55 KW, BANGALORE ABOVE 55 KW, RQP
		I				JYOTI	VADODARA	A			
		I				LHP	SOLAPUR	A			
						NGEF	HUBLI	A			UPTO 15 KW
11	XLPE/ PVC INSULATED LT POWER CABLES					REFER SEPARATE LIST					
12	PVC INSULATED LT CONTROL CABLES					REFER SEPARATE LIST					
13	SCREENED (INSTRUMENT) CABLES	I				POLYCAB	DAMAN	A			
		I				ELKAY TELELINKS	FARIDABAD	A			
		I				ADVANCE CABLES	BANGALORE	DR			
		I				PARAMOUNT	KHUSKHERA	A			
		I				UNIVERSAL	SATNA	A			
		I				NICCO	KOLKATA	A			
		I				DELTON	FARIDABAD	A			
		I				INCAB	PUNE	A			



एनटीपीसी NTPC		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE SUB-SYSTEM: BHEL RANIPET, ISG			REF. NO.: CS-9585-001-02			
		PACKAGE: STEAM GENERATOR ISLAND						REV. NO.: 00			
		CONTRACTOR: BHEL									
		CONTRACT NO.: CS-9585-001-02						DATE: 04.04.2017			
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL/ STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
		I				THERMO CABLES	HYDERABAD	A			
		I				KEI	BHIWADI	A			
		I				CORDS	BHIWADI	A			
		I				GUPTA POWER INFRASTRUCTURE LTD.	KHURDA	A			
		@				CMI	BHIWADI	DR			
		@				SPECIAL CABLES	RUDRAPUR	DR			
		@				KEC	MYSORE	DR			
14	RTD AND THERMOCOUPLE ALONG WITH THERMOWELL	II				THERMAL INSTRUMENT INDIA PVT. LTD	MUMBAI/ SAVANTWADI	A			
		II				TEMPSENS INSTRUMENT (I) PVT. LTD.	UDAIPUR	A			
		II				DETRIV INST & ELEC LTD	MUMBAI	A			
		II				PYRO ELECTRIC INSTRUMENT (GOA) PVT. LTD.	GOA	A			
		II				TECHNO INSTRUMENT	AHMEDABAD	A			
		@				GOA INSTRUMENT PVT. LTD.	GOA	DR			
		@				TOSHNIWAL INDUSTRIAL PVT. LTD.	AJMER	DR			
		@				BAUMER TECHNOLOGIES INDIA PVT. LTD.	VAPI	DR			
15	AUXILIARY CONTROL PANEL/ LTMSB					REFER SEPARATE LIST					
16	ELECTRICAL ACTUATOR (WITH GEAR BOX	II				DREHMO	GERMANY				

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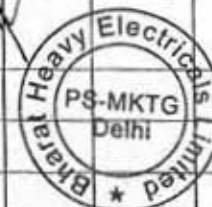
उत्पादन निगम
C & M



एनटीपीसी NTPC		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE				REF. NO.: CS-9585-001-02		
		PACKAGE: STEAM GENERATOR ISLAND							REV. NO.: 00		
		CONTRACTOR: BHEL									
		CONTRACT NO.: CS-9585-001-02			SUB-SYSTEM: BHEL RANIPET, ISG				DATE: 04.04.2017		
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL. STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
	ALSO)										
		II				AUMA	GERMANY	A			
		II				ROTORK	CHENNAI/ BANGALORE	A			
		II				ROTORK	UK	A			
		II				LIMITORQUE	FARIDABAD	A			
		II				AUMA INDIA	BANGALORE	A			
17	CABLE TRAYS AND ACCESSORIES					REFER SEPARATE LIST					
18	FLEXIBLE CABLE TRAY SUPPORT					REFER SEPARATE LIST					
19	CABLE GLANDS					REFER SEPARATE LIST					
20	CABLE LUGS					REFER SEPARATE LIST					
21	GEARED MOTOR	III				SHANTI GEARS LTD	COIMBATORE	A			
		III				NEW ALLENBERY WORKS	KOLKATA	A			
		III				LAXMI HYDRAULIC PVT. LTD.	SHOLAPUR	A			
		III				POWERBUILD	VV NAGAR	A			
22	DISCONNECTING SWITCH FOR ESP	III				BHEL APPROVED VENDORS					INSULATOR MAKE SHALL BE BHEL/ WSI/ JSI/ UCE/ ADITYA BIRLA
23	HEATING ELEMENT (TUBULAR) FOR ESP	III				BHEL APPROVED VENDORS					
24	JUNCTION BOXES (GALVANISED) FOR ESP					REFER SEPARATE LIST					
25	INTERLOCKS FOR ESP	III				BHEL APPROVED VENDORS					
26	EARTHING MATERIALS (GI FLATS) FOR ESP					REFER SEPARATE LIST					
27	PERSONNEL COMPUTER FOR ESP	III				BHEL APPROVED VENDORS					

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C & M



4. 14/12

		PROJECT: PATRATU STPP (3X800 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUBCONTRACTOR APPROVAL PACKAGE				REF. NO.: CS-9585-001-02		
		PACKAGE: STEAM GENERATOR ISLAND							REV. NO.: 00		
		CONTRACTOR: BHEL									
		CONTRACT NO.: CS-9585-001-02			SUB-SYSTEM: BHEL RANIPET, ISG				DATE: 04.04.2017		
SL. NO.	ITEM	QP/ INSP. CAT.	QP. NO.	QP. SUBMISSION SCHEDULE	QP APPL. SCHEDULE	PROPOSED SUB SUPPLIER	PLACE	SS APPL/ STATUS/ CAT	SS DETAIL SUB SCHEDULE	SC APPL. SCHEDULE	REMARKS
28	PRINTER FOR ESP	III				BHEL APPROVED VENDORS					
29	THERMOSTAT FOR ESP	III				BHEL APPROVED VENDORS					
30	LOCAL START/ STOP PUSH BUTTON STATION FOR ESP					REFER SEPARATE LIST					
31	LIMIT SWITCH WITH LEVER FOR GATES & DAMPERS	III				BHEL APPROVED VENDORS					
32	JUNCTION BOXES FOR GATES & AMPERS	III				BHEL APPROVED VENDORS					
33	OTHER ITEMS LIKE PC TERMINATION BOX, PC ADD ON CARD SIMULATOR FOR ARECA, COMCON INTERFACE MODULE, PC	III				BHEL APPROVED VENDORS					
34	FQP FOR ELECTRICAL ITEMS	I				BHEL	RANIPET				

Note 1 : a) Acceptance of Motor less than 30 KW is based on COC of the manufacturer and the contractor confirming as follows: It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage and frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud and gland plate and tested in accordance with approved drawing /data sheets b) 30 KW and above Acceptance of Motor rating between 30 KW 50 KW is based on NTPC review of Routine Test Inspection report as per IS 325 witnessed by main contractor along with COC of the manufacturer and the contractor confirming as follows: It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage and frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud and gland plate, space heater and tested in accordance with approved drawing /data sheets. Above 50 KW up to 200 KW NTPC inspection as per approved QP.

Note 3: Misc items like name plate, cable laying accessories, cable tags, cable dressing, material, wire, marker, clamps and pads for thermocouple adaptor, union, cross, socket and plug, pneumatic fittings tubes shall be as per BHEL system.

Note 4: NTPC Approval conditions for all approved vendors shall be complied.

Note 5: @ - Inspection category will be decided during vendor evaluation.



ENGINEERING DIV/ QA&I



Project : 3x800 MW PATRATU STPP (Phase-I)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL							Doc.No 9585-001-QDE-R40	
Package : EPC Pkg- Oil Filled Transformers (GT, Reactor, ST, SBT, UT, Auxiliary Transformer, Maintenance Equip), GCB, Dry Type Transformer, IPBD, SPBD,)									REV.NO. : 0	
Supplier : BHEL									DATE : 27.04.2017	
Contract No.: CS-9585-001-2									PAGE : 1 OF 5	
S.N.	Item Description	QP/ Insp. Cat	QP # 9585-001-QVE-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
1	OIL FILLED POWER TRANSFORMER (Above 72.5 kV & UP TO 400 kV Class) L1 Level Vendor (Refer Note 4 & 5)	I	Q-001			ALSTOM	ALLAHABAD	A		
						ABB	VADODARA	A		
						SIEMENS	NAVI MUMBAI	A		
						EMCO	THANE	A		
						BHEL	BHOPAL	A		
						BHEL	JHANSI	A*		*Upto 220kV class only
						CGL	KANJUR MARG	A		
						GE T&D	VADODARA	DR		
2	DRY TYPE TRANSFORMER L1 Level Vendor (Refer Note 4)	I	Q-002			TELK	AGNAMALLY	A		
						ABB	Savli	A		up to 8 MVA, 24 kV Class
						Raychem	Pune	A		Up to 3.5 MVA, 33 kV Class
						Toshiba	Hyderabad	A		Up to 2.0 MVA, 33 kV Class
						BHEL	Jhansi	A		Up to 6.3 MVA, 33 kV Class
						Krioskar	Pune	A		Up to 4.0 MVA, 33 kV Class
						Voltamp	Savli	A		Up to 3.25 MVA, 33 kV Class
						MARSONS LTD	KOLKATA	DR		
3	OIL FILLED SERVICE / AUX TRANSFORMER (≤72.5 kV Class) L1 Level Vendor (Refer Note 4 & 5)	I	Q-003			UNIVERSAL POWER TRF	BANGALORE	DR		
						BHEL	JHANSI	A		
						Krioskar	Mysore	A		up to 16 MVA, 33 kV Class
						KRYFS POWER COMPONENT	SILVASA	A		Up to 2.5 MVA, 33 kV Class
						SCHNEIDER	VADODARA	A		Up to 50MVA, 132 kV Class
						SOUTHERN POWER	BANGALORE	DR		
						EMCO	JALGAON	A		Up to 16 MVA, 33 kV Class
						DANISH PVT LTD	JAIPUR	DR		
						ESENNAR TRFSFORMERS	MEDAK	A		Up to 16 MVA, 33 kV Class
						T & R (INDIA) LTD.	AHMEDABAD	A		Up to 16 MVA, 132 kV Class
						VOLTAMP TRANSFORMERS	SAVLI	A		UP TO 3.5 MVA, 33KV
						TESLA TRANSFORMERS (U-2)	BHOPAL	A		UP TO 5 MVA, 33 KV
4	NEUTRAL GROUNDING REACTOR L1 Level Vendor (Refer Note 4)	I	Q-004			KANOHAR ELECTRICALS LTD.	MEERUT	A		Upto 16 MVA, 33 kV Class
						QUALITY POWER	SANGLI	A		
						BHEL	BHOPAL	A		
5	SHUNT REACTOR (400 kV Class) L1 Level Vendor (Refer Note 4 & 5)	I	Q-005			SHRIHAN'S ELECTRICAL	RAIGAD	DR		
						ABB Ltd. (MPT/LPT)	Vadodara	A		
						BHEL	Bhopal	A		
						SIEMENS	NAVI MUMBAI	A		
						TBEA	VADODARA	DR		
						GE T&D	Naini	A		
6	NEUTRAL GROUNDING RESISTOR L1 Level Vendor (Refer Note 4)	I	Q-006			CGL	Kanjurmarg	A		
						RSI SWITCHGEAR PVT. LTD.	KOLKATA	A		
						S.R.NARKHEDE	PUNE	A		
						LACHHMAN ELECTRONICS	NEW DELHI	A		
						RESITECH ELECTRICALS	KOLKATA	A		
						AMPCONTROL EQUIPMENTS	PUNE	A		



Amrit Yadav
mgr/PS-MKTG.
BHEL

Project : 3x800 MW PATRATU STPP (Phase-I) Package : EPC Pkg- Oil Filled Transformers (GT, Reactor, ST, SBT, UT, Auxiliary Transformer, Maintenance Equip), GCB, Dry Type Transformer, IPBD, SPBD, J) Supplier : BHEL Contract No.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL						Doc No.9585-001-QOE-R-00 REV.NO. : 0 DATE : 27.04.2017 PAGE : 2 OF 5		
S.N.	Item Description	QP/ Insp. Cat	QP # 9585-001-QVE-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
7	NEUTRAL GROUNDING TRANSFORMER L1 Level Vendor (Refer Note 4)	I	Q-007			PRAGATI ELECTRICALS	THANE	A		
						PRAYOG ELECTRICALS	PUNE	A		
						PETE	HYDERABAD	A		
						VOLTAMP	SAVLI	A		
						KANOHAR ELECTRICALS LTD.	MERRUT	A		
						CGL	MALANPUR	A		
						TESLA TRANSFORMERS (U-2)	BHOPAL	A		
						TOSHIBA	HYDERABAD	A		
						T & R (INDIA) LTD.	AHMEDABAD	A		
						PS ELECTRICALS	CHENNAI	DR		
8	MV Busduct (IPBD & SPBD) L1 Level Vendor (Refer Note 4 & 5)	I	Q-008			BHEL	RUDRAPUR	A		
						C&S	NOIDA/HARDWAR	A		
9	ON LINE DGA ANALYZER	III				POWERGEAR	CHENNAI/HINDUPUR	A		
						GE Kelman Ltd	UK	A		
						Severon	USA	A		
						DOBLE	USA	DR		
						GE SYPROTECH	Canada	DR		
						Hydran	Canada	DR		
						MTE	SwitzerLand	DR		
						NILGOM	China	A		
						A-eberle (EMH EncRGIE)	Germany	A		
						Morgan Scheffler	Canada	A		
10	OIL BDV MEASUREMENT KIT	III				Tettex	SwitzerLand	A		
						Volkommen	Germany	DR		
						Hassely Test AG	SwitzerLand	DR		
						H Tinsley	UK	DR		
						Megger	USA / UK	A		
						HVDSA	SwitzerLand	DR		
						Shivananda	Nashik	A		
						Megger	USA/UK	A		
11	OIL TAN DELTA AND RESISTIVITY MEASUREMENT KIT	III				Elitel Industries	Bangalore	A		
						Hafely	USA	A		
						Doble	USA	DR		
						Appareils Veltiner	France	DR		
						Volkommen	Germany	DR		
						Tinsley	UK	A		
						AVO	UK	A		
						12	DEW POINT MEASUREMENT INSTRUMENT	III		
Vaisala	Finland	A								
Doble	USA	A								
Cryo Industries	USA	A								

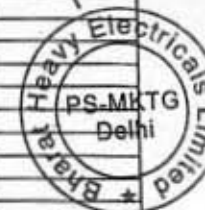
Main Contractor to obtain prior approval from NTPC for the Model of equipment they intent to supply, before placing order

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Main Contractor to obtain prior approval from NTPC for the Model of equipment they intent to supply, before placing order



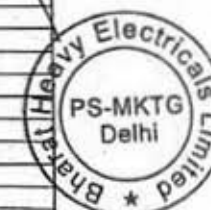
Adarsh

Project : 3x800 MW PATRATU STPP (Phase-I) Package : EPC Pkg- Oil Filled Transformers (GT, Reactor, ST, SBT, UT, Auxiliary Transformer, Maintenance Equip), GCB, Dry Type Transformer, IPBD, SPBD, .) Supplier : BHEL Contract No.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL						Doc.No:9585-001-QDE-R-00 REV.NO.: 0 DATE : 27.04.2017 PAGE : 1 OF 5		
S.N.	Item Description	QIP/ Insp. Cat	QP # 9585-001-QVE-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
13	FRA TEST KIT	III	.			Doble	USA	A		Main Contractor to obtain prior approval from NTPC for the Model of equipment they intent to supply, before placing order
						Haefely	Switzerland	DR		
						Omicron	Hongkong	DR		
						HP (Allent)	USA	A		
						Tettex	USA	A		
14	CAPCITANCE & TAN DELTA MEASUREMENT KIT	III	.			Megger	Sweden	A		
						Megger	USA	A		
						Andeen Hagerling	USA	A		
						Doble	USA	A		
						Haefely	France/Switzerland	A		
15	TRANSFORMER TURNS RATIO (TTR) MEASUREMENT KIT	III	.			Tettex	USA	A		
						Tinsley	UK	A		
						Haefely	Switzerland	DR		
						Sivananda Electronics	Nashik	DR		
						Megger	USA / UK	A		
16	WINDING RESISTANCE MEASUREMENT KIT	III	.			DV Power	Sweden	A		
						Eltel	Bangalore	A		
						Megger	USA	A		
						Shivananda	Nashik	DR		
						IBEKO	Sweden	A		
17	OFF LINE LABORATORY MODEL OIL DGA KIT	III	.			DV Power	Sweden	A		
						Scopec T&M	Pune	A		
						GE Kelmen Ltd	UK	A		
						Perkin Elmer	Germany	DR		
						GE SYPROTECH	Canada	DR		
18	HYDRAULIC JACKING SYSTEM	III	.			Hydran	Canada	DR		
						CIC	Vadodara	A		
						Agilent	USA	DR		
						Brucker	USA	A		
						Enerpack Hydraulic	Vassli, Mumbai	A		
19	ON LINE MOITURE REMOVAL SYSTEM	III	.			Bemco Jackas & Allied Products	Belgaon	A		
						Kelco	Japan	A		
						Hydro Pack	Belgaon	A		
						Oriental Engg Works	Yamunanagar	A		
						Venkos & Co	Palna	A		
						Transec	UK	A		
						Dry Keep	USA	DR		
						Velcon	USA	DR		
						Ravin Infra	Pune	A	Conditions Apply	
						CEE DEE VACUUM EQUIPMENTS PVT LTD	PUNE	A	Conditions Apply	
						PTSS	Combailore	A		
						Dry Keep	South Africa	A		

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Project : 3x800 MW PATRATU STPP (Phase-I) Package : EPC Pkg- Oil Filled Transformers (GT, Reactor, ST, SBT, UT, Auxiliary Transformer, Maintenance Equip), GCB, Dry Type Transformer, IPBD, SPBD, J) Supplier : BHEL Contract No.: CS-9585-001-2				LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL					Doc.No 9585-001-QOE-R-00 REV.NO.: 0	
							DATE : 27.04.2017			
							PAGE : 4 OF 5			
S.N.	Item Description	QP/ Insp. Cat	QP # 9585-001-QVE-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
20	VACUUM PUMP WITH MOTOR	III	.			Vacuumair	Ahmedabad	A	Main Contractor to obtain prior approval from NTPC for the Model of equipment they intent to supply, before placing order	
						Turhill Pneumatics Group	USA	A		
						Shinko Seiki	Japan	A		
						Orlikon	Germany	A		
						Kakati	Hyderabad	A		
						Gardner Denver Nash	China	A		
21	OIL TANKER, WHEEL MOUNTED	II	Q-009			VPI	Pune	A		
						CEEDEE Vacuum	Pune	A		
						Satyam Industries	Bhopal	A		
						Mechman	Bhopal	A		
						Jyoti Fab	ALLAHABAD	A		
						Electromech (U-2)	Bhopal	A		
						Jagdamba Tools	Vadodara	DR		
						Fowler Westrup (India) Pvt Ltd	Bangalore	A		
						Iris Power (Qualitrol)	Canada	DR		
22	Dielectric Response Analyzer	III	.			Megger	Sweden	DR		
						Omicron	Austria	DR		
						VPI	Pune	A		
23	OIL PURIFYING EQUIPMENT	I	Q-010			CEEDEE Vacuum	Pune	A		
						Fowler Westrup	Bangalore	A		
						LUVATA	Sweden	A		
24	OFAF COOLER	II	Q-011			Unifin	Canada	DR		
						Serk Heat Transfer	UK	DR		
						ABB	Sweden	A		
						GEA	China	A		
						BHEL	Bhopal	A		
						Asha Bhanu Tech Services	Hyderabad	A		
						Fitwell	Bhopal	A		
						Dyanamic Ratings	USA	A		
25	COMPOSITE MONITORING SYSTEM	III	.			A-eberle	Germany	A	1) Main Contractor to obtain prior approval from NTPC for the Model of equipment they intent to supply, before placing order. 2) As per approval conditions.	
						BHEL	Bhopal	A		
						MR	Germany	DR		
						GE Grid	Germany	DR		
						Siemens	Navi Mumbai	A		
26	Enclosure for CMS System	II	Q-.012			BHEL	Bhopal	A		
						Rittal	Bangalore	A		
						Pyrotech	Udaipur	A		
						Maktel	Vadodara	A		
27	GENERATOR CIRCUIT BREAKER L1 Level Vendor (Refer Note 4 & 5)	I	Q-140			GRID Solutions SAS	FRANCE	DR		
						ABB SWITZERLAND LTD..	SWITZERLAND	A		

Amrith
07/04/17



ATadav

 Project : 3x800 MW PATRATU STPP (Phase-I) Package : EPC Pkg- Oil Filled Transformers (GT, Reactor, ST, SGT, UT, Auxiliary Transformer, Maintenance Equip), GCB, Dry Type Transformer, IPBD, SPBD, .) Supplier : BHEL Contract No.: CS-9585-001-2		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL						Doc No: 9585-001-QOE-R-00 REV.NO.: 0		
								DATE : 27.04.2017 PAGE : 5 OF 5		
S.N.	Item Description	QP/ Insp. Cat	QP # 9585-001-QVE-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
28	FQP FOR OIL FILLED TRFs	I	G-001			BHEL		A		
29	FQP FOR GCB	I	G-002					A		
30	FQP FOR SHUNT REACTOR	I	G-003					A		
31	FQP FOR NGT	I	G-004					A		
32	FQP FOR DRY TYPE TRF	I	G-005					A		
33	FQP FOR MV BUSDUCT	I	G-006					A		
34	WPS FOR TRF TANK	I	W-001					A		
35	WPS FOR BUSDUCT	I	W-002					A		
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. 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 / INSPN 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 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. * Control measure of item covered in quality plan of main item. 3. UNITS/WORKS : Place of manufacturing/ Place of Main Supplier of multi units/works. 4. Comprehensive L-2 list of sub-vendors shall be finalized with the finally selected L-1 vendor, but prior to order finalization on L-1 vendor by the Bidder. 5. Item Subjected to Sub-QR clearance										

Amrith
09/10/19

Atadav



		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACAKGE : EPC Sub Package : Solar roof top dedicated items CONTRACTOR : M/S BHEL CONT. NO.; CS-9585-001-02					LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 26.04.2017	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585- 001-QOE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB- SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE	SC DETAIL SUB SCH	REMARKS

1.	SPV module	I	Q-01			BHEL	Bangalore	A@			@- Subject to Sub-QR clearance from NTPC Engg.
						Warree	Surat	A@			
						Emmvee	Bangalore	A@			
						Vikram Solar	Parganas	A@			
						Lanco Solar	Chattisgarh	A@			
						Tata Power Solar	Bangalore	A@			
						Alpex	Solan	A@			
						Synergy	Durgapur	A@			
						Photonix	Satara	A@			
						HHV Solar	Bangalore	A@			
						Moserbaer	Greater Noida	A@			
						REIL	Jaipur	DR			
2.	String Inverter	II	Q-01			Delta	China	A			Model- RPI-M10A, RPI-M15A, RPI-M20A, RPI-M30A, RPI-M50A
						Huawei	China	A			SUN2000 Series String Inverter
						Kaco	Germany	DR			
						Schneider	Bangalore	DR			
						ABB	Bangalore	DR			
3.	DC Cable (Interconnecting	II	Q-01			Slechem	Pondicherry	A			

(NTPC)

(Bidder)

Page 1 of 3

		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACAKGE : EPC Sub Package : Solar roof top dedicated items CONTRACTOR : M/S BHEL CONT. NO.: CS-9585-001-02				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 26.04.2017			
		SI. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE	SC DETAIL SUB SCH
	SPV Modules, SPV Module to AJB) As per TUV specification 2 Pfg 1169/08.2007: subject to acceptance by Engg											
						Lapp	Korea	A				
						Leoni	Switzerland	A				
						Apar	Khatalwada	A				Conditions apply
4.	FQP for SPV Moddules	G-01										

Abbreviations

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 "Detailed required" for NTPC review. To be identified with letter "DR" in the list.

QP/INSPECTION 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 QP.

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

General Notes:

1-Vendor list & category of the mandatory spares shall be as mentioned above.

2- For items not covered above, main contractor shall seek NTPC-QA's clearance before placing the order.

(NTPC)

(Bidder)



		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACKAGE : EPC Sub Package : Solar roof top dedicated items CONTRACTOR : M/S BHEL CONT. NO.: CS-9585-001-02					LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 26.04.2017	
		SL. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE

3- NTPC Approval conditions to above identified vendors shall be adhered to. Vendor's approval conditions will be informed on specific request of Main Contractor




A Yadav
Amit Yadav
mgr/mktg.
BHEL



(NTPC)

(Bidder)

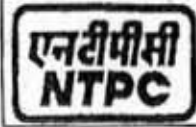
Page 3 of 3

		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACKAGE : EPC Sub Package : HT Switchgear dedicated Items CONTRACTOR : M/S BHEL CONT. NO.; CS-9585-001-02				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL		REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE: 26.04.2017				
		Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE	SC DETAIL SUB SCH
1.	HT Switchgear Panel up to 33KV with Vacuum type circuit breaker (BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.)	I	Q-01			Siemens Megawin BHEL Jyoti ABB L&T	Mumbai Salem Bhopal Vadodara Nasik Ahmednagar	A@ A@ A@ A@ A@ A@				@- Subject to Sub-QR clearance from NTPC Engg.
						Schneider	Kolkata	A@				Upto 11KV -Salt lake works -Vg series Interrupter made at Salt Lake Works.
2.	Numerical Relay Network system Integration	I	Q-02			Main Contractor approved sources						@- Subject to Sub-QR clearance from NTPC Engg
3.	IEC 61850 Complaint Numerical Relays	(part of Swgr MQP)				SEL	Pullman, USA	A@				@- Subject to Sub-QR clearance from NTPC Engg
						ALSTOM T&D	Stafford, UK	A@				P14X, P34X, P44X, P64X, P74X models only.

(NTPC)

(Bidder)

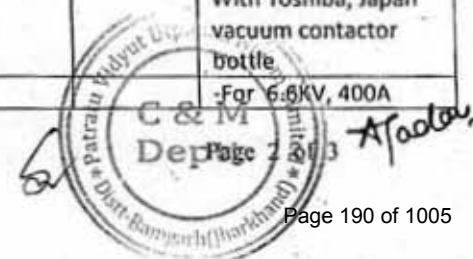
C & M Dept.

		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACAKGE : EPC Sub Package : HT Switchgear dedicated Items CONTRACTOR : M/S BHEL CONT. NO.; CS-9585-001-02					LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE: 26.04.2017	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585- 001- QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE	SC DETAIL SUB SCH	REMARKS

						ALSTOM T&D	Chennai	A@			P14X, P24X, P34X, P44X, P64X, P74X models only.
						ABB	Finland	A@			
						ABB	Baroda	A@			For 6XX Series
						GE Multilin	Zamudio, Vizcaya, Spain/ Markham, Ontario, Canada	A@			F-650 only
						Schneider	Stone, UK	A@			PX30, PX40, VAMP 5X and VAMP 2XX models only.
						Siemens	Germany	A@			75X Series only
						Siemens	Goa	A@			75R2X series only
4.	MV Vacuum Contactor up to 6.6 KV	(part of Swgr MQP)				ABB SACE	Italy	A			
						Jyoti	Vadodara	A			With Toshiba, Japan vacuum contactor bottle
						Megawin	Salem	A			For 6.6KV, 400A

(NTPC)

(Bidder)



		PROJECT: Patratu Super Thermal Power Station Expansion Phase-I (3x800MW) PACKAGE : EPC Sub Package : HT Switchgear dedicated Items CONTRACTOR : M/S BHEL CONT. NO.; CS-9585-001-02				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL		REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE: 26.04.2017			
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S L&T	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHED ULE	SC DETAIL SUB SCH	REMARKS

											- With Toshiba Vacuum Bottle
						Siemens	Kalwa	DR			
5.	Fast Bus Transfer Panel	I	Q-03			Aartech	Parwanoo	A			FBT device Model-BTS-2000 from Cooper Power, USA
						ABB	Vadodara	A			FBT Device Model-SUE-3000 from ABB, Finland
						SEL	Delhi	A			FBT device Model-SEL-451 from SEL, USA
6.	FQP for HT switchgear	I	G-01								

Abbreviations

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 "Detailed required" for NTPC review. To be identified with letter "DR" in the list.

QP/INSPECTION 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 QP.

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

General Notes:

1-Vendor list & category of the mandatory spares shall be as mentioned above.

2- For items not covered above, main contractor shall seek NTPC-QA's clearance before placing the order.

3- NTPC Approval conditions to above identified vendors shall be adhered to. Vendor's approval conditions will be informed on specific request of Main Contractor

4. Comprehensive L-2 list of sub-vendors shall be finalized with the finally selected L-1 vendor but prior to order finalization on L-1 vendor by the Bidder.

(Bidder)

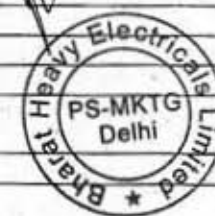


Atadav
Amit Yadav
Mgt. / MKTG.
BHEL



		PROJECT : PATRATU STPS (3X800 MW) PACAKGE : EPC Sub Package: MOTORS & VVF Drive Panels 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 20th April 2017	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QOE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

1)	L T (415 V) Motors	Refer Note 1				ABB	FARIDABAD	A		UPTO 55KW
						ABB	BANGALORE	A		55KW - 200KW
						BHARAT BULEE	MUMBAI	A		RQP. FOR FLAME PROOF ALSO
						CGL	AHMEDNAGAR	A		FOR FLAME PROOF ALSO
						JYOTI	BARODA	A		
						KEC	BANGALORE	A		FOR FLAMEVPROOF ALSO
						KEC	HUBLI	A		UPTO 90KW; FOR FLAME PROOF ALSO
						LHP	SOLAPUR	A		UPTO 200KW
						MARATHON	KOLKATA	A		FOR FLAME PROOF ALSO
						NGEF	BANGALORE	A		UPTO 15KW
						SIEMENS	MUMBAI	A		
2)	HT MOTOR					BHEL	BIHOPAL	A		
3)	DC MOTOR	Refer Note 1				BHEL	HARIDWAR	A		
						CGL	AHMEDNAGAR	A		
						KEC	BANGLORE / HUBLI	DR		
4)	VARIABLE FREQUENCY DRIVES PANELS	1				L&T-YASHKAWA	INDIA	A		
						DANFOSS	CHENNAI	A		
						SCHNEIDER	NASHIK	A		
						ROCKWELL ALLEN	DELHI-SHAHIBABAD	A		
						BRADLEY				
						ABB	BANGALORE	A		
						SIEMENS	NASHIK	A		
						GE		DR		



DR for HT



		PROJECT :PATRATU STPS (3X800 MW) PACKAGE : EPC Sub Package: MOTORS & VVF Drive Panels 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 20th April 2017	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9585-001-QOE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS
						HITACHI-HIREL	GANDHINAGAR/SANAND	DR		
						INGETEA M TECHNOLOGIES	SPAIN	DR		
						NIDEC(ANSALDO)	ITALY	DR		
						FUJI ELECTRIC SYSTEMS	JAPAN	DR		
						TMEIC	BANGALORE	DR		
						L&T	MUMBAI	DR		

NOTE 1 : FOR LT MOTORS**a) Less than 30 KW**

Acceptance of Motor less than 30 KW is based on COC of the manufacturer & the contractor confirming as follows:

It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage & frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud & gland plate and tested in accordance with approved drawing /data sheets.

b) 30 KW -50KW

Acceptance of Motor rating between 30 KW & 50 KW is based on NTPC review of Routine Test inspection report as per IS 325 witnessed by main contractor along with COC of the manufacturer & the contractor confirming as follows:

It is hereby confirmed that the above mentioned motor /motors was/ were manufactured taking care of NTPC specific requirements regarding ambient temp., voltage & frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud & gland plate, space heater and tested in accordance with approved drawing /data sheets.

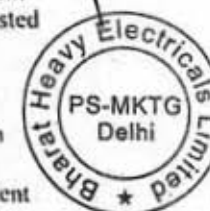
c) Above 50 KW as per NTPC approved quality plan

Approval Conditions attached to above vendors-as applicable shall prevail.

General Notes:

- 1) Vendor list & category of the mandatory spares shall be as mentioned above.
- 2) For item not appearing in the above list, main contractor to approach NTPC for acceptable vendors & inspection categorization of the same.
- 3) NTPC Approval conditions to above identified vendors shall be adhered to. Vendor's approval conditions will be informed on specific request of Main Contractor.

[Signature] NTPC



		PROJECT :PATRATU STPP (2X660 MW) PACAKGE : EPC Sub Package: HT Power cables, LT power cables, Control cables, CONTRACTOR : M/S BHEL CONT. NO. CS-9578-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL		REF NO : 9578-001-QOE-R-01 REVISION NO. 00 DATE 10th April 2017		
		SL No.	ITEM	QP / INS CAT.	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC

1	HT Cable upto 33KV	I	Q-01			Universal Cable Ltd.	Satna	A@		@- Subject to Sub-QR clearance from NTPC Engg
						Torrent Cable Ltd	Nadiad	A@		
						Polycab Wires Pvt. Ltd	Daman	A@		
						KEI Industries	Bhiwadi	A@		
						Havells India Ltd.	Alwar	A@		
						Finolex	Pune	A@		
						Apar	Valsad	A@		
						NICCO	Shamnagar , Kolkata	A@		Upto 11KV only
						Incab	Pune	A@		Upto 11KV only
						Sri ram Cables	Bhiwadi	A@		Upto 11KV only
						Krishna Electrical Indsutries Ltd	Gwalior	A@		Upto 11KV only
						KEC International	Vadodara	A@		
						Paramount	Bhiwadi	A@		
						Diamond Power	Vadodara	DR@		
						Crystal Cable	Kolkata	DR@		
						Gemscab	Bhiwadi	A@		
						CCI	Nasik	DR@		
						Tirupati Plastomatics	Jaipur	DR@		
						Dynamic Cables	Jaipur	DR@		
						Sterlite Technologies	Haridwar	DR@		
						Ravin Cables	Mumbai	DR@		
						Gupta Power	Bhubneshwar	DR@		
						GEMS CABLES	MEDAK ,TELANGA	DR@		
2	1.1 KV Power cable	I	Q-02			Universal Cable Ltd.	Satna	A@		@- Subject to Sub-QR clearance



NTPC

1 OF 5

ENGINEERING DIV / QAI

CONTRACTOR

C & M
4/24/2017

		PROJECT :PATRATU STPP (2X660 MW) PACAKGE : EPC Sub Package: HT Power cables, LT power cables, Control cables, CONTRACTOR : M/S BHEL CONT. NO. CS-9578-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL		REF NO : 9578-001-QOE-R-01 REVISION NO. 00 DATE 10th April 2017		
		Sl. No.	ITEM	QP / INS CAT.	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC

	(PVC & XLPE)									from NTPC Engg
						NICCO	Shamnagar , Kolkata	A@		
						Torrent Cable Ltd	Nadiad	A@		
						Incab	Pune	A@		
						Hindustan Vidyut Products Ltd	Faridabad	A@		
						KEI Industries	Bhiwadi	A@		
						Delton Cable Ltd	Faridabad	A@		A)Unarmoured cable all sizes. B) Armoured cable up to 3.5 x 240 sq. Mm with GI strip armour and 1CX70 sq mm with al strip armour
						Paramount Cable	Khushkhera	A@		
						Polycab Wires Pvt. Ltd	Daman	A@		
						Gemscabs Industries	Bhiwadi	A@		
						Cords Cables	Bhiwadi	A@		
						Havells India Ltd.	Alwar	A@		
						Sri ram Cables	Bhiwadi	A@		
						Ravin Cables	Pune	A@		
						Thermocables	Hyderabad	A@		
						Sbee Cables	Bangalore	A@		
						Suyog Cables	Vadodara	A@		
						Gupta Power Cables	Bhubaneswar	A@		
						Finolex	Pune	A@		
						Scot Innovation wires & cables	Baddi	A@		
						Anhui Hualing	China	A@		
						LS Cable	Korea	A@		
						Radiant Cables	Hyderabad	A@		

NTPC

2 OF 5

ENGINEERING DIV / QAI

CONTRACTOR

C & M
Deptt.

4/24/2017

		PROJECT :PATRATU STPP (2X660 MW) PACAKGE : EPC Sub Package: HT Power cables, LT power cables, Control cables, CONTRACTOR : M/S BHEL CONT. NO. CS-9578-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9578-001-QOE-R-01 REVISION NO. 00 DATE 10th April 2017	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS
						KEC International	Vadodara	DR@		
						Manisfield cables	G.Noida	DR@		
						Diamond Power	Vadodara	DR@		
						Crystal Cable	Kolkata	DR@		
						Apar Industries	Umbergaon	A@		
						Krishna Electricals	Gwalior	DR@		
						Special Cables	Rudrapur	A@		
						Dynamic Cables	Jaupur	DR@		
						Tirupati Plastomatics	Jaipur	DR@		
						Govind Cables	Kolkata	DR@		
						Goyolene Fibre	Daman	DR@		
						Chandresh Cables	Gandhinagar	DR@		
3	1.1 KV Control cable	I	Q-03			NICCO	Shamnagar , Kolkata	A@		@- Subject to Sub-QR clearance from NTPC Engg
						Torrent Cable Ltd	Nadiad	A@		
						Incab	Pune	A@		
						Polycab Wires Pvt. Ltd	Daman	A@		
						Hindustan Vidyut Products Ltd	Faridabad	A@		
						KEI Industries	Bhiwadi	A@		
						Delton Cable Ltd	Faridabad	A@		
						Paramount Cable	Khushkhhera	A@		
						Gemscabs Industries	Bhiwadi	A@		
						Cords Cables	Bhiwadi	A@		
						SPM Cables	Hyderabad	A@		
						Elkay Telelink	Faridabad	A@		
						Havells India Ltd.	Alwar	A@		

NTPC

3 OF 5

ENGINEERING DIV / QAI

CONTRACTOR

C & M
Deptt.
4/24/2017

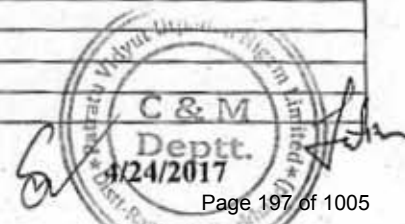
		PROJECT :PATRATU STPP (2X660 MW) PACAKGE : EPC Sub Package: HT Power cables, LT power cables, Control cables, CONTRACTOR : M/S BHEL CONT. NO. CS-9578-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9578-001-QOE-R-01 REVISION NO. 00 DATE 10th April 2017	
SL. No.	ITEM	QP / INS CAT.	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

						R.R. Kabel	Silvasa	A@		
						Ravin Cables	Pune	A@		
						Gupta Power cable	Bhubaneswar	A@		
						Thermocables	Hyderabad	A@		
						Finolex	Pune	A@		
						Sbee Cables	Bangalore	A@		
						Suyog Cables	Vadodara	A@		
						Universal Cables	Satna	A@		
						Scot Innovation wires & cables	Baddi	A@		
						Anhui Hualing	China	A@		
						LS Cable	Korea	A@		
						Radiant Cables	Hyderabad	A@		
						KEC International	Vadodara	DR@		Out of the identified "DR" vendors, BHEL shall propose maximum 5 no. of vendors for NTPC review
						Manisfield cables	G.Noida	DR@		
						Diamond Power	Vadodara	DR@		
						Crystal Cable	Kolkata	DR@		
						Apar Industries	Vadodara	DR@		
						Krishna Electricals	Gwalior	DR@		
						Special Cables	Rudrapur	A@		
						Govind Cables	Kolkata	DR@		
						Incom	Delhi	DR@		
						Sam Cables	Rudrapur	DR@		
						Advance Cables	Bangalore	DR@		
						Tirupati Plastomatics	JAipur	DR@		
						CMI	Faridabad	A@		
						Sarval India	Nimrana	DR@		
						Advance Cable	BANGalore	DR@		
						Goyolene Fibre	Daman	DR@		
						Sriram Cables	Alwar	DR@		
						Dynamic Cables	Jaipur	DR@		

NTPC

4 OF 5

 ENGINEERING DIV./QAI
 S. Jaiswal

 CONTRACTOR
 S. Jaiswal


		PROJECT :PATRATU STPP (2X660 MW) PACAKGE : EPC Sub Package: HT Power cables, LT power cables, Control cables, CONTRACTOR : M/S BHEL CONT. NO. CS-9578-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : 9578-001-QOE-R-01 REVISION NO. 00 DATE 10th April 2017		
		SL No.	ITEM	QP / INS CAT.	QP No:- 9578-001-QVE-	QP SUB. SCH.	QP APP L SCH EDU LE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE
4	FQP of Cables & Accessories	I	G-01								SFQP no. -000-999-QOE-I-004 will be applicable

Note 1 : Approval conditions attached to sub- vendors shall be adhered to.

Note 2 : Abbreviations

A – For these items proposed vendor is acceptable to NTPC. To be indicated with letter "A" in the list alongwith the condition of approval, if any.

DR – For these 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."

1. 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 QP.

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

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NTPC



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24/04/17
(Jatin Chakraborty)
BHEL



NTPC

5 OF 5

ENGINEERING DIV / QAI

CONTRACTOR

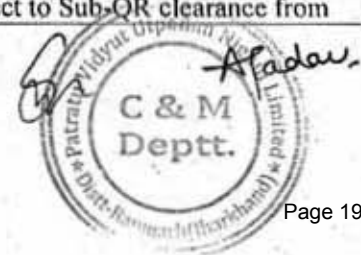
4/24/2017

Page 198 of 1005

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS
1	Floor mounted Draw out type indoor LT Switchgear Panel (MCC panels etc.)	1	1			L&T	Mumbai / Coimbatore/ Ahmednagar	A@		@- Subject to Sub-QR clearance from NTPC Engg. BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						GE	Bangalore	A@		@- Subject to Sub-QR clearance from NTPC Engg BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Siemens	Mumbai	A@		@- Subject to Sub-QR clearance from NTPC Engg. BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						C&S Electric	Noida /	A@		@- Subject to Sub-QR clearance from

pg. 1



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -		
		SL No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE
								Hardwar			NTPC Engg. BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Schneider	Nasik		A@		ACB from Schneider, France. @- Subject to Sub-QR clearance from NTPC Engg. BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Unilec	Gurgaon		A@		@- Subject to Sub-QR clearance from NTPC Engg. BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						ABB	Bangalore		DR@		@- Subject to Sub-QR clearance from NTPC Engg.

pg. 2



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- ---- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -		
		SL No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE
											pg. 3
2.	Floor mounted Fixed type indoor LT Switchgear Panel (ACDB / DCDB / Lighting DB / Solenoid valve distribution boards) (subject to sub-QR)	1	2			L&T	Mumbai / Coimbatore/ Ahmednagar		A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						GE	Bangalore		A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Siemens	Mumbai		A*		*- DR for Fixed type outdoor LT



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 4

										Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						C&S Electric	Noida / Hardwar	A*		*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Schneider	Nasik	A*		*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Unilec	Gurgaon	A*		*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Switching Circuits	Kolkata	A*		*- DR for Fixed type outdoor LT



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL				REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -	
		SL No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE

pg. 5

										Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Tricolite	Sahibabad / Manesar		A*	*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Hindustan Control & equipment Ltd	Kolkata		A*	With fabrication & painting at unit II & MP Electrical Narendrapur
										*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Maktel	Vadodara		A*	*- DR for Fixed type outdoor LT Switchgear Panel
										BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid



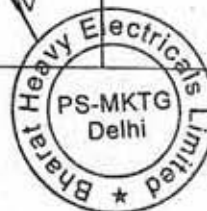
Atadav.

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -	
		Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC

pg. 6

											CML no.
						Jakson	Greater Noida	A*			*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Vidyut Control	Gaziabad	A*			*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Adlec Power	Rohad (Jhajjar)	A*			*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Pyrotech	Udaipur	A*			*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 7

						Anand Power Ltd.	Noida	A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Control & Schematics	Hyderabad	A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						Positronics	Vadodara	A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid CML no.
						ABB	Bangalore	DR		
						Nitya Electrocontrols	Noida	A*		*- DR for Fixed type outdoor LT Switchgear Panel BOIs preferably with VDE/CE/UL/CSA marked or BIS approved with valid



A. Adav.

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

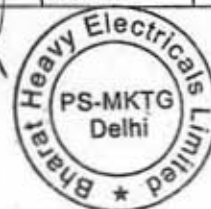
		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 8

3	Wall mounted fixed type indoor / outdoor LT Switchgear non compartment alized Panel (Lighting panels / AC / DC Fuse boards / MCB boxes)	I	3			L&T	Mumbai / Coimbatore/ Ahmednagar	A		CML no. BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						GE	Bangalore	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Siemens	Mumbai	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						C&S Electric	Noida / Hardwar	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Schneider	Nasik	A		BOIs preferably with CE/VDE/UL/CSA

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LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 9

										marked or BIS approved with valid CML no.
						Unilec	Gurgaon	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Switching Circuits	Kolkata	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Tricolite	Sahibabad / Manesar	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Hindustan Control & equipment Ltd	Kolkata	A		With fabrication & painting at unit II & MP Electrical Narendrapur BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Maktel	Vadodara	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Jakson	Greater Noida	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Vidyut Control	Gaziabad	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO, CS- --- -001C-2					LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE.	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLI ER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS	

pg. 10

										CML no.
						Adlec Power	Rohad (Jhajjar)	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Pyrotech	Udaipur	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Anand Power Ltd.	Noida	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Control & Schematics	Hyderabad	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Positronics	Vadodara	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Control Devices	Kolkata	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Jasper	Noida	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
						Havells	Faridabad	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.

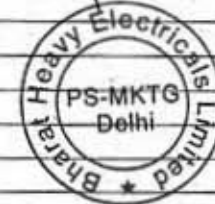


LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACKAGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : -----001-QOE-R-01 REVISION NO. 00 DATE -	
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 11

						Novateur Electrical & distribution systems	Murthal	A		CML no.
						Avoid Technovator	Manesar	A		BOIs preferably with CE/VDE/UL/CSA marked or BIS approved with valid CML no.
4	ACB	(part of LT Swgr MQP)	4			C&S Electric	Noida	A		
						L&T	Mumbai	A		
						GE	Bangalore	A		
						Siemens	Germany	A		
						Schneider	France	A		
5	LT Busduct (air insulated non phase segregated type)	1	5			C&S Electric	G.Noida	A		
						C&S Electric	Hardwar	A		
						Unilec	Gurgaon	A		Upto 3200 A
						KGS Engg Ltd	Chennai	A		
						Spaceage Swgr Ltd	Bawal	A		
						REEP	Chennai	A		
						Enpro	Chennai	A		
						Jasper Engg Ltd	Noida	A		



A. S. S. S.

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
SL. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS

pg. 12

6	LT Buct (insulated sandwiched type)	1	6			C&S Electric	Hardwar	A		
						Jasper Engg Ltd	Noida	DR		
						Schneider	Baroda	DR		
						Henikwon	Malaysia	A		
7	IEC 61850 Compliant Numerical Relays	(part of Swgr MQP)				SEL	Pullman, USA	A@		A@- Subject to Sub-QR clearance form NTPC Engg
						ALSTOM T&D	Stafford, UK	A@		P14X, P34X, P44X, P64X, P74X models only. A@- Subject to Sub-QR clearance form NTPC Engg
						ALSTOM T&D	Chennai	A@		P14X, P34X, P44X, P64X, P74X models only. A@- Subject to Sub-QR clearance form NTPC Engg
						GE Multilin	Zamudio, Vizcaya, Spain/ Markham, Ontario, Canada	A@		F 650 only A@- Subject to Sub-QR clearance form NTPC Engg



LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg.

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
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pg. 13

						Schneider	Stone, UK	A@		PX30 & PX40 models only. A@- Subject to Sub-QR clearance form NTPC Engg
						ABB	Finland	A@		A@- Subject to Sub-QR clearance form NTPC Engg
						ABB	Baroda	A@		For 6XX Series A@- Subject to Sub-QR clearance form NTPC Engg
						Siemens	Goa	A@		7SR2X series only A@- Subject to Sub-QR clearance form NTPC Engg
						Siemens	Germany	A@		7SX Series only A@- Subject to Sub-QR clearance form NTPC Engg
8	Local Push Button Station	III				Main contractor approved sources for the box (with push button with CE/VDE/UL/CSA marked or BIS approved with valid CML no.)		Noted		
9	FQP for LT	I	G-01							



A. J. Adar

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ---001-QOE-R-01 REVISION NO. 00 DATE -																																												
		<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>ITEM</th> <th>QP / INS CAT.</th> <th>QP No:- 9591-001-QVE-</th> <th>QP SUB. SCH.</th> <th>QP APPL SCHE DULE</th> <th>SUB-SUPPLIERS PROPOSED BY M/S BHEL</th> <th>PLACE</th> <th>SUB-SUPPLIER APPL STATUS AS PER NTPC</th> <th>SC APPL SCHE DULE</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td></td> <td>Switchgear</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>FQP for LT Busduct</td> <td>I</td> <td>G-02</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS		Switchgear										10	FQP for LT Busduct	I	G-02																
Sl. No.	ITEM	QP / INS CAT.	QP No:- 9591-001-QVE-	QP SUB. SCH.	QP APPL SCHE DULE	SUB-SUPPLIERS PROPOSED BY M/S BHEL	PLACE	SUB-SUPPLIER APPL STATUS AS PER NTPC	SC APPL SCHE DULE	REMARKS																																											
	Switchgear																																																				
10	FQP for LT Busduct	I	G-02																																																		

pg. 14

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.

General Notes:

Vendor list & category of the mandatory spares shall be as mentioned above.

For item not appearing in the above list, main contractor to approach NTPC for acceptable vendors & inspection categorization of the same.

NTPC Approval conditions to above identified vendors shall be adhered to. Vendor's approval conditions will be informed on specific request of Main Contractor.

Note-1- VDE / CE / UL / CSA MARKING CERTIFICATION PREFERABLY FROM THIRD PARTY AGENCY OR BIS APPROVAL LETTER SHALL BE SUBMITTED FOR NTPC's VERIFICATION /INFORMATION

Handwritten signature
NTPC



Handwritten signature
Atadav,
Armit Yadav
Manager / PS-MKTG.
BHEL

LT SWITCHGEAR panels' sub-vendors are subject to sub-QR clearance from NTPC-Engg

		PROJECT : PATRATU STPP, PACAKGE : Sub Package: LT Switchgear & LT Busduct CONTRACTOR : M/S BHEL CONT. NO. CS- --- -001C-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS PROPOSED BY M/S BHEL			REF NO : ----001-QOE-R-01 REVISION NO. 00 DATE -	
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pg. 15



		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
1.	Alternator	I	I			M/s Kirloskar Electric	Bangalore	A		415 V alternators
						M/s Cummins Generator Technology (Stamford)	U.K	A		415 V & 11kV alternators
						M/s Leroy Somer	France	A		Up to 11kV alternator 3500 kW
						M/s Marathan	USA	A		Alternators for up to 415 V, 1500 KVA DG SET
						M/s Cummins Generator Technology (Stamford)	Ahmednagar	A		415 V Alternators up to 1600 KVA
						Toshiba	Chennai	DR		
2.	Diesel engine	I	2			M/s Cummins	Pune	A		
						M/s Cater Pillar	USA	A		
						M/s Mitsubishi	Japan	A		Diesel engine for up to 1500 KVA DG SET
						M/s MTU	Germany	A		Diesel engine for up to 1500 KVA DG SET
						M/s Perkins	UK	A		Diesel Engine for upto 2000KVA DG SET
3.	D G set (assembly testing) @ subject to sub-QR clearance	I	3			M/s TIL	Ghaziabad	A@		up to 1500 KVA
						M/s. Kohler	Singapore	A@		Up to 1500 kVA ,11kV
						M/s CLS	Singapore	A@		Up to 1250 kVA, 415 V.
						M/s Powerica	Silvasa	A@		Up to 2000 KVA, 415 V & 1500 KVA, 11 KV
						M/s Jakson	Kathua	A@		Up to 415 V, 2000 KVA
						M/s Sterling Generators Pvt Ltd	Silvasa	A@		For up to 415 V 1500 KVA
						M/s Supernova	Rajpur	A@		
4.	DG Set acoustic enclosure	II				DG Set supplier approved sources		Noted		



		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	
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5.	Battery charger (110V/220V) @ subject to sub-QR clearance	1	4			M/s Amararaja	Tirupati	A@		
						M/s HBL- Power System	Hyderabad	A@		
						M/s Chhabhi electrical	Jalgaon	A@		
						M/s. Chloride Power	Kolkatta	A@		
						M/s Statcon	Hapur	A@		Approved Up to 220, V 850 A subject to Sub-QR clearance, higher rating in DR
						M/s Dubas	Bangalore	A@		Approved upto 220 V, 850 A subject to Sub-QR clearance , higher rating in DR
						M/s Saft Nife Power Systems	Singapore	A@		
						Massteck	Jalgaon	A@		
						Emerson Network	Thane	DR@		
						Jema Energy	Spain	DR@		
6.	Battery (Ni-Cd)	1	5			M/S HBL-Power System	Hyderabad	A @		Up to 990 Ah with conditions(Pocket plate type)
						M/S Amcosoft	Bangalore	A @		8Ah to 990Ah- KPH type 10Ah to 1365 Ah- KPM type 11Ah to 1550Ah – KPL type (Pocket plate type)
						Hoppekke	Germany	A@		
						Exide	Kolkata	DR@		
7.	Battery Plante	1	6			M/s Exide	Kolkata	A@		
						Hoppekke	Germany	DR@		

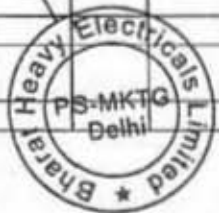


		PROJECT : Patratu STPP (2X660 MW) PACAKGE : EPC Sub Package: Electrical Equipment Supply & Erection CONTRACTOR : M/S BHEL CONT. NO. CS-9585-001-2				LIST OF ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR Contractor-M/S BHEL			REF NO : 9585-001-QOE-R-01 REVISION NO. 00 DATE 24th April 2017	
SL No.	ITEM	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

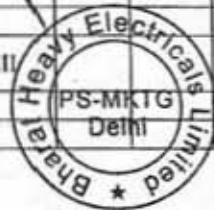
8.	Battery Health Monitoring System	I	7			Elteck	Gurgaon	DR		
						Emerson	Mumbai	DR		
						Hitachi Hirel	Gandhinagar	DR		
						HBL Power System	Hyderabad	A		
						Statcon	Hapur	DR		
						Hoppecke	Germany	DR		
9.	Fire Sealing System	III				M/s 3M India	Bangalore	A		
	i) Type – A material supplier					M/s GE Silicon	USA	A		
						M/s Dow Corning	USA	A		
	ii) Type – B Material supplier	III				M/s Lloyds	Delhi	A		
						M/s Signum	Nagpur	A		
						M/s Vijay System Engineers Pvt. Ltd.	Mumbai	A		
						M/s Multikil Fire	Vadodara	DR		
						Murugapa Morgan	Ranipet	DR		
						Unifrax India	AHMEDABA D	DR		
	iii) Execution Agency for above					Same as 9 (ii) & 3 M India	Same as 9 (ii) & 3 M India	A		
10.	GI cable trays, fitting	I				Inar Profiles Ltd	Enkapalli	A		



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	& accessories including bends					Vatco	Mumbai	A		Galvanization at Sigma Mumbai
						Indiana cable trays	Mumbai	A		Galvanization at Karamtara galvaniser
						Industrial Perforation	Kolkata	A		
						Ratan Engineering	Kolkata	A		Galvanization at B.P. Projects
						India Electric Syndicate	Kolkata	A		Galvanization at BMW Industries/B.P Projects
						Steelite engg.	Mumbai	A		
						Premier Power Products	Kolkata	A		Galvanising at Neha Galvaniser
						Indiana Gratings	Pune	A		Galvanization at Poona Galvanizer/ Anand Yeknow Aids Engg
						M.J. Engineering	Okhla/ Bhiwadi	A		
						Jamna Metal	Delhi/ Kundli	A		
						T.R.G	Chennai	A		Galvanization at TM Radhakrishna Chetty & Co
						Amtech	Pune	A		Galvanization at B.G. Shirke - Pune
						Kannade Anand Udyog	Mumbai	A		Fabrication at their units: Plot No. 42, District Thane & Plot No.: D-35 Anand Nagar MIDC, Addl. Ambernath , Dist.Thane Galvanization and offer the galvanized cable trays for inspection at D-34 Anand Nagar MIDC, Addl. Ambernath, Dist.Thane.
						Rukmani	Rajpur	A		Ladder type cable trays only
						Passive Infra	Hasangarh (Rohtak)	A		
						Unitech Fabricators &	Howrah/	A		



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						Engineers	Hoogly (Kolkata)			
						Patny System	Hyderabad	A		Galvanisation at Gurpreet galvaniser - Hyderabad
						Rabi Engg	Kolkata	A		Galvanizing from NTPC approved sources
						Advance Power Products	Howrah	A		
						Maheswari Electricals	Noida	DR		
						Sural Industries	Raibareli	DR		
						Parmar Metal	Rajkot	DR		
						Pentax	Mumbai	DR		
						Eros metal	Nagpur	DR		
						Vinfab	Thane	DR		
						Namdhari	Ludhiana	DR		
						Indmark Formtech	PUNE	DR		
						Vatco	Mumbai	A		Galvanising at Sigma Mumbai
						Inar profiles	Enkapalli	A		
						Industrial perforations	Kolkata	A		
						Premier power products	Kolkata	A		Galvanising at Ncha Galvaniser
						Steelite engg.	Mumbai	A		
						Indiana gratings	Pune	A		Galvanising at Poona Galvaniser
						Amtech	Pune	A		Galvanising at B.G. Shirke
						Ratan Projects	Kolkata	A		Galvanization at NTPC approved sources
						Indmark Formtech	PUNE	DR		
						M/s PLICA	Ghaziabad	A		
						M/s Lapp	Germany	DR		
						M/s Bansal Labs	Bhopal	A		
11.	Cable tray flexible support system (GI)	I	9							
12.	Lead coated steel flexible conduits	III								



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13.	Junction boxes / Link Boxes/ Test Link Box/ Adopter box, Switch Boxes, Pull Boxes (Hot Dip Galvanized)	III				Main contractor approved sources with galvanization from NTPC approved sources (Note-2)		Noted		
14.	FRP Junction boxes	II	10			Main Contractor approved sources		Noted		
15.	Cable termination kits & straight through jointing kit upto 33KV	I	11			M/s 3M Electro & Communication	Pune	A		up to 33 KV
						Raychem	Mumbai	A		Heat shrinkable type up to 33 KV
						Yamuna Cable Accessories	Yamunanagar	DR		
						Hari Consolidated Pvt Ltd	Delhi	A		Heat shrinkable type Upto 11 KV with conditions, above rating DR
16.	Cable glands	III				Main contractor approved sources		Noted		
17.	Cable lugs	III				M/s Dowell	Mumbai	A		
						M/s Billets Elektro Werke Ltd.	Umbergaon	A		



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						(3 D)					
						M/s Chetna	Nasik	A			
						Additionally Any make's model with VDE or CE or UL or CSA marking or BIS approved with CML no. Refer Note-3			Noted		
18.	Lighting fixtures with accessories	I	12			M/s Crompton	Mumbai	A#			#- "A"- for filament type and "DR" for LED Type
						M/s Bajaj Electricals	Mumbai	A			
						M/s Philips	Noida	A#			
						M/s Wipro	Mumbai	A			
						M/s Surya Rosini	Kashipur	A			
						M/s Goldwyn	Noida	A			
19.	Lamps	III				M/s Crompton	Mumbai	A#			#- "A"- for filament type and "DR" for LED Type
						M/s Bajaj Electricals	Mumbai	A			
						M/s Philips	Noida	A#			
						M/s Wipro	Mumbai	A			
						M/s Surya Rosini	Kashipur	A			
						Goldwyn	Noida	A			
20.	Lighting Panels	I				Please refer serial no- 3 as identified in LT Switchgear & LT Busduct sub package list					

