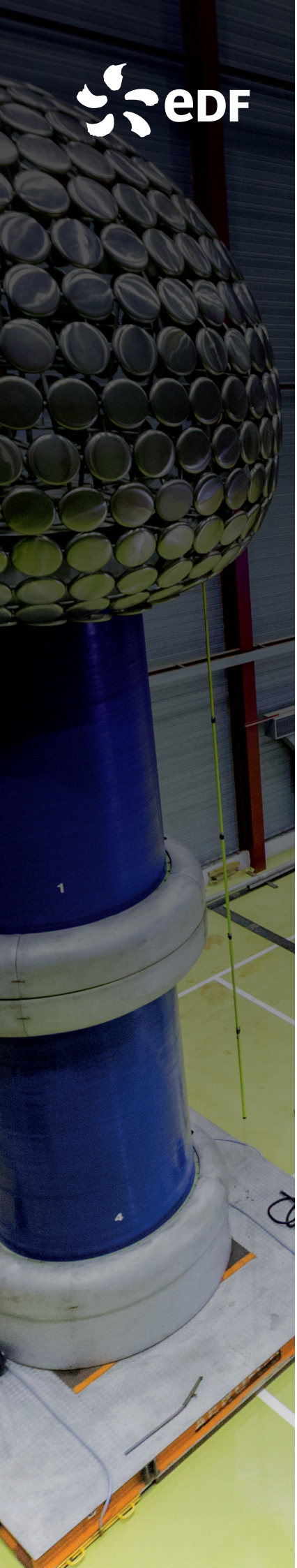


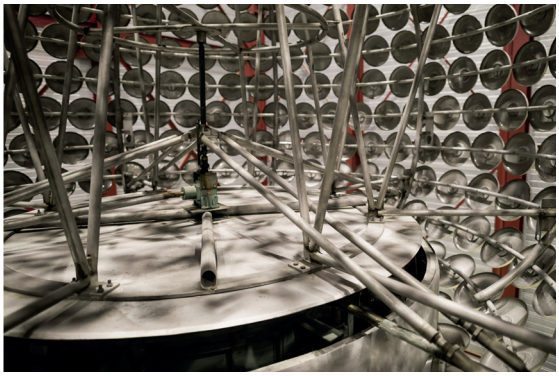
EDF POWER NETWORKS LAB

DIELECTRIC TESTS

The basic components

of the transmission and distribution networks are subjected to numerous dielectric stresses, caused by a wide range of factors, including switching or lightning impulse over-voltage, power frequency over-voltage, and the effects of ageing on insulating materials. To ensure that equipment withstands such stresses, the Laboratories perform certification tests, type tests and development tests, according to international standards. Tests can also be carried out according to specific requirements. Our testing bays are equipped with the latest digital data acquisition systems and high performance data processing.

The dielectric tests make it possible to ensure the quality of the various electrical insulation of generation, transmission and distribution equipment.



The laboratories are at your disposal for the realization of type acceptance tests or development tests according to the international standards IEC, EN, NF and according to specific programs.

The laboratories are equipped with equipment enabling tests to be carried out under AC, under DC or under lightning or switching impulse (with the possibility of using tests in superimposed and / or rain).

In addition, during application of the test voltage, the quality of the samples under test, can be evaluated by the measurement of partial discharges, dielectric losses, radio disturbance.

EDF POWER NETWORKS LAB

DIELECTRIC TESTS

The laboratories have three high-voltage test area. The largest one allows testing on high and very high voltage equipment, while the second is dedicated to low and medium voltage equipment. A third area is dedicated to DC testing. A modular test area completes the dielectric test facilities.

Transformers, powered either by regulators or by rotating units, can be used to perform industrial frequency tests (typically 50 Hz, in some cases from 40 to 60 Hz or 150 Hz).

HVDC generators allow DC testing.

CARACTERISTICS	AREA 1 EDF	AREA 2 ENEDIS L'ELECTRICITE EN RESEAU	AREA 3 EDF	MULTI-PURPOSE TEST AREA
SIZE (L x l x h)	43 m x 21 m x 23 m	17 m x 13 m x 22 m	20 m x 20 m x 17 m	20 m x 20 m x 17 m
SOURCES	Up to 10 kV - 3000 kVA 50 Hz	50 Hz – three-phase 250 V - 130 kVA		Up to 750 kVA
				50 Hz or 15/60 Hz
	Up to 10 kV - 750 kVA 15/60 Hz	150 Hz – three-phase 220 V - 50 kVA		
		50 Hz – three-phase 30 kV - 100 kVA		
IMPULSE GENERATOR	3 MV- 150 kJ	2 MV - 100 kJ		2 MV – 100 kJ
AC TRANSFORMERS	1100 kV- 1512 kVA	250 kV- 100 kVA		2x400 kV 1000 kVA
	550 kV – 756 kVA			
DC GENERATOR	600kV - 30 mA 250 kV - 400mA		1000 kV – 20 mA	600 kV – 30 mA 250 kV – 400 mA
EQUIPMENTS	Rain spray device			
	Tent for artificial pollution test			
	Spark gap (up to 1800 kV) for chopped lightning			
	Thermostatic chamber (2 m x 1,9 m x 6,9 m) from -25°C to + 60°C			
	Testing facility for Heating cables 6000 A			

In area 1 and 2, the background noise level is less than 1PC allowing an exceptional measurement quality.

EDF R&D
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