VArPro™ STATCOM case study
Attala Steel galvanizing plant
Voltage support for a facility serving the solar PV market

Attala Steel Industries added a galvanizing facility at its Kosciusko, Mississippi operations to meet the growing needs of the growing needs of solar PV equipment suppliers. This expansion meant increased power requirements. A study determined that a STATCOM solution could manage facility power quality, offer higher operational reliability as well as power factor control.

Advanced steel technology serves the Solar PV market with durable, cost-effective hot dip galvanizing. Attala Steel Industries recognized this growing market by adding a 30,000-square-foot galvanizing facility at its Kosciusko, Mississippi location. The facility expansion allows Attala Steel Industries to offer a more complete package for solar panel mounting, including beams, tubing, pipes and pedestal posts, for large-scale, ground-mounted PV solar fields. Hot-dip galvanizing these structures provide long-term protection from the extreme elements, and the life-cycle guarantees that solar PV farms require.

The plant expansion added to the company's existing structural steel mill and fabrication facility, giving them the unique advantage of having three processing facilities in one location. The galvanizing plant is fully automated with a 42-foot kettle and the latest in environmental technology.

In order to add the additional scope to their site, Attala recognized a need to enhance their power system. The potential for poor power factor, voltage transients, flicker and harmonics can have adverse impacts on process loads as well as the surrounding utility distribution network. ABB's VArPro STATCOM provided a robust solution that improved power quality to the plant, improved utilization of the new equipment, increased plant efficiency, while complying with utility requirements, including voltage and flicker limits.

Key project data	
Scope of supply	3 MVAr ABB VArPro STATCOM in an outdoor NEMA 3R enclosure
	Padmount transformer with LV bus throat connections
	On-site commissioning
Connection voltage	24.9kV, 3phase, 60 HZ
Application	To meet the local utility requirements of regulating voltage and provide power factor control on the 24.9 kV network.

Operational benefits
Prevent power supply interruptions
Reduction in system losses
Meet utility voltage and power factor requirements to avoid penalties
Improved power quality for the plant leading to better utilization of equipment and increased efficiency

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What is a STATCOM?

A STATCOM (static synchronous compensator) is a voltage regulating device. It is based on a power electronics voltage-source converter and can act as either a source or sink of reactive power. It is a member of the flexible AC transmission systems (FACTS) family which detects and instantly compensates for voltage fluctuations or flicker, as well as controls power factor. As a fully controllable power electronic device, the STATCOM is capable of providing both capacitive and inductive VArs.

ABB STATCOM Features

- Power factor control
- Voltage regulation
- Independent phase control
- Flicker reduction
- Active harmonic filtering (application specific)
- Multiple system parallel control
- High and low voltage ride through
- Modular inverter blocks for simple long term maintenance
- Flexible transformer integration for optimal footprint and low installation costs
- Optional overload capacity up to 300 percent

ABB's outdoor cabinet STATCOM solution for Attala Steel.

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