



Rapid Response to Transformer Explosion at Power Plant

AZZ designed, built, shipped, installed, and commissioned replacement SF₆ gas insulated line (GIL) in just 39 days

AZZ received an urgent call that an explosion had occurred on a critical 864 MVA generator step-up transformer (GSU) at a major power plant in Saudi Arabia. The explosion caused significant damage to the transformer and the gas insulated line (GIL) which connects the transformer to a 380 kV Gas Insulated Substation (GIS).

AZZ immediately dispatched the local Country Manager from Riyadh to the site to assess the damage and determine how AZZ could help. Damage photos and copies of Instruction Book drawings were sent to AZZ's High Voltage Bus Systems division (HVBS) in Medway, MA, U.S. From these photos and drawings, HVBS was able to prepare a layout drawing outlining the best solution. In order to complete the detailed design, HVBS dispatched the Field Services Manager to the site to

take detailed measurements of the equipment the GIL would need to connect with. With the detailed interface measurements from site, the Engineering team was able to complete the designs and release for manufacturing at AZZ's HVBS plant.

Due to the severity of the transformer fault and collateral damage, this repair required a total of 36 sections to bring the generator back online, which required expedited manufacturing of additional standard components, including flanges, silver plated contact assemblies, adjustment bellows and epoxy insulators. AZZ maintains an emergency supply of standard GIL components as well as an in-house capability to produce additional components and thus was able to rapidly produce the needed components within days of understanding the full required scope of supply.

High Voltage Bus Systems Case Study

In total, 22 tons of AZZ high voltage transmission equipment were air freighted to Saudi Arabia via 747, a 48-hour transit from origin to destination that normally requires 8 weeks.

After seven days of around-the-clock installation coordinated by AZZ, the equipment was ready for high voltage testing and commissioning, which were completed in less than one week. The plant was brought back on line three full days before the start of Ramadan as strongly desired by the utility due to mid-summer being the time of peak demand.

AZZ High Voltage Bus Systems was able to accomplish in 39 days what would typically have required 5-6 months and would have left utility's customers without power during the Ramadan holiday and the hottest time of year.



Loading of equipment onto chartered plane at JFK



Replacement transformer with new AZZ GIL ready for energization

