As an enhancement to ABB's customer service commitment, High Current Systems has created a special purpose group just to serve Power Plant Owners. The group provides engineered solutions and solution packages to meet customers’ needs and requirements. This group is located in the central hub of engineering excellence, Zurich, Switzerland and is backed by technical, engineering as well as research and development engineers.

**Customer focused**
This Service Solutions group work in close cooperation with ABB's numerous local service centers in order to be near to the customer and to have first-hand understanding of the needs of each specific power station.

At the same time, the centre of excellence brings global experience locally to evolve service solutions tailored to suit the power plants and their owners’ requirements. Access to the spare parts warehouse, the manufacturing factory and the test laboratory is one of the strengths of this group and the reason for its location in Zurich.

ABB’s goal of customer focused service not only includes providing local service personnel in an expeditious manner to the required Power Plants located in various countries but also providing comprehensive, innovative, customer requirements based economical solutions to equipment or group of related equipment. The key focus of the Service Solutions group is to offer retrofitting or replacement of Generator Circuit Breakers (GCB). However this group will also focus on providing solution packages related to the High-Current path of existing generating units.

**Engineered Solutions**
Engineered Solution Packages may include equipment that are associated with the transmission of energy from the generator terminals to the step-up transformer terminals as well as engineering services:

- equipment for generator circuit breakers, generator load switches, disconnectors, bus-bars, earthing switches, instrument transformers, surge protection devices as well as systems to integrate the interfaces to generator control and its protection, synchronization and related visualization.

- diagnosis such as thermal measurements, material property evaluation on the existing high current path equipment.

- engineering evaluation services for maintaining or improving the reliability and the availability of the high-current path, short-circuit requirements, existing generator and unit protection schemes, existing equipment ratings as against future requirements (uprating), availability analysis of the power plant in case of retrofitting a unit with generator circuit breaker.
Retrofitting with GCB

The inclusion of GCB in the high current path serves as a key and added protection not only to the electrical generator of the power station but also to the step-up transformer.

The advantage is not just protecting the key equipment like Generator and the Transformer. These key elements of the Power Station are normally not kept in spare and the lead time for any replacement is several months. This highlights the simple fact that it is not just the cost of repair or replacement of these items that interrupts the prime purpose of the power station, which is supplying power to the grid, but also loss of revenues to the owners resulting from the inability of the power plant to deliver the power to the grid.

When we consider the interruption of power supply to the grid, the resulting economic losses are enormous not only to the power station itself but also to the industries that utilize and depend on this power for its operations. Such interruptions can be definitely decreased by the provision of the GCB in the high current circuit thus improving the availability of the plant for power production with which the grid can be served by the power plant.

This also enhances the reliability with which the power can be delivered to the industries as well as other domestic consumers. Introduction of GCB can also eliminate the need for Unit auxiliary power supply thus saving related costs.

Replacement of GCB

The life time of the GCB is defined by the number of years of service (due to aging, corrosion, etc.) or number of open/close operations (due to factors such as abrasion of moving parts, wear and tear) or accumulated events of current that determine the ablation coefficient. It is necessary to consider a replacement at appropriate service life. Another reason for replacement is the availability of improved, modern and state of the art technology based new breed of GCBs.

These have improved life time, increased maintenance intervals thus reducing the number for maintenance overhauls and reduced costs for maintenance. The decrease in time duration of maintenance and increase in maintenance intervals directly contribute in improving the availability of the power plant and resulting economic benefit.

Moreover upgrading of the Turbine and Generator will also necessitate the replacement of the GCB with suitable ratings. Obsolescence of existing breakers and resulting non availability of spare parts from OEM or inadequate engineering solutions that might be in place may call for GCB replacement.

The focused Service Solutions group

The new group in ABB’s High Current Systems department has dedicated mechanical engineers, electrical engineers and supply chain specialist. The team members has experience in different areas such as technical, commercial, erection, commissioning, maintenance services and over all power plant background. This multi-faceted nature of this focus group will help in understanding the power plant owners’ requirements from different engineering aspects as well as execution point of views in evolving feasible and economical solutions that are cost-wise and time-wise optimized to enhance customer benefits. In addition, this focus group has the backing of in-house technical, engineering, field service and logistic capabilities to diagnose, design and deliver engineering solutions and packages.

ABB Ltd.
Branko Knezevic
+41 58 588 30 35
+41 79 264 03 19
branko.knezevic@ch.abb.com
www.abb.com/gcb

Note:
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document. We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.