

# Switchgear Solutions:

Beyond the Standard

## Value-Engineered Metal Clad Alternative

Metal clad gear is a common choice for consultants and usually comes with a large cost for procurement, storage, installation and maintenance.

A metal clad specification typically details a rating of 25kA to 40kA symmetrical fault interrupting and 1,200A to 3,000A continuous current. Many times, metal clad gear is overrated for the application and a quick evaluation of the transformers adjacent to the gear, along with its connecting cables, may reveal a lower current rating for which a value-engineered solution is suitable. When 900A continuous current is sufficient for the application, SF6 switchgear provides several advantages, making it an ideal value-engineered solution.

The total initial cost can be less than half of the compared metal clad gear. Beyond the savings for initial purchase and installation, the storage and maintenance cost will be substantially reduced as well.

Upon receipt of metal clad gear, power will be required for the condensation heaters. It is vitally important the condensation is controlled as the contacts are exposed to air. Condensation can build inside the gear and cause the contacts to tarnish, which can lead to a shorter life or premature failure. Due



to these factors, temporary power will need to be provided if the system is not energized, or if the gear cannot be installed upon receipt. SF6 switchgear can be stored without temporary power, as the switching mechanisms are fully sealed within the tank.

# Value-Engineered Metal Clad Alternative (Continued)

Installation of metal clad gear typically requires the connection of individual compartments on site due to its weight and size. When used externally, the gear will require housing to be built around it to mitigate contaminants such as wildlife, dust and salt fog. SF6 switchgear ships fully assembled with no adjustments

required. The switchgear is factory tested to require minimal testing on site, and is installed as a single unit to significantly reduce installation time.

A cost that is often left out of the initial purchase decision is the lifetime maintenance. Metal clad gear

recommends an inspection and lubrication of the switching contacts at least once every three years. In time, these contacts may need to be replaced due to corrosion or contaminants. SF6 switchgear contains all mechanisms within the switch tank. The switching mechanisms are isolated from contaminants and do not require maintenance. A periodic check of the SF6 pressure gauge is all that's recommended.

With capability of 25kA symmetrical fault interrupting, 900A continuous current, lower procurement, installation, storage and maintenance cost, SF6 switchgear is the ideal value-engineered solution.

5-WAY COMPARISON	METAL CLAD	G&W SF6
Procurement Cost per Unit	1	0.48
Installation Cost per Unit	1	0.40
Total Initial Cost per Unit (Procurement + Installation)	2	0.88
Continuous Current (kA)	1,200 - 3,000	900
Sym. Fault Interrupting (A)	25-40	25
Weight (Lbs)	42,000	7,500
Length (Inches)	294	192
Width (Inches)	130	65
Height (Inches)	115	80
Insulation	Air	SF6 Gas
Power for Heaters	Required	Not Required
Maintenance	Annual to 2 Year Cycle	Maintenance Free

Table 1

Table 1 above outlines the differences between G&W SF6 gear and typical automated metal clad gear based on a 5-way lineup.