Manual: Hospital and Hospital Clinics
Chapter: Environment of Care EC
Topic: Emergency Power Systems - Types

What is the distinction between emergency generators, stored emergency power supply systems (SEPSS), and UPS, and when is one used versus the other?

Any examples are for illustrative purposes only.

An emergency generator can be defined as a stationary device, driven by a reciprocating internal combustion engine or turbine that serves solely as a secondary source of mechanical or electrical power whenever the primary energy supply is disrupted or discontinued.

A stored emergency power supply system (SEPSS) is a system

consisting of an uninterruptible power supply (UPS), or a motor generator, powered by a stored electrical energy source, together with a transfer switch designed to monitor preferred and alternate load power source and provide desired switching of the load, and all necessary control equipment to make the system(s) for which it is connected functional.

An uninterruptible power supply (UPS) is a device that powers equipment, nearly instantaneously allowing it to keep running for at least a short time when incoming power is interrupted. As long as utility power is flowing, it also replenishes and maintains the energy storage.

The decision to use one type over the other is usually determined by the required time for the emergency power systems to deliver electrical power. Engine driven generators can provide as long as the fuel supply is maintained. Hospitals with heavy electrical loads for critical care patient care requiring life support equipment, lighting, HVAC and other critical systems and the need to remain functional during uncertain emergencies opt for the engine driven electrical generators. SEPSS are typically used in smaller outpatient clinics, surgical centers and ambulatory facilities due to the lower acuity of the patients and that the duration that emergency power is required to be supplied is much shorter than an in-patient facility. Emergency power is required to allow staff and patients to exit the facility, and to treatments or therapy in progress to be halted and evacuate the patients.

Runtimes for a SEPSS can be as short as a few minutes to as long as 90 minutes. Utilization of a UPS is typically to bridge the 10 second gap from power interruption to generator start time and is not to be considered a SEPSS.

Additional Resources

NFPA 111 – 2010: 8.3.1; 8.3.3; 8.3.4; 8.4.1

Last updated on September 20, 2024 with update notes of: Review only, FAQ is current

First Published Date: April 11, 2016

Last Reviewed Date: September 20, 2024