

## Format for Technical Pre-Bid Queries

Tender No **TPSODL/OT/2022-23/0131**Package Name **Rate Contract for Supply of CT and PT at TPSODL**

**Note :** The said format to be used only for Technical Pre-Bid Query. Any Commercial Query has to be strictly in Format B2 Format for Commercial Pre-Bid Query and sent separately  
 Format to be used for query regarding Technical Pre-Qualification Requirement, Safety Pre-Qualification Requirement, Technical Set of Document  
**Pre-Bid Query has to be sent in editable Excel file format only**  
**Pre-Bid Query has to be sent through e-mail in TPSODL E-Tender System**

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Page No/ Clause No	Description as per Bid Document	Remarks - Query / Clarification (As on 14-March-2023)	TPSODL Response
1	2	3	4	5
A	Technical specifications for 33kV & 11kV outdoor Potential Transformers - ENV-EHV-1014			
1	Clause 4, point 12	We understand that PTs are with three secondary winding	Generally two secondary winding are sufficient, one for metering and the other for protection purpose. We therefore request to review and reconfirm the no. of secondary winding.	Specification to be complied
2	Clause 4, point 13	Rated burden = 100VA	<p>Note that 100VA rated burden is excessively high and is technically not recommended/not appropriate for the following reasons:-</p> <p>a. Class 0.2 is a high precision accuracy class and the associated digital meters /relays at utility end are also of equivalent precision accuracy class. Such <b>digital meters impose a very low burden of less than 1VA</b>, and including to and fro lead drops, the imposed burden will still be maximum 5VA.</p> <p>b. Accuracy of a metering class core/ winding is guaranteed from <b>25% to 100% of rated burden</b>. Hence, <b>at 10VA</b> rated burden, ratio &amp; phase errors within 0.2 class shall be guaranteed within a range of <b>2.5VA to 10VA</b>, which suits the actual service condition requirements.</p> <p>On the other hand, with <b>PT designed at 100VA rated burdens, the errors under actual service condition will be inferior and will fall under 0.5 or 1.0 class, instead of desired 0.2 class</b> ( since actual burden is not more than 5VA)</p> <p>c. Even for protection class, in view of the <b>digital relays of very low burden, the rated burden of 100VA is not at all recommended.</b></p> <p><b>Hence, burden imposed by digital meters and digital relays must be thoroughly reviewed and appropriate rated burden must be finalized. In case if still you need such high 100VA burden, we would request to share with us the technical reasons for the same.</b></p>	Revised Accuracy class: 0.2 /3P/3P Burden: 50/50/50 VA
3	Clause 4, point 12 & 13	Metering class 0.2 at 100VA rated burden (DESIGN FEASIBILITY)	<p>Design of metering class 0.2 winding is technically feasible at following maximum rated VA burdens-</p> <p><b>(a) for 11KV PTs, maximum VA burden of 20VA.</b></p> <p><b>(b) for 33KV PTs, maximum VA burden of 50VA ( however technically recommended rated VA is still lower).</b></p> <p>This is based on existing <b>premium grade low loss PT laminations</b> available in the indigenous domestic market.</p> <p>Further, <b>a metering winding of 0.2 class designed at 100VA rated burden will fail to achieve designed 0.2 class accuracy as actual burden imposed on it will be from 1VA to maximum 5VA.</b></p> <p><b>Infact, its accuracy class under actual service condition will shift between 0.5 class to 1.0 class, which is inferior to the desired 0.2 class.</b></p> <p>Hence, please review the technical parameters of digital precision grade voltmeters and amend the rated VA burden to actual burden as seen during service conditions.</p>	Revised Accuracy class: 0.2 /3P/3P Burden: 50/50/50 VA
4		Accuracy test of secondary windings	Kindly confirm that ratio- phase error accuracy test of each secondary winding shall be done with only winding under test loaded ( 25% and 100% rated burden) and other secondary windings unloaded. Limits of errors shall be as per IS 3156 for the respective class of winding..	Noted

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5	Clause 4, point 22, 23 & clause 5.5	Tank - Fabrication with G7/3mm Finish painted	Note that tank fabrication is not possible with GI sheet. <b>Tank fabrication is done with uncoated bare MS sheet and after fabrication the tank can be either painted or it can be hot dip galvanized.</b> Hence, kindly rectify incorporating fabrication with "MS (3mm)". Also please clarify the tank finish, whether <b>painted or hot dip galvanized.</b>	Specification to be complied
6	Clause 7.1(iv) & 7.2 (iv)	Partial Discharge Measurement	This test is not applicable on outdoor oil filled PTs upto 33KV (as per IS:3156). Hence please eliminate this test.	Noted
7	Clause 8.0	Type Test Certificates are required from CPRI/ERDA	We request to accept type test report not only from CPRI & ERDA, but also from <b>other NABL accredited testing Laboratories.</b>	CPRI & ERDA only
8		Scope of supply	Please confirm that supply of <b>junction boxes against a set of 3no. PTs is not required.</b>	Not Required
9	Clause 5.1	Capacitance test tap.	This is not required in outdoor oil filled PTs upto 33KV (as per IS:3156). Hence please eliminate this test.	Noted
10	Technical Specification of 11kV and 33kV 1-phase PTs, Pre-bid clarification on required accuracy Point-4	Accuracy class: 0.2 /3P/3P Burden: 100100/100 VA	Accuracy: class 0.2 /3P Burden: 50/50 VA	<b>Revised Accuracy class: 0.2 /3P/3P Burden: 50/50/50 VA</b>
	<b>Technical Specification for 33KV &amp; 11KV Outdoor Current Transformer- ENG - EHV - 1015</b>			
1	Clause 4, 12.4 & 12.5	Rct & Ic Values	<b>Kindly confirm that <math>R_{ct} &lt; 6\Omega</math> and <math>I_c (max) = 30mA</math> at <math>V_k/2</math> is applicable for ratio tap 400/1A.</b>	Specification to be complied
2	Clause 4, 12.2 (Rated Burden)	Rated burden =30VA	Note that <b>30VA rated burden is excessively high</b> and is technically not recommended/not appropriate for the following reasons:- a. Class 0.2 is a high precision accuracy class and the associated digital meters /relays at utility end are also of equivalent precision accuracy class. Such <b>digital meters impose a very low burden of less than 1VA</b> , and including to and fro lead drops, the imposed burden will still be maximum 5VA. b. Accuracy of a metering class core/ winding is guaranteed from 25% to 100% of rated burden. Hence, at 10VA rated burden, ratio & phase errors within 0.2 class shall be guaranteed within a range of 2.5VA to 10VA, which suits the actual service condition requirements. On the other hand, with <b>CT designed at 30VA rated burden, the errors under actual service condition will be inferior and will fall under 0.5 or 1.0 class, instead of desired 0.2 class ( since actual burden is not more than 5VA)</b> c. Even for protection class, in view of the <b>digital relays of very low burden, the rated burden of 30VA is not at all recommended.</b>  <b>d.The purpose of ISF in CT metering cores fails if the actual service condition burden is much lower as compared to the rated burden.</b>  <b>Infact ISF=5 in a metering core designed at 30VA rated burden will reach almost ISF=20 or even higher and hence the connected meters will be at a great risk of high current flow under fault conditions.</b>  <b>It must be understood that ISF purpose is fulfilled only when rated burden is matching to actual service condition burden. Ignoring this point is a great technical flaw.</b>  Hence, burden imposed by digital meters and digital relays must be thoroughly reviewed and appropriate rated burden must be finalized. In case if still you need such high 30VA burden, we would request to share with us the technical reasons for the same.	Revised VA Requirement is given below - 33KV 800/400/200/1-1-1(0.2S 5P20 15VA) 11KV 800/400/200/1-1-1 (0.2S 5P20 15VA) BA shall ensure to comply the tender requirement with the above revised burden.
3	Clause 12.6	ISF<5	Kindly confirm that ISF<5 shall be applicable on lowest CT ratio tap, as acceptable by other utilities.	Specification to be complied
4	Clause 5.1, 5.6	Tank - Fabrication with GI/3mm Finish painted	Note that tank fabrication is not possible with GI sheet. <b>Tank fabrication is done with uncoated bare MS sheet and after fabrication the tank can be either painted or it can be hot dip galvanized.</b> Hence, kindly rectify incorporating fabrication with "MS (3mm)". Also please clarify the tank finish, whether <b>painted or hot dip galvanized.</b>	Specification to be complied
5	Clause 5.1/5.2	Capacitance test tap / Tan Delta Test	This is not required for CTs upto 33KV range.	Noted
6	Clause 7.1 ( e ) & 7.2 ( v ), (vii)	Partial Discharge Measurement / Tan Delta Test	This is not required for CTs upto 33KV range.	Noted

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7	Clause 8.0	Type Test Certificate CPRI / ERDA	We request to accept type test report not only from CPRI & ERDA, but also from <b>other NABL accredited testing Laboratories.</b>	CPRI & ERDA only
8	Technical Specification of 11kV and 33kV 1-phase CTs,Pre-bid clarification on required accuracy Point-4	Accuracy class: PS/0.2s/5P20 Burden: 30/30VA	Accuracy class: PS/0.2s/ 5P20 Burden:15/15 VA	<b>Revised VA Requirement is given below - 33KV 800/400/200/1-1-1(0.2S 5P20 15VA) 11KV 800/400/200/1-1-1 (0.2S 5P20 15VA) BA shall ensure to comply the tender requirement with the above revised burden.</b>