

CENTRALIZED CONTRACTS GROUP

Response to Pre-Bid Queries

Dt: 02.02.2024

NIT Number: TPCODL/CCG/23-24/100000534

(Rate Contract for Supply of Pin & Disc Insulators (Polymer) for TPCODL, TPNODL & TPSODL.)

The pre-bid queries as received against the referred tender enquiry and CCG/CEQG (TP-Odisha) responses on the same are placed below:

S. No.	Tender Reference	Description as per Tender Doc.	Pre-Bid Query raised by Bidder	CCG/CEQG (TP-Odisha) response
A) 33 kV Polymeric Composite Pin Insulator				
1	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 19- Dia of FRP Rod- 32 mm	The diameter of 32mm for 10KN is not enough to give a mechanical strength of 10KN. The diameter of FRP Rod must be minimum 34mm to meet the required mechanical strength of 10 KN. You are therefore requested to please change the same to 34mm in place of 32mm.	Shall be as per Technical Specifications however better can be accepted
2	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 33- Weight of the insulator- 1.2±0.1 kg	For 33kV Pin Insulator the weight should be minimum 2.3kgs in place of 1.2±0.1 kg.	Weight of insulator to be provided by bidder
3	ENG-EHV-1035, CLAUSE NO. 5.4	"Bottom end fitting should be single		NA
4	4.GENERAL TECHNICAL REQUIREMENTS, TECHNICAL PARTICULARS, 33kV Polymeric Pin SL No 19, Dia of FRP Rod page no 32	Dia of FRP Rod 32 mm	Dia of FRP Rod should be 34mm	Shall be as per Technical Specifications however better can be accepted
B) 33kV Polymeric Disc Insulator 90KN				
1	ENG-EHV-1035, CLAUSE NO. 4	SL. No. 3 (b) - Material of housing weather sheds (silicon content)- Silicon content of minimum 40% by weight	As per PGCIL, GETCO specification and as desired by maximum Indian Utilities the Silicon content is mentioned as	Silicon content of minimum 30% by weight

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	(TECHNICAL PARTICULARS)		minimum 30% by weight, whereas in Technical specification of tender, at some places it is mentioned as 30% and at some places it is mentioned as 40%. You are therefore requested to please mentioned the same as 30% by weight.	
2	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(iii) - Length of FRP rod- 440 mm	The length of FRP Rod may vary from one manufacturer to other depending upon their design and is not a parameter which is required to be fixed. You are therefore requested to remove this parameter.	Length of FRP rod- 440 mm (min.)
3	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(vi) - Dry arc distance- 380 mm	IEC :61109 has not specified any value for Dry Arcing distance. The creepage distance of insulators is main parameter and must be met as per requirements of system voltage. You are therefore requested to remove this parameter also.	Shall be as per Technical Specifications
4	4.GENERAL TECHNICAL REQUIREMENTS, TECHNICAL PARTICULARS, 33kV Polymeric Disc Insulator (90KN & 120KN), SL No 3 (b) ,	"Silicon content of	4.GENERAL TECHNICAL REQUIREMENTS, TECHNICAL PARTICULARS, 33kV Polymeric Disc Insulator (90KN & 120KN), SL No 3 (b) , Material of housing weather sheds (silicon content) page 45	Silicon content of minimum 30% by weight

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	Material of housing weather sheds (silicon content) page 45			
C) 33kV Polymeric Disc Insulator 120KN				
1	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 3 (b) - Material of housing weather sheds (silicon content)- Silicon content of minimum 40% by weight	As per PGCIL, GETCO specification and as desired by maximum Indian Utilities the Silicon content is mentioned as minimum 30% by weight, whereas in technical specifications of tender, at some places it is mentioned as 30% and at some places it is mentioned as 40%. You are therefore requested to please mentioned the same as 30% by weight.	Silicon content of minimum 30% by weight
2	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(iii) - Length of FRP rod- 440 mm	The length of FRP Rod may vary from one manufacturer to other. The type tests and design tests should be considered enough to prove the electro mechanical suitability of insulators as per requirements of IEC: 61109.	Length of FRP rod- 440 mm (min.)
3	ENG-EHV-1035, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(vi) - Dry arc distance- 380 mm	IEC :61109 has not specified any value for Dry Arcing distance. The creepage distance of insulators is main parameter and must be met as per requirements of system voltage. Our insulators are designed & tested as per requirements of IEC:60815 & IEC: 61109.	Shall be as per Technical Specifications
4	Misc	Designation of ball & socket fittings is not mentioned in the technical specification'	It is highly recommended and required that for 120KN load requirement the designation must be 20.	Designation shall be 16 mm & 20 mm for 90 KN & 120 KN respectively

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S. No.	Tender Reference	Description as per Tender Doc.	Pre-Bid Query raised by Bidder	CCG/CEQG (TP-Odisha) response
5	4.GENERAL TECHNICAL REQUIREMENTS, TECHNICAL PARTICULARS, 33kV Polymeric DiscInsulator (90KN & 120KN), SL No 3 (b) , Material of housing weather sheds (silicon content) page 45	Silicon content of minimum 40% by weight	In 33kV Pin Insulators specification it as mention 30% how come same 33 kv disc insulaotrs 40%	Silicon content of minimum 30% by weight
D) 11kV Polymeric Pin Insulator (5KN)				
1	ENG-EHV-2027, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 20 - Length of FRP rod min.- 200 mm	The length of FRP Rod may vary from one manufacturer to other depending upon their design and is not a parameter which is required to be fixed. You are therefore requested to remove this parameter.	Length of FRP rod min.- 200 mm (min.)
2	ENG-EHV-2027, CLAUSE NO. 5.4.	Bottom end fitting should be single unit without any joints.	Bottom end fitting is mentioned as single unit without any joints, whereas in Technical particulars (Sl. No. 5) material of End Fittings is mentioned as SGCI. We wish to mention here that	Query is not clear. SGCI is already mentioned in Technical Particulars.

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			SGCI is cost effective with equal performance like single piece without joints. You are therefore requested to mention the same as SGCI in technical particulars also.	
3	ENG-EHV-1035 & ENG-EHV-2027 CLAUSE NO. 7	7.1 ACCEPTANCE TESTS i) Verification of dimensions ii) End Sealing test (FRP rod and Silicone rubber housing) iii) Visual examination (Free from voids, cavity, foreign particle and scratch/nick spot) iv) Verification of the locking system or the tightness of the interface between end fitting and insulator housing v) Galvanizing Test vi) Verification of the specified mechanical load vii) Bending Load Test viii) Dry Power Frequency Withstand Voltage Test ix) Wet Power Frequency Withstand Voltage Test x) Analysis of material properties of housing material xi) Analysis of material properties of Core material	As per IEC:61109-2008-05, following tests are required to be conducted on Composite Polymeric Insulators as acceptance test:- a) verification of dimensions b) verification of the locking system c) verification of the tightness of the interface between end fittings and insulator housing d) verification of the specified mechanical load, SML- which will be bend test for Pin Insulators e) galvanizing test You are therefore requested to please mention these test in the list of acceptance tests	All tests to be performed as per IEC-61109
E)11kV Polymeric Disc Insulator 70KN				
1	ENG-EHV-2028, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 3 (b) - Material of housing weather sheds (silicon content)- Silicon content of minimum 40% by weight	As per PGCIL, GETCO specification and most of Indian utility desired Silicon content of minimum 30% by weight. As well as in specification ENG-EHV-2027	Silicon content of minimum 30% by weight

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S. No.	Tender Reference	Description as per Tender Doc.	Pre-Bid Query raised by Bidder	CCG/CEQG (TP-Odisha) response
			for 11 kV pin required Silicon content of minimum 30% by weight.	
2	ENG-EHV-2028, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(i) - Weight (Approx.)- 1.2 kg	Weight of insulator must be minimum 0.9 kg	Weight of insulator to be provided by bidder
3	ENG-EHV-2028, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(iv) - Dia of weather sheds-≥90mm	The diameter of weathershed may vary from one manufacturer to other. The creepage distance of insulators must be met as per requirements of system voltage. Our insulators are designed & tested as per requirements of IEC:60815 & IEC: 61109.	Shall be as per Technical Specifications
4	ENG-EHV-2028, CLAUSE NO. 4 (TECHNICAL PARTICULARS)	SL. No. 7(vi) - Dry arc distance- 175 mm	IEC :61109 has not specified any value for Dry Arcing distance. The creepage distance of insulators is main parameter and must be met as per requirements of system voltage. Our insulators are designed & tested as per requirements of IEC:60815 & IEC: 61109.	Shall be as per Technical Specifications
5	4.GENERAL TECHNICAL REQUIREMENTS, TECHNICAL PARTICULARS, 11kV Polymeric Pin Insulator, SL No 3 (b) , Length of FRP Rod (min) page no 58	Length of FRP Rod (min) 200mm	Length of FRP Rod min 200 mm is not mandatory it very from vendor to vendor based on there design	Length of FRP rod min.- 200 mm (min.)

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<p>In addition to above we wish to inform about acceptance & type tests mentioned in specification for Pin & Disc Insulators: -</p>				
<p>1</p>	<p>Tests for Pin Insulators ENG-EHV-1035 & ENG-EHV-2027 CLAUSE NO. 7</p>	<p>7.1 ACCEPTANCE TESTS i) Verification of dimensions ii) End Sealing test (FRP rod and Silicone rubber housing) iii) Visual examination (Free from voids, cavity, foreign particle and scratch/nick spot) "iv) Verification of the locking system or the tightness of the interface between end fitting and insulator housing" v) Galvanizing Test vi) Verification of the specified mechanical load vii) Bending Load Test viii) Dry Power Frequency Withstand Voltage Test ix) Wet Power Frequency Withstand Voltage Test x) Analysis of material properties of housing material xi) Analysis of material properties of Core material</p>	<p>"As per IEC:61109-2008-05, following tests are required to be conducted on Composite Polymeric Insulators as acceptance test: - a) verification of dimensions b) verification of the locking system c) verification of the tightness of the interface between end fittings and insulator housing d) verification of the specified mechanical load, SML- which will be bend test for Pin Insulators e) galvanizing test You are therefore requested to please mention these tests in the list of acceptance tests"</p>	<p>All tests to be performed as per IEC-61109</p>
		<p>7.3 TYPE TESTS A) For Insulators i) Dry Power Frequency Withstand Voltage Test ii) Dry Power Frequency Voltage Flashover Test iii) Dry lightning impulse withstand voltage test. iv) Wet Power Frequency Withstand Voltage Test v) Wet Power Frequency Voltage Flashover Test vi) Mechanical failing load test.</p>	<p>As per IEC:61109-2008-05 , Flashover Tests are not required to be conducted and only withstand tests are required, you are therefore required. You are therefore requested to please remove Flashover tests from Type Tests.</p>	<p>For insulators Type test shall be as per Technical Specifications.</p>

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S. No.	Tender Reference	Description as per Tender Doc.	Pre-Bid Query raised by Bidder	CCG/CEQG (TP-Odisha) response
		vii) Salt fog test: On insulators for 1000 hr as per IEC viii) Galvanization test ix) Radio interference test.		
		B) For Silicon rubber i) Tensile Strength ii) Elongation iii) Tear Strength iv) Inclined plane Tracking & Erosion resistance test v) Volume Resistivity vi) Dielectric constant vii) Dielectric Strength viii) Density ix) Hardness x) Arc Resistance xi) Silicone Content xii) Flammability xiii) Limiting oxygen index test xiv) Resistance to weathering & UV. xv) Specific gravity	All of these tests are conducted by us in day to day basis on all lots of silicon rubber being received by us from our suppliers. The same may be removed from Type Tests and we will submit test report for the same during inspection of material at our work	All tests to be submitted as per IEC-61109
		C) For FRP rods i) Verification of dimensions ii) Specific Gravity iii) Glass Content iv) Water Diffusion Test v) Hardness vi) Dye Penetration Test vii) Flexural Strength viii) Brittle fracture resistance test.	All of these tests are conducted by us in day-to-day basis on all Flots of silicon rubber being received by us from our suppliers. The same may be removed from Type Tests and we will submit test report for the same during inspection of material at our work	All tests to be submitted as per IEC-61109

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S. No.	Tender Reference	Description as per Tender Doc.	Pre-Bid Query raised by Bidder	CCG/CEQG (TP-Odisha) response
2		7.1 ACCEPTANCE TESTS i) Verification of dimensions ii) End Sealing test (FRP rod and Silicone rubber housing) iii) Visual examination (Free from voids, cavity, foreign particle and scratch/nick spot) iv) Mechanical performance Test v) Galvanizing Test vi) Mechanical Failing Load Test vii) Dry Power Frequency Withstand Voltage Test viii) Wet Power Frequency Withstand Voltage Test "ix) Verification of the locking system or the tightness of the interface between end fitting and insulator housing"	As per IEC:61109-2008-05, following tests are required to be conducted on Composite Polymeric Insulators as acceptance test: - a) verification of dimensions b) verification of the locking system c) verification of the tightness of the interface between end fittings and insulator housing d) verification of the specified mechanical load, SML e) galvanizing test You are therefore requested to please mention these tests in the list of acceptance tests	All tests to be submitted as per IEC-61109
		7.3 TYPE TESTS A) For Insulators i) Dry Power Frequency Withstand Voltage Test ii) Dry Power Frequency Voltage Flashover Test iii) Dry lightning impulse withstand voltage test. iv) Wet Power Frequency Withstand Voltage Test v) Wet Power Frequency Voltage Flashover Test vi) Mechanical failing load test. vii) Salt fog test: On insulators for 1000 hr as per IEC viii) Galvanization test ix) Damaged Limit Proof Test x) Radio interference test.	As per IEC:61109-2008-05, Flashover Tests are not required to be conducted and only withstand tests are required, you are therefore required. You are therefore requested to please remove Flashover tests from Type Tests.	For insulators Type test shall be as per Technical Specifications.
		B) For Silicon rubber i) Tensile Strength ii) Elongation iii) Tear Strength iv) Inclined plane Tracking & Erosion resistance test	All of these tests are conducted by us in day to day basis on all lots of silicon rubber being received by us from our suppliers. The same may be removed from Type Tests and we will	All tests to be submitted as per IEC-61109

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		v) Volume Resistivity vi) Dielectric constant vii) Dielectric Strength viii) Density ix) Hardness x) Arc Resistance xi) Silicone Content xii) Flammability xiii) Limiting oxygen index test xiv) Resistance to weathering & UV. xv) Specific gravity	submit test report for the same during inspection of material at our work	
		C) For FRP rods i) Verification of dimensions ii) Specific Gravity iii) Glass Content iv) Water Diffusion Test v) Hardness vi) Dye Penetration Test vii) Flexural Strength viii) Brittle fracture resistance test. ix) Water Diffusion Test	As per IEC:61109-2008-05, Flashover Tests are not required to be conducted and only withstand tests are required, you are therefore required. You are therefore requested to please remove Flashover tests from Type Tests.	All tests to be submitted as per IEC-61109
3	We would also like to inform you that in your technical specification Design Tests are not mentioned. As per IEC:61109 following design tests are required to be conducted:	1) Tests on interfaces & connections of End Fittings 2) Assembled core load time test 3) Tracking & Erosion Test for 1000 hours on silicon rubber 4) Accelerated weathering test for 1000 hours on silicon rubber 5) Hardness test on silicon rubber 6) Flammability Test on silicon rubber 7) Dye Penetration test on FRP Rod 8) Water Diffusion Test of FRP Rod	All of these design tests are desired by all Indian Utilities, you are therefore also requested to incorporate these design tests in the technical specification of your tender and in PQR conditions. Only those supplier should be considered as qualified who have submitted these design tests. You are also requested to add that all Tests reports should	All tests to be submitted as per IEC-61109

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			have conducted from ERDA and CPRI Only with NABL Logo on the test reports.	
4	8. TYPE TEST CERTIFICATES Page No 36	All the tests shall be conducted at CPRI/ERDA as per the relevant IS/IEC.	Some Place mentioned All the tests shall be conducted at CPRI/ERDA/Other Govt. Labas per the relevant IS/IEC. Please considered test test should be CPRI/ERDA/Other Govt. Labas	Please considere type test tests should be from CPRI/ERDA/Other Govt. Labs.

Note:

This document shall be an integral part of the tender and bidder shall submit signed/stamped copy of this document along with technical bid, as a token of acceptance. The tender document stands modified to the extent stipulated herein above in this document. All other terms & conditions shall be strictly followed as per Bid documents.

All other terms of Original Tender, remains unaltered.

CONFIDENTIAL