
Support Infrastructures

CESGA'S support infrastructures

In order to guarantee 24 x 7 service to users and researchers at CESGA, computing servers, switching, and routing equipment have a support infrastructure available which provides the following resources.

ELECTRICAL SUPPLY

In order to support the increment in electrical power that the supercomputer requires, CESGA has:

- an external electrical supply line of 1.5 Mw,
- 10 electric circuit breakers,
- a 1,600 KVA transformer, complementary to the previous existing one with 630 KVA,
- two Systems of Uninterrupted Power Supply (UPS) of 400 KVA,
- two units adding up to 180 KVA, and
- an electricity generation group of 1,100 KVA and 8 tons of weight. This group allows the entire installation to be maintained in operation during prolonged cuts in electrical supply.

COOLING

- Two chiller plants of 580 KW each, and
- 10 computer room air handlers (CRAH) of 120 KW, to dissipate the heat generated.

FIRE SUPPRESSION

- A state-of-the-art system for the detection and extinction of fires based on HFC227 gas.

DATA CENTRE ROOM

- The data centre room has a technical floor surface area of 340m².

EQUIPMENT	CHARACTERISTICS
ELECTRICAL SUPPLY	
General Circuit Breaker Board Remodeling	10 New circuit breaker boards (general distribution board, UPS distribution boards, 6 distribution boards in data centre)
Transformers	1.600 KVA 630 KVA
UPS	1 x 120 KVA 1 x 60 KVA
External Electrical Supply Line	1.5 Mw
Power Generator	1.100 KVA
COOLING	
Chilled Water Plants	2 x 580 Kw
CRAH	10 Units x 120 Kw
DATA CENTER ROOM	
Technical Flooring Surface Area	340 m^2
FIRE SUPPRESSION	
Fire Detection & Extinction System	Based on HFC227 Gas

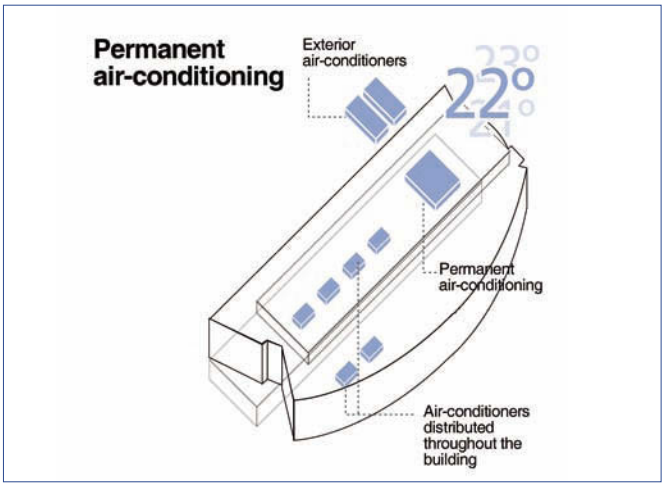
permanent air-conditioning

Large computers generate an enormous amount of heat. In order to maintain optimal climactic conditions (22º and 50% humidity), the building has two chiller plants of 580 KW each, with a total of 10 interior computer room air handlers.

Exterior water chiller plants.

Computer room air handlers (CRAH).

Air-conditioners distributed throughout the building.



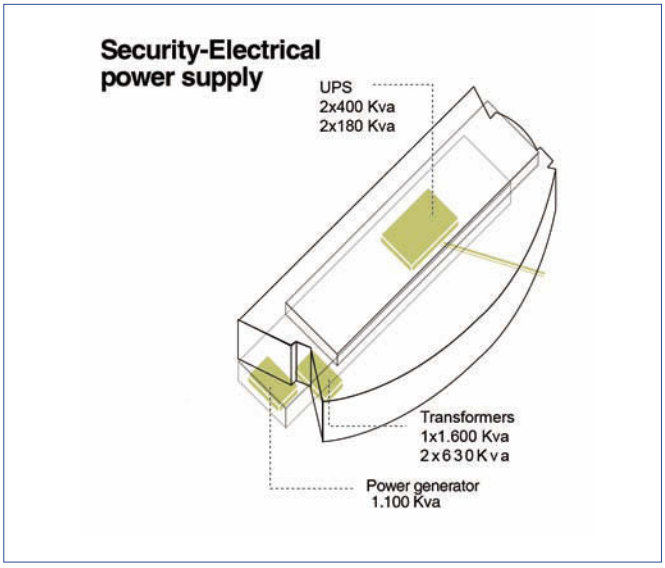
Security – Electrical Power Supply

The Centre has an uninterrupted power supply (UPS) system that guarantees continuity of power supply while external interruptions may exist. Additionally, a power generator assures the autonomy of the Centre indefinitely.

Transformer
(1,600 Kva+630 KVA)

Power generator
(1,100 KVA)

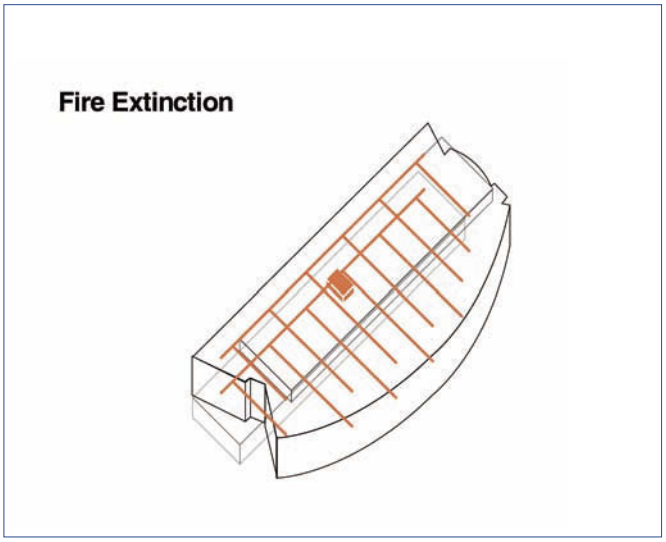
UPS
(2x400 KVA+180 KVA)



Fire Suppression

A system of smoke detectors activates the alarm and initiates the gas (HFC227) extinction system when necessary. This gas rapidly displaces the oxygen in the rooms and prevents combustion.

UPS room
Extinction room
Storage room
Air-conditioning rooms
Power generator room
Electricity transformer centre (transformers)



Access Control

Access to the computing and communications room is only available to authorized personnel who are identified by means of an identification card and fingerprint control. All entries are recorded.