

ELECTRICAL AND THERMAL ENDURANCE TESTS ON INSULATED CABLE SYSTEMS



Endurance tests

allow to validate the design and mechanical behavior of cables and accessories under environmental stresses. The tests reproduce the conditions of installation and operation for all types of networks.

Endurance tests consist of energizing with high voltage the cable system under conditions of high temperature for several thousand hours.

The temperature of the cable conductor is settled to its maximum operating value, by running current cycles representative of the network loads.

The main cable insulation is continuously subjected to the phase-to-phase voltage.



Outdoor test area for LV, MV and HV cables up to 90 kV



Three outdoor areas, powered by transformers and resonant power supply, are used to test cable systems (LV, MV, HV and EHV) with different civil works, as required by specific test conditions.

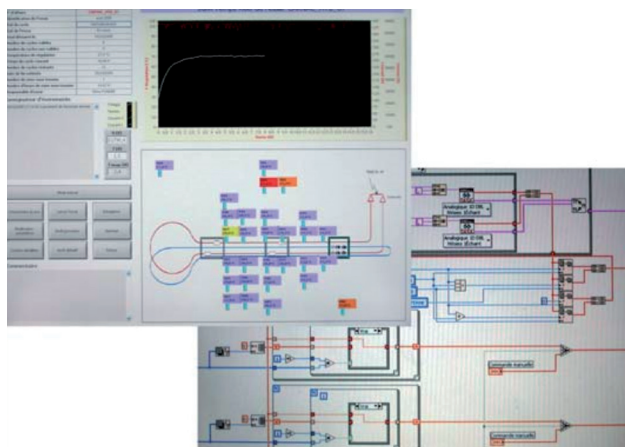
A specific testing facility is dedicated to thermo-mechanical test, when an initial qualification requires extension for instance.

Test loops are controlled by a computer system, which regulates, supervises and provides data acquisition and data processing, including electrical and thermal measurements.

THERMAL AND ELECTRICAL ENDURANCE TESTS

Technical characteristics:

PARAMETERS	LV-MV 	HV 
TEST VOLTAGE	Transformers Us = 2 kV - 5 A Us = 13.2 kV - 2.2 A Us = 40 kV - 2.3 A Single-phase or three-phase	Transformer Us = 63 kV - 11 A Us = 90 kV - 11 A Single-phase
HEATING CURRENT	0 à 2000 A Adjustable or continuous cycles	0 à 2000 A Adjustable or continuous cycles
SIEZ OF TEST AREA	30 m x 67 m 30 m x 67 m	60 m x 90 m
CAPACITY	16 long loops (30 m)	6 long loops (100 m) With thermal loop
CURRENT REGULATION	± 2 %	± 2 %
TEMPERATURE REGULATION	± 2 %	± 2 %
TYPE TESTS	Pre-qualification tests Heating cycle voltage tests thermo-mechanical tests	



Control command system for cable electrical endurance test

