

**PRE-BID COMMENTS ON SECTION -C OF TENDER SPECIFICATION**

Overall Query no.	Sl. no.	Section	Cl. no.	Page no.	DESCRIPTION AS GIVEN IN THE TENDER DOCUMENTS	COMMENTS / CLARIFICATIONS	NPCIL response dated 17.07.2018
6	1	C	1.3	2 of 12	Terminal Connectors for all bushings (oil to air for the 24kV side, neutral & oil to SF6 for the 420kV side), is included in the scope of work.	M/s NPCIL to kindly note that our scope of supply shall be upto bushing terminal/palm as per prevailing practice. The flexible connectors from LV bushings to LV bus duct conductor shall be in the scope of IPBD supplier and the connectors from HV bushing to Gas insulated bus duct shall be in the GIBD supplier.	Noted. However, bushing CTs if any are part of this EOI scope.
7	2	C	8.2 c)	4 of 12	Percentage impedance - 14% at rated base MVA at principal tap	M/s NPCIL to kindly note that the percentage impedance 14% is on lower side with respect to short circuit current point of view in large rating transformer of 417 MVA. The percentage impedance may be around 18% (at rated base MVA at principal tap). In 285MVA GT for KAPP-3&4 and RAPP-7&8 the percentage impedance is 15%. NPCIL to kindly review.	Percentage impedance shall be 14% at rated base MVA at principal tap as per our specification.
8	3	C	8.2 d)	4 of 12	Tolerance on impedance - ±5% on all taps	M/s NPCIL to kindly note that as per IEC:60076 the tolerance on impedance is ±7.5%, therefore ±5% to be changed to ±7.5%. NPCIL to kindly review.	EOI clause shall prevail.
9	4	C	8.3 b) ii)	4 of 12	Direction of power flow - During shut down /start up	We understand that control switching device (CSD) already shall considered in HV circuit breaker in the switchyard side during charging from HV side of GT.	Bidder may note that CSD are part of the 400kV CB under NPCIL scope.
10	5	C	8.12 c)	7 of 12	Rated current amps 24000 Amps	M/s NPCIL to kindly note that we propose to provide 4 nos. 15000 A current rating LV bushing (i.e. two nos for 2.1 and two nos. 2.2 terminal). This will result in 30000A current rating which is more than required 24000A current rating. 24000 Amps LV bushing not available in India. Please also note that already same arrangement (i.e. two nos for 2.1 and two nos. 2.2 terminal) in 285MVA, 1 ph GT for NPCIL, KAPP-3&4 & RAPP-7&8 project has been accepted by NPCIL.	Bidder's proposal is not acceptable. EOI clause shall prevail.
11	6	C	8.12 d)	7 of 12	Impulse withstand voltage kV peak (1.2/50 micro. Sec. Wave) HV neutral end: 200 KVp LV Line end: 200 kVp	M/s NPCIL to kindly note that as per IEC 60137, for 36 kV voltage class the Impulse withstand voltage level is 170 kVp. Same may be corrected to 170kVp.	EOI clause shall prevail.
12	7	C	8.12 g)	7 of 12	Power frequency withstand voltage kV HV neutral end: 80 KV LV Line end: 80 kV	M/s NPCIL to kindly note that as per IEC 60137, for 36 kV voltage class the Power frequency withstand voltage level is 77 kV. Same may be corrected to 77 kV.	EOI clause shall prevail.
13	8	C	Note-1)	8 of 12	The material of palm of LV Bushings - Copper and suitable to meet the temperature rise of 20 deg. C over an ambient of 50 deg. C.	M/s NPCIL to kindly note that LV bushing palm shall be suitable for 40 deg. C. Same was also agreed in NPCIL KAPP-3&4 and RAPP-7&8 project.	EOI clause shall prevail.
14	9	C	Note-3)	8 of 12	No. of LV bushings - 2 nos. for each GT	M/s NPCIL to kindly note that we propose to provide 4 nos. 15000 A current rating LV bushing (i.e. two nos for 2.1 and two nos. 2.2 terminal).	Please refer to our response to query overall query number 10.
15	10	C	8.14 b)	8 of 12	Impulse withstand voltage (1.2/50 micro second) kV Peak - 200 kVp	M/s NPCIL to kindly note that as per IEC 60137, for 36 kV voltage class the Impulse withstand voltage level is 170 kVp. Same may be corrected to 170kVp.	EOI clause shall prevail.

16	11	C	8.14 c)	8 of 12	Power frequency withstand voltage - 80 kV	M/s NPCIL to kindly note that as per IEC 60137, for 36 kV voltage class the Power frequency withstand voltage level is 77 kV. Same may be corrected to 77 kV.	EOI clause shall prevail.
17	12	C	8.17.11	10 of 12	Main tank with bushings, fittings, Radiators and accessories: Full Vacuum.	M/s NPCIL to kindly note since GT shall be supplied with Unit coolers, hence radiators are not applicable and radiators may be replaced with coolers.	Noted and point closed.
18	13	C	8.17.14	10 of 12	Unit Coolers for each GT	We propose 6 x 20 % unit coolers (5 working + 1standby). NPCIL to kindly review.	Noted and point closed.
19	14	ITE	21	ITE 14 of 14	21 Civil Liability for Nuclear Damages (CLND) Act 2010 & Rule 2011 thereof:	This clause shall not be applicable.	EOI clause shall prevail.
20	15	C	8.17.17	10 of 12	Subsequent to the enactment of CLND Act 2010 and Rule 2011, the Purchaser shall have Right to	<p>We request NPCIL may please review their requirement and exclude this test because of following reasons:</p> <p>I) Short circuit test is a special test. Transformer will be sent for short circuit testing to an external laboratory which will require total period of approx. 4 months, therefore total delivery time would be extended by 4 months for performing short circuit test.</p> <p>II) BHEL has excellent record of short circuit testing for various rating of Power transformers. For the 400 KV Class transformer our 260MVA, 22/420/<math>\sqrt{3}</math> kV, 1-phase Generator transformer, 200 MVA, 21/400/<math>\sqrt{3}</math> kV, 1-phase Generator transformer and 167 MVA, 400/<math>\sqrt{3}</math>/220/<math>\sqrt{3}</math>/33, 1-phase Auto transformer were successfully short circuit tested. Our design and facilities has well proven for Short circuit testing.</p> <p>However we shall furnish calculation for thermal withstand capability and dynamic for short circuit for transformer during detail engineering.</p>	EOI clause shall prevail.