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┢			Tender Enquirey No.: TPCO	DL/P&S/1000000156/21-22 - RC FOR SITC OF 24V DC SYSTEM	Date:15.01.2022	
ł			TPCODL Pre Bi	d Queries Response for "SITC of 24V DC System"		
	Sr. No.	Detailed Reference to TPCODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPCODL Response Dated 15th Jan 2022	
	1	2	3	4	5	
	1	A&T/2021/SPEC-03/PSS DC SYSTEM/ clause 3/ page 12 pf 64	The scope of this specification covers all the technical requirement with all accessories, tools and tackles of Design, Engineering, Supply, Insurance, Testing at Manufacturer's works, packing, forwarding, Transportation, Delivery at site, unloading at site/stores Installation, Testing & Commissioning of DC system and seamless integration with Purchaser's RTU and other systems for the 33/11kV Primary substation, Warranty support as per the detailed specification	Delivery at site is interpreted as delivery to central/ regional/ zonal stores. Transfer of material from store to installation site is not considered in our scope.	Bidder to consider the entire scope as per the RFP	
	2	A&T/2021/SPEC-03/PSS DC SYSTEM/ clause 3.3.1/ page 13 pf 64	Extension of AC supply to the DC System and extension of DC output to DCDB shall be in scope of the bidder.	. Kindly clarify the same existing cable are to be used for AC supply connection or new cable to be supplied. Also provide the length of the cable to be considered if required.	Bidder to include supply, laying & termination of AC Cable of appropriate size in the scope. Bidder shall add additional line item in the BoM. Since this system is to be installed in the existing Substation Control Room, expected cable length will not be more than 60 meters for two runs.	
	3	A&T/2021/SPEC-03/PSS DC SYSTEM/ clause 3.3.1/ page 13 pf 64	Supplying, Laying and Termination of auxiliary power supply cable for extending 24V DC inputs from DCDB to the RTU	, The no. of outgoing cable with size and length to be provided.	Cable size & length are mentioned in the indicative BoM. Bidder to refer item B1 of Sheet no. 230 of NIT for Phase-1 & item B1 of Sheet no 233 of NIT for Phase-2	
	4	A&T/2021/SPEC-03/PSS DC SYSTEM/ clause 9.1.1/ page 31 pf 64 and 9.1.2	For Phase-1 FY'21-22	The document will be submitted for approval 7days from RC. Delivery shall commense within 60days from RO or 60days from receipt of drawing approval whichever is later. For commissioning atleast two months to be provided as it is practically impossible to commissioned all the system within 5days of supply. commissioning activitiy shall be out of ambint of delivery schedule.	Since the system is to be commissioned along with the RTU (Procured under Separate project, not in the Scope of this RFP), hence the timeline mentioned in the RFP to be adhered.	
	5	A&T/2021/SPEC-03/PSS DC SYSTEM/ clause 12.3.3 page 41 pf 64 and 9.1.2	Earthing interface and the earth cable of the DC System to the earth pit to be provided by the Bidder	Earthing termination may please be allowed to nearest earth strip within control room.	Bidder's proposal is accepted	
	6	A&T/2021/SPEC-03/PSS DC SYSTEM, section-b/ cl 4/page 6 of 55	Details of Specifications of VRLA Type (24V) 2.4.1 Battery and various Sub clauses	The specification calls for all kinds of batteries VRLA, plante/ tubular/ Gel and further other sub clauses are mix of all. Pl clarify the extact type of battery type required. The VRLA battery confirms IEC-60896. The cells are made from polypylene container, there is no liquid electrolyte inside the battery. It is absorbed into separators and cells are sealed one. The end cell voltage for VRLA Battery shall be 1.75v.	Bidder to consider low maintenance type battery with mandatorily 5 years warranty.	
	7	A&T/2021/SPEC-03/PSS DC SYSTEM, section-b/ cl 2.7.1/nage 11 of 55	type test for battery	The batteries are mostly consumable and commercial grade item. Type test report can be provided if available from manufacturer.	Bidder to submit all test reports as per RFP	

#### TPCODL Pre Bid Queries Response for "SITC of 24V DC System" Reference Detailed to TPCODL Technical **TPCODL Response** Sr. No. Document. Please specify **Description as per Bid Document Remarks - Query / Clarification** Dated 15th Jan 2022 Document No / Clause No / Page No 2 5 1 1. Bidder to note the DC system will be commissioned in highly humid costal area. The Bill of material contents components such as transformer/SCR/IGBT/2. Bidder to ensure for compliances to all the environmental A&T/2021/SPEC-03/PSS DC Potentiometer and other various items required. We confirm the requirements for the proposed DC system as mentioned in 8 SYSTEM, section-b/ cl Bill of Material compliance of meeting the requirement considering the basic principle and the RFP. 3.3/page 16 of 55 functional requirement. Alternative provisions/ items shall be used to ful fil 3. Bidder can propose solution based on latest proven requirement considering the SMPS charger. technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution 1. Integration of Controller with RTU on MODBUS-RTU protocol is accepted. A&T/2021/SPEC-03/PSS DC 2. Preference will be given to Controller having IEC 61850 Since charger to RTU communication is based on modbus RTU, other 9 SYSTEM, section-b/ cl General Technical Requirements with SNMP & SNTP shall support. specified protocols such as SNMP etc ignored. 3.12.1/page 37 of 55 3. Bidder to propose the alternate solution for Time Synchronization and health monitoring of the Controller, in case the proposed Controller supports only MODBUS-RTU. Price schedule is provided for phase-1 and phase-2. Similar price schedule Bidder to note that the present NIT covers only the A&T/2021/SPEC-03/PSS DC for phase-3 also to be provided. We cant keep the same price valid for 10 price schedule requirement of Phase-1 and Phase-2. SYSTEM, section-E phase-3 due to continuous increase in prices of semiconductor 2. Separate RFP will be floated for Phase-3. microprocessor prices. Supply: 1. 60% release of payment (Supply) on receipt of materials at site. 2. 40% release of payment (Supply) on completion of ITC & closure of all SAT points. Payment shall be made as per the finalized payment terms In case of non availability of site front and any other reason with Purchaser's procurement team as per the milestones attributable to TPCODL. 40% of Supply payment will be mentioned below: Supply: 90% within 30 days from date of receipt of material & 10% within released to bidder within 60 days from the date of receipt of 9.3 Payment Mile Stones a) 60% release of payment on supply of material 60 days from receipt of material material at site. 11 ITC: 100% payment within 30 days from the date of invoice. b) 40% release of payment on complete ITC Service: All payments to the bidder will be released within 30 days of 3. 100% Payment against Service (ITC) will be released after invoice date, after certification from TPCODL. successful completion of the activities and Closure of all SAT points. All payments to the bidder will be released within 30 days (except specifically mentioned) from invoice submission date, after certification from TPCODL. Bids shall remain valid for 180 days from the due date of 90 days 12 3.5 Period of Validity of Bids As per RFP submission of the bid. RC will be valid for 01 year from the placement of RO, 7.1. Special Conditions of a) After finalization of tender, TPCODL shall place a Rate We request for reducing the validity of RC to 1 year including PVC (Lead, 13 however the delivery of material will be as per the delivery Contract Contract for a period of Two (02) years to the successful Copper, Steel, and other commodity items clause and dollar rate applicable) schedule mentioned in the RO bidder.

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1	2	3	4	5	
31	3.5.6	Under normal operation, the float charger shall be supplying the DC load current and at the same time trickle charge the station battery. When the battery voltage goes down considerably, automatic transfer arrangement shall be provided such that the battery is disconnected from the float charger and gets connected to the Boost charger. However, when battery is on boost charge, DC load shall be fed from the float charger. In addition, means shall be provided to ensure interruption free availability of control power from the battery whenever there is a power failure irrespective of whether the battery is on boost charge or float charge.	Normal Operation: Float charger will supply DC load & FCBC will charger VRLA battery. In case of float or boost charger fail, other charger should sufficent to supply power to load and charger battery as well. Float charger rating: 70A + Battery charger @ C10 or C20 ?	Bidder to consider 70A Battery Charger with Float cum Boost Charging as per RFP with all the required functionalities mentioned in the RFP	
32	3.6.2	The enclosure of the charger shall be made of CRCA sheet steel of thickness not less than 3 mm for load bearing members, 2 mm for door and non-load bearing members and 3 mm for gland plates. Panels shall be offered with base frame of 3.0 mm thick CRCA sheet, painted black all around, suitable for bolting/ welding/ grouting on to the foundation. Gaskets on doors and inter panel gaskets shall be of neoprene rubber.	Complied with GI sheet with thockness 1.6mm to 2mm	<ol> <li>Bidder can propose the solution with GI sheet and shall ensure all the functional requirements as per the RFP.</li> <li>Bidder to note the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements for the proposed DC system as mentioned in the RFP.</li> </ol>	
33	3.6.6	Power wiring for the chargers shall be done with 1.1KV grade, heavy duty, single core, stranded copper conductor PVC insulated cables or suitable sized PVC sleeved copper bus bars. Control wiring for the charger shall be done with 1.1KV grade PVC insulated copper wires of cross section 2.5 sq. mm for all control connection. Wire of 2.5 sq. mm cross section shall be used for control bus. All control wiring shall be ferruled	Control harness wire is 0.35 to 0.5 sq.mm according to the terminations available in controller connectors.	Bidder to note that all Internal wiring shall comply to applicable IS code, to meet the functional and environmental requirement mentioned in the RFP.	
34	3.6.11	The incoming and outgoing circuits shall be provided with MCCBs with static releases for overload, short circuit and earth fault protections. The incoming power supply to the chargers will be from two sources with a facility of changeover switch. The changeover facility shall be provided in the charger itself.	FC & FCBC charger sections shall have individual AC incomer MCCB, No changeover is required at AC incomer	<ol> <li>Bidder to confirm "The incoming and outgoing circuits shall be provided with MCCBs with static releases for overload, short circuit and earth fault protections" is complied by the proposed solution.</li> <li>Bidder to submit justification / supporting documents for no requirement of Change over switch.</li> <li>Bidder to ensure all the functional requirements as per the RFP for the purposed solution.</li> </ol>	
35	3.11 13 Control & switches	d) Float and boost voltage variable potentiometers.	Controller has inbuilt setting of FC & FCBC parameter. Hence potentiometer not required	Bidder to explain how the functional requirement of manual setting of the variable charging current in the Battery Charger is taken care. If the proposed solution is having Automatic setting of Charging Current, in that case no potentiometer is required.	
36		f) Test Push button	What is the purpose of test push button	Test push button is required to check the healthiness of annunciators/ LEDs for proposed system along with reset push button.	

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1	2	3	4	5	
37	3.11 15 Meters	i)Input Voltmeter (ii)Input Ammeter (iii)Output Voltmeter (iv)Output Ammeter	Complied with digital VA meter	Bidder to consider the scope as per the RFP meeting all the functional requirement.	
38	3.11 20 Paint Thickness	(iii) 80 - 100 Micron	80 - 120 Micron	Noted	
39	18 Design and Constructional Details	7 Cell Voltage a) Nominal 2V b) End Cell Voltage 1.85V	Complied with 12V VRLA Cell	<ol> <li>Bidder to consider low maintenance type battery with mandatorily 5 years warranty.</li> <li>Bidder to provide Battery as specified in the RFP i.e. 12 nos. of 2V Battery Cell.</li> </ol>	
40	3.11 3.13 DC Distribution Board (DCDB)	The DCDB shall be floor mounting, integral to battery charger panel. Non compartmentalized, separate partition shall be provided between battery charger and DCDB. It shall have Moving coil DC voltmeter of size 96 sq.mm with HRC fuse 0- 300V and Incoming Feeder 300A DC, Copper Bus-bar, MCCB: 2 Nos., Outgoing Feeder 25A DC MCB: 15 Nos. with Feeder 'ON' LED indication.	Since the charger rating is 70A we shall be provide the 100A MCB, 10KA 2P 2nos Instead of 300A MCCB	<ol> <li>MCCB rating for DCDB incoming feeder shall be 150 A, 2P.</li> <li>MCB are not envisaged</li> </ol>	
41	2.5 (Design & Constructional Details), Page No: 133	Boost Charging Voltage 2.0V to 2.75V Per Cell	For VRLA Battery, Boost Voltage will be 2.3V Per Cell.	Noted	
42	2.5 (Design & Constructional Details), Page No: 133	End Cell Voltage : 1.85V	AS Battery Manufacturers, we will Suggest 1.75V as ECV.	Bidder to consider the scope as per the RFP	
43	3.0 Technical Specification of 70A Battery Charger, Page NO: 141	70A Single Phase Charger (Float Cum Boost Charger)	75A , Three Phase, Four Wire instead of Single Phase Float Cum Boost charger	<ol> <li>Bidder to Consider Single Phase 70A Float cum Boost Charger as per the RFP</li> <li>However Single Phase 75A Float cum Boost Charger is acceptable.</li> </ol>	
44	3.3 (4) , Page No: 143	Three Phase, Full Wave, Full Controlled rectifier Bridge Comprising of MOSFETS / IGBT	Three Phase, Full Wave, Full Controlled rectifier Bridge Comprising of SCR / Thyristors	Bidder to consider the scope as per the RFP	
45	3.3 (27, 28) , Page No: 144; 3.6.13, Page No: 148 15. METERS, Page No: 155	Digital Meters	Instead of Digital Meters, All the Parameters will be Displayed on LCD	Bidder to consider the scope as per the RFP Bidder to provide the experience of LCD display in view of temperature inside the Charger panel. Bidder shall submit the Life expectancy of the LCD modules proposed.	
46	3.6.14, Page No: 149	Annunciation	Provided Through Both LCD & LED	<ol> <li>Bidder's query is not clear. How the functionality is achieved through LCD and LED.</li> <li>Bidder to consider the entire scope as per the RFP</li> </ol>	
47	20. PANEL	3 mm for Load Bearings & 2 mm for Non- Load bearings	2 mm for Load Bearing & 1.6 mm for Non-Load bearing sections & 3 mm for undrilled Gland Plate	Noted	
48	22, Page No: 156	Use Interface with Controller	RS-485 COM Port will be Provided with Universal Modbus Protocal for SCADA Interconnection	<ol> <li>Integration of Controller with RTU on MODBUS-RTU protocol is accepted.</li> <li>Preference will be given to Controller having IEC 61850 with SNMP &amp; SNTP shall support.</li> <li>Bidder to propose the alternate solution for Time Synchronization and health monitoring of the Controller, in case the proposed Controller supports only MODBUS-RTU.</li> </ol>	

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1	2	3	4	5			
49	3.11.1, Page No: 157	General Features (a)	We will Provide Float cum Boost Charger in one Cabinet & Separate Free standing, Floor Mounted, Non-Compartmentalized DCDB in another Cabinet	Bidder to consider the entire scope as per the RFP			
50	3.13, Page No: 167	DC DISTRIBUTION BOARD (DCDB)	Instead of Charger Inbuilt DCDB, we will Provide Separate Free standing, Floor Mounted, Non-Compartmentalized DCDB	Bidder to consider the scope as per the RFP			
51	Battery -Type 1 & Type-2	70 A Float cum Boost for 24V, 150 AH (Type-1) & 24V, 200 AH (Type-2) VRLA Type Batter	Requesting to change the Battery Capacity from 150AH to 200AH for Type-1 also in BOQ.	<ol> <li>Bidder may consider 200 AH battery &amp; 70 A Battery Charger</li> <li>However Commercial evaluation by TPCODL will be on the basis of the requirement mentioned in the RFP.</li> </ol>			
52	Commercial Point -Payment Terms[9.3]	Payment shall be made as per the finalized payment terms with Purchaser's procurement team as per the milestones mentioned below (1) 60% release of payment on supply of material (2)40% release of payment on complete ITC	90% payment shall be made within 45 days from date of submission of Invoice/ Bill to E-I-C of TPCODL post supply of Material in good condition at TPCODL site/ Store. Balance 10% payment shall be released post commissioning of Battery/ Battery Charger, however, it shall be subject to, TPCODL shall provide the site clearance within 10 days from the date of receipt of material at TPCODL site/ store. In case TPCODL will not provide the site clearance within 10 days from the date receipt of material; then balance 10% payment shall be released within 60 days from the date of supply.	Supply: 1. 60% release of payment (Supply) on receipt of materials at site. 2. 40% release of payment (Supply) on completion of ITC & closure of all SAT points. In case of non availability of site front and any other reason attributable to TPCODL. 40% of Supply payment will be released to bidder within 60 days from the date of receipt of material at site. Service: 3. 100% Payment against Service (ITC) will be released after successful completion of the activities and Closure of all SAT points. All payments to the bidder will be released within 30 days (except specifically mentioned) from invoice submission date, after certification from TPCODL.			
53	Page No.11 of 234 Clause No.3.5	Bids shall remain valid for 180 days from the due date of submission of the bid.	Price of raw materials are increasing day by day, in this contex it is not possible to keep validity of offer for 180 days. Request you to reduce it to 60 to 90 days	As per RFP			
54	Page No.75 of 234 Clause No.3.3.1.g	Appropriate civil work shall be carried out before installation of DC System	Exclude civil work from scope	Bidder to consider the entire scope as per the RFP			
55	Page No.77 of 234 Clause No.4.1.3	Provision of the required power supply from ACDB to DCDB. It is the bidder's responsibility to lay the required cable up to the equipment supplied by bidder	Please send SLD to understand the same	SLD and other documents will be shared during detailed engineering with successful bidder. AC, DC Supply cable requirement w.r.t size, length is mentioned in the Indicative Bill of Material and TPCODL Response to item 2.0 above			
56	Page No.93 of 234 Clause No.9.1.1	Delivery Schedule of Phase 1 ; 90 days from PO Placement	Delivery 12 /16 weeks from drawing approval and manufacturing clearance or clear techno commercial purchase order which ever is later.	Since the system is to be commissioned along with the RTU (Procured under Separate project, not in the Scope of this RFP), hence the timeline mentioned in the RFP to be adhered.			
57	Page No.93 of 234 Clause No.9.1.2	Delivery Schedule of Phase 1 ; 153 days from PO Placement	Delivery 12 /16 weeks from drawing approval and manufacturing clearance or clear techno commercial purchase order which ever is later.	Since the system is to be commissioned along with the RTU (Procured under Separate project, not in the Scope of this RFP), hence the timeline mentioned in the RFP to be adhered.			

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58	Page No.94 of 234 Clause No.9.3	Payment Mile Stones	90 % payment against supply of material and balance 10% within 45 days or complete ITC whichever is earlier.	Supply: 1. 60% release of payment (Supply) on receipt of materials at site. 2. 40% release of payment (Supply) on completion of ITC & closure of all SAT points. In case of non availability of site front and any other reason attributable to TPCODL. 40% of Supply payment will be released to bidder within 60 days from the date of receipt of material at site. Service: 3. 100% Payment against Service (ITC) will be released after successful completion of the activities and Closure of all SAT points. All payments to the bidder will be released within 30 days (except specifically mentioned) from invoice submission data after cartification from TPCODI		
59	Page No.102 of 234 Clause No.12.2	Inspection	Cost of Inspection engineer/third party agency is not in vendor scope. However vendor will arrange inspection at vendor premises free of cost.	Boarding, Lodging and Travel of TPCODL Personnel or Third Party Agency engaged by TPCODL will be borne by TPCODL. Rest other requirement is to be arranged by the Bidder		
60	Page No.103 of 234 Clause No.12.3.3	All cables to and from any equipment supplied by Bidder	All cable detail with to and from to be mentioned in BOQ with SLD	SLD and other documents will be shared during detailed engineering with successful bidder. AC, DC Supply cable requirement w.r.t size, length is mentioned in the Indicative Bill of Material and TPCODL Response to item 2.0 above		
61	Page No.132 of 234 Clause No.2.4.1	VRLA Type (24V) plates manufactured to conform to IS: 1652- 1991.	IS 1652 is applicable for Plante type battery not for VRLA, please clarify	Noted. In case the bidders are considering Plante Type batteries, then the clause is applicable, however for VRLA type of battery bidder shall comply with appropriate applicable IS standard		
62	Page No.132 of 234 Clause No.2.5	Container Transparent	Not applicable for VRLA battery; please clarify	Noted		
63	Page No.132 of 234 Clause No.2.5	Plante/Low maintenance Tubular Gel Type	Please clarify type of battery. Tubular, Plante or VRLA	Bidder to consider low maintenance type battery with mandatorily 5 years warranty.		
64	Page No.141 of 234 Clause No.	SMPS based battery charger	Charger is SMPS type or Thyristor based. Thyristor is more suiatable for this type of application due to rugged system.	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
65	Page No.141 of 234 Clause No.3	(70 Amp single phase Charger (Float Cum Boost Charger)	it is Single phase or Three phase	Bidder to Consider Single Phase 70A Float cum Boost Charger as per the RFP		

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1	2	3	4	5		
66	Page No.142 of 234 Clause No.3.3	Float & Float Cum Boost Charger	Please confirm it is Float & Float Cum Boost Charger OR Float Cum Boost Charger	Bidder to consider Float & Float Cum Boost Charger. Please refer Item 3.11 of NIT Section B, General Technical Requirement of Battery Charger Page No. 153 of 234		
67	Page No.143 of 234 Clause No.4	controlled rectifier bridge comprising of MOSFETs / IGBTs liberally rated	SCR type	Bidder to consider the entire scope as per the RFP		
68	Page No.143 of 234 Clause No.7	Dropper diode	As per industrial practice dropper diode is not applicable for VRLA battery ; pls clarify	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		
69	Page No.144 of 234 Clause No.3.5.1	SMPS type suitable for VRLA Batteries	Charger is SMPS type or Thyristor based	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
70	Page No.144 of 234 Clause No.3.5.4	The battery charger shall have full-wave, Half-controlled thyristor control bridge rectifier circuit	Charger is SMPS type or Thyristor based	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
71	Page No.147 of 234 Clause No.3.5.6	Under normal operation	Please let us know when Float charger is not working, what will happen to load & boost charging to battery. This will decide the rating of the battery charger.	Bidder to consider 70A Battery Charger with Float cum Boost Charging as per RFP		
72	Page No.153 of 234 Clause No.3.11	Float & Float Cum Boost Charger for VRLA Type, full wave, full controlled type.	Please confirm it is Float & Float Cum Boost Charger OR Float Cum Boost Charger	Bidder to consider Float & Float Cum Boost Charger. Please refer Item 3.11 of NIT Section B, General Technical Requirement of Battery Charger Page No. 153 of 234		
73		150AH Battery is 15 Nos. and 200AH Battery is 7 Nos. for 22 sets on Charger	Please share the SLD for your DC systems to understand the operation of the system	SLD and Other documents will be shared during detailed engineering with successful bidder.		

	TPCODL Pre Bid Queries Response for "SITC of 24V DC System"					
Sr. No.	Detailed Reference to TPCODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPCODL Response Dated 15th Jan 2022		
1	2	3	4	5		
74	Page No.146 of 234 Clause No.3.5	Design and control details	Specification is very confusing. It is a hybrid specfication because you have asked thyristor charger and SMPS charger also in same specification. You are requested to freeze the specification either SMPS or thyristor charger. We are maufacturing both type of charger.We can help you to freeze the specification.	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
75	2.0	2.5 of Section B	Battery required VRLA as per specification however in Clause no. 2.5 of section B it has mentioned Plante/Tubular battery. We are cosnidering VRLA type battery having polypropylin Co-Polimar type container and will be manufactured as per Battery OEM standard compling to IEC 60896. Battery will be offered either 2 nos. 12V monoblock or 12 nos. 2V Cells.	<ol> <li>Bidder to consider low maintenance type battery with mandatorily 5 years warranty.</li> <li>Bidder to provide Battery as specified in RFP i.e. 12 nos. of 2V Battery Cell.</li> </ol>		
76			Battery type test can not be conducted as it is very long duration test. Battery OEM TTR report will be shared for approval.	Bidder to submit all test reports as per RFP. However the Test Report shall be of the product offered and shall be latest.		
77	3.2	3.5.1	In specificaiton it has mentioned charger will be charge the Li-ion battery however requirment is VRLA battery so charger will be suitable for VRLA battery.	Bidder to offer complete solution for DC system as per the functional requirement of RFP. All the offered product should be compatible to each other i.e. the battery charger should be suitable to the proposed battery system.		
78			It has mentioned Double wound impregnated naturally air cooled three phase mains transformer necessary secondary tapes however for SMPS charger each module is having inbuild tranformer so no saprate tranformer is required for SMPS based charger. We are meeting the regulation with our SMPS charger as per your specification.	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
79		3. Double wound impregnated naturally air	High frequency transformer is default inbuilt inside Rectifier Module. Hence, additional transformer is not applicable	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution.		

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1	2	3	4	5		
80		4. Three phase, full wave, fully controlled	Offered Charger is modular, SMPS type.	<ol> <li>Bidder to note that the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements mentioned in the RFP for the proposed DC system.</li> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> </ol>		
81		5. Filter circuit comprising of smoothing	Filter circuit is default inbuilt inside rectifier module meeting your techncial specificaiton. Hence additional filter circuit is not required	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		
82		7. Dropper diode selector switch with	Dropper diode is not required for VRLA battery as boost voltage is only 27.6 V and during boost charging float charger will taking care the load so boost voltage will not go to load.	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		
83		8. Auto/Manual selector switch for selecting	Automatic float cum boost charging shall be provided. Mode selection & adjustments shall be done through Microprocessor Based controller Display Unit. Hence selector switches are not applicable.	Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
84		9. Potentiometers for setting DC output	Voltage & Current controls shall be displayed on Microprocessor Based LCD Display. Hence Potentiometers are not applicable.	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>		
85		10. The float charger DC output current	All metering values shall be displayed on Microprocessor Based LCD Display.	1. Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.		
86		11. The float charger DC output voltage	Hence separate meters not considered	be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
87	3.3	13. Float Charger Blocker diode with	Blocking diode is default inside rectifier module.	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		

#### TPCODL Pre Bid Queries Response for "SITC of 24V DC System" Reference Detailed to TPCODL Technical **TPCODL Response** Sr. No. Document. Please specify **Description as per Bid Document Remarks - Query / Clarification** Dated 15th Jan 2022 Document No / Clause No / Page No 2 2 5 1 1. Bidder can propose solution based on latest proven We are using Microprocessor based controller & LCD display which can be technology, and similar system installed elsewhere in last 2 used for charger ON/OFF Purpose & MCCB as per latest technology years. 88 17. Auxiliary AC contactor to be interlocked trend.Hence. AC contactor is not required. 2. Bidder to note that the Local and Remote Operation shall Please find attached SLD for your refrence. be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally. 1. Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 Automatic float cum boost charging shall be provided. vears. 18. Constant current/ Constant voltage 89 Mode selection & adjustments shall be done through Microprocessor Based 2. Bidder to note that the Local and Remote Operation shall controller Display Unit. Hence selector switches are not applicable. be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally. 1. Bidder can propose solution based on latest proven We are using Microprocessor based controller & LCD display which can be technology, and similar system installed elsewhere in last 2 used for charger ON/OFF Purpose & MCCB as per latest technology vears. 90 19. DC contactor with power ` NC' contact trend.Hence, AC contactor is not required. 2. Bidder to note that the Local and Remote Operation shall Please find attached SLD for your refrence. be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally. 1. Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 vears. 21. The charge/ discharge current of Shall be displayed on Charger LCD display. 91 2. Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally. Suitable rated MCB shall be provided & it shall be placed inside the Charger 92 22. Double pole ON/OFF DC MCB with cabinet & it is accessible after opening the front door. MCCB rating for DCDB incoming feeder shall be 150 A, 2P. Hence, lock and key is not applicable. Battery voltage will be communicated through MODBUS TCP/IP protocol to 93 23. The Battery voltage to be measure of Bidder to consider the entire scope as per the RFP SCADA. 94 27. Digital meters: - AC Moving iron 1. Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 All metering values shall be displayed on Microprocessor Based LCD vears. Display. 2. Bidder to note that the Local and Remote Operation shall Hence separate meters not considere be independent. Failure of Microprocessor based Controller 95 28. Digital meters: - AC Moving iron shall not lead to non-availability of the operation locally.

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1	2	3	4	5	
96		32. Alarm Annunciation	All necessary alarms shall be provided through charger LCD display. 5 No's of PFC contacts (Selectable) shall be provided in each cherger & MCCB Trip PFC's shall be provided.	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>	
97		35. Digital leakage current Indicator	It shall be provided on LCD Display	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.</li> </ol>	
98		36.Lamp indication to be provided whether	AC Input ON & DC Output ON LED's shall be provided on Charger front door. Float ON & Boost ON indications will be provided on LCD Display	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>	
99	3.4	Arrangements	<ol> <li>We understand the Charger configuration as 24V/70Amps Float Charger &amp; 24V/70Amps Float Cum Boost Charger.</li> <li>We are using Microprocessor based controller &amp; LCD display which can be used for charger ON/OFF Purpose &amp; MCCB as per latest technology trend. MCCB is having inbuild short circuit and overload protection. Hence, Contactor + Thermal overload relay + Control switches are not required.</li> </ol>	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>	
	3.5	Design and Construction Details			
100	3.5.1	The battery chargers of 24V/70 Amp in	MODBUS protocol shall be provided.	<ol> <li>Integration of Controller with RTU on MODBUS-RTU protocol is accepted.</li> <li>Preference will be given to Controller having IEC 61850 with SNMP &amp; SNTP shall support.</li> <li>Bidder to propose the alternate solution for Time Synchronization and health monitoring of the Controller, in case the proposed Controller supports only MODBUS-RTU.</li> </ol>	
101	3.5.4	The battery charger shall have full	As per clause no."3.5.1" SMPS based charger shall be provided. Float voltage range:22.2VDC to 27VDC Boost voltage range:27VDC to 28.2VDC	<ol> <li>Bidder to consider the voltage range as per the RFP</li> <li>The float voltage shall be adjustable from 80% to 115% of nominal voltage.</li> <li>The boost voltage shall be adjustable from 80% to 135% of nominal voltage.</li> <li>Ripple voltage shall be less than 3% RMS voltage.</li> </ol>	
	3.6	Charger Panel			
102	3.6.6	Power wiring for the chargers shall be done	We are using 0.5Sq.mm PVC Cable for all internal control wiring which is connecting to PCB's. Power cabling through copper busbar / UniNyvin Copper cable. From past 10 years, we have not recieved any single complaint from site regarding the cables.Request you to accept the same.	Bidder to note that all Internal wiring shall comply to respective IS code, to meet the functional and environmental requirement mentioned in the RFP.	

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Sr. No.	Detailed Reference to TPCODL Technical Document. Please specify Document No / Clause No , Page No	)   7 Description as per Bid Document /	Remarks - Query / Clarification	TPCODL Response Dated 15th Jan 2022		
1	2	3	4	5		
103	3.6.9	The float and equalizer charging rates shall	Automatic float cum boost charging shall be provided. Mode selection & adjustments shall be done through Microprocessor Based controller Display Unit. Hence selector switches are not applicable. Blocking diode is default inside rectifier module.	1. Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution 3. Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
104	3.6.10	The rectifier units of the chargers shall	Complied for operation philosophy. 24V, 70A charger shall be provided. Charger components are designed for 24V, 70A only.	1.Noted 2. Charger Components are to proposed as per the specifications mentioned in the RFP.		
105	3.6.11	The incoming and outgoing circuits shall	Suitable rated MCCB's shall be provided with Thermal overload, short circuit protections. Earth fault detection is inbuilt feature through our internal PCB's & earth fault alarm shall be discplayed on LCD Display.	1.Noted 2. Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
106	3.6.13	Input volt meter and ammeter shall be	All metering values shall be displayed on Microprocessor Based LCD Display. Hence separate meters not considere	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2</li> </ol>		
107	3.6.14	Cluster LED lamps for indicating	AC Input ON & DC Output ON LED Indications shall be provided on Charger front door. All other necessary Indications shall be displayed on LCD Display. All necessary Alarms as per our standard shall be displayed on Microprocessor Based LCD Display.	years. 2. Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
108	3.8	Drawings / Documents	Necessary drawings & documents shall be provided during detailed Engg.	Noted		
109	3.11	General Technical Requirements for Battery Charger	Please find attached data sheet.			
	3.11.1	General Features				
110	a.	The Float charger, Float cum Boost charger	Charger construction shall be provided as per our standard design. Charger fabrication shall be 2mm for frame and 2mm for All doors and covers. External cable glands and lugs are not in vertiv scope.	<ol> <li>Bidder to note the DC system will be commissioned in highly humid costal area.</li> <li>Bidder to ensure for compliances to all the environmental requirements for the proposed DC system as mentioned in the RFP.</li> <li>Bidder to consider the entire scope as per the RFP</li> </ol>		
111	f.	Conformal coating on all electronics	Electronics components shall be provided as per our standard.	<ol> <li>Bidder to submit the standard adopted.</li> <li>However bidder to note the DC system will be commissioned in highly humid costal area. and must ensure for compliances to all the environmental requirements for the proposed DC system as mentioned in the RFP.</li> </ol>		

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1	2	3	4	5		
112	g.	All indicating instruments, control & selector	AC Input ON & DC Output ON LED Indications shall be provided on Charger front door. All other necessary Indications shall be displayed on LCD Display. Selector switches are not considered.	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>		
113	0.	Charger Output: Suitable ripple filtering	Filter circuit is default inbuit rectifier module.	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		
114		For locking Trickle/Boost selector switch	As per clause "3.13" Integral DCDB shall be provided. Noted for isolator in D.C. distribution board	Noted. Bidder to consider the entire scope as per the RFP		
115	p.	The Charger enclosure door locking	All Components will be placed inside the Charger cabinet & these are accessible after opening the front door. Hence, padlocking is not considered.	Noted. Bidder to consider the scope as per the RFP		
116	3.11.2	Wiring	We are using 0.5Sq.mm PVC Cable for all internal control wiring which is connecting to PCB's. Power cabling through copper busbar / UniNyvin Copper cable. From past 10 years, we have not recieved any single complaint from site regarding the cables.Request you to accept the same. External cable glands and lugs are not in vertiv scope.	<ol> <li>Bidder to note that all Internal wiring shall comply to respective IS code, to meet the functional and environmental requirement mentioned in the RFP.</li> <li>Bidder to consider the entire scope as per the RFP</li> </ol>		
117	3.11.7	Blocking Arrangements	Blocking diode is default inside rectifier module.	Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years. Bidder must ensure all the functional requirements as per the RFP are complied by the proposed solution		
118	3.11.10	Following are the minimum Mandatory	MODBUS 5 No's of PFC contacts shall be provided.	<ol> <li>Bidder can propose solution based on latest proven technology, and similar system installed elsewhere in last 2 years.</li> <li>Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.</li> </ol>		

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1	2	3	4	5		
119	3.12	Battery Charger Controller	Charger controller shall be provided as per our standard design with 200 event log facility. MODBUS TCP/IP protocol shall be provided. Output voltage and current transducers shall be provided. Details shall be provided during detailed engg.	<ol> <li>Integration of Controller with RTU on MODBUS-RTU protocol is accepted.</li> <li>Preference will be given to Controller having IEC 61850 with SNMP &amp; SNTP shall support.</li> <li>Bidder to propose the alternate solution for Time Synchronization and health monitoring of the Controller, in case the proposed Controller supports only MODBUS-RTU.</li> <li>All Analog data to remote SCADA System shall be through proposed Controller.</li> <li>Event Log Facility shall be minimum 500 as per RFP</li> <li>Bidder to ensure and confirm meeting all the functional requirement as per the RFP, to accept the statement "Details shall be provided during detailed engg."</li> </ol>		
120	3.13	DC Distribution Board (DCDB	Complied for Integral DCDB. We understand that 100A incomer rating is sufficient for your requirenment. However, please confirm if higher rating required All metering values and necessary indication shall be displayed on charger LCD display.	1, MCCB rating for DCDB incoming feeder shall be 150 A, 2P and accordingly it should be designed. 2. Bidder to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of the operation locally.		
121		Warranty	Can we give 2 years of warrnaty and balance 3 year as comp. AMC as currently 5 years of warranty we are not getting from our subvendors.	<ol> <li>Bidder to consider the warranty scope as per the RFP.</li> <li>No deviation is accepted.</li> </ol>		
122	9.3	Payment Terms	We request for payment terms as 90% against dispatch of material within 30 days and balance 10% against I&C or within 60 days from dispatch of material whichever is earlier.	Supply: 1. 60% release of payment (Supply) on receipt of materials at site. 2. 40% release of payment (Supply) on completion of ITC & closure of all SAT points. In case of non availability of site front and any other reason attributable to TPCODL. 40% of Supply payment will be released to bidderwithin 60 days from the date of receipt of material at site. Service: 3. 100% Payment against Service (ITC) will be released after successful completion of the activities and Closure of all SAT points. All payments to the bidder will be released within 30 days from invoice submission date, after certification from TPCODL.		
123	9.1	Delivery	We required time min. 8-10 weeks for make the system ready for inspection after drawing approval. Request for acceptance for the same.	Since the system is to be commissioned along with the RTU (Procured under Separate project, not in the Scope of this RFP), hence the timeline mentioned in the RFP to be adhered.		

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1	2	3	4	5
124	12.3.1	Receipt at site, Handling, Storage & Insurance	We have our Business partenar through whome we shall participate in the BID,we shall submit authorisation letter and material can be stored in his wear house to take care storage & handlling.	Supply: 1. 60% release of payment (Supply) on receipt of materials at site. 2. 40% release of payment (Supply) on completion of ITC & closure of all SAT points. In case of non availability of site front and any other reason attributable to TPCODL. 40% of Supply payment will be released to bidder within 60 days from the date of receipt of material at site. Service: 3. 100% Payment against Service (ITC) will be released after successful completion of the activities and Closure of all SAT points. All payments to the bidder will be released within 30 days (except specifically mentioned) from invoice submission
125		QR requirment	We shall submit autohrisation letter for our Business partner registered in Orrisa to M/s TPCODL and will submit our documents for qualifying the QR requirement.	Bidder to submit the PQR document: 1. Authorization letter of Channel partner/ Business Partner with all the qualifying criteria mentioned in the RFP. 2. Supply, Installation & Commissioning experience as per the PQR of the RFP.

# **Note for Bidders:**

Bidders to note that the Local and Remote Operation shall be independent. Failure of Microprocessor based Controller shall not lead to non-availability of functionality locally as per RFP.

By Order Chief-Procurement & Stores