



2X1550 kVA | 2.4 MW

UNIVERSITY HOSPITAL INSTITUTE, STRASBOURG (FRANCE)

How Genelec guarantees a redundant emergency power supply for one of the world's most advanced surgical centres

Summary:

Location:
Strasbourg (France)

Installed power:
2 x 1550 kVA = 2.4MW

Generator sets:
2 HTW-1550 T5 units
5,086 x 2,796 x 2,330 mm (L x W x H)

Special configuration:
Redundant emergency power supply with synchronised start-up system capable of supplying 100% of the load in 10 seconds. Two redundant control units per generator set and a double silencer system.

Installer:
SOVEC

The complexity of the project required Genelec to conduct a thorough analysis, both of the design and manufacture, and of the installation of the equipment. In addition to the sensitivity involved in working with a hospital, in France there is a host of environmental and power supply safety legislation, which made development complicated in terms of engineering, adapting each part of the process to technical and legal requirements.

The University Hospital Institute (UHI) is the new part of Strasbourg Civil Hospital for the treatment of gastrointestinal disorders, a leading centre in image-guided and minimally invasive surgery. The new building that houses the Institute, which is equipped with cutting-edge surgical technology, is connected to two separate power grids. The power supply is distributed with separate loads that are combined in a common busbar. Under French standard NF61940-37312, hospital facilities of this kind are required to:

- have a redundant emergency power supply;
- ensure continuous power supply during transformer maintenance.

Genelec therefore supplied two generator sets supplying 1,550 kVA in stand-by, synchronised with each of the grids and programmed with a parallel start-up system. Both generator sets start up synchronously and accept 100% of the load in 10 seconds, but only one of the units continues to function in an emergency, once the power supply is secured.

OBJECTIVE

The project required emergency generator sets that are capable of synchronising with two separate power grids and that, in the event of an outage on either grid, can supply 1,550 kVA of power in 10 seconds. The installation must comply with French legislation on noise emissions and environmental legislation, and ensure a secure power supply during transformer maintenance on the main grids.

SOLUTION

Genelec guaranteed continuous power supply with a synchronised start-up system. Up to 2.4 MW of power can be supplied, double the current needs of this new part of the hospital. By installing load demand-based management or wattmetric management, the control units detect existing demand. If this exceeds a set threshold, both generator sets work in parallel to supply up to 3,100 kVA of power at specific times to cover demand peaks.

Technical Specifications:



Two HTW1550 T5 generator sets with Mitsubishi engines were supplied. They are **emissions-compliant models** that comply with French law No 2910, which requires engines, between 2 and 20 thermal MW, to meet NOx and HCH emissions limits.



The **control systems** are redundant with two control units in each generator set, so that the generator sets can continue to function if either of them breaks down. In addition, the installation includes a **programmable logic controller**, or PLC, which regulates the complex operating system. All electrical parameters, both of the installation and of the generator sets, can be viewed from a remote screen. Another challenge of the project was to secure the hospital's power supply during the annual **maintenance** required by French law for transformers on major grids. Genelec planned a complex system that involves controlling a large number of low-voltage inputs and outputs to ensure the safety both of the machinery and of those working at the facility during this maintenance.

Double silencer system:



A **double exhaust silencer system** was incorporated, which maintains the backpressure of the equipment and ensures minimal noise. To minimise noise pollution, the sealed room in which the generator sets are located was completely soundproofed, including motorised grilles in the air vents to cool the room, and bushings, which absorb vibrations from the generator sets and the structure supporting the silencers.



Thierry Blond,
SECTOR MANAGER AT
SOVEC ENTREPRISES



As part of the construction of the UHI Strasbourg, from the award of the project SOVEC Entreprises sought a partner company for the implementation of two generator sets supplying

1,550 kVA in stand-by. The final choice was Genelec, who has managed to demonstrate, during the various technical and commercial negotiations, its expertise in the ability

to carry out such a project. The design phase, the factory reception, execution and implementation have confirmed that we had chosen the right partner.

