APPENDIX A

Synthetic Testing Facility at

Central Power Research Institute(CPRI), Bangalore

Synthetic Testing Facility for high power testing of EHV Circuit Breakers up to 63 kA, 245 kV full pole and unit testing of EHV Circuit breakers beyond 245 kV level.

Features :

Method : Parallel Current Injection

Injection Frequency : 350 Hz to 1000 Hz

Injection Current: 18 kA peak max.

TRV Circuit : For two and four parameters as per IEC/Indian Standards

Main capacitor bank (C1) : 400 kV, 18 μF, 1.44 MJ

TRV capacitor bank (C2 & C3) : 2.8 μF/500 kV & 4μF/ 400 kV

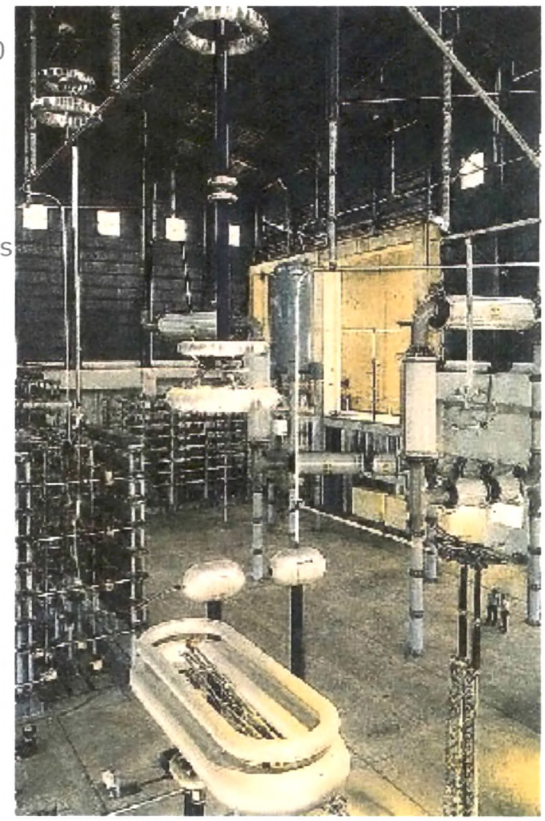
Charger : ± 20 to ± 440 kV DC

Spark Gap : ± 100kV to ± 880 kV

Discharge Resistor : 50 ohms

Reactor Banks : Bank I - 0.1 to 400mH, Bank II - 0.1 to 200 mH

Damping Resistor : 33 Ohms to 68 K Ohms



Two, Reignition Circuits. for prolonging the arcing time of the test breaker.

High Speed Making Device (For Synthetic Making Test Facility):

Rated up to 300 kV DC & 80 kA rms; this device triggers automatically on pre-striking of test circuit breaker on closing.

High Power Laboratory

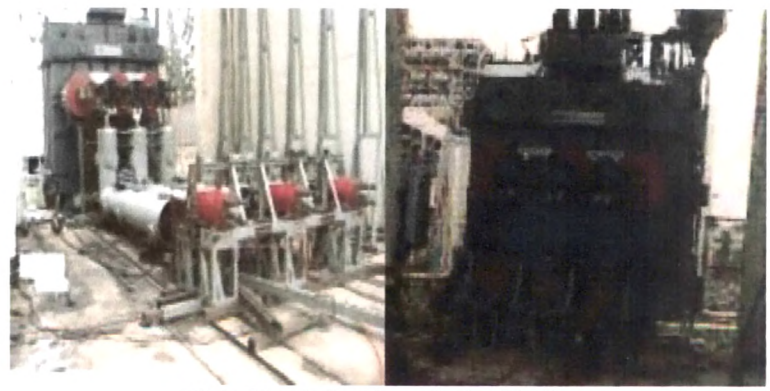
The laboratory comprises

(i) Direct Testing Facility of 2500 MVA capacity at 36/72.5 kV in three phase and 1400 MVA capacity, up to 245 kV in single phase for testing of Circuit Breakers and short circuit withstand capability tests on other apparatus viz., Power Transformers, Wave Traps, Reactors, Insulators, Lightning Arresters etc., and for short time current test up to 300 kA rms on Bus ducts, CTs, Isolators, Panels, etc.,

(ii) a Synthetic Testing Facility for high power testing of EHV Circuit Breakers up to 63 kA, 245 kV full pole and unit testing of EHV Circuit breakers beyond 245 kV level.

Facilities Available :

- Synthetic Testing Facility
- High Current Short Circuit Test Facility
- Supplementary Test Facility
- Equipment Facility



EHV Circuit Breakers Under Testing