Success story

Pre-assembled cabinets for condition-based monitoring of high voltage assets
It’s easy being green!

Customer need
A large, US-based utility began a “green” initiative in 2011. Their aggressive approach to the reduction of GHG (Green House Gases) went well beyond the EPA's requirement that all utilities with over 17,820 lbs. of SF₆ nameplate capacity must report emissions on a yearly basis. Key to making the program work was finding an SF₆ gas monitoring solution for their high voltage circuit breakers that could be field retrofitted on any breaker type, regardless of manufacturer. The reason for that was three-fold:

- Provide early SF₆ gas leak detection to eliminate costly, unplanned maintenance services.
- Like most utilities, they have multiple brands of high voltage circuit breakers across their fleet.
- A field retrofit must be available as replacing existing breakers with a factory installed monitoring device was not a fiscal option.

In addition to meeting the three key drivers, it was necessary to complete installation by April 2013 per their project requirements.

ABB solution
The challenge then, was finding one equipment monitoring device they could standardize the entire fleet with, while being robust enough to meet their GHG reduction goals; install by the required deadline; and support a field retrofit of the installed breakers.

After researching vendors, the decision to use ABB was determined by four factors:

- Our CBS-F₆ monitoring device works with any OEM high voltage SF₆ circuit breaker.
- We have a large and well-trained field service staff, which was necessary to support the project deadline.
- ABB leverages the resources of a locally developed and manufactured device to support all of our products and services globally.
- High Voltage Service operates a remanufacturing facility, this allowed us to custom build cabinets in-house to retrofit the monitoring devices.

The scope of work included pre-assembled field retrofit cabinets and site commissioning services on 220 breakers for a multitude of circuit breaker manufacturers and types.

Retrofit features included the following:

- Adapted monitoring device and components to limited breaker cabinet space
- Provided CBS F₆ terminal blocks, fused power, condensation heaters, and drawings
- Fiber communications to support IP addressable devices for integration into the company’s network architecture
- Alarm contacts for SCADA integration

Facts

<table>
<thead>
<tr>
<th>Country</th>
<th>USA</th>
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<tbody>
<tr>
<td>Customer</td>
<td>Large, US-based Utility</td>
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<tr>
<td>Scope of supply</td>
<td>220 Pre-assembled high voltage circuit breaker SF₆ gas monitoring cabinets</td>
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<tr>
<td>Year of delivery</td>
<td>2012 - 2013</td>
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<tr>
<td>Engineering and construction of installation</td>
<td>Collaboration to provide easy customer installation and commissioning support</td>
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</tbody>
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Mitsubishi circuit breaker with ABB pre-assembled asset monitoring cabinet

Power and productivity for a better world™
Customer benefits

Productivity/Efficiency:
- Allows users to move from the typical "time-based maintenance" to a "conditioned-based maintenance" approach
- Defers/extends maintenance intervals
- Reduces unnecessary downtime
- Allows adequate time to schedule outages
- Pre-assembled cabinets reduce hardware installation time and outage requirements

Environmental Impact:
- Compliant with EPA regulations to reduce the usage of SF₆ gas
- Provides early leak detection
- Facilitates proper outage planning

Cost-reduction:
- Reduces maintenance intervals
- Reduces/eliminates emergency repairs
- Prevents loss of revenue due to failed equipment
- Minimizes SF₆ gas usage

Asset management solutions for a greener power grid

The primary objective of a maintenance organization is to ensure asset availability and performance goals are met on a predictable basis. To do so successfully requires visibility and collaboration with the appropriate personnel so that proper maintenance can be performed when needed, which reduces unnecessary downtime. The challenge is having the relevant information available at the right time in the right form, and accessible to the right people.

ABB provides asset management solutions that present condition information seamlessly and in the proper context. As a result, continuous improvement initiatives, such as proactive maintenance practices, will improve maintenance efficiencies and minimize unscheduled shutdowns, as well as minimize the environmental impact of SF₆ gas usage. ABB High Voltage Service can help utilities achieve those goals with an evaluation of your installed base.

For more information, contact your local marketing representative at 724-696-1300.