Strategic and operational spare components
Recommendation for improving substation availability

The requirements to more power and reliability within a grid system increase daily. Particular attention is considered for the availability of the substation.

The “Recommendation of strategic and operational spare components” is an indispensable service designed to reveal weaknesses in case of a major failure which will lead to serious outages.

Customer advantage
Although the ABB gas-insulated switchgear (GIS) is a highly reliable equipment with minimal outage rates, a certain number of failures during the entire lifetime might occur. As a result of more complex grid configurations in the future and thus the impact on substation and component, failures cannot be ruled out completely. In a worst case scenario this could result in a total blackout. With possible financial and reputational losses for the customer.

Within our recommendation of strategic and operational spare components, we focus on critical parts, which could lead to an outage of the running system in case of a major failure. Due to customized installed GIS it is crucial to have such spare components on site to speed up repair and keep downtime as short as possible.

The most important question is not how often such failures occur in particular components, but how sensitive is the system to an unexpected long-term outage of a section. This information needs to be considered by owner of the substation and is the basis for any decision.

The importance of strategic spare components depends heavily on the redundancy in the system.

Strategic spare component
Strategic spare components are fully factory tested and can be used immediately for replacement of failed components. It is important to check configuration and variants of installed equipment to ensure one-to-one replacement.

Operational spare parts
Operational spare parts are in addition to strategic spare components and are needed to repair small failures. These kind of spare parts are typically on manufacturer’s stock.

GIS type ELK-04 (520 / 735) and ELK-03
Recommended strategic spare component
- Circuit breaker
- Operating mechanism
- Combined disconnect/earthing-switch
• Fast acting earthing switch
• Busbar and other modules
• Support insulator
• Barrier insulator
• Voltage transformer
• Outdoor bushing, silicone type

Recommended operational spare parts for
• Operating mechanism
• Combined disconnect/earthing-switch
• Busbar and other modules

02 Strategic spare component:
Voltage transformer

03 Operational spare part: Gas density monitor

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