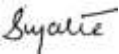


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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. <u>Specification for PLC System</u> 1. SCOPE This technical specification covers the Design, Engineering, Manufacturing, System integration, Assembly, testing at vendor works, inspection by purchaser, packing and transportation to site with necessary documentation like data sheets, statutory approvals, O&M manuals etc., as required and supervision of Erection, Commissioning till final handover of PLC system to End user. 2. Proven Track Record The systems being offered as per specification should be operating satisfactorily for <u>at least two (2) years prior to the date of techno- commercial bid opening</u> in industrial installations. Vendor shall submit necessary supporting documents / past users confirmation supporting to above PTR requirements along with technical offer. If offered instruments / equipments are supplied to BHEL PE&SD within last 5 years, above PTR clause is not applicable. 3. INSTRUCTIONS TO BIDDERS 3.1 Bidders are advised to contact BHEL for essential technical queries in writing <u>within one week of issue of Enquiry</u>. In the event of any conflict between these specifications, data sheets, related standards, codes etc. the vendor shall refer the matter to the purchaser for clarifications before bid submission. 3.2 Offers with incomplete information will not be considered for evaluation, and are likely to be rejected outright without any further interaction with the Bidder. 3.3 Any technical features [over & above BHEL enquiry specification requirements] proposed by Bidder will not be given preference for the purpose of evaluation. 3.4 Bidder shall submit the "Duly filled & Signed copy of Check list" compulsorily along with technical offer without which offer is liable for rejection without any further interaction with the Bidder 4. Codes & Standards – Refer Annexure-[D] of this specification				
Ref. Doc	Revision :00 Refer Record of Revisions	Prepared :  SUJATHA	Approved : ANAND	Date : 02.01.17

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5. CHECK LIST (To be filled by BIDDER and submitted along with Technical offer compulsorily)

Vendor shall submit the following documents mandatorily as part of COMPLTE technical offer.

Enquiry No. / Date : _____

Name of the Bidder : _____

Project Name : _____

Item Description : _____

S. No	Document	Bidder confirmation (Yes/No)	Remarks
1	Technical offer complies with the specifications and its associated annexures, pre-bid clarifications in Toto and there are no technical deviations. Signed and stamped copy of this specification along with annexures enclosed along with technical offer.		
2	In case of deviation, vendor to confirm that these are technically not feasible deviations and same are submitted in BHEL format . In case technically feasible deviations are proposed by the bidder and subsequently withdrawn, <u>no commercial implications can be claimed by the bidder</u>		
3	All items are manufactured conforming to latest version of material grade standard and manufacturing standard mentioned in this specifications		
4	Bidder to quote as per BHEL price format only. No other format is acceptable. Bidder to attach un-priced price bid format by indicating "QUOTED" against each item and submit with technical offer duly signed & stamped.		
5	For addition/reduction of quantity, unit rate quoted in the present offer shall be considered during ordering and shall be valid up to execution of the contract to the extent of + 10% and -30% of order Value.		
6	Bidder to agree that Bill of materials / list of equipment furnished in the offer is only for information; Vendor shall supply all the material to meet the performance, sizing & technical requirement as per specification & its Annexures, scope matrix etc.		
7	Confirm that the quote includes training, commissioning spares, special tool & tackles, mounting hardware/ accessories, terminations, networking components etc. as required for commissioning activities.		
8	Bidder to confirm that all networking components/ hardware software, licenses as required for complete functional operation of the all systems are included.		
9	All the equipments / items / sensors / detectors etc., supplied by bidder are having valid statutory approval certificates and same will be produced at any stage of contract execution to BHEL. The same were eligible to take local statutory regulatory body approval during commissioning of the system		

Ref. Doc

(Bidder's Signature and stamp with date)

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6. List of Annexures (To followed along with this specification)

Document No.	Document Name
Annexure – [A]	Bill of material [for <u>Main Supply + Mandatory Spares</u>]
Annexure – [B]	Price Bid format [for <u>Main Supply + Mandatory Spares</u>]
Annexure – [C]	PLC Configuration Diagram
Annexure – [D]	Technical Specification for PLC System
Annexure – [E]	Master Document Schedule
Annexure – [F]	Quality Requirements

7. Scope Matrix for Supply, Engg and Installation & commissioning

S.No.	Description	Engineering by	Supply by	Erection by	Supervision of Erection by	Commissioning by	Remarks
[A]	FPS PLC including Remote IO cabinets, operation station, Engg station, softwares, etc. based on IO count	Bidder (Note-3)	Bidder	BHEL	Bidder (Note-1,2,4)	Bidder + BHEL (Note-2)	Note-(5)

Notes:

- Termination accessories and termination of all types of cables at bidder supplied items/panels shall be in Bidder scope.
- BHEL will provide the necessary man power required for commissioning. However system commissioning shall be done by bidder only.
- Engineering of Panels, model selections, configuration of software, etc are part of Bidder scope.
- Any special activities involved in erection like FO cable splicing, termination, etc. shall be by bidder including special tools & tackles.
- PLC I/O List, Signal grouping, Logic diagrams & inputs for graphics shall be provided by BHEL after P.O. placement.

8. Technical SPECIFICATIONS

S. No.	System	:	Technical specifications																														
[A]	PLC System for FPS package																																
1	Bill of material	:	Refer Annexure-[A] of this specification for <u>Main Supply + Mandatory Spares</u>																														
2	PLC configuration	:	Refer Annexure-[C] of this specification																														
3	I/O Count	:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">S. No.</th> <th style="width: 40%;">System</th> <th colspan="3" style="width: 50%;">No. of I/O's</th> </tr> <tr> <th></th> <th></th> <th>Analog Input</th> <th>Digital Input</th> <th>Digital Output</th> </tr> <tr> <td>1</td> <td>FPS PLC</td> <td>100</td> <td>90</td> <td>28</td> </tr> <tr> <td>2</td> <td>Remote IO-1 (Booster Pump House)</td> <td>10</td> <td>28</td> <td>8</td> </tr> <tr> <td>3</td> <td>Interposing Relays</td> <td>NA</td> <td>NA</td> <td>Applicable for DO's</td> </tr> <tr> <td>4</td> <td>Isolators & trip amplifiers</td> <td colspan="3">20</td> </tr> </table>	S. No.	System	No. of I/O's					Analog Input	Digital Input	Digital Output	1	FPS PLC	100	90	28	2	Remote IO-1 (Booster Pump House)	10	28	8	3	Interposing Relays	NA	NA	Applicable for DO's	4	Isolators & trip amplifiers	20		
S. No.	System	No. of I/O's																															
		Analog Input	Digital Input	Digital Output																													
1	FPS PLC	100	90	28																													
2	Remote IO-1 (Booster Pump House)	10	28	8																													
3	Interposing Relays	NA	NA	Applicable for DO's																													
4	Isolators & trip amplifiers	20																															
4	System Loading	:	Loading of controller shall not exceed 50% with installed spares; Also refer Annexure-[D] of this specification																														
5	System Redundancy	:	Controller - 1:1; Communication / Network cords – 1:1; Power supply – 1:1; I/O cards – 1:1; PLC shall be provided with 100% redundancy i.e. hot standby. Also refer Annexure-[D] of this specification																														
6	Spares philosophy	:	Refer Annexure-[D] of this specification																														
7	Work stations' s Control desk	:	Refer Annexure-[D] of this specification along with 1 set of keypad and Locker set																														
8	Chairs	:	1 No Industry standard revolving chairs for each work station with wheels and with provision for adjustment of height (hydraulically/gas lift) shall be provided. These shall be designed for sitting for long duration such that these are comfortable for the back																														

Form No.


HYDERABAD

PRODUCT STANDARD

PROJECT ENGINEERING & SYSTEMS DIVISION

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9	Other technical requirements	:	1) Refer Annexure-[D] of this specification 2) Software Licenses shall be valid for life time. 3) All softwares provided shall necessarily include the cost for perpetual license(s) for use on all the machines and shall include software upgrades as & when released by the software agency for a period of three (3) years after warranty/guarantee period. 4) PLC shall be provided with necessary interface hardware and software for dual fiber optic connectivity & interconnection with station wide LAN for two –way transfer of signals for information sharing. The information shall be made available through Ethernet link following TCP/IP standard. The system shall be OPC compliant. All required plant data shall be transferred ensuring complete security. 5) Time Synchronization: Station LAN shall also be used for time synchronization of PLCs connected on the LAN
10	Operation requirements	:	The PLC based panel at fire water pump house and Remote IO panel at Booster pump house shall indicate the status of each pump, system pressure, operation of hydrant and/ or spray system, failure of starting of pumps, healthiness & failure of batteries / chargers, main supply, low level of fuel oil of diesel engines, tripping of pumps, low level / very low level of water level in the water supply system, status of batteries & chargers of panels and diesel engines etc. Alarms from these panels shall also be available to operator at fire alarm addressable panels, central monitoring station and DDCMIS. Operation of Hydrant and Spray booster pumps shall be possible from booster pump house control room through GIU as well as from OWS at Main fire water pump house

9. Panel Specification

9.1 PLC Panels and Remote IO Panels shall be designed & manufactured as per Annexure-[D] of this specification.

9.2 Other requirements shall be as given below:

a)	Installation location	:	FPS PLC: Indoor in air-conditioned room Remote IO panels : Indoor in air conditioned room
b)	Panel colour	:	To be intimated during detail engineering
c)	Panel Cable entry	:	From Bottom
d)	Removable gland plate at bottom	:	Required

10. POWER SUPPLY

10.1 Purchaser shall provide the power supplies as per scope markings indicated in Annexure-[C] of this specification. Further conditioning & distribution within bidder supplied Panels/system & HMIs shall be in bidder scope. Vendor shall do the distribution with necessary protections & metering. Power distribution scheme shall be approved by purchaser.

10.2 24 V DC power supply system for each PLC based control system shall comprise of two sets, each set shall consist of 1x100% microprocessor controlled, intelligent, modular rectifier banks, Controller – one for each rectifier bank, 1x100% Nickel - Cadmium batteries for one (1) hour duty, 1x100% DC distribution board and 1x100% Microprocessor controlled Battery Health Monitoring System (BHMS)– common for both the sets.

10.3 Vendor shall supply accessories (like cable glands, plugs, etc.) required for termination of purchaser’s as well as vendor power & control cables at vendor supplied equipments.

10.4 Vendor shall furnish above feeder capacity during order execution with calculations.

10.5 All internal distributions shall be designed such that a single power fault in any instrument branch system shall not cause a trip of the entire system. Each consumer shall be provided with separate switch & isolation fuse.

10.6 For detailed specification of power supply system, please refer Annexure-[D] of this Specification.

11. EARTHING

11.1 All panels, desks, cabinets shall be provided with a continuous bare copper ground bus. The ground bus shall be bolted to the panel structure on bottom on both sides. The bolts shall face inside of panels. The system ground shall be isolated from the panel ground with suitable isolators. All internal component grounds or common shall be connected to the system ground, which shall be fabricated of copper flat (size 25mm x 6mm min., length as applicable). Shield on instrumentation cables shall be grounded on panel side. When shielding termination is required in cabinets furnished under this specification, suitable terminals shall be furnished on copper flat forming system ground.

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	11.2 Scheme for recommended earthing system/earth pit shall be furnished by vendor during order execution for approval. 11.3 Earth points of all panels shall be looped together and shall be terminated at BHEL’s earth raisers at single point. 11.4 All hardware with in package required for earthing & connectivity up to BHEL’s earth points shall be in vendor scope. 12. Bidder’s Scope of SERVICES 12.1 Supervision of erection & commissioning, performance guarantee testing & trial run and final handing over to end customer for the supplied systems. 12.2 Number of man days and number of visits as specified in the “Annexure-[A] of this specification” shall be considered. However, either or both of the number of man days or no of visits may increase / decrease based on the actual site requirement. 12.3 Bidder to mobilize concerned competent person for supervision of Erection & commissioning activities within a period of 7 days of receipt of intimation in this regard from BHEL. 12.4 Following shall be the scope of work for services: a) Services charges shall include the travel to & fro travel from vendors work to site, lodging, boarding & local travel. Vendors shall arrange their own lodging, boarding & traveling. b) Vendors shall arrange their own Test equipment’s, commissioning tools, manpower etc as required. 12.5 Above services shall be ordered by BHEL Site at the time of commissioning. However vendor shall submit the price offer for services as per “Annexure-[A] of this specification” and same shall be considered for L1 evaluation. 13. MANDATORY SPARES - Spares requirement shall be as per enquiry & “Annexure-[A] of this specification”. 14. Erection & Commissioning SPARES 14.1 All commissioning spares as required during erection and commissioning of all the systems are included in bidder’s scope & shall be supplied along with the main supply/package. 14.2 Bidder to ensure that all the spares are procured from the original equipment manufacturers (as per their recommendation) and shall make them available at site well before the start of commissioning activities. 15. TRAINING 15.1 Bidder shall arrange training for Owner’s personnel. Different type of courses shall be offered for operation / process engineers and operators, instrument maintenance engineers and technician. 15.2 Travel and living expenses of the owner’s personnel shall be borne by the Owner. Apart from the hardware and software maintenance training and site training, bidder shall also offer operation training basically meant for operating personnel. 15.3 The various facilities available in the system for operation, actions required during emergencies and identifying the various diagnostic messages shall be the main contents of the operation training. 15.4 The duration & location of the training shall be as per “Annexure-[A] of this specification”. 16. DOCUMENTATION 16.1 Information to be included with offer Vendor shall make the offer in detail, with respect to every item of the Purchaser’s specifications. Any offer not conforming to this shall be summarily rejected. a) Duly filled & Signed copy of Check list b) Deviation list, if any (as per “No deviation format” given in this specification). If there are no deviations, bidders shall submit “Deviation format” by mentioning deviations “Nil”. c) Unpriced price schedule (To be submitted compulsorily without fail) d) Bill of materials 16.2 Documentation after P.O. Placement a) Submission of documents as per “Master documents schedule” (which will be finalized in Kick-off meeting after award of the contract) within 2 weeks of placement of LOI (for approval by BHEL and / or BHEL’s customer in 4 sets)			Ref. Doc

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	Ref. Doc	b) <i>All vendor documents of PLC and its sub-items shall be submitted to NTPC for approval during order execution. Any comment furnished by NTPC / BHEL shall be taken care by vendor during ordering execution.</i> c) Further BHEL will provide comments on vendor submitted document within 25 working days for revision & resubmission. Vendor shall follow up with BHEL for non-receipt of comments/approvals. d) Revised drawings / Documents shall be submitted by Bidder in 07 days of receipt of comments / observations from BHEL. BHEL shall revert within 25 days on receipt of these revised documents / drawings from vendor for approvals. e) All the approvals required for manufacturing shall be completed with 2months from P.O to meet the P.O delivery schedule. Accordingly vendor shall ensure the submission of approval category documents (which are required for manufacturing) and obtain their approvals. f) Vendor shall obtain final approvals on all technical + quality aspect documents before inspection dates. g) It is vendor's responsibility to obtain approvals from BHEL as earliest as possible to meet PO delivery schedules. Accordingly vendor to plan and execute the supplies in time. 16.3 Documents to be submitted during final shop testing and before equipment dispatch. (Note: submission of these documents are commercially linked) - all in 16 sets (2 sets to be included with item dispatch and balance to BHEL purchase department). a) Complete O& M manual. b) Approved Engg documents c) As-Shipped documents d) As-Built documents e) Guarantee and all test certificates for review and acceptance by BHEL and / or BHEL's Customer 3 sets of CD-ROM – containing O&M manual and Engineering documents (1 set to be included with item dispatch and balance to BHEL purchase department). 17. MARKING, PACKING AND DESPATCH 17.1 All items shall be marked (stamped/etched) in accordance with the applicable code/standard/specification. In addition, the item code, if available, shall also be marked. 17.2 For ease of identification, the color of painted strip (wherever required) shall be as per the applicable standard. 17.3 Part number/Dispatch link-up of all the equipment's/items supplied and also their co-relation with system/drawing/approved BOQ. 17.4 Paint or ink for marking shall not contain any harmful metal or metal salts which can cause corrosive attack either ordinarily or in service. Special items/smaller items shall have attached corrosion resistant tag providing salient features. 17.5 The equipment shall be transported to site by the vendor in fully assembled condition. However, in case some components are liable to be damaged during transit, the same shall be dismantled and supplied separately, to be reassembled at site the vendor. Assembly of the item supplied loose at site and repairing of any item damaged during transport shall be in the vendor's scope. The vendor shall send each consignment to site with a detailed packing list. 17.6 All the equipment shall be divided into several sections for protection and ease of handling during transportation. The equipment shall be properly packed for transportation by ship/rail or trailer. The equipment shall be wrapped in polythene sheets before being placed in crates/cases to prevent damage to the finish. Crates/cases shall have skid bottom for handling. 17.7 Special notations such as 'Fragile', 'This side up', 'Center of gravity', 'Weight', 'Owner's particulars', 'PO Nos.' etc. shall be clearly marked on the package together with other details as per purchaser order. 17.8 The equipment/items may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage in areas with heavy rains/high ambient temperature, unless otherwise agreed. 17.9 The following minimum packing procedures shall be followed:- a) All items shall be dry, clean and free from moisture, dirt and loose foreign material of all kinds. b) All items shall be protected from rust, corrosion, and mechanical damage during transportation and handling. c) Each variety and size of item shall be supplied in separate packaging marked with the purchase order no., item code (if available), and the salient specifications.	

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- d) All electrical, instrumentation etc., shall be properly packed to prevent damage during transport, storage, handling at site.
- e) All the items which the Bidders considered liable to be damaged during shipment or storage, shall be packaged for separate shipment. If instruments are removed from the panel, they and their connection shall be suitably tagged to ensure simple re installation at the job site. Each instrument shall be sealed in plastic bags containing moisture absorbing dessicants.
- f) It shall be bidder's sole responsibility to protect all the material during period of dispatch, storage and erection against corrosion, incidental damage due to vermin, sunlight, rain, high temperature, humid atmosphere, rough handling in transit and including delays in transit.
- g) Mandatory Spare parts shall be packaged separately and clearly marked as 'Mandatory Spares '.
- h) Commissioning spares, Tools & tackles to be packed separately & suitably tagged.

17.10 *Mandatory spares should be supplied separately with green colour painted box.*

17.11 *Loose vendor items sent by vendor to sites shall be quantified/numbered/tagged and not merely mentioned as ONE lot of loose items.*

17.12 A packing list covering items having shelf life are to be intimated to site. Also, shelf life items shall be packed separately in black color painted box for easy identification at site.

18. TESTING, INSTALLATION, COMMISSIONING & ACCEPTANCE – As per Annexure-[D] of this specification.

18.1 Final Inspection including document verification as per approved QAP shall be carried out by CUSTOMER /CONSULTANT/ CUSTOMER's Third Inspection Agency & BHEL/BHEL's Third Party Inspection Agency at vendor works.

18.2 Inspection & Factory Acceptance Test at Vendor works – by BHEL + VENDOR + NTPC as per approved FAT procedure

18.3 Site Acceptance Test at site - by BHEL + VENDOR + NTPC as per approved SAT procedure

18.4 Representative of OEM shall also required to be present during Factory acceptance testing of PLC.

19. WARRANTY

The warranty shall be valid for 36 calendar months commencing from date of supply (or) 24 calendar months commencing from the date of commissioning” whichever is earlier.

20. SUB VENDOR LIST

Bidder to supply the all items from following manufacturers.

S NO.	Item Description	Approved make
1	PLC System	As per attached vendor list
2	Mini UPS (up to 2.5 KVA)	As per attached vendor list
3	DC UPS for PLC	As per attached vendor list
4	Ni-Cd Battery for PLC system	As per attached vendor list
5	Instrumentation Cable	As per attached vendor list
6	Fibre Optic Cables	As per attached vendor list
7	Terminal Block	Phoenix / Wago / Wied Muler / Elemax (CE marked only)
8	24V Intelligent Battery Charger / DCDB & BHMS	As per attached vendor list
9	Graphical Interface Units (GIU)	As per attached vendor list
10	OWS / PC	Compaq (HP) / IBM (Lenovo) / DELL
11	Laser Printer	HP / Canon / IBM / Xerox / EPSON / LEXMARK (brand name)
12	Computer furniture	Main contractor approved sources

Note: If any component is not appearing in above the list, makes of the same shall be proposed by bidder during order execution for NTPC's approval.

DEVIATION FORMAT

Enquiry No.:Item:Name of Bidder:Offer Ref. No.:

Sl. No.	Clause no. & Spec. no.	Description as per Specification	Deviation taken	Nature of Deviation	Remarks

NOTES:

- 1. Clause deleted.**
- Deviations, if any, shall be clearly brought out only in this format. Deviations mentioned / taken elsewhere or in any other format will be ignored.
- Additional sheets in the same format can be attached by the vendor, if necessary.
- Nature of Deviations shall only be of Design / Manufacturing constraints and non-availability of items / components / makes in market.
- No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of Price implications.
- Reasons for the deviations shall be specified in the Remarks column.
- If there are no deviations from the specifications, bidder still has to submit the signed copy of this format by writing "NO Deviations" on this format.
- If the "Deviation Schedule" is not submitted along with the offer, the bidder's offer is likely to be rejected without any further interaction with the bidder. Only the accepted deviations in conjunction with the original tender shall constitute the contract document for the award of job to the bidder

SIGNATURE OF THE BIDDER_____

NAME_____

DESIGNATION_____

DATE_____

COMPANY SEAL

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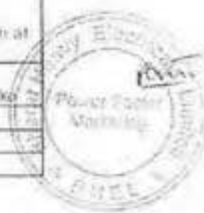
TD-106-3 Rev No. 5 Form No.		PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD				PY 56396
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	Rev. No.	Date	Revision Details	Revised By	Approved By	
	00	06.02.2020	Original issue	-----	Anand	
	Ref. Doc.					

		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 02.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
Sr No	Major Equipment	QP Inspection Category	Proposed Sub Supplier	Place/Country	Provenness Category	Approval Status	Remarks
1	AAQMS						
		I	Chemtrol Engineering Ltd	Goa	Note-1	A	AAQMS analysers from M/S Teledyne & meteorological sensors & SPM analysers from Met one Instruments Inc USA
		I	Environment SA India Pvt. Ltd.	Bangalore	Note-1	A	Analysers SO2,NOx,CO2 & SPM from Environment SA France. 2-Multipoint Calibrator From LM Industries SA Switzerland. 3-Metrological Sensor with interface unit from M/s LSI Lastam SPL Italy
		I	Thermo Fisher Scientific India Pvt. Ltd	Mumbai	Note-1	A	1) Analysers (Sox,NOx,CO,SPM,RSPM, Ozone) multi gas calibrator shall be sourced from their principle Thermo Environmental USA (Division of M/S Thermo fisher Scientific USA) 2) Mercury analyser shall be sourced from M/S Mercury Instruments GMBH Germany. 3) Metrological sensors shall be sourced from M/S Metone Instruments USA
		*	LAND COMBUSTION	UK	Note-1	DR	
2	Acoustic pyrometers						
		I	HI TECH SYSTEMS & SERVICES LTD	Kolkata	Note-1	A	M/S BONNENBERG-DRESCHER GMBH,GERMANY MAKE SYSTEM
		II	M/s Scientific Environment Instrument Inc	USA	Note-1	A	Conditional as per approval letter 01/COA/3520-001 dated 02.02.2000
		II	M/s Bonnenberg + Drescher GmbH	Germany	Note-1	A	
		II	STOCK Equipment Co	USA	Note-1	A	Conditional as per approval letter 01/COA/4330-102 dated 21.08.2001
3	Acoustic Coal Flow Detector						
		III	Stock Redler India Pvt Ltd	Bangalore	Note-1	A	AFM Shall be of M/S Stock USA make
		III	Memick Industries (India) Pvt Ltd	Bangalore	Note-1	A	AFM Shall be of M/S Memick Inc USA make
		III	Stock	USA	Note-1	A	
		III	Menck	USA	Note-1	A	
4	ADDRESSABLE DETECTORS (MULTI SENSOR, PHOTO & HEAT DETECTORS TYPE), INTERFACE UNITS & MANUAL CALL POINTS						
		II	NOTIFIER	USA	Note-1	A	
		II	AUTRONICA	NORWAY	Note-1	A	
		II	SCHRACK	AUSTRIA	Note-1	A	



27/6/19

		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 01.06.2015
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		II	EDWARDS	USA	Note-1	A	
		II	Tyco	USA	Note-1	A	for Simplex brand
		*	ESSER (HONEYWELL)	GERMANY	Note-1	A	
5	Battery (Ni-Cd)						
		I	SAFT INDIA LIMITED	Bangalore	Note-1	A	
		I	HBL POWER	Hyderabad	Note-1	A	Upto 900AH(H type)
		II	SAFT	France/Sweden	Note-1	A	
		II	HOPPECKE BATTERIEN GMBH & CO KG	Germany	Note-1	A	
		*	Cummins Pulse Lite		Note-1	DR	
6	Blank Panels / Cabinets						
		III	Rittal	Bangalore	Note-1	A	
		III	Hoffman	Bangalore	Note-1	A	
		III	Pyrotech	Udaipur	Note-1	A	
		III	BHEL	Bangalore	Note-1	A	
7	Boiler tube leak detection system						
		II	HI TECH SYSTEMS & SERVICES LTD	Kolkata	Note-1	A	1. Critical items like air blone sensors, pre amplifiers, pre amp cables, all racks will be sourced from AMI - USA. 2. Others items are to be procured as under: a) Air filter regulator with connector, SOV shall be of ASCO India make. b) PLC & panel & software shall be ABB/SIEMENS/Rockwell make. c) PC, Printer & monitor shall be of Dell /HP/Lenovo make. d) PTFE Isolator -Victrex makes (AMI design). e) Wave surfer, Hitech system (SS-304).
		III	BHEL	Trichy	Note-1	A	
		III	Raman Instruments	Delhi	Note-1	A	M/S PROCON, UK MAKE SYSTEM
		III	INSTROTECH (PTY) Ltd	South Africa	Note-1	A	
		III	Rectuson Restisan Co. Ltd	Korea	Note-1	A	
		III	Procon	UK	Note-1	A	
		III	Acoustic Monitoring International Inc.	USA	Note-1	A	
8	CCTV Components (IP)						
		II	Axis	Sweden	Note-1	A	1. CCTV components will be of Axis communication AB Sweden make & Video Management Software will be of Milestone Brand. 2. To make the system complete, other indigenous items like server/OVS/PC, Network Switch, Cables etc are to be procured from owner approved sources which will be tied up during the finalization MOP. 3. TOSHNIWAL INDUSTRIES PVT LTD will do the complete integration of CCTV Sytem and Installation at site.
		III	Honeywell Security & Fire	Gurgaon	Note-1	A	CCTV active component including explosion proof camera along with VMS will be honeywell china make
		III	Pelco	USA	Note-1	A	PELCO MAKE-IP BASED
		*	HONEYWELL AUTOMATION	BANGALORE	Note-1	DR	
		*	SCHNEIDER ELECTRIC	BANGALORE	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.06.2015	
		CONTRACTOR :BHEL						
		CONTRACT NO :						
		*	TYCO FIRE AND SECURITY	BANGALORE	Note-1	DR		
		*	CISCO		Note-1	DR		
		*	D-LINK		Note-1	DR		
		*	NELCO	MUMBAI	Note-1	DR		
		*	NEURAL INTEGRATED SYSTEMS	BANGALORE	Note-1	DR		
		*	TEXONIC INSTRUMENTS	BANGALORE	Note-1	DR		
		*	WPRO INFOTECH	BANGALORE	Note-1	DR		
		*	ORANGE BUSINESS SERVICES		Note-1	DR		
		*	POLIXEL SECURITY SYSTEMS	GURGAON	Note-1	DR		
		*	BINARY SYSTEMS PVT LTD.	BANGALORE	Note-1	DR		
		*	NETWARE COMPUTERS	New Delhi	Note-1	DR		
9	Coal bunker level Monitoring system							
		III	APM	Israel	Note-1	A	CBLM Sys (3D Type)	
		II	EIP Technologies Pvt Ltd	Noida	Note-1	A	CBLM Sys (3D Type) / As a system integrator for the APM Israel make system	
		III	THERMO FISHER SCIENTIFIC PVT. LTD.	Pawane	Note-1	A	Strain Gauge Type /For Ramsey supplied system	
		III	KISTLER - MORSE AUTOMATION LTD.,	HYDERABAD	Note-1	A	CBLM Sys(StrainGauge Type) / Microcells sensors (with environmental covers), Junction Boxes with Microcells, Multi - Vessel System to be procured from M/s Kistler-Morse Corporation, USA. Make of Bar graph indicator should be M/s M System, Japan or Owner approved source. 2. Other indigenous items like Panel for housing Multi- Vessel System, Enclosure for Bar Graph Indicator, Master Junction Box etc. should be sourced from Owner agreed sources	
		*	EMERSON PROCESS MANAGEMENT	MUMBAI	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	ENDRESS + HAUSER INDIA PVT. LTD.	MUMBAI	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	KISTLER MORSE AUTOMATION LTD	HYDERABAD	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	KROHNE MARSHALL PVT LTD.	PUNE	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	K-TEK	LONGMEADOW	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	SIEMENS LIMITED	BANGALORE	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	VEGA INDIA LEVEL & PRESSURE MEASUREMENT PVT LTD.	MUMBAI	Note-1	DR	CBLM Sys (Ultrasonic Or RADAR Type) Panel	
		*	THERMO RAMSEY INC	CHICAGO, USA	Note-1	DR	CBLM Sys(StrainGauge Type) Panel /Approved for Australia works	
		*	VENTURE MEASUREMENT	USA	Note-1	DR	CBLM Sys(StrainGauge Type) Panel	
10	CHLORINE LEAK DETECTOR				Note-1		Note-10	



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		PROJECT : UPRVUNL 1x500 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00 DATE : 03.05.2015
		PACKAGE : EPC					
		CONTRACTOR : BHEL					
		CONTRACT NO :					
11	Coal feeder control system	I	Stock Redler India Pvt Ltd	Bangalore	Note-1	A	MAIN COMPONENTS FROM M/S STOCK USA
		I	Merick Industries (India) Pvt Ltd	Bangalore	Note-1	A	MAIN COMPONENTS FROM M/S MERICK USA
		I	BHEL	TRICHY	Note-1	A	BOI SHALL BE FROM LOA AGREED SOURCES
		III	STOCK	USA	Note-1	A	
		III	MERICK	USA	Note-1	A	
		*	SCHENCK PROCESS SOLUTIONS INDIA	BANGALORE	Note-1	DR	
12	Coal Flow Monitoring System	II	PRIMECON	GERMANY	Note-1	A	
		II	SWR Engg	GERMANY	Note-1	A	MICROWAVE TYPE (SOLID FLOW PF)
		II	EU Tech	GERMANY	Note-1	A	MICROWAVE TYPE * Complete system will be imported from Eutech-Germany * Item is to be supplied meeting owner Technical Specification & Approved Data sheet requirement
		*	TRANSWEIG	INDIA	Note-1	DR	
		*	TECHNOMARK ENGINEERS&CONSULTANT	INDIA	Note-1	DR	
		*	STOCK REDELLER	INDIA	Note-1	DR	
		*	GREENBANK ENERGY SYSTEM	USA	Note-1	DR	
		*	BERTHOLD	GERMANY	Note-1	DR	
		*	EDIT	Germany	Note-1	DR	
13	Control Desk	I	PYROTECH WORKSPACE SOLUTIONS PVT LTD	UDAIPUR	Note-1	A	BOI shall be as per owner approved makes
		I	COSMOS MEDIA PRODUCTS PVT LTD	GREATER NOIDA	Note-1	A	1. H block should be from Knurr Germany 2. Complete integrated mosaic grid should be procured from owner approved sources like Pro Plan/Subflow 3. solid acrylic surface should be procured from Du Pont/owner approved sources 4. Extruded Al profile structure should be procured from Hindalco (With Knurr design)
		I	ADARSHA CONTROL SYSTEM PVT LTD	BANGALURU	Note-1	A	1. Mosaic items should be from owner approved sources. 2. Acrylic solid surface (ASS) should be procured from Du Pont/owner approved sources 3. wood works are to be done by M/S C K Fum Bangalore
		*	HARMONY SYSTEMS	New Delhi	Note-1	DR	
		*	CHEMIN CONTROLS AND INSTRUMENTATION	PONDICHERRY	Note-1	DR	
		*	KHODAY CONTROL SYSTEMS	BANGALORE	Note-1	DR	
		*	CONTROL DEVICES	KOLKATA	Note-1	DR	
		*	CONTROL INFOTECH PVT LTD	BANGALORE	Note-1	DR	
		*	DYNASPEDE INTEGRATED SYSTEMS PVT. LTD.	HOSURE	Note-1	DR	
		*	ELKTRISCHEN POWER GEARS (P) LTD	BANGALORE	Note-1	DR	
		*	GEMCO CONTROLS LTD	FARIDABAD	Note-1	DR	
		*	HI-POWER CONTROLS	BANGALORE	Note-1	DR	
		*	JASPER ENGINEERS PVT LTD.	NOIDA	Note-1	DR	

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 02	
		PACKAGE : EPC					DATE : 03.06.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		*	KHOKHAR ELECTRICALS PVT. LTD.	NOIDA	Note-1	DR		
		*	KMG ATOZ SYSTEMS (P) LTD.	NOIDA	Note-1	DR		
		*	LOTUS POWER GEAR PRIVATE LTD.	BANGALORE	Note-1	DR		
		*	MEDITRON	RANCHI	Note-1	DR		
		*	POWER & PROECTION	KOLKATA	Note-1	DR		
		*	SEN & SINGH ENGINEERS	KOLKATA	Note-1	DR		
		*	SUN ELECTRO CONTROL SYSTEMS PVT. LTD	BANGALORE	Note-1	DR		
		*	SWITCHING CIRCUITS	KOLKATA	Note-1	DR		
		*	TECH-UP ENGINEERING	TRICHY	Note-1	DR		
		*	VEE VEE CONTROLS	BANGALORE	Note-1	DR		
		*	VENSON ELECTRIC CO. LTD	BANGALORE	Note-1	DR		
14	Control Valve for Start Up System							
		I	Control Component India PVT Ltd	Sncity	Note-1	A	1. The critical components of control valve i.e. Disk Stack (Drag technology) shall be sourced from CCI, USA/CCI KOREA. The positioner from Owner approved sources & pneumatic actuators are sourced from CCI Korea. 2. Control valve to be manufactured as per CCI USA design & drawing.	
		I	KOSO India Pvt Ltd	Nask	Note-1	A		
		II	SEMPPELL AG (TYCO GROUP)	Germany	Note-1	A	UP TO 20 INCHES 2500 ANSI CLASS	
		II	NIHON KOSO CO LTD	Japan	Note-1	A		
		II	HORA	Germany	Note-1	A		
		II	CCI	KOREA	Note-1	A		
		II	EMERSON (Fisher)	USA/France/Japan	Note-1	A		
		II	CCI	SWITZERLAND/USA	Note-1	A		
		*	PARCOL S.P.A.	MILAN, Italy	Note-1	DR		
		*	CONTROL COMPONENT INDIA PVT LTD	BANGALORE	Note-1	DR		
		*	DRESSER MASO	FRANCE	Note-1	DR		
15	Control Valve for BFP Recirculation.							
		I	Control Component India PVT Ltd	Sncity	Note-1	A	1. The critical components of control valve i.e. Disk Stack (Drag technology) shall be sourced from CCI, USA/CCI KOREA. The positioner from Owner approved sources & pneumatic actuators are sourced from CCI Korea. 2. Control valve to be manufactured as per CCI USA design & drawing.	
		I	KOSO India Pvt Ltd	Nask	Note-1	A		
		I	KSB MIL CONTROLS LTD	Thiruvur (KERLA)	Note-1	A	UP TO 10 INCHES & 3400 CLASS	
		II	DRESSER PRODUITS INDUSTRIELS S.A.S	France	Note-1	A		
		II	NIHON KOSO CO LTD	Japan	Note-1	A		
		II	CCI	USA	Note-1	A		
		*	CCI	AUSTRIA/KOREA	Note-1	DR		
		*	HORA	GERMANY	Note-1	DR		
		*	SEMPPELL	GERMANY	Note-1	DR		
		*	LESLIE	USA	Note-1	DR		
		*	NAKIKATA	JAPAN	Note-1	DR		
		*	PARCOL SPA	USA	Note-1	DR		



		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		*	YAMATAKE	JAPAN	Note-1	DR	
		*	BOPP & ROUTHER	GERMANY	Note-1	DR	
15	Control valve for feedwater flow Control						
		I	Control Component India PVT Ltd	Shriy	Note-1	A	1.The critical components of control valve i.e. Disk Stack (Drag technology) shall be sourced from CCI, USA/CCI KOREA. The positioner from Owner approved sources & pneumatic actuators are sourced from CCI Korea. 2.Control valve to be manufactured as per CCI USA design & drawing.
		I	KOSO India Pvt Ltd	Nask	Note-1	A	
		I	Emerson Process Management Ltd	Chennai	Note-1	A	1.The control valve body assembly will be manufactured and sourced from Nippon Fisher, Japan with IBR form III C certificates. 2.CV testing will be carried out at FCRI, Palakkad
		I	KSB MIL	Thiruv	Note-1	A	1.Provision of straight type of brackets for linkage mechanism. 2.Factory fitted strainer/diffuser type seat ring. 3.AFR with T connector for pneumatic connection to volume booster
		II	DRESSER PRODUITS INDUSTRIELS S.A.S	France	Note-1	A	
		II	NIHON KOSO Co Ltd	Japan	Note-1	A	
		II	CCI	USA / Austria / Korea / Switzerland	Note-1	A	
		II	EMERSON (Fisher)	USA/France/Japan	Note-1	A	
		*	BOMABA SPECIAL VALVE SOLUTIONS PVT LTD	Vatva, - Ahmedabad- GUJARAT	Note-1	DR	
		*	DRESSER VALVE INDIA PVT. LTD	Echanan Post, - Coimbatore- TAMIL NADU	Note-1	DR	
		*	Forbes Marshall Arca Pvt. Ltd	Pune	Note-1	DR	
		*	INSTRUMENTATION LTD.	KANJIKODE WEST, - PALAKKAD- KERALA	Note-1	DR	
		*	Mascot Valves Pvt. Ltd	GIDC Naroda - Ahmedabad- GUJARAT	Note-1	DR	
		*	HORA	GERMANY	Note-1	DR	
		*	LESLIE	USA/JAPAN	Note-1	DR	
		*	PARCOL SPA	USA	Note-1	DR	
		*	SEMPELL	GERMANY	Note-1	DR	
		*	R.K.CONTROL INSTRUMENTS PVT. LTD	THANE- MAHARASHTRA	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 08
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		*	Severn Glocon India Pvt. Ltd.	Irungattukottai, - Chennai-TAMIL NADU	Note-1	DR	
		*	SUZHOU DELAN ENERGY SCIENCE & TECHNOLOGY CO., LTD.	Suzhou-Foreign Country CHINA	Note-1	DR	
		*	Valvitelia S.P.A.	Tortona 65, Rivarazzano (Pavia) - Italy	Note-1	DR	
		*	WALDEMAR PRUSS ARMATURENFABRIK GMBH	Hannover- GERMANY	Note-1	DR	
17	Control valves for Soot blower pressure reducing, SH/ RH Attemperation.						
		I	Control Component India PVT Ltd	SRICITY	Note-1	A	1. The critical components of control valve, i.e. D&S Stack (Drag technology) shall be sourced from CCI, USA/CCI KOREA. The positioner from Owner approved sources & pneumatic actuators are sourced from CCI Korea. 2. Control valve to be manufactured as per CCI USA design & drawing.
		I	KOSO India Pvt Ltd	Nagik	Note-1	A	
		I	Emerson Process Management Ltd	Chennai	Note-1	A	
		I	KSB MIL	Thiruvai	Note-1	A	
		I	Flow Serve India Controls Pvt Ltd	Bangalore	Note-1	A	
		I	Instrumentation Limited	Palakkad	Note-1	A	
		II	DRESSER PRODUITS INDUSTRIELS S.A.S	France	Note-1	A	only for SH / RH
		II	Leslie Controls Inc	USA	Note-1	A	only for SH / RH
		II	SEMPELL AG T YCO	Germany	Note-1	A	
		II	CCI	USA/Sweden /Korea	Note-1	A	
		II	EMERSON (Fisher)	USA/France /Japan	Note-1	A	
		*	SEVERN GLOCON INDIA (P) LTD.	CHENNAI, India	Note-1	DR	
		*	DRESSER MASO	FRANCE	Note-1	DR	
		*	CONTROL COMPONENT INDIA PVT LTD	BANGALORE, Indi a	Note-1	DR	
		*	PARCOL S.P.A.	MILAN, Italy	Note-1	DR	
		*	HOLTER REGELARMATUREN GMBH	Germany	Note-1	DR	
		*	KOSO	Japan	Note-1	DR	
		*	ARCA REGLER GMBH	Germany	Note-1	DR	
		*	GE OIL & GAS INDIA PRIVATE LIMITED.	COIMBATORE, Ind ia	Note-1	DR	
		*	CCI	Austria	Note-1	DR	

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		PROJECT : UPRVUNL 1x660 MW PAKKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
18	Control valve(Other than BFP RC, FW flow Control.)						
		I	KOSO India Pvt Ltd	Nashik	Note-1	A	
		I	Emerson Process Management Ltd	Chennai	Note-1	A	
		I	Forbes Marshall Arca Pvt Ltd	Pune	Note-1	A	up to 16" and 900 Class
		I	Instrumentation Limited	Palakkad	Note-1	A	up to 2500 class
		*	DRESSER VALVE INDIA PVT. LTD	Echanan Post. - Coimbatore- TAMIL NADU	Note-1	DR	
		*	SUZHOU DELAN ENERGY SCIENCE & TECHNOLOGY CO., LTD.	Suzhou-Foreign Country CHINA	Note-1	DR	
		*	Valvitalka S.P.A.	Tortona 69,Rivanazzano (Pavia) - Italy	Note-1	DR	
		*	R.X.CONTROL INSTRUMENTS PVT. LTD.	THANE- MAHARASHTRA	Note-1	DR	
		*	Mascot Valves Pvt. Ltd.	GIDC Naroda - Ahmedabad- GUJARAT	Note-1	DR	
		*	BOMABA SPECIAL VALVE SOLUTIONS PVT LTD	Valva, - Ahmedabad- GUJARAT	Note-1	DR	
		*	Severn Glocon India Pvt. Ltd.	Irungattukottai, - Chennai-TAMIL NADU	Note-1	DR	
		*	WALDEMAR PRUSS ARMATURENFABRIK GMBH	Hannover- GERMANY	Note-1	DR	
		*	MIL CONTROLS LTD	ALWAYE	Note-1	DR	
19	Control valve(Other than Start up Control, SH/RH/SB Control.)- up to 2500 class, Pneumatic operated						
		I	Control Component India PVT Ltd	Shiradi	Note-1	A	- up to 2500 class, Pneumatic operated
		I	KSB MIL	Thiruvur	Note-1	A	- up to 2500 class, Pneumatic operated
		I	Emerson Process Management Ltd	Chennai	Note-1	A	- up to 2500 class, Pneumatic operated
		I	M/s GE Oil & Gas India Pvt Ltd, (Earlier known as Dresser India)	Coimbatore	Note-1	A	
		I	Flow Serve India Controls Pvt Ltd	Bangalore	Note-1	A	14" 600 Class
		I	Forbes Marshall Arca Pvt. Ltd.	Pune	Note-1	A	up to 16" and 900 Class
		I	Instrumentation Limited	Palakkad	Note-1	A	up to 2500 class
		II	CCI	USA/Sweden /Korea	Note-1	A	
		II	NIHON KOSO	JAPAN	Note-1	A	
		II	EMERSON (Fisher)	USA/France /Japan	Note-1	A	
		II	Leslie Controls Inc.	USA	Note-1	A	
		II	PARCOL S.P.A	Italy	Note-1	A	
		II	DRESSER PRODUCTS INDUSTRIELS S.A.S	France	Note-1	A	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		II	HORA	Germany	Note-1	A	
		*	Copes Vulcan	UK	Note-1	DR	
		*	KOSO	Palakkad	Note-1	DR	
		*	KOSO	Nashik	Note-1	DR	
		*	Spx Copes Vulcan	USA	Note-1	DR	
		*	Tyco Sempell	Germany	Note-1	DR	
		*	Mascot Valves Pvt. Ltd.	Ahmedabad	Note-1	DR	
20	Control valves						
		I	Severn Giecon India Pvt. Ltd.	Chennai	Note-1	A	UP TO 14 Inches 300 Class
		I	BOMABA SPECIAL VALVE SOLUTIONS PVT LTD	Ahmedabad	Note-1	A	For the supply of Aux PRDS with A182F92 material with conditions as per approval letter
		*	SUZHOU DELAN ENERGY SCIENCE & TECHNOLOGY CO., LTD	CHINA	Note-1	DR	
		*	Valvitaba S.P.A.	Italy	Note-1	DR	
		*	R.K. CONTROL INSTRUMENTS PVT. LTD.	THANE	Note-1	DR	
		*	Mascot Valves Pvt. Ltd.	Ahmedabad	Note-1	DR	
		*	WALDEMAR PRUSS ARMATURENFABRIK GMBH	Hannover-GERMANY	Note-1	DR	
21	Control Valve for Aux PRDS						
		I	M/S Instrumentation Limited	Palghat	Note-1	A	For the supply of Aux PRDS with A182F92 material with conditions as per approval letter
		I	M/S Koso India Pvt limited	Nashik	Note-1	A	For the supply of Aux PRDS with A182F92 material with conditions as per approval letter
		I	M/S Bomaba Special Valve solutions Pvt Ltd	Ahmedabad	Note-1	A	For the supply of Aux PRDS with A182F92 material with conditions as per approval letter
22	Coupling / Interposing relays		Paramount / Omron / OEN / Jyoti / Elsta or OEM approved sources		Note-1	A	Note-9
23	DCMIS						
		I	BHEL (MAX DNA)	BANGLORE	Note-1	A	
		I	SIEMENS AG	Germany	Note-1	A	
24	DEW Point Sensor / meter						
		*	GE Sensing EMEA	UK	Note-1	DR	
		*	Michell Instruments Limited	Germany	Note-1	DR	
		*	Bartec OMBH	Germany	Note-1	DR	
		*	Spectrum Automation And Controls	Fardabad	Note-1	DR	
25	Dust Emission Monitor						
		III	Land Instruments International	UK	Note-1	A	For In Situ type / Optical Transceiver type
		III	Codel	UK	Note-1	A	For In Situ type / Optical Transceiver type
		III	Durag	Germany	Note-1	A	For In Situ type / Optical Transceiver type
		III	Emerson Process Management	Ireland	Note-1	A	For In Situ type / Optical Transceiver type
		III	SICK AG	Germany	Note-1	A	In Situ & Extractive type / Optical Transceiver type /
		*	FORBES MARSHALL CODEL PVT. LTD	Pune	Note-1	DR	
		*	CHEMTROLS INDUSTRIES PVT LTD.	MUMBAI	Note-1	DR	
26	Electric to Pneumatic converter						
		III	IMI NORGEN	India	Note-1	A	Make : WATSON SMITH



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		PROJECT : UPRVUNL 1x660 MW PANKU		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		III	Fair child	USA	Note-1	A	
		*	ABB	INDIA	Note-1	DR	
		*	SMC PNEUMATICS	Noida	Note-1	DR	
		*	P&F	Bangalore	Note-1	DR	
		*	Fair child India Pvt Ltd	Noida	Note-1	DR	
		*	Festo	Bangalore	Note-1	DR	
27	ELECTRICAL ACTUATOR (WITH GEAR BOX, IF APPLICABLE)						
		II	Antrieb Technik Pvt Ltd	Chennai	Note-1	A	For low torque app like SH/RH vent circulation & Feed water isolation
		II	Auma	Bangalore	Note-1	A	
		II	Rotork	Bangalore	Note-1	A	For low torque app (Up to 1000 Newton meter)
		II	Rotork Controls (India) Private Ltd	Chennai	Note-1	A	For low torque app (Up to 1000 Newton meter) & High torque 4000 to 7000 NM With integral starter for non critical applications
		II	Limitorge	Fandabad	Note-1	A	Model no L120, SM6, LY series, Gear Box T. HBC Series
		III	Auma	Germany	Note-1	A	
		III	Nippon gear	Japan	Note-1	A	
		III	Drehmo GMBH	Germany	Note-1	A	C MATIC SERIES (DMC/DMCR) file not available
		III	Rotork	UK	Note-1	A	For low torque app (Up to 1000 Newton meter)
		III	Harold Beck & Sons Inc	USA	Note-1	A	ONLY FOR ELECTRONIC ACTUATOR (For Blade pitch IGV and Scoop)
		*	Limitorge	UK	Note-1	DR	
		*	LINDCO	USA	Note-1	DR	
28	Electrical actuator for ID/FD/PA Blade pitch IGV & SCOOP						
		III	Harold Beck & Sons Inc	USA	Note-1	A	
		III	SIPOS Aktomatik GmbH	Germany	Note-1	A	
		*	AUMA (INDIA) PRIVATE LIMITED	BANGALORE	Note-1	DR	
		*	ABB	GERMANY	Note-1	DR	
29	Electrical Control Panel (UCB/backup)						
		I	Pyrotech Electronics Pvt limited	Udaipur	Note-1	A	
30	Electrical Indicating Instruments (Mosaic Compatible)						
		III	Siemens	Germany	Note-1	A	
		III	Ganz	Germany	Note-1	A	
		III	Gossen / Metrowatt / Camille Bauer	Germany	Note-1	A	
		III	Weigell Messgeräte	Germany	Note-1	A	
31	Mosaic tiles /Console items						
		III	PRO PLAN EARLIER BOYKO STREY	Germany	Note-1	A	
		III	TEW EARLIER SUBKLEW	Germany	Note-1	A	



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		PROJECT : UPRVUNL 1x650 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2019
		CONTRACTOR : BHEL					
		CONTRACT NO :					
32	Electromagnetic Flow Meter						
		III	M/S Siemens Sensor & Communication Ltd	China	Note-1	A	Supply of Full bore in line type Electromagnetic flow meter up to 1500 NB size
33	EQMS				Note-1		Note-10
34	Fiber optic cable						
		Note-3	HFCL	Goa	Note-1	A	
		Note-3	Aksh Fibre	Bhiwadi	Note-1	A	
		Note-3	Finglex	Pune/Goa	Note-1	A	
		Note-3	M/S Birla Cable Limited	Rewa	Note-1	A	
		Note-3	APAR INDUSTRIES LIMITED	Valsad	Note-1	A	
		*	D-LINK	INDIA	Note-1	DR	
		*	R&M	INDIA	Note-1	DR	
		*	SCHNEIDER-DIGILINK	INDIA	Note-1	DR	
		*	TYCO/AMP	INDIA	Note-1	DR	
		*	FIBERTEK	BANGALORE	Note-1	DR	
		*	AKASH SOLAR	INDIA	Note-1	DR	
		*	PRISHA NETWORK	BANGALORE	Note-1	DR	
		*	MICRONOVA IMPEX	BANGALORE	Note-1	DR	
		*	WEBCOM	BANGALORE	Note-1	DR	
		*	MICRO SOLUTION	BANGALORE	Note-1	DR	
		*	TEXONIC	BANGALORE	Note-1	DR	
		*	BINARY SYSTEMS PVT LTD	INDIA	Note-1	DR	
		*	NETSOFT TECHNOLOGIES	INDIA	Note-1	DR	
		*	SCHNEIDER ELECTRIC	BANGALORE	Note-1	DR	
		*	INTERFACE CONNECTRONICS	INDIA	Note-1	DR	
		*	RPG CABLES LIMITED	THANE	Note-1	DR	
35	Flame Monitoring System (SCANNER)						
		II	Durag India Instrumentation Pvt Ltd	Bangalore	Note-1	A	FOR Durag Germany based flame scanners.
		II	ABB	Bangalore	Note-1	A	Critical items like Sensor, Analyzer unit, Power Supply & Diode O ring will be sourced from Principal ABB-Italy ii) Complete assembly / wiring of the panel & final testing of the complete flame scanner system will be done at ABB-Bangalore works.
		II	FORNEY	USA	Note-1	A	
		II	BFI	Germany	Note-1	A	
		II	BHEL	Trichy	Note-1	A	
		*	MAXON A HONEYWELL COMPANY	INDIANA USA	Note-1	DR	
		*	LUCENT MARCONS (P) LTD.	NOIDA	Note-1	DR	
		*	FIVES COMBUSTION SYSTEMS PVT. LTD.	GUJARAT	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKU		LIST OF CSI ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
35	Flow nozzle						
		I	Microprecision	Palwal	Note-1	A	Flow nozzle assembly Alloy steel material grade P-92 & other conditions as per approval letter
		I	MINCO India Flow Elements Pvt. Ltd.	Goa	Note-1	A	1- up to 26 inches for Alloy steel/ Stainless steel pipe SA335 P-11, P-22 and SA 335 P-91 2- Branch pipe will be issued as free issue item from main supplier to manufacturer or procure from Customer approved sources by manufacturer from vendor identified in the contract agreement. However raw material / forging for flow nozzle will be procured by manufacture as per their standards regular suppliers. 3. Carrying out wet calibration of flow nozzle assembly at FCRI or owner agreed third party laboratory.
		I	Instrumentation Limited	Palakkad	Note-1	A	Approved up to alloy steel grade P-92 subject to qualified WPS & other conditions as per approval letter
		I	Starmech controls (India) Pvt Ltd	Pune	Note-1	A	Approved up to alloy steel grade P-92 subject to qualified WPS & other conditions as per approval letter
		II	SEIKO	Austria	Note-1	A	
		II	WMSE Control	Korea	Note-1	A	
		II	TECHNOMATIC	Italy	Note-1	A	
		*	ASIAN INDUSTRIAL VALVES AND INSTRUM	CHENNAI	Note-1	DR	
		*	BOPP & REUTHER HEINRICH'S MESSTECHNI	Germany	Note-1	DR	
		*	EMERSON PROCESS MANAGEMENT		Note-1	DR	
		*	ENGINEERING SPECIALITIES PVT LTD.	KOLKATA	Note-1	DR	
		*	IA FLOWELEMENTS PVT.LTD.	CHENNAI	Note-1	DR	
		*	MASLONIAN		Note-1	DR	
		*	MESTRO		Note-1	DR	
		*	MINCO INDIA FLOWELEMENTS PVT LTD	MUMBAI	Note-1	DR	
		*	MOORE		Note-1	DR	
		*	SIEMENS		Note-1	DR	
		*	SMAR		Note-1	DR	
		*	YAMALAKE		Note-1	DR	
		*	YOKAGAWA		Note-1	DR	
		*	DYNAFLUID VALVES AND FLOW CONTROLS (P) LTD.	Belgaum-KARNATAKA	Note-1	DR	
		*	MINCO (INDIA) PRIVATE LIMITED	KARASWADA, Goa	Note-1	DR	
		*	HYDROPNEUMATICS PVT. LTD.	Bicholim-Goa	Note-1	DR	

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		PROJECT : UPKVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
37	FLOW SWITCH						
		III	Ashcroft	Germany	Note-1	A	
		III	Auxitrol	UK	Note-1	A	
		III	Delta Control	UK	Note-1	A	
		III	Gauges Bourdon	Parvel	Note-1	A	
		III	Krohne Marshal	Pune	Note-1	A	
		III	Levcon	Kolkata	Note-1	A	
		III	Magnetrol	Belgium	Note-1	A	
		III	Mencoid	USA	Note-1	A	
		III	Menum	USA	Note-1	A	
		III	Switzer	Chennai	Note-1	A	100 mm line size , more than 100 mm line size third party lab calibration required. Model :- BM-040
		III	UNIVERSAL FLOWMETER	USA	Note-1	A	
		*	CHEMIROL	INDIA	Note-1	DR	
		*	SUNAG CORPORATION	INDIA	Note-1	DR	
		*	V AUTOMAT	NEW DELHI	Note-1	DR	
		*	DK Instrument	Kolkata	Note-1	DR	
38	Flue Gas Analyser (CO)						
		III	Emerson Process Management	Pawane	Note-1	A	Analysers from principals M/S Emerson Germany/ USA
		III	Codef	UK	Note-1	A	
		III	Sick AG	Germany	Note-1	A	For In Situ Type
		*	Siemens	Germany	Note-1	A	
		*	ABB Limited	Bangalore	Note-1	DR	
		*	Adage Automation	Goa	Note-1	DR	
		*	Yokogawa India	Bangalore	Note-1	DR	
39	Flue Gas Analyser (CO2)						
		III	Yokogawa Electric Corporation	Japan	Note-1	A	IR-400 SERIES
		*	ABB Limited	Bangalore	Note-1	DR	
		*	Adage Automation	Goa	Note-1	DR	
		*	Siemens Limited	India	Note-1	DR	
		*	Yokogawa India	Bangalore	Note-1	DR	
40	Flue Gas Analyser (SOX and Nox)						
		III	Emerson Process Management	Pawane	Note-1	A	Analysers from principals M/S Emerson Germany/ USA
		III	SICK AG	Germany	Note-1	A	Hot Extractive Type For So2 & Nox and In situ type for So2 analyser
		III	Fuji Electric	Japan	Note-1	A	
		III	Siemens	Germany	Note-1	A	
		III	Yokogawa Electric Corporation	Japan	Note-1	A	IR-400 SERIES
		*	ABB Instrumentation	GLOUCESTERSHIRE UK	Note-1	DR	
		*	CODEL INTERNATIONAL LTD	UK	Note-1	DR	
		*	ABB Limited	Bangalore	Note-1	DR	
		*	Adage Automation	Goa	Note-1	DR	
		*	Siemens Limited	India	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 01.06.2013
		CONTRACTOR : BHEL					
		CONTRACT NO :					
		*	Yokogawa India	Bangalore	Note-1	DR	
41	Flue Gas Analyser (O2 Analyser (HT))						
		II	SECO	Chennai	Note-1	A	
		III	Marathon Monitor	USA	Note-1	A	
		*	ABB Limited	Bangalore	Note-1	DR	
		*	Adage Automation	Goa	Note-1	DR	
		*	Siemens Limited	India	Note-1	DR	
		*	Yokogawa India	Bangalore	Note-1	DR	
42	Flue Gas Analyser (O2 Analyser (LT))						
		III	Emerson Process Management	Pawane	Note-1	A	For In Situ Type / Analyser from principals M/S Emerson USA
		III	ABB	Bangalore	Note-1	A	For In Situ Type / Make ABB UK
		III	Enotech GMBH	Germany	Note-1	A	For In Situ Type
		III	Yokogawa India	Bangalore	Note-1	A	For In Situ Type / Make Yokogawa Japan
		III	Ametek	USA	Note-1	A	For In Situ Type / Shall be supplied through ICE Mumbai
		III	Yokogawa Electric Corporation	Japan	Note-1	A	For In Situ Type
		*	TELEDYNE ELEC TECH	USA	Note-1	DR	
		*	Fuji Electric	JAPAN	Note-1	DR	
43	Flue Gas Analyser Panel(Continuous Emission Monitoring system Panel) CEMS						
		I	M/S YOKOGAWA India Ltd	Banglore	Note-1	A	1. SOX,NOX & CO2 Analyser will be from M/S Yokogawa Electric Corporation Japan
		I	ADAGE AUTOMATION PVT. LTD.	GOA	Note-1	A	1. SOX,NOX & CO2 analysers will be imported from M/S SIEMENS Germany
		I	Emerson Process Management Pvt Ltd	Pawane	Note-1	A	Analysers will be from Emerson USA
		I	Analysar Instrument Co Pvt Ltd	Kota	Note-1	A	Analysers from Fuji Japan & other BOI shall be as per LOA approved sources.
		*	ADAGE AUTOMATION PRIVATE LIMITED	NAVI MUMBAI	Note-1	DR	
		*	ABB LTD	Banglore	Note-1	DR	
		*	Chemtrol Engg limited	Mumbai	Note-1	DR	
		*	Forbes Marshall codel pvt ltd	Pune	Note-1	DR	
		*	ICE ASIA	Mumbai	Note-1	DR	
		*	Pyrotech electronics pvt ltd	Udaipur	Note-1	DR	
		*	Marvel Engg company	Chennai	Note-1	DR	
44	Furnace Flame viewing system (High Temperature CCTV Components)						
		II	Hi Tech System and Service	Kolkata	Note-1	A	M/S LENOX USA MAKE SYSTEM
		II	Durag India Instrumentation Pvt Ltd	BANGALORE	Note-1	A	Complete Camera Assembly, IRIS Control etc. from Durag Germany Other Component like chiller, video monitor OPC Panel from Durag Approved sources

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 03	
		PACKAGE : EPC					DATE : 03.05.2019	
		CONTRACTOR :BHEL						
		CONTRACT NO :						
		II	TLT Engg Pvt. Ltd.	Kolkata	Note-1	A	M/S DIAMOND POWER USA SWEDEN MAKE SYSTEM	
		II	Toshniwal Industries	Ajmer	Note-1	A	M/S MIRION UK MAKE SYSTEM	
		II	Diamond Power	USA / Sweden	Note-1	A		
		III	Durag	Germany	Note-1	A	D-VTA-201	
		II	Lenex	USA	Note-1	A		
		II	Minch	UK	Note-1	A		
		II	Piper GmbH	Germany	Note-1	A		
		II	Sapota GmbH	Germany	Note-1	A		
		II	Serfel Electronics Pvt. Ltd.	Chennai	Note-1	A	Furnace Flame viewing system (High Temperature CCTV Components) Visible type only	
		*	EUTECH SCIENTIFIC ENGG. GmbH	Germany	Note-1	DR		
		*	Honeywell Automation India Ltd	Pune	Note-1	DR		
45	Generator End Winding Vibration Monitoring System							
		I	M/S PROTECH MONITORING PVT LTD	NEW DELHI	Note-1	A	1.Acquisition system i. e. rack based monitoring system along with Processing Module, Interface card, Power Supply module, Reference module and Software module for data storage and visualization will be of M/s MC Monitoring, Switzerland make 2.Freestanding panel, Ethernet switch, patch cord, panel power supply, Terminal, MCB and Supervision computer etc. will be supplied from M/s Protech Monitoring Pvt. Ltd, as per owner agreed make which will be tied up in QP	
		*	Siemens Limited	Gurgaon	Note-1	DR		
		*	Rockwell Automation India Pvt	Delhi	Note-1	DR		
		*	IRD Mechanalysis Limited	Mumbai	Note-1	DR		
		*	Shinkawa Electric Co.Ltd.	Japan	Note-1	DR		
		*	MEGGITT SA	Switzerland	Note-1	DR		
		*	SKF INDIA LTD	MUMBAI/SWEDEN	Note-1	DR		
46	H2 Gas Analyser							
		I	M/s Adage Automation Pvt. Ltd	GOA	Note-1	A	1. Hydrogen gas analyser (Calomat 6) will be imported from M/s Siemens, Germany 2. Blank cabinets to be supplied from owner approved make agreed in the I/OA	
		I	YOKOGAWA INDIA LTD	BANGLORE	Note-1	A	ANALYSER WILL BE IMPORTED FROM YOKOGAWA ELECTRIC CORPORATION JAPAN (MICROPROCESSOR BASED WORKING ON DENSITY BASED PRINCIPLE)	
		I	SIEMENS	GURGAON	Note-1	A	H2 GAS ANALYSER (CALOMAT 6) WILL BE IMPORTED FROM M/S SIEMENS GERMANY (KARLSRUHE WORKS)	
47	HEA ignitor	*	ABB Limited	Bangalore	Note-1	DR		

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 02.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		I	M/S Hindustan Thermometers	Ambala	Note-1	A	conditional as per approval ref no 01/COA/0270-102 dated 17.09.2012, spark tip of their own make is also acceptable
		I	Fives combustion System Pvt Ltd	Vadodara	Note-1	A	
		III	Unison Industries	USA	Note-1	A	
		III	Durag group	Germany	Note-1	A	
		III	Ignition system INC	USA	Note-1	A	
		III	Tes SPA	Italy	Note-1	A	
		*	HORNWORTHY PCABODY COMBUSTION	UK	Note-1	DR	
		*	FORMEY	US	Note-1	DR	
		*	TURBINE TECHNICS, INC	FLORIDA, USA	Note-1	DR	
		*	Durag	Bangalore	Note-1	DR	
48	HIGH Temp. cable (PTFE/FEP)						
		II	Thermocables	Hyderabad	Note-1	A	
		II	Tempsens	Udaipur	Note-1	A	Type- C(KX-type) . 2pair & 4 pair
		II	Habia cables	China	Note-1	A	
		II	Habia cables	Sweden	Note-1	A	
		II	Thermo Etecrica BV	Netherland	Note-1	A	
		II	Lapp cables	Germany	Note-1	A	
		II	Kerpen cables	Germany	Note-1	A	
		II	TEW & C	USA	Note-1	A	
		*	DELTON CABLES	NEWDELHI	Note-1	DR	
		*	LEONI KERPEN	GERMANY	Note-1	DR	
		*	THERMOELECTRIC	USA	Note-1	DR	
		*	ADVANCE CABLES TECHNOLOGIES	BANGALORE	Note-1	DR	
		*	FLUTEF INDUSTRIES	AHME DABAD	Note-1	DR	
		*	RELIANCE INDUSTRIES	BANGALORE	Note-1	DR	
		*	RJ INDUSTRIAL CORP.	ROORKEE	Note-1	DR	
		*	TOSHNIWAL CABLES PRIVATE LIMITED	UDAIPUR	Note-1	DR	
		*	UNIVERSAL CABLES LIMITED	JAIPUR	Note-1	DR	
		*	BICC CABLES LIMITED	United Kingdom	Note-1	DR	
		*	CORDS CABLE INDUSTRIES LIMITED	NEWDELHI, India	Note-1	DR	
		*	ELKAY TELELINKS LIMITED	FARIDABAD, India	Note-1	DR	
		*	GOYOLINE FIBRES (I)	MUMBAI, India	Note-1	DR	
		*	MANSFIELD CABLE COMPANY LTD	NOIDA, India	Note-1	DR	
		*	POLYCAD WIRE PVT. LTD.	MUMBAI, India	Note-1	DR	
		*	SCOT INNOVATION WIRES & CABLES	NEWDELHI, India	Note-1	DR	
49	Impact Head Type Flow Element (AVERAGING PITOT TUBE)						
		II	Dietrich (An Emerson group company) (ANUBAR)	USA / India	Note-1	A	
		II	Midwest	USA	Note-1	A	
		II	Vens inc (VERABAR)	USA	Note-1	A	
		I	Starmech controls (India) Pvt Ltd	Pune	Note-1	A	APPROVED FOR I P WATER STARTUP SYSTEM (CEP DISCH) SIZE 330MM



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.05.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		I	Microprecision	PALWAL	Note-1	A	Approved up to 3600mm size
		*	Switzer process instrument pvt ltd	Chennai	Note-1	DR	
		*	TM technomatic SPA	Italy	Note-1	DR	
50	IMPULSE PIPES/TUBES						
		II	Rathamani Metals and Tubes	Gandhinagar	Note-1	A	For SS only
		II	Heavy metals and Tubes	Gandhinagar	Note-1	A	For SS & CS only
		II	Sumitomo/Kawasaki/Nippon	Japan	Note-1	A	
		II	TPS TECHNITUBE	Germany	Note-1	A	
		II	Veluric & manessmann	Germany	Note-1	A	
		II	Sandvik	SWEDEN	Note-1	A	For SS only
		II	BHEL	TRICHY	Note-1	A	
		*	Heavy metals and Tubes	Mumbai	Note-1	DR	
		*	INDIAN SEAMLESS METAL TUBES LTD	PUNE	Note-1	DR	
		*	JINDAL SAW LTD	CHENNAI	Note-1	DR	
		*	SHUBHLAXMI METALS & TUBES PVT LTD	MUMBAI	Note-1	DR	
		*	TUBACES	SPAIN	Note-1	DR	
		*	SALZGITTER MANNESMANN INTERNATIONAL	GERMANY	Note-1	DR	
		*	MAXIM TUBES CO PVT LTD	AHMEDABAD	Note-1	DR	
		*	MBM TUBES PVT LTD	CHATTAL, GUJARAT	Note-1	DR	
		*	TUBACEX PRAKASH INDIA PVT LTD	UMBERGAON GUJARAT	Note-1	DR	
		*	SURAJ STAINLESS LIMITED	AHMEDABAD	Note-1	DR	
51	Instrument Cables (F, G & TIC Cables)						
		Note-2	Polycab	Daman	Note-1	A	PVC, FRLS type
		Note-2	Delton	Fardabad	Note-1	A	PVC, FRLS type
		Note-2	Elkey Telelinks	Fardabad	Note-1	A	PVC, FRLS type
		Note-2	CORDS	Kaharani	Note-1	A	PVC, FRLS type
		Note-2	Nicco	Kolkata	Note-1	A	PVC, FRLS type
		Note-2	Universal Cable	Satna	Note-1	A	
		Note-2	Thermocables	Hyderabad /Mahabubnagar	Note-1	A	A, B, F&G
		Note-2	Gupta Power Infrastructure Ltd.	Khurda	Note-1	A	PVC, FRLS type
		Note-2	CMI	Fardabad	Note-1	A	PVC, FRLS type / 0.5 SOMM F&G TYPE CABLES
		Note-2	Advance Cables Pvt Ltd	Banglore	Note-1	A	0.5 SOMM F&G TYPE CABLES
		Note-2	Gemsab Industries Ltd	Bhiwadi/ Alwar	Note-1	A	0.5 SOMM F&G TYPE CABLES
		Note-2	T C COMMUNICATION	GHAZIABAD	Note-1	A	PVC, FRLS type
		Note-2	TEW & C	USA	Note-1	A	
		Note-2	Habia cables	Sweden	Note-1	A	
		Note-2	Kerpen cables	Germany	Note-1	A	
		Note-2	Lapp cables	Germany	Note-1	A	
		Note-2	Thermo electra Bv	Netherlands	Note-1	A	
		*	Thermo electra Bv	Hyderabad, India	Note-1	DR	
		*	Kerpen cables	Germany/ Netherlands	Note-1	DR	
		*	Lapp cables	Germany/ Satna, India	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 01.06.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		*	Habia cables	Sweden/ Germany	Note-1	DR		
		*	TEW & G	USA/ Germany	Note-1	DR		
		*	Elkey Telelinks	Kaharani	Note-1	DR		
		*	Delton	New Delhi	Note-1	DR		
		*	Polycab	Mumbai	Note-1	DR		
		*	APAR INDUSTRIES LIMITED	GUJARAT/Bangal ore	Note-1	DR		
		*	ASSOCIATED CABLES PVT LTD	ANDHERI(EAST) MUMBAI	Note-1	DR		
		*	CORDS CABLE INDUSTRIES LTD.	RAJASTHAN/ NEW DELHI	Note-1	DR		
		*	GUPTA POWER INFRASTRUCTURE LTD.	BHUBANESWAR	Note-1	DR		
		*	LAPP INDIA PVT. LTD.	PHASE II, ANEKAL TALUK, BANGALORE	Note-1	DR		
		*	MANSFIELD CABLES COMPANY LTD.	NOIDA, U.P	Note-1	DR		
		*	PARAMOUNT COMMUNICATION LTD	RAJASTHAN/Secu ndrabadi New Delhi	Note-1	DR		
		*	LEONI CABLE SOLUTIONS (INDIA)	PUNE	Note-1	DR		
		*	TEMPSENS CABLE	UDAIPUR	Note-1	DR		
		*	SERVEL INDIA PVT LTD	NEMERANA/ NEW DELHI	Note-1	DR		
		*	UDEY PYRO CABLES	VADODARA/MUM BAI	Note-1	DR		
		*	GOYOLENE FIBRES (INDIA) PVT. LTD	SILVASSA/ MUMBAI	Note-1	DR		
		*	COROS	KOLKATA/ USA	Note-1	DR		
		*	FORBES MARSHALL	PUNE	Note-1	DR		
		*	NIDON	SWEDEN	Note-1	DR		
		*	POISTRONICS	VADODRA	Note-1	DR		
		*	PROCON	CHENNAI	Note-1	DR		
		*	THERMOCATICS	INDIA	Note-1	DR		
		*	UNIVERSAL INSTRUMENTS MANUFACTURING LTD	INDIA	Note-1	DR		
		*	CMI	BHIWADI	Note-1	DR		
		*	ALLIED ENGINEERING WORKS PVT	NEW DELHI	Note-1	DR		
		*	GRID INDIA POWER CABLE PVT LTD	GURGAON	Note-1	DR		
		*	KEC INTERNATIONAL	MUMBAI	Note-1	DR		
		*	N C CABLES PVT LTD	NEW DELHI	Note-1	DR		
		*	SHYAM CABLE INDUSTRIES	NOIDA	Note-1	DR		
		*	SRINI LINK	VALSAD	Note-1	DR		
		*	TORRENT CABLE	AHMEDABAD	Note-1	DR		
		*	ULTRACAB (INDIA) LIMITED	RAJKOT	Note-1	DR		
		*	HIND RECTIFIER LTD	INDIA	Note-1	DR		
		*	KEI INDUSTRIES LIMITED	NEW DELHI India	Note-1	DR		
		*	UDEY PYRO CABLES	Mumbai	Note-1	DR		
		*	Thermocables	BANGALORE	Note-1	DR		
		*	Gemscab Industries Ltd	New Delhi/ Alwar	Note-1	DR		
		*	KEI Industries	Chennai	Note-1	DR		



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2013
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		*	KEC INTERNATIONAL LIMITED	Hyderabad	Note-1	DR	
		*	MIDDLE EAST SPECIALIZED CABLES CO.	DUBAI	Note-1	DR	
		*	PAGODA CABLES PVT. LTD.	NOIDA	Note-1	DR	
		*	TOSHNIWAL CABLES PRIVATE LIMITED	JAIPUR	Note-1	DR	
		*	Relience Engineering	New Delhi	Note-1	DR	
		*	Associated Flexible	Pune	Note-1	DR	
		*	Brooks Cable	Mumbai	Note-1	DR	
		*	SBEE Cable	Bangalore	Note-1	DR	
		*	Rallison Electrical	New Delhi	Note-1	DR	
		*	IMT Cable	New Delhi	Note-1	DR	
		*	Paras Wires	Bangalore	Note-1	DR	
		*	ShivaPriya cables	New Delhi	Note-1	DR	
		*	Nangalwala industries	Ajwar	Note-1	DR	
		*	Bhansali Cables	Ajwar	Note-1	DR	
		*	Chandresh Cables	Ahmedabad	Note-1	DR	
		*	Manoj Cables	New Delhi	Note-1	DR	
		*	Sriram Cables	New Delhi	Note-1	DR	
		*	Gloster Cables	Secunderabad	Note-1	DR	
		*	CMI Energy India	New Delhi	Note-1	DR	
		*	Incom Cable	New Delhi	Note-1	DR	
		*	SUYOG ELECTRICALS LTD	Vadodara	Note-1	DR	
		*	SPECIAL CABLES PVT LTD	New Delhi	Note-1	DR	
		*	T C COMMUNICATION	New Delhi	Note-1	DR	
		*	Govind Cable	Ghaziabad	Note-1	DR	
		*	RR Kabel	Mumbai	Note-1	DR	
52	INSTRUMENT VALVE(Globe Type)						
		II	Instrumentation Limited	Palakkad	Note-1	A	
		II	Excel Hydro	Mumbai	Note-1	A	
		II	HP Valves and fittings	CHENNAI	Note-1	A	FORGED TYPE GLOBE VALVE 1/2"UPTO CLASS 4500 & 1"UPTO CLASS 2500 IBR/NIBR
		II	Baldota	Mumbai	Note-1	A	
		II	Metpress Engineering works	Kolkata	Note-1	A	Approved for 1/2" instrument valves (Globe Valve)
		III	Swagelok	USA	Note-1	A	
		III	Parker	USA	Note-1	A	
		II	BHEL	TRICHY	Note-1	A	
		*	AURA INC	DELHI	Note-1	DR	
		*	PMT ENGINEERS	AHMEDABAD	Note-1	DR	
		*	FLOWTECH	KOLKATA	Note-1	DR	
		*	INSTRUMENTATION LIMITED	PALGHAT	Note-1	DR	
		*	HYDAIR LONAVALA	LONAVALA	Note-1	DR	
		*	FLUID CONTROL	MUMBAI/PUNE	Note-1	DR	
		*	DYNA FLUID VALVES AND FLOW CONTROLS	UDYAMBAG,BEL GAUM, KARNATAKA	Note-1	DR	
		*	PRECISION ENGG INDUSTRIES	MUMBAI	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.05.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
53	Intelligent Battery charger 24V DC / DCDB/BHMS							
		Note-4	Chabbi Electricals	Jalgaon	Note-1	A	Rectifier module, Controller module and Battery Health monitoring system shall be of M/s VERTIV make	
		Note-4	Eltek SGS Pvt Ltd	Gurgaon	Note-1	A		
		Note-4	VERTIV ENERGY PVT LTD	Mumbai	Note-1	A	Rectifier module, Controller module and Battery Health monitoring system shall be of M/s VERTIV China	
		Note-4	MassTech	MUMBAI	Note-1	A	Rectifier modules shall be of Setec, China	
		*	HBL POWER System LTD	HYDERABAD	Note-1	DR		
		*	DUBAS	INDIA/ Bangalore	Note-1	DR		
		*	HITACHI HI-REL	GANDHINADAR	Note-1	DR		
		*	STATCON POWER CONTROL PVT LTD	NOIDA	Note-1	DR		
		*	UNIVERSAL INSTRUMENTS MANUFACTURING CO PVT LTD	Bangalore	Note-1	DR		
		*	HIND RECTIFIERS		Note-1	DR		
		*	CHLORIDE POWER SYSTEMS & SOLUTIONS LTD	INDIA/ Kolkata	Note-1	DR		
		*	AMARARAJA	TIRUPATI	Note-1	DR		
		*	KELTRON POWER ELECTRONICS	TRIVENDRAM	Note-1	DR		
		*	CHABBI ELECTRICALS	MUMBAI	Note-1	DR		
		*	EMERSON NETWORK POWER (PUNE) PVT.LTD.	BANGALORE/ THANE	Note-1	DR		
		*	SERVILINK ENGINEERS PVT.LTD.	VADODARA	Note-1	DR		
		*	ELECTRONIC SYSTEMS	VADODARA	Note-1	DR		
		*	POWER & PROTECTION	KOLKATA	Note-1	DR		
		*	SIGNOTRON (INDIA) PVT LTD	KOLKATA	Note-1	DR		
		*	SYSTEM AID	BANGALORE	Note-1	DR		
		*	SHERENE ELECTRO CONTROL PVT LTD	MUMBAI	Note-1	DR		
		*	UNIVERSAL INDUSTRIAL PRODUCTS	MUMBAI	Note-1	DR		
		*	LIVELINE ELECTRONICS	KOLKATA	Note-1	DR		
54	IR DETECTOR							
		III	NEOLA CORP.(ODTI)	USA/CANADA	Note-1	A		
		III	PATOL	UK	Note-1	A		
		*	AGNI CONTROLS	CHENNAI	Note-1	DR		

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP		REVISION NO : 02
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS		DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED		
		CONTRACT NO :				
55	Isolator		Truck/Stahl//P&F/MTL/Wed Muler or OEM approved sources	Note-1		Note-9
56	Large Video Screen (LED Based)					
		I	DELTA	GURGAON	Note-1	A
		I	BARCO	NOIDA	Note-1	A
		I	PLANAR	USA	Note-1	A
		I	Pyrotech Electronics Pvt Ltd	UDAIPUR	Note-1	A
		*	CHRISTIE	USA	Note-1	DR
		*	Mitsubishi		Note-1	DR
		*	Eyevis		Note-1	DR
57	LEVEL SWITCH RF TYPE					
		II	EIP Enviro	Noida	Note-1	A
		II	FLOW STAR	Fardabad	Note-1	A
		III	BHEL	RANIPET	Note-1	A
		*	EIP BULK CONTROLS PVT LTD	NEW DELHI	Note-1	DR
		*	NIVO CONTROLS PVT LTD	INDORE	Note-1	DR
58	Level switch capacitance type					
		III	D K Instruments Pvt Ltd	Kolkata	Note-1	A
		III	ENDRESS & HOUSER	Aurangabad	Note-1	A
		III	SBEM	PUNE	Note-1	A
		III	PUNE TECHTROL	PUNE	Note-1	A
		III	LEVCON	KOLKATA	Note-1	A
		III	Nivo Controls	Indore	Note-1	A
		III	V AUTOMAT	New Delhi	Note-1	A
		III	MAGNETROL	BELGIUM	Note-1	A
		*	ENDRESS & HOUSER	Switzerland	Note-1	DR
		*	IGEMA GMBH	GERMANY	Note-1	DR
		*	SIEMENS	GERMANY	Note-1	DR
		*	ABB	KOREA	Note-1	DR
		*	ROSEMOUNT	KOREA	Note-1	DR
59	Level switch- cond type					
		III	EMERSON (Solartron morbey) HYDRASTEP	UK	Note-1	A
		III	Yarway	USA	Note-1	A
		III	LEVELSTATE	UK	Note-1	A
		II	Raman Instruments	Delhi	Note-1	A
		II	Hi Tech	Kolkata	Note-1	A
		II	BHEL	TRICHY	Note-1	A
		*	PUNE TECHTROL PVT LTD	PUNE	Note-1	DR

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.05.2019
		CONTRACTOR : BNEL					
		CONTRACT NO :					
		*	IGEMA GMBH	GERMANY	Note-1	DR	
60	Local Instrument Enclosure/Rack						
		I	Pyrotech	Udaipur	Note-1	A	BOI from owner approved sources
		I	Instrumentation Limited	Kota	Note-1	A	BOI from owner approved sources
		I	Sajas electrical	Trichurapalli	Note-1	A	BOI from owner approved sources
		I	Prammen	Puddukotta	Note-1	A	BOI from owner approved sources
		I	Chemin	Pondicherry	Note-1	A	BOI from owner approved sources
		*	PROCON INSTRUMENTATION PVT LTD	CHENNAI/ KURUKSHETRA	Note-1	DR	
		*	Shyam Machine Tools	Hardwar	Note-1	DR	
		*	Panam Engineers	Mumbai	Note-1	DR	
		*	FORBES MARSHALL PVT LTD	PUNE/ VADODARA	Note-1	DR	
		*	NAGARJUNA FABRICATORS	UDAIPUR	Note-1	DR	
		*	ECIL	HYDERBAD	Note-1	DR	
		*	POSITRONICS	GOA / VADODARA/ CHENNAI	Note-1	DR	
		*	SYSPRO AUTOMATION	Chennai	Note-1	DR	
61	Lube oil control valve - Self Regulating						
		III	OEM APPROVED SOURCES		Note-1		
62	LHS Cable						
		III	KIDDE	UK	Note-1	A	
		III	PATOL	UK	Note-1	A	
		*	PROTECTOWRE	UK	Note-1	DR	
		*	SYSTEM SENSOR	UK	Note-1	DR	
63	Master Slave Clock System						
		I	Signals and Systems Pvt. Ltd. (SANDS)	Chennai	Note-1	A	
		I	Masbus	Gandhinagar	Note-1	A	
		I	Sertel Electronics Pvt. Ltd.	Chennai	Note-1	A	
		II	Hopf Elektronik GmbH	Germany	Note-1	A	
		II	Hathway	USA	Note-1	A	
		II	Mein Berg	Germany	Note-1	A	
		II	Moser Baer AG	Switzerland	Note-1	A	
		*	SANDS	GERMANY	Note-1	DR	
64	On line carbon in Ash Analyser						
		III	Greenbank Engery Systems	UK	Note-1	A	
		III	Behold Technologies	Germany	Note-1	A	
		III	Pratocan	GERMANY	Note-1	A	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2015
		CONTRACTOR : BHEL					
		CONTRACT NO :					
		III	M&W ASHETEKNIK	Denmark	Note-1	A	
		*	ABB	BANGALORE	Note-1	DR	
		*	EMERSON	INDIA	Note-1	DR	
		*	YOKAGAWA	BANGLORE	Note-1	DR	
		*	FORBES MARSHAL	PUNE	Note-1	DR	
65	Mercury Analyser						
		III	DURAG	BANGLORE	Note-1	A	Analysers from M/S Veteewa Umwelt Germany
		III	Thermodisher	USA	Note-1	A	FOR CEMS PACKAGE
		*	Thermodisher INDIA	MUMBAI	Note-1	DR	
		*	ANALYSER INSTRUMENTATION CO PVT LTD	KOTA, RAJASTHAN	Note-1	DR	
		*	SICK INDIA PVT LTD	MUMBAI	Note-1	DR	
		*	MAIHAK	GERMANY	Note-1	DR	
66	Orifice plate assembly						
		III	Instrumentation Limited	Palakkad	Note-1	A	
		III	Micro Precision	Palwal	Note-1	A	
		III	Starmech Controls (I) Pvt Ltd	Pune	Note-1	A	900 NB class 300 600NB class 600
		III	Flow Star	Fardabad	Note-1	A	
		III	MINCO India Pvt. Ltd.	GOA	Note-1	A	upto 36"
		III	Eureka Industrial Equipment	Pune	Note-1	A	upto 200 NB
		III	TM TECHNOLOGIES	Italy	Note-1	A	
		III	Technomatic	Italy	Note-1	A	
		III	WSE Control	Korea	Note-1	A	
		III	SEIKO	Austria	Note-1	A	
		*	TANSA Equipments Pvt Ltd	Mumbai	Note-1	DR	
		*	Scientific Devices	Mumbai	Note-1	DR	
		*	Chemtrol Industries Pvt Ltd	Mumbai	Note-1	DR	
		*	Hydropneumatics Pvt Ltd	Goa	Note-1	DR	
		*	Instrumentation Engineers Pvt Ltd	Hyderabad	Note-1	DR	
		*	Dynaford Valves and Flow	Belgaum	Note-1	DR	
		*	DYNAMIC FLUID VALVES AND FLOW	BELGAUM, India	Note-1	DR	
		*	ASIAN INDUSTRIAL VALVES AND INSTRUM	CHENNAI, India	Note-1	DR	
		*	BALGIA	CHENNAI	Note-1	DR	
		*	BOPP & REUTHER HEINRICH'S MESSTECHNI	Germany	Note-1	DR	
		*	ENGINEERING SPECIALITIES PVT LTD.,	KOLKATA, India	Note-1	DR	
		*	IA FLOW ELEMENTS PVT LTD.	CHENNAI, India	Note-1	DR	
		*	MINCO INDIA FLOW ELEMENTS PVT LTD	MUMBAI, India	Note-1	DR	
		*	PYROELECTRIC	MUMBAI	Note-1	DR	
		*	MINCO (INDIA) FLOW ELEMENTS PVT. LTD.	Karawada - Mapusa-GOA	Note-1	DR	

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
67	P A System	I	M/S Aishan Technologies Pvt Ltd	Bangalore	Note-1	A	For Zenitel Norway make IP based system
		I	M/S HARITASA CHECKMATE ELECTRONICS PVT LTD	Bangalore	Note-1	A	For Comend Austria make system (IP based and Conventional)
		I	M/s BNA Technology Consulting Ltd.	Bangalore	Note-1	A	For IP based System, items like Cables (Fiber Optic Cable, Power Cable and Control & Instrumentation Cable) are to be procured from owner approved Sources
		*	POWER SYSTEMS	KOLKATA	Note-1	DR	
		*	CHASHMITA ENGINEERS PVT. LTD.	BARODA	Note-1	DR	
		*	BYTE COMMUNICATIONS PVT.LTD.	GURGAON	Note-1	DR	
		*	INDUSTRONIC INDUSTRIE-ELECTRONIC GMBH & CO. KG	GERMANY	Note-1	DR	
		*	LARAON ENGINEERS AND CONSULTANTS PVT. LTD	Gurgaon	Note-1	DR	
		*	NETWARE COMPUTERS	DELHI	Note-1	DR	
		*	PHI AUDIOCOM SYSTEMS PVT. LTD	PUNE	Note-1	DR	
68	PADO (Performance Analysis Diagnosis and Optimization) system						
		*	BHEL	Bangalore	Note-1	DR	
69	PLC System						
		I	GE Intelligent platforms Pvt Ltd	Bangalore	Note-1	A	
		I	SCHNEIDER ELECTRIC INDIA	Nask	Note-1	A	
		I	ABB	Bangalore	Note-1	A	
		I	Siemens	Nask	Note-1	A	
		I	ROCKWELL AUTOMATION INDIA PVT. LTD.	Sahibabad	Note-1	A	
		I	HONEYWELL	PUNE	Note-1	A	1-PLC modules should be procured from M/s Honeywell Co Ltd, Korea. 2-Make of Panel (Blank Enclosure), Terminal block, Network components & interposing relay should be from owner approved source.
		I	M/S VIRTUAL AUTOMATION	RANGAREDDY	Note-1	A	PLC FORM M/S SCHNEIDER MAKE & OTHER BOI SHALL BE AS PER 100 AGREED SOURCES. OTHER BOI FROM owner APPROVED MAKES QP VETTED BY M/S SCHNIEDER
		I	M/s Cotmac Electronics Pvt Ltd	Pune	Note-1	A	FOR SIEMENS MAKE PLC BOI FROM owner APPROVED SOURCES.QP VETTED BY OEM PROJECT SPECIFIC AUTHOTIZATION LETTER
		I	M/S Tech-Masters	Hyderabad	Note-1	A	FOR GEIP MAKE PLC OTHER BOI FROM owner APPROVED SOURCES. ENGG DOCUMENT VETTED BY OEM
		I	EMCONS	Ranchi	Note-1	A	FOR ROCKWELL MAKE PLC SYSTEM. OTHER BOI FROM owner APPROVED MAKES ENGG DOC VETTED BY OEM
		I	CREATIVE ROBOTICS PVT. LTD.	GHAZIABAD	Note-1	A	For Honeywell Make PLC
		*	Automation Networks	Kolkata	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.06.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		*	Genico Controls	Fardabad	Note-1	DR		
		*	I-Logicon Control	Bangalore	Note-1	DR		
		*	LARSEN & TOUBRO LIMITED	CHENNAI	Note-1	DR		
		*	Megatech Control	Chennai	Note-1	DR		
		*	POWERTECH SWITCHGEARS	NEW DELHI	Note-1	DR		
		*	Pyrotech Electronics	Udaipur	Note-1	DR		
		*	ROCKWELL AUTOMATION INDIA PVT. LTD.	BANGALORE	Note-1	DR		
		*	SCHNEIDER ELECTRIC INDIA	NEW DELHI	Note-1	DR		
		*	SIEMENS INDIA LTD.	BANGALORE	Note-1	DR		
		*	SunLux Technologies	Bangalore	Note-1	DR		
		*	SYNERGY SYSTEMS & SOLUTIONS	NEWDELHI	Note-1	DR		
		*	Vasundhara Automation	Bangalore	Note-1	DR		
		*	YOKOGAWA INDIA LIMITED	BANGALORE	Note-1	DR		
		*	SUN INDUSTRIAL AUTOMATION	CHENNAI (TAMIL NADU)	Note-1	DR		
		*	SI ENERGY VENTURES PVT. LTD.	NEW DELHI	Note-1	DR		
		*	LADDER AUTOMATION SOLUTIONS	GURGAON (HARYANA)	Note-1	DR		
		*	SOLPRO AUTOMATION SYSTEMS	HYDERABAD	Note-1	DR		
		*	DYNAMIC ENGINEERS LIMITED	NOIDA (U P)	Note-1	DR		
70	Pneumatic Actuator Regulating (Power Cylinder HAD,CAD SADC & BURNER TILT)							
		I	Instrumentation Limited	PALGHAT	Note-1	A		
		I	Kelton	Cochin(Aleppy)	Note-1	A		
		I	Hotex	Mumbai	Note-1	A	1. Burner Tilt actuator up to maximum bore diameter 350 NB of Mild Steel type and to be supplied with smart PTR card. 2. SADC and SOFA actuators up to maximum bore diameter 250 NB of Anodised aluminum type. 3. PNEUMATIC CYLINDER UP TO 900 MM BORE DIA.	
		I	SMC Pneumatics	Noida	Note-1	A	Bore size 12 inches	
		II	Dong Woo Valve Control Co. LTD	Korea	Note-1	A		
		II	Shin Hwa Engineering Co. LTD	Korea	Note-1	A		
		I	IMI Norgren Henon Pvt Ltd	NOIDA	Note-1	A		
		*	EMERSON PROCESS MANAGEMENT	Chennai	Note-1	DR		
		*	MIL CONTROLS	ALWAYE	Note-1	DR		
		*	FESTA	BANGALORE	Note-1	DR		



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 02.06.2015
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
71	Positive displacement flow meter /Transmitter						
		I	Toshniwai corporation Hyvac	Chennai	Note-1	A	1.UP TO 4 INCHES 2.LINE SIZE UPTO 100 NB.3 BOI LIKE SENSROS AND PULSE TO CURRENT CONVERTOR FROM BOPP & REUTHER APPROVED SOURCES.4 ELECTRONIC METER(IF ANY) IS TO BE PROCURED FROM M/S FLUIDWELL,NETHERLAND
		III	Brooks	USA	Note-1	A	
		III	Bopp & Reuther	Germany	Note-1	A	
		III	OVAL	Japan	Note-1	A	
72	Probe Type Heat Detector						
		III	KIDDE FENWAL	USA	Note-1	A	
		III	TYCO	USA	Note-1	A	
73	ORP MONITOR/ ANALYSER				Note-1		Note-10
74	PR/ VACCUUM/ DP GAUGES						
		III	H.Guru South India	Bangalore	Note-1	A	MIS TYPE,0-1000KSC &0-600DEG C
		III	Gauge Bourdon(GIC)	Panvel	Note-1	A	UPTO 300KSC
		III	Goa Thermostatic	GOA	Note-1	A	PRESSURE SENSING ELEMENT I.E. BOURDON/DIAPHRAGM/CAPSULE WILL BE SOURCED FROM M/S BACHMAIER AND KEIMMER,GERMANY
		III	Forbes Marshall	Hyderabad	Note-1	A	PRESSURE /DO GAUGES,BOURDON TYPE (OTHER THEN MAIN STEAM AND FEED WATER APPLICATION) UO TO 6" DIAL SIZE .TEMPERATURE GAUGE(GAS FILLED 1/2" TO 6" DIAL SIZE) COMPLETE RANGE PRESSURE/DP AND TEMPERATURE GAUGE(ASHCROFT AND MASS BRAND)
		III	Precision mass products Pvt. Ltd.	Gandhinagar	Note-1	A	NOTESHEET NO. 3411 DTD 15/11/2012
		III	Walchandnagar Industries	Dharwad	Note-1	A	up to 250 KG/cm2 (TIWAC Brand) .6inch dial
		III	Nestech Instruments Pvt Ltd	Vapi	Note-1	A	1. Upto 250 KG/cm2 up to 6" dial size 2. Complete assembled diff pressure shall be of M/s Nestech, Inc Japan Make 3. For low pressure gauge up to 2.5bar bourdon is to be procured from M/S Beckman & Klemm, Germany
		III	Wika	Pune	Note-1	A	



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PROJECT : UPRVUNL 1x660 MW PANKI			LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
PACKAGE : EPC						DATE : 03.05.2019	
CONTRACTOR : BHEL							
CONTRACT NO :							
		III	Baumer	Vapi	Note-1	A	Other than MS /FW application
		III	H Guns	Rishra/Muzaffarpur	Note-1	A	MIS DIAL TYPE & BI-METALLIC TYPE ONLY NOT FOR GAS FILLED TYPE MAIL DTD 18.08.2000 /CARD NUMBER 3114 Not mentioned IN MAIL FROM WHICH APPROVAL PROVIDED
		III	Pressure & Temp Control	Kolkata	Note-1	A	C-250 KSC
		III	BUDENBERG	UK	Note-1	A	
		III	ASHCROFT	USA/Germany	Note-1	A	
		III	Wika	GERMANY	Note-1	A	
		III	WISE Control	Korea	Note-1	A	
		III	Nagano KEIKI	Japan	Note-1	A	
		*	GOA INSTRUMENT INDUSTRIES PVT LTD.	GOA,India	Note-1	DR	
		*	A N INSTRUMENTS	KOLKATA/ NARENDRAPUR	Note-1	DR	
		*	THERMAL INSTRUMENTS INDIA PVT LTD	MUMBAI	Note-1	DR	
		*	GAUGES BOURDEN	UK / CHENNAI	Note-1	DR	
		*	MANOMETER INDIA PVT LTD	MUMBAI/ CHENNAI	Note-1	DR	
		*	PROTECH CONTROL	KOLKATA	Note-1	DR	
		*	NEW SCIENTIFIC	KOLKATA	Note-1	DR	
		*	Scientific Devices	Mumbai	Note-1	DR	
		*	HIRLEKAR PRECISION ENGG. PVT. LTD.	PUNE	Note-1	DR	
		*	SAMSON CONTROLS PVT LTD.	PUNE	Note-1	DR	
		*	FISHER MESS	GERMANY	Note-1	DR	
		*	US GAUGE	USA	Note-1	DR	
		*	TEMPSENS INSTRUMENTS (I) PVT LTD	UDAIPUR,India	Note-1	DR	
		*	WINTERS GAUGE	USA	Note-1	DR	
		*	Siemens Limited	Gurgaon	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00	
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 01.06.2019	
		CONTRACTOR : BHEL		APPROVED				
		CONTRACT NO :						
		*	GLUCK	MUMBAI	Note-1	DR		
		*	SWITZER	CHENNAI	Note-1	DR		
		*	WAAREE	VAPI	Note-1	DR		
		*	ITEC MEASURES PVT LTD	VAPI	Note-1	DR		
		*	Predmeasure Controls Pvt. Ltd.	Bangalore	Note-1	DR		
75	Radar type level transmitter							
		III	Emerson Process Management Pvt Ltd	Pawane	Note-1	A	Basic Instrument Transmitter & Probe to be procured from Emerson Singapore, only integration & configuration at pawane works	
		III	Endress & Houser	Aurangabad	Note-1	A		
		III	Supreme Technology	Thane	Note-1	A	Transmitter procured from Siemens Canada with Co-related TC, Valid Authorisation from M/s Siemens	
		III	Magnetrol	Belgium	Note-1	A		
		III	ABB(K-Tech)	USA	Note-1	A		
		III	Endress & Houser	Germany	Note-1	A		
		III	VEGA	GERMANY	Note-1	A		
		*	EMERSON	SWEDEN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	ABB	INDIA	Note-1	DR		
		*	P & F	BANGALORE	Note-1	DR		
		*	KHRONE	FRANCE	Note-1	DR		
		*	HONEYWELL	PUNE	Note-1	DR		
		*	VEGA	INDIA	Note-1	DR		
		*	SIEMENS	INDIA	Note-1	DR		
		*	V AUTOMATA	INDIA	Note-1	DR		
		*	PUNE TECHTROL	INDIA	Note-1	DR		
		*	SBEM	PUNE	Note-1	DR		
76	Reverse Rotation Indicator (RRI)							
			ALL TSI VENDORS ARE ALSO ACCEPTABLE					
77	SHORT TERM FIRE PROOF CABLES, MICG CABLES				Note-1			
		III	TYCO	UK/CHINA	Note-1	A	2CX1.5 SQ MM AND 2CX2.5SQ MM	
		III	WREXHAM MINERAL CABLES	UK	Note-1	A	2,3,4 & 7 CORE CABLE	
		III	KME	ITALY	Note-1	A	2CX1.5 SQ MM AND 2CX2.5SQ MM	
		III	Penlar	UK	Note-1	A	2CX1.5 SQ MM AND 2CX2.5SQ MM	
		*	Saini Electronics Security Systems	MUMBAI	Note-1	DR		
78	SWAS (Sampling Handling System and Dry Panel)							
		I	Emerson Process Management	Navi Mumbai	Note-1	A	Procured from USA, assembly & testing at pawane	
		I	Forties Marshall	Pune	Note-1	A		
		I	STEAM EQUIPMENTS PVT LTD	PUNE	Note-1	A		



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING OP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.05.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		*	ABB	BANGLORE	Note-1	DR		
		*	CHEMIN CONTROLS	PONDICERRY	Note-1	DR		
		*	LOWE	UK	Note-1	DR		
		*	ENDRESS HAUSER	MUMBAI	Note-1	DR		
		*	FLOW LINE INSTRUMENTATION PVT LTD	BANGLORE	Note-1	DR		
		*	INSTRUMENTATION LTD	KOTA	Note-1	DR		
		*	ANALYSER INSTRUMENTATION CO PVT LTD	KOTA	Note-1	DR		
		*	YOKOGAWA INDIA LTD	BANGLORE	Note-1	DR		
79	SWAS Analyser (Chloride)							
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR		
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR		
		*	HACH LANGE S.A.R.L	VESENZ, SWITZ ERLAND.	Note-1	DR		
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR		
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		
80	SWAS Analyser (Conductivity)							
		III	Yokogawa	Japan	Note-1	A		
		III	EMERSON PROCESS MANAGEMENT	USA	Note-1	A		
		*	ABB INDUSTRIES	SWITZERLAND, U K	Note-1	DR		
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR		
		*	HACH LANGE S.A.R.L	VESENZ, SWITZ ERLAND.	Note-1	DR		
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		
81	SWAS Analyser (Dissolved Oxygen)							
		III	HACH	SWITZERLAND	Note-1	A		
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR		
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR		
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2019
		CONTRACTOR : BHEL					
		CONTRACT NO :					
82	SWAS Analyser (Hydrazine)	*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR	
		III	Hach	Switzerland	Note-1	A	
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR	
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR	
		*	HACH LANGE S.A.R.L	VESENZ	Note-1	DR	
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR	
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR	
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR	
		*	WTW	GERMANY	Note-1	DR	
		*	DKK	JAPAN	Note-1	DR	
		*	YOKOGAWA	JAPAN	Note-1	DR	
		*	HONEYWELL	USA	Note-1	DR	
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR	
83	SWAS Analyser (PH)	III	EMERSON PROCESS MANAGEMENT	USA	Note-1	A	
		*	ABB INDUSTRIES	SWITZERLAND, U.K	Note-1	DR	
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR	
		*	HACH LANGE S.A.R.L	VESENZ, SWITZERLAND	Note-1	DR	
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR	
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR	
		*	WTW	GERMANY	Note-1	DR	
		*	DKK	JAPAN	Note-1	DR	
		*	HONEYWELL	USA	Note-1	DR	
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR	
		*	YOKOGAWA	JAPAN	Note-1	DR	
84	SWAS Analyser (Phosphate)	III	Hach	USA	Note-1	A	
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR	
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR	
		*	HACH LANGE S.A.R.L	VESENZ, SWITZERLAND	Note-1	DR	
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR	
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR	
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR	
		*	WTW	GERMANY	Note-1	DR	
		*	DKK	JAPAN	Note-1	DR	
		*	YOKOGAWA	JAPAN	Note-1	DR	
		*	HONEYWELL	USA	Note-1	DR	
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR	
85	SWAS Analyser (Silica)	*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR	
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR	
		*	HACH LANGE S.A.R.L	VESENZ	Note-1	DR	
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.06.2019	
		CONTRACTOR :BHEL						
		CONTRACT NO :						
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		
66	SWAS Analyser (Sodium)							
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR		
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR		
		*	HACH LANGE S.A.R.L	VESENZ	Note-1	DR		
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR		
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		
67	SWAS Analyser (Turbidity)							
		*	ABB INDUSTRIES	SWITZERLAND	Note-1	DR		
		*	ENDRESS + HAUSER INDIA PVT. LTD	MUMBAI	Note-1	DR		
		*	HACH LANGE S.A.R.L	VESENZ,SWITZERLAND	Note-1	DR		
		*	METTLER-TOLEDO INDIA PVT. LTD.	POWAI, MUMBAI	Note-1	DR		
		*	EMERSON PROCESS MANAGEMENT	USA	Note-1	DR		
		*	SWAN ANALYTISCHE INSTRUMENTE AG	SWITZERLAND	Note-1	DR		
		*	WTW	GERMANY	Note-1	DR		
		*	DKK	JAPAN	Note-1	DR		
		*	YOKOGAWA	JAPAN	Note-1	DR		
		*	HONEYWELL	USA	Note-1	DR		
		*	THERMO ORION INC.	CHELMSFORD	Note-1	DR		
68	Synchronising Relay							
		III	Siemens	Mumbai	Note-1	A		
		III	ABB	Bangalore	Note-1	A		
		III	ALSTOM T&D (Earlier Areva)	Chennai	Note-1	A		
69	Synchroscope							
		III	AE	Mumbai	Note-1	A		
		III	Alstom	Chennai	Note-1	A		
		III	ABB	Germany	Note-1	A		
		III	Reyrolle	UK	Note-1	A		
90	TEMPERATURE ELEMENT(THERMOCOUPLE , RTD & THERMOWELL)							
		II	Emerson Process Management Pvt Ltd	Pawane	Note-1	A	Imported from Emerson, Germany (make)	



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		PROJECT : UPRVUNL 1x660 MW PANKU		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		II	Thermal Instruments	Savantwadi	Note-1	A	DUPLEX TYPE RTD
		II	Techno Instruments	Ahmedabad	Note-1	A	1-Excluding IP Inner casing Thermocouple 2. Carrying out N2 leak test for weld closure conformity as per IEC standard on 100 % basis
		II	Tempsens	Udaipur	Note-1	A	
		II	Pyroelectric	Goa	Note-1	A	K&R TYPE
		II	Detriv Instrumentation & Electronics Ltd	Mumbai	Note-1	A	
		III	Minco	USA	Note-1	A	
		III	OKAZAKI	JAPAN	Note-1	A	
		III	Yaman	JAPAN	Note-1	A	THERMOCOUPLE ASSEMBLY WITH THERMOWELL
		III	Yaman	Singapore	Note-1	A	Thermocouple (Up to 1100 Deg. C)K&R TYPE
		III	EMERSON PROCESS MANAGEMENT	Germany	Note-1	A	RTD, TC AND THERMOWELL
		III	HERAUS SENSOR	GERMANY	Note-1	A	
		III	WSE Control	Korea	Note-1	A	
		III	Thermosensor	Germany	Note-1	A	
		III	Gauges Burdon	Parvel	Note-1	A	
		II	TOSHNIWAL INDUSTRIES	AJMER	Note-1	A	
		II	WKA Instruments India Pvt Ltd	PUNE	Note-1	A	
		*	CARLO DYNATECH	INDIA	Note-1	DR	
		*	EMERSON (ROSEMOUNT)	DAMAN	Note-1	DR	
		*	FABRIKA	INDIA	Note-1	DR	
		*	EXOTHERM INSTRUMENTS MUMBAI	MUMBAI	Note-1	DR	
		*	GOA INSTRUMENTS INDUSTRIES PVT LTD	GOA	Note-1	DR	
		*	INDUSTRIAL INSTRUMENTATION	KOTA/ KOLKATA	Note-1	DR	
		*	ABB (SENSYCON)	GERMANY	Note-1	DR	
		*	ALTOP INDUSTRIES LTD.	India	Note-1	DR	
		*	E&H	AURANGABAD	Note-1	DR	
		*	NESSTECH INSTRUMENTS PVT LTD	VAPI	Note-1	DR	
		*	PYRO ELECTRIC INSTRUMENTS	GOA, India	Note-1	DR	
		*	RESISTANCE ALLOYS (INDIA	MUMBAI, India	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.05.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		*	SIEMENS INDIA	GURGAON	Note-1	DR		
		*	ELEIND ENGG	NOIDA	Note-1	DR		
		*	JINDAL ELECTRONICS	ROORKEE	Note-1	DR		
		*	BAUMER	VAPI	Note-1	DR		
		*	EMERSON (ROSEMOUNT)	GERMANY	Note-1	DR		
		*	HONEYWELL	USA/INDIA	Note-1	DR		
		*	MASIBUS AUTOMATION	INDIA	Note-1	DR		
		*	MICROPRECISION	INDIA	Note-1	DR		
		*	NAVDIRGA FORGINGS & FITTINGS	INDIA	Note-1	DR		
		*	PRECISION ENGINEERING	INDIA	Note-1	DR		
		*	PRECISION MASS	INDIA	Note-1	DR		
		*	TC LTD	USA	Note-1	DR		
		*	TECHNO INSTRUMENTS	AHMDABAD	Note-1	DR		
		*	THERMO ELECTRIC	INDIA	Note-1	DR		
		*	TM TECHNOMATIC	INDIA	Note-1	DR		
		*	VALUE TREK ENGINEERS	INDIA	Note-1	DR		
		*	WALCHANDER INDUSTRIES LTD	INDIA	Note-1	DR		
		*	Process Control	Roorkee	Note-1	DR		
91	TEMPERATURE GAUGE(WITH THERMOWELL)							
		III	Baumer	Vapi	Note-1	A		
		III	Precision mass products Pvt. Ltd.	Gandhinagar	Note-1	A	MASS AND ASHCROFT BRAND WITH ALL COMPONENTS IMPORTED FROM ASHCROFT GERMANY	
		III	Wika	Pune	Note-1	A		
		III	Forbes Marshall	Hyderabad	Note-1	A	upto 6" dial size. Gasfilled Type	
		III	Goa Instrument Industries	Goa	Note-1	A		
		III	Goa Thermostatic	Goa	Note-1	A	MIS AND INERT GAS TYPE	
		III	H GURU INDUSTRIES	Rishra/Muzaffarpur	Note-1	A		
		III	BUDENBERG	UK	Note-1	A		
		III	DRESSOR (ASHCROFT)	USA/Germany	Note-1	A		
		III	Wika	GERMANY	Note-1	A		



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2019
		CONTRACTOR :BHEL					
		CONTRACT NO :					
		III	H.Guru South India	Bangalore	Note-1	A	
		III	Nagano KEIKI	Japan	Note-1	A	
		III	Nesstech Instruments Pvt Ltd	Vapi	Note-1	A	Gas filled type 600 deg C, Gas filled & Thermowell up to 130 Ksc
		III	NUOVA FIMA	ITALY	Note-1	A	
		III	WSE Control	Korea	Note-1	A	
		III	Walchandnagar Industries	DHARWAD	Note-1	A	
		*	Gauges Bourdon (GIC)	Panvel	Note-1	DR	
		*	KONICS	KOREA	Note-1	DR	
		*	H.GURU Instruments (P) Ltd.	NEW DELHI	Note-1	DR	
		*	General Instruments Consortium	MUMBAI	Note-1	DR	
		*	A.N INSTRUMENTS PVT LTD	KOLKATA	Note-1	DR	
		*	Pressure & Temperature Control Instruments	KOLKATA	Note-1	DR	
		*	PYROELECTRIC	GOA	Note-1	DR	
		*	TEMPSENS INSTRUMENTS (I) PVT.LTD.	UDAIPUR,India	Note-1	DR	
		*	JUMO INDIA PVT LTD	INDIA	Note-1	DR	
		*	THERMAL INSTRUMENT INDIA PVT. LTD	Savanihawadi	Note-1	DR	
		*	US GAUGE	USA	Note-1	DR	
		*	WINTERS GAUGE	GOA/ USA	Note-1	DR	
92	TEMPERATURE TRANSMITTER						
		III	ENDRESS & HOUSER	Aurangabad	Note-1	A	
		III	Emerson Process management Pvt Ltd	Pawane	Note-1	A	Dual input & multi-input imported from Singapore but tagged & configured at Pawane works
		III	ABB	Bangalore	Note-1	A	DIN RAIL DUAL I/P FIELD MOUNTED TYPE (MAKE M/S ABB GERMANY)
		III	Yokogawa	Japan	Note-1	A	
		III	Moore	USA	Note-1	A	
		III	M System co Ltd	JAPAN	Note-1	A	Model No-B3HU-0
		III	EMERSON	U.S.A/Singapore	Note-1	A	
		III	ABB	GERMANY	Note-1	A	
		III	ABB	BANGALORE	Note-1	A	ASSEMBLED TT PROCURED FROM ABB,GERMANY
		*	KHRONE	FRANCE	Note-1	DR	
		*	TOKYO KIESO	JAPAN	Note-1	DR	
		*	HONEYWELL AUTOMATION	PUNE	Note-1	DR	
		*	INOR	SWEDEN	Note-1	DR	



		PROJECT : UPRVUNL 1x660 MW PANKU		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		*	P & F BANGALORE	BANGALORE	Note-1	DR	
		*	SIEMENS LTD	CHENNAI	Note-1	DR	
		*	YAMATAKE	JAPAN	Note-1	DR	
		*	YAMARI	JAPAN	Note-1	DR	
		*	FOXBORO	INDIA	Note-1	DR	
93	Terminal Block (Cage and Clamp type)						Note-9
		III	Elmex	Vadodara	Note-1	A	
		III	Windmuller	Germany	Note-1	A	
		III	Wago	Germany / India	Note-1	A	
		III	Phoenix	Germany / India	Note-1	A	
94	TRANSMITTER (ELECTRONIC) (PRESSURE, DP, FLOW, LEVEL APPLICATION)						
		III	ABB Ltd	Bangalore	Note-1	A	2600T & critical item from ABB Italy and ALL OTHER COMPONENTS LIKE HOUSING AND FLANGES FROM ABB approved source
		III	Emerson Process Management Pvt Ltd	Pawane	Note-1	A	
		III	Siemens Ltd	Thane	Note-1	A	Model - SITRANS P
		III	Honeywell Automation India Ltd	Pune	Note-1	A	
		III	Baldota Control and Equipment Pvt Ltd	Navi Mumbai	Note-1	A	PT & DPT of LD 301 Series (SMART)
		III	Yokogawa India Limited	Bangalore	Note-1	A	EJA-E 110,430,530 SERIES & all raw material and BOI under knocked down condition (sensor assembly as a single unit) shall be sourced from M/S Yokogawa Japan
		III	M/s Endress + Hauser India Automation Instrument Pvt Ltd	Aurangabad	Note-1	A	
		III	EMERSON (Rosemount)	USA	Note-1	A	
		III	YOKOGAWA	JAPAN	Note-1	A	
		III	ABB	GERMANY / Italy	Note-1	A	2600T & critical item from ABB Italy/ Their approved source, FILE FOR GERMANY WORKS NOT IN THE SYSTEM
		III	Siemens	France	Note-1	A	Sitrans P DSIII Series
		III	Fuji Electric	France	Note-1	A	FCX -A/III SERIES
		III	Fuji Elec co Ltd	China	Note-1	A	FCX-III MICROPROCESSOR BASED CARD NO 3573

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2019
		CONTRACTOR : BHEL					
		CONTRACT NO :					
		III	FUJI	JAPAN	Note-1	A	
		*	M/s Endress + Hauser India Automation Instrument Pvt Ltd	Mumbai	Note-1	DR	
		*	ABB	Dehradun	Note-1	DR	
		*	SIEMENS LTD	KALWA	Note-1	DR	
		*	LAXSON AUTOMATION	DAMAN	Note-1	DR	
		*	CIBNO	GHAZIABAD	Note-1	DR	
		*	E&H	GERMANY	Note-1	DR	
		*	Smar Equipamentos Industriais	Brazil	Note-1	DR	
		*	Honeywell Automation India Ltd	Chennai	Note-1	DR	
95	Turbine supervisory Instruments along with vibration analysis system.						Note-7
		I	MEGGITT (VIBROMETER)	Switzerland	Note-1	A	
		I	GE	Pune	Note-1	A	For GE Bentley USA make system
		I	MEGGITT (VIBROMETER)	Bangalore	Note-1	A	For Meggitt (Vibrometer) Switzerland make system
		I	Forbes Marshall	Pune	Note-1	A	For Shinkawa Japan make system
		II	GE BENTLY	USA	Note-1	A	
		II	SHINKAWA	JAPAN	Note-1	A	
		*	BRUEL & KJAER VIBRO/SHERMAN	Germany/NEWDEL HI	Note-1	DR	
		*	GEIPL, INDIA	INDIA	Note-1	DR	
		*	MEGGIT INDIA PRIVATE LTD.	INDIA	Note-1	DR	
		*	ROCKWELL AUTOMATION	USA/INDIA	Note-1	DR	
		*	ROCKWELL AUTOMATION	SAHIBABAD	Note-1	DR	
		*	FORBES MARSHALL	PUNE	Note-1	DR	
		*	EMERSON	INDIA	Note-1	DR	
		*	BHEL EDN	BANGALORE	Note-1	DR	
		*	SKF	USA/INDIA	Note-1	DR	
96	Ultrasonic Type Flow Meter (for Stack)						
		III	SICK AG	Germany	Note-1	A	
		III	Durag	Germany	Note-1	A	
		III	Teledyne	USA	Note-1	A	
		*	GE Sensing	USA	Note-1	DR	
97	Ultrasonic Flow Meters						
		*	Accept Fluidyne Pvt. Ltd.	Pune	Note-1	DR	
		*	FLEXIM Flexible Industrietechnik GmbH	GERMANY	Note-1	DR	
		*	Rockwell Flowmeter India Pvt. Ltd.	Ghaziabad	Note-1	DR	
		*	FLASH FORGE PVT LTD	Aurangabad	Note-1	DR	
		*	Electronet Equipments Pvt Ltd.	Pune	Note-1	DR	
		*	NIVUS GMBH	GERMANY	Note-1	DR	
98	Ultrasonic Type Level Transmitter						

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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00
		PACKAGE : EPC					DATE : 03.06.2019
		CONTRACTOR : BHCL					
		CONTRACT NO :					
		III	ENDRESS & HAUSER	Aurangabad	Note-1	A	
		III	Emerson Process management Pvt Ltd	Pawane	Note-1	A	COMPLETE Instrument Transmitter & Probe to be procured from Mobrey UK , only intergration & configuration at Pawane works
		III	SIEMENS MILTRONICS	Canada	Note-1	A	
		III	Nivelco	Hungary	Note-1	A	Manufactured ,assembled CALIBRATED AND TESTED in hungary Flange,EXTERNAL CAGES,MOUNTING BRACKETS, PANELS ETC ,configured AND SUPPLIED BY NIVELCO PUNE in pune
		III	ENDRESS & HAUSER	Germany	Note-1	A	
		*	Adept Fluidyne Pvt. Ltd.	Pune- MAHARASHTRA	Note-1	DR	
		*	VEGA GRIESHABER K.G	SCHILTACH	Note-1	DR	
		*	KHRONE	FRANCE/USA/PUNE	Note-1	DR	
		*	YOKOGAWA	Bangalore	Note-1	DR	
		*	PEPPERL+FUCHS	GERMANY	Note-1	DR	
		*	MAGNETROL	BELGIUM	Note-1	DR	
		*	ABB	GERMANY/INDIA	Note-1	DR	
		*	FORBES MARSHALL	PUNE	Note-1	DR	
		*	FLEXIM Flexible Industriemeßtechnik GmbH	Berlin- GERMANY	Note-1	DR	
		*	Rockwin Flowmeter India Pvt. Ltd.	Ghaziabad- UTTAR PRADESH	Note-1	DR	
		*	FLASH FORGE PVT LTD	Aurangabad- MAHARASHTRA	Note-1	DR	
		*	Electionet Equipments Pvt Ltd.	Kondhwa Budruk - Pune- MAHARASHTRA INDIA	Note-1	DR	
		*	NIVUS GMBH	Baden Wuerttemberg,- Foreign Country GERMANY	Note-1	DR	
09	UPS WITH ACDB						
		Note-5	Hilachi Hrel Power Electronics Pvt Ltd	Gandhinagar	Note-1	A	Upto 120KVA, Single phase IGBT
		Note-5	KELTRON	TRIVENDRUM	Note-1	A	
		Note-5	Merlin & Gerin	France	Note-1	A	
		Note-5	Gatur	Switzerland	Note-1	A	
		Note-5	AEG (Salt)	Germany	Note-1	A	
		Note-5	Fuji Electric	Japan	Note-1	A	
		Note-5	VERTIV ENERGY PVT LTD	Mumbai	Note-1	A	UP TO 160 KVA
		Note-5	VERTIV ENERGY PVT LTD	Pune	Note-1	A	UP TO 125 KVA FOR 1 PHASE & 300 KVA FOR 3 PHASE
		Note-5	CONSUL NEOWATT POWER SOLUTIONS PVT LTD	PUNE	Note-1	A	Up to 100 KVA single phase
		*	APC	INDIA	Note-1	DR	
		*	DUBAS ENGG PVT LTD	BANGALORE	Note-1	DR	



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		PROJECT : UPRVUNL 1x660 MW PANKI		LIST OF C&I ITEMS REQUIRING QP			REVISION NO : 00
		PACKAGE : EPC		APPROVAL & ACCEPTABLE VENDOR AS			DATE : 03.06.2019
		CONTRACTOR : BHEL		APPROVED			
		CONTRACT NO :					
		*	GRID POWER CONVERSION PVT LTD	Bangalore	Note-1	DR	
		*	EMERSON	BANGALORE/Pune	Note-1	DR	
		*	EMERSON (TATA LIBERT)	AMBAMATH	Note-1	DR	
		*	AMETEK SOLIDSTATE CONTROLS	USA	Note-1	DR	
		*	APLAB	THANE	Note-1	DR	
		*	SCHNEIDER ELECTRIC IT BUSINESS INDIA PRIVATE LIMITED	BANGALORE	Note-1	DR	
		*	DELTA INDIA ELECTRONICS PVT LTD.	GURGAON	Note-1	DR	
		*	LIVELINE ELECTRONICS	KOLKATA	Note-1	DR	
		*	Hitachi Hirai Power Electronics Pvt Ltd	Bangalore	Note-1	DR	
100	Valve manifolds						
		III	Anderson Greenwood	USA	Note-1	A	1/2" AND 3/4" UPTO 3000 SPL CLASS
		III	Astech	Mumbai	Note-1	A	
		III	Baldota Valves & Fitting	Mumbai	Note-1	A	2/3/5 way, 4500 class
		III	Excel hydro	Mumbai	Note-1	A	UP TO 6000 lbs
		III	Hamlet	Israel	Note-1	A	
		III	HP Valves and fittings	CHENNAI	Note-1	A	UPTO 5 WAYS, UPTO 9000 PSI
		III	HYD AIR	LONAVALA	Note-1	A	
		III	Metpress	KOLKATA	Note-1	A	upto 1/2", 5 way
		III	Microprecision	Palwal	Note-1	A	
		III	Parker	USA	Note-1	A	
		III	SCHNEIDER	Germany	Note-1	A	
		III	Swagelok	USA	Note-1	A	
		*	VIPAL ENTERPRISES PVT LTD	MUMBAI	Note-1	DR	
		*	ARCELLOR CONTROLS	AHEMADABAD	Note-1	DR	
		*	ARYA CRAFTS AND ENGG PVT LTD	MUMBAI	Note-1	DR	
		*	AURA INC	New Delhi	Note-1	DR	
		*	FLOWTECH	KOLKATA	Note-1	DR	
		*	Fluid Controls Ltd.	PUNE	Note-1	DR	
		*	Fluid Controls Ltd.	MUMBAI	Note-1	DR	
		*	DYNA FLUID VALVES FLOW CONTROLS	BELGAUM	Note-1	DR	
		*	PARKER HANNIFIN INDIA PVT LTD	LEBANON	Note-1	DR	
		*	PMT ENGINEERS	AHEMADABAD	Note-1	DR	
		*	PRECISION ENGG INDUSTRIES	MUMBAI	Note-1	DR	
		*	PRIME ENGINEERS	MUMBAI	Note-1	DR	
101	Vibration Monitoring System						Note-7
		II	Forbes Marshall Pvt Limited	Pune	Note-1	A	VMS hardware and sensors with integral cable shall be shinkawa Japan make .2. All other BOI shall be from LOA agreed sources
		II	Rockwell Automation	Sahibabad	Note-1	A	
		II	Shinkawa	Japan	Note-1	A	
		II	GE (Bendley Niveda)	USA	Note-1	A	
		II	GE	Pune	Note-1	A	
		II	MEGITT (Vibrometer)	Switzerland	Note-1	A	
		II	SONSONICS	UK	Note-1	A	

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		PROJECT : UPRVUNL 1x660 MW PANKJ		LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED			REVISION NO : 00	
		PACKAGE : EPC					DATE : 03.06.2019	
		CONTRACTOR : BHEL						
		CONTRACT NO :						
		II	BHEL	BANGALORE	Note-1	A	1. Imported items like Vibration Monitors, Cross Connection Cables, Buffered Output Modules and Piezoelectric Vibration Sensors, Eddy Current type Proximity Probe Extension Cable and Signal Conditioner will be procured from Valmet Automation, Finland. 2. Indigenous items like Communication cables, networking components, blank panels, TB, OWS will be procured from owner approved sources.	
		II	Sensonic Technologies	Kundli	Note-1	A	For Sensonic UK system	
		*	MEGGITT	BANGALORE	Note-1	DR		
		*	ROCKWELL AUTOMATION	U.S.A/BANGALORE	Note-1	DR		
		*	VIBROMETER	SWITZERLAND	Note-1	DR		
		*	EMERSON	MUMBAI	Note-1	DR		
		*	BRUEL AND KJAER		Note-1	DR		
		*	BRUEL & KJAER VIBRO GMBH	GERMANY / DENMARK	Note-1	DR		
		*	IRD MECHANALYSIS LIMITED	MUMBAI	Note-1	DR		
		*	SKF CONDITION MONITORING	U.S.A. / MUMBAI	Note-1	DR		
		*	SQUAREM ELECTRA PVT. LTD. (System Integrator for ROCKWELL AUTOMATION, India products)		Note-1	DR		
		*	VALMET AUTOMATION	FINLAND	Note-1	DR		
		*	WILCOXON SENSING TECHNOLOGY	U.S.A.	Note-1	DR		
		*	PCB PIEZOTRONICS	U.S.A.	Note-1	DR		
		*	CONNECTION TECHNOLOGY CENTER (CTC)	U.S.A.	Note-1	DR		
		*	HANSFORD SENSORS	U.K.	Note-1	DR		
102	SOLENOID VALVE				Note-1		Note-10	
103	Furnace Exit Gas Temperature Probe				Note-1		Note-10	
103	Density Meter				Note-1		Note-10	

FOLLOWING ITEMS TO BE SUPPLIED FROM MAIN CONTRACTOR APPROVED SOURCES

	Major Equipment	QP Inspection Category	Proposed Sub Supplier	PACKAGES
MC-1	AIR FILTER REGULATOR	III	Main Contractor Approved Sources	ALL PACKAGES
MC-2	ANEMOMETER	III	Main Contractor Approved Sources	CT
MC-3	Annunciator	III	Main Contractor Approved Sources	ALL PACKAGES
MC-4	Battery Health Monitoring System	III	Main Contractor Approved Sources	ALL PACKAGES
MC-5	Biofouling/ Deposit Monitor	III	Main Contractor Approved Sources	ALL PACKAGES
MC-6	COMPRESSION FITTINGS(SS)	III	Main Contractor Approved Sources	ALL PACKAGES
MC-7	Condensing Pots	III	Main Contractor Approved Sources	ALL PACKAGES
MC-8	CONDUITS / PIPE (GI)	III	Main Contractor Approved Sources	ALL PACKAGES



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			PROJECT : UPRVUNL 1x660 MW PANKI	LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED	REVISION NO : 00
			PACKAGE : EPC		DATE : 02.06.2019
			CONTRACTOR : BHEL		
			CONTRACT NO :		
MC-9	CONDUITS LEAD COATED (FLEXIBLE)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-10	Copper tubing/Brass connectors	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-11	Coriolis Type Mass Flow meter	III	Main Contractor Approved Sources	SG/AHP	
MC-12	DENSITY INDICATOR	III	Main Contractor Approved Sources	WTP	
MC-13	Desk for OWS/EVWS/Printer/Server	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-14	Digital Indicators	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-15	Dust Sensor	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-16	Flow Gauge	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-17	FLOW INDICATOR CUM TOTALISER	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-18	FLOW SWITCH	III	Main Contractor Approved Sources	SG/TG/WTP/AC/AHP/FDPS/HYD PLANT	
MC-19	FRP JUNCTION BOX	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-20	Furniture for control Room(Chair, Almira, Lock)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-21	Graphic Interface Unit	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-22	Hand Held Calibrator	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-23	Hart Management System	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-24	Humidistat / Thermostat / Gyserstat / Airstat	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-25	INSTANT CORROSION RATE MONITOR	III	Main Contractor Approved Sources	WTP	
MC-26	Instrument Tube Fittings (Air)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-27	INSTRUMENT VALVE(NEEDLE VALVE)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-28	KVM SWITCH/MATRIX KVM SWITCH	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-29	Level gauge (Transparent & Reflex, Tubular type)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-30	Level Indicator (Float & Board type)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-31	Level Switch Float Type	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-32	LIMIT SWITCH	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-33	Maintenance and Calibration Equipment	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-34	Mini UPS up to 3.5 KVA	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-35	PITOT TUBE	III	Main Contractor Approved Sources	CT	
MC-36	Press, DP, Vacuum Switch	III	Main Contractor Approved Sources	ALL PACKAGES	



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			PROJECT : UPRVUNL 1x660 MW PANKI	LIST OF C&I ITEMS REQUIRING QP APPROVAL & ACCEPTABLE VENDOR AS APPROVED	REVISION NO : 03
			PACKAGE : EPC		DATE : 03.05.2019
			CONTRACTOR : BHEL		
			CONTRACT NO :		
	PRESSURE TRANSMITTER (PRESSURE DP.FLOW LEVEL APPLICATION)	III	Main Contractor Approved Sources	AC/ESP/FDPS	
MC-37					
MC-38	Printer (Dot Matrix)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-39	Printer (Inkjet / Laser)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-40	PSYCHROMETER	III	Main Contractor Approved Sources	CT	
MC-41	Pulse jet Controller	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-42	Pulse Valve	III	Main Contractor Approved Sources	ALL PACKAGES	
	Residual Chlorine Analyser	III	Main Contractor Approved Sources	WTP	
MC-43					
MC-44	ROTAMETER	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-45	Semaphore Indicators	III	Main Contractor Approved Sources	ALL PACKAGES	
	SIGHT FLOW INDICATOR	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-46					
	SINGLE AND MULTI POINT TEMPERATURE RECORDER (Microprocessor based)	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-47					
MC-48	SMART POSITIONER	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-49	Socket Weld Fittings	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-50	SOLENOID VALVE	III	Main Contractor Approved Sources	AC/AHP/CHP/CWP/FDPS/HYD PLANT /MILL REJ/STATION PIPING	
MC-51	Solid Mass Flow Meter	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-52	SV BOX	III	Main Contractor Approved Sources	CHP/WTP	
	Temperature cum Humidity Indicator	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-53					
	TEMPERATURE SWITCH	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-54					
MC-55	Transducer	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-56	Tube thickness Meter	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-57	Turbidity Analyser	III	Main Contractor Approved Sources	WTP	
MC-58	Voltmeter	III	Main Contractor Approved Sources	ALL PACKAGES	
	Watthour Meters	III	Main Contractor Approved Sources	ALL PACKAGES	
MC-59					
	SMF LEAD-ACID BATTERY FOR MICROPROCESSOR BASED FIRE ALARM PANEL	III	Main Contractor Approved Sources	FDPS	
MC-60					
LEGENDS :					
1.0 SYSTEM SUPPLIER / SUB SUPPLIER APPROVAL STATUS CATEGORY					
A - For those items proposed vendor is acceptable to Customer. To be indicated with letter "A" in the list alongwith the condition of approval, if any.					
DR - For those items "Detailed Required" for Customer review. To be identified with letter "DR" in the list. For these items, vendor shall be proposed for owner acceptance with-in the agreed contract schedule of the package					
SQP-Standard Quality Plan		ROP-Reference Quality Plan			
2.0 QP INSPECTION CATEGORY :					

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PROJECT : UPRVUNL 13660 MW PANKI	LIST OF C&I ITEMS REQUIRING QP	REVISION NO : 03
PACKAGE : EPC	APPROVAL & ACCEPTABLE VENDOR AS	DATE : 03.06.2019
CONTRACTOR : BHEL	APPROVED	
CONTRACT NO :		

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

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

CAT - III : For these items Quality control to be exercised as per Main contractor Quality Assurance System. The final acceptance by Owner shall be on the basis of Certificate of Conformance (COC) by main contractor

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

* - Inspection category will be decided during vendor evaluation.

NOTE - 1 : Approval is conditional and subject to Sub QR / Provenances clearance as specified in the contract specification. Further for any change in the Technical specification at later stage vendor approval will be reviewed accordingly.

NOTE - 2 : For Instrument cable <= 1 KM inspection category CAT - III, For > 1 KM to <= 10 KM inspection category CAT - II GOC & FCR > 10 KM inspection category CAT-I

NOTE - 3 : For Fiber Optic cable <= 10KM inspection category CAT - III & for > 10KM inspection category CAT-II

NOTE-4 : Batteries for UPS <= 10 KVA and batteries for intelligent battery charger 24 V DC <= 40 Amp inspection category CAT-III & for Batteries for UPS > 10KVA and batteries for intelligent battery charger 24 V DC > 40 Amp rating inspection category CAT-I

NOTE-5 : UPS <= 10 KVA rating inspection category CAT-III & for > 10KVA rating inspection category CAT-I

NOTE - 6 : For the items not appearing in the preaward list and falls in the scope of supply of the bidder, bidder and Customer will mutually discussed in future.

NOTE - 7 - EMPTY CABINETS, COMPUTERS, SIGNAL ISOLATOR/ MULTIPLIER and TB SHALL ALSO BE ACCEPTABLE FROM OWNER ACCEPTED IN QP, IF THE TOTAL INTEGRATED PANEL AND FAT IS CONDUCTED INDEGENOUSLY

NOTE-8 : For the C & I Instruments mounted on the skid of the main item or supplied as a integral part of the main item, instrument to be supplied as per proven practice of the manufacturer meeting the Customer technical specification requirement.

NOTE-9- This item is a bought out component of main equipments like DDCMS, PLC, TSI, CCTV, PA system etc

NOTE-10- For these controlled items, vendor shall be proposed for owner acceptance within the agreed contract schedule of the package

N Aganwal
N Aganwal
(QA- Consultant)

27/6/19
(S.N. Mishra)

