

**TECHNICAL SPECIFICATION FOR 11 KV VACUUM INTERRUPTERS****1.0 SCOPE:**

This specification covers design, engineering, manufacture, stage testing, inspection and testing before supply and delivery at site and testing and commissioning of 11 KV Vacuum Interrupters for use in 11 KV indoor incoming & outgoing Vacuum Circuit breakers installed at different 33/11 KV Substation in PVVNL & supplied by VCB manufacturers such as **M/s Crompton Greaves, M/s Biecco Lawrie , M/s Megawin Switchgears Pvt Ltd, M/s Easun Reyrolle Ltd, M/s Siemens , M/s Alsthom, M/s ABB, M/s BHEL, M/s Stelmec , ECE Industries Ltd., M/s Toshiba , M/s Yamuna Power and M/s Pascal Switchcare of different model. *The 11 KV Vacuum Interrupter shall be compatible to all the makes and models of 11 KV VCBs mentioned above.***

- 1.1 It is not the intent to specify completely herein all the details of the design and construction of material. However the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the purchaser, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such, components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.

**2.0 STANDARDS :**

- 2.1 The materials shall conform in all respects to the relevant Indian Standard Specifications with latest amendments thereto(if any).Equipment conforming to other internationally accepted standards, which ensure equal or higher quality than the standards mentioned above, would also be acceptable. In case the Bidders who wish to offer material conforming to the other standards, salient points of difference between the standards adopted and the specific standards shall be clearly brought out in relevant schedule. Four copies of such standards with authentic English Translations shall be furnished along with the offer. In case of conflict the order of precedence shall be (i) IS, (ii) IEC, (iii) Other standards. In case of any difference between provisions of these standards and provisions of this specification, the provisions contained in this specification shall prevail.

**3.0 PRINCIPAL PARAMETERS :**

- 3.1 The material shall conform to the following specific parameters :

Sl. No.	Item	Specification
1.	Type of Installation	indoor
2.	System Voltage	11 KV (+10% )
3.	System Frequency	50 Hz +/- 5%
4.	No. of Phases	Three
5.	System of earthing	Solidly grounded

**4.0 TECHNICAL REQUIREMENTS :****4.1 MAIN FEATURES :**

The Vacuum Interrupters shall be of 11 KV grade, conforming to relevant standards suitable for 11 KV three phase 50 cycle per second earthed system with following technical requirements.

#### **4.2 Main Technical Requirements**

SI. No.	SPECIFICATION OF VACUUM INTERRUPTER	UNITS	RANGE		
			(i)	(ii)	(iii)
1	Rated line to line voltage (50 +/- 5 % Hz)	<b>KV rms</b>	<b>12</b>	<b>12</b>	<b>12</b>
2	Rated normal current	<b>Amps</b>	<b>2000</b>	<b>1250</b>	<b>800</b>
3	Rated short circuit breaking current	<b>KA rms</b>	<b>25</b>	<b>25</b>	<b>25</b>
4	Rated peak short circuit making current	<b>KA peak</b>	<b>63</b>	<b>63</b>	<b>63</b>
5	Rated peak withstand current	<b>KA peak</b>	<b>63</b>	<b>63</b>	<b>63</b>
6	Rated short time withstand current (3 sec)	<b>KA rms</b>	<b>25</b>	<b>25</b>	<b>25</b>
7	Single Capacitor Breaking current capability	<b>Amps</b>	<b>1200</b>	<b>400</b>	<b>400</b>
	<b>Rated Insulation level</b>				
8	Rated power frequency withstand voltage-1 min	<b>KV rms</b>	<b>35</b>	<b>35</b>	<b>35</b>
9	Rated lightning impulse withstand voltage	<b>KV peak</b>	<b>75</b>	<b>75</b>	<b>75</b>
10	Electrical life At rated normal current	<b>operations</b>	<b>20000 min.</b>	<b>20000 min</b>	<b>20000 min</b>
11	Electrical life At rated short circuit current	<b>operations</b>	<b>100 min.</b>	<b>100 min.</b>	<b>100 min.</b>
12	Mechanical Life	<b>operations</b>	<b>30000 Min</b>	<b>30000 Min</b>	<b>30000 Min</b>

##### **4.2.1 GUARANTEED TECHNICAL PARTICULARS:**

The guaranteed technical particulars in the prescribed format shall be furnished along with the bid without which the Bid shall be treated as non-responsive

#### **5.0 INSPECTION & TESTING :**

- 5.1 Successful type test 11 KV Vacuum Interrupter of same design, size, type and manufacturing process during last five years (counted from the date of tender opening) should be made available by the firm.,
- 5.2 However, the purchaser reserves the right to get the 11 KV Vacuum Interrupter type tested at any stage during the pendency of contract at its own expenses in any reputed test house mentioned above. The transportation and arrangement of testing of sample to test laboratory shall be the responsibility of the contractor.
- 5.3 Routine and Acceptance tests as laid down in relevant IS (if any) with latest amendment thereof shall be carried out by the inspecting officers of the PVVNL on sample selected at random as per relevant ISS.