

Standby power and uninterruptible power supplies General design guidelines

General

[Information within brackets in this document refers to local regulations]

This report provides guidelines on the design and specification of standby power systems.

Contents

1 Introduction	1
2 Regulations and standards	1
3 Requirement factors	3
4 Factors which influence choice of system	3
5 Factors which influence sizing of system	4
6 System options	5
7 Environment etc.	6
8 Testing, service	7
9 Documentation	8

Appendix 1 Uninterruptible power supply system

Appendix 2 Schematic of diesel-generator unit

Appendix 3 Schematic of most commonly used system

Appendix 4 Schematic of system used in cellulose industry (SCA, Östrand, caustic plant)

1 Introduction

In many industries, power failures cause significant financial losses.

With a high degree of automation and frequently long interlock sequences, disturbance in the form of a short power interruption or a sharp drop in frequency or voltage may have farreaching consequences.

Power supply equipment designed specifically for different applications and system configurations can be configured in a variety of ways, the final choice must, as always, be based on local factors, such as the demand for supply continuity, safety, price etc.

The design of standby power systems of various types is also a function of the reliability and quality of the grid supply.

Swedish standards define various types of reserve feed, and also the difference between emergency power and standby power systems. Emergency power systems are designed to maintain functions linked with personal safety and standby power systems to maintain facility functions, i.e. for reasons other than personal safety.

General recommendations on standby power systems are given in the following pages. Although by no means complete or exhaustive, these may be of assistance in the design and specification of such systems.

Schematics of the most commonly used systems are shown in the appendices.