Retrofitting
A future-oriented concept in lifecycle management
Retrofit solutions for gas-insulated switchgear > 50 kV to 170 kV

ABB-supplied high-voltage substations generally have a service life of approx. 40 years. This life span and time of availability can be assured without any problems by performing the regular maintenance routines.

In order to be able to achieve even longer service lives for gas-insulated switchgear, we developed numerous retrofit solutions in close cooperation with plant owners in the utility industry and other industrial sectors. As a result, our retrofit concepts are capable of optimizing the operation of installations and increasing their reliability – for example, by replacing older piston-operated breakers (based on oil hydraulics technology) with new self-blast circuit breakers with hydraulic spring-operated mechanisms.
Extending the lifetime of plants and systems - with the help of ABB`s retrofit solutions

Retrofit solutions are a future-oriented concept in lifecycle management. They are designed to substantially extend the service span of ABB installations and systems by way of subsequently upgrading the equipment with state-of-the-art components.

The primary focus of the retrofit solutions developed by ABB is on optimizing the systems engineering, enhancing the personnel safety, and conforming with today’s requirements of environmental protection, such as reducing potential SF₆ leakage.

Retrofit solutions are capable of mastering a great number of challenges in lifecycle management:
- Preventing for technical failure of older installations or components
- Enabling an increase in power output which has become necessary
- Reducing the maintenance costs of older items of equipment

- Cutting outage times caused by maintenance work or malfunctions
- Improving the future spare parts supply
- Adapting the equipment to the latest safety and environmental standards

Retrofit solutions are a future-oriented concept in lifecycle management.
ABB’s retrofit solutions are a sensible complement to the maintenance routines performed, and constitute an important building block in assessing a piece of equipment’s life-cycle.

Retrofits are mostly selected as an option when the provision of conventional maintenance work is no longer viable at an acceptable cost.

In order to equip ageing substations with state-of-the-art components, which will extend their useful lifetimes significantly, our design people have developed a comprehensive choice of retrofit solutions.

There are additional retrofit solutions for:
- Circuit breakers
- Operating mechanisms
- Disconnectors
- Earthing switches
- Rupture disks
- Cable terminations
- Control technology
- Voltage transformers
- Outdoor bushings
Cost-efficient and fit for a longer period of time

During its life cycle of approximately forty years, an ABB high-voltage switchgear is exposed to numerous influential factors. Many factors, including environment, operation or malfunctions, can lead to a substantial diminishment of the installation’s reliability.

Our intention is to increase the availability and reliability of our customers’ assets by installing state-of-the-art components that are capable of enhancing the service time considerably, lowering the operating costs and, at the same time, reducing the environmental impact.

When conventional maintenance measures are no longer possible at reasonable cost, many of our customers opt for our recommended retrofit solutions. They have been designed to implement technical advancements in existing installations that will allow them to be run cost-efficiently for a longer period of time. This concept is geared to actively protect your capital investment far into the future.

We therefore recommend to complement your maintenance routines with ABB’s retrofit solutions. They will be a vital element in a successful lifecycle management of your assets.

Longer equipment lifecycles combined with higher levels of cost-efficiency, reliability, availability and environmental compatibility.

Schematic representation of the economic analysis of retrofit measures

- Lower operating costs due to reduced maintenance activities
- Minimized downtimes by cutting maintenance activities
- Increased personnel and operating safety and operational reliability
- Increased plant availability
- More operator convenience by utilizing state-of-the-art devices
- Lifecycle extension