ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact.

The ABB Group of companies operates in around 100 countries and employs about 145,000 people.

ABB offers a wide range of high-voltage products up to 1200 kV (kilovolt) that help enhance the reliability, efficiency and quality of power in transmission and distribution grids, power plants and industries while minimizing environmental impact.

ABB pioneered high-voltage GIS in the mid-1960s and continues to drive technology and innovation, offering a full range product portfolio with voltage levels from 72.5 kV to 1200 kV. As a market leader in high-voltage GIS technology, ABB has a global installed base of more than 25,000 bays.

The factory spread over 21,000 square meters is conceptualized on the principles of ‘Lean Production’ techniques to manufacture high-voltage GIS for voltage ranges from 145 kV to 420 kV.

Inaugurated in 2015, the factory houses state-of-the-art manufacturing and a training center, the one and only in the country, to provide training on ABB’s power products offerings for our customers.

With a team of highly qualified experts, we are committed to providing the best products and services to our customers.
Manufacturing facility highlights

GIS is a compact metal encapsulated switchgear consisting of high-voltage components such as circuit-breakers and disconnectors, which can be safely operated in confined spaces. GIS is used, where space is limited, such as extensions, in city buildings, on roofs, on offshore platforms, industrial plants and hydro power plants.

Modern Manufacturing Execution System (MES)
Implementation for material tracking, quality assurance and digital work instructions to enable higher efficiency and productivity throughout the production process.

Incoming goods inspection
All materials are thoroughly checked in the incoming good inspections to guarantee 100 percent quality.

Kardex System for automated storage and retrieval of parts
The efficient management of “C” Class items in any factory is an integral requirement of assembly lines in a fast and lean manufacturing set up.
To achieve this two Kardex machines are installed for automated storage and retrieval of parts so that the right quantity is supplied by logistics at right work station at the right time.

– This reduces the non-value added activities in logistics thereby reducing the operational cost
– Storage of maximum parts with minimum floor space requirement

Floor integrated rail system
Rails are fitted across the shop floor for safe and quick movement of products with set of universal fixtures to adapt various mechanical variants of GIS.

Products manufactured in Dammam: 1 ELK-04 C, 145 kV | 2 ELK-14 C, 245 kV | 3 ELK-3 C, 420 kV
Common flow production line with one piece flow and pull concept

The total assembly line including testing and packing is divided into a number of assembly stations (i.e. Takt). The products move with a fix takt time from station to station. The work steps are standardized and optimized to reach highest quality standards, efficiency, work ergonomics and safety.

Modern process techniques such as lean manufacturing, lean administration, just-in-time, one-piece flow, kaizen and theory of constraints are applied. Use of these new techniques in the factory helps in achieving highest industry standards such as:

- Shortest delivery times
- Reliable on-time delivery
- Highest quality level
- Rapid response to customer requirements
- Highest cost efficiency
- Best performance

Lean and Continuous Improvement Process (CIP) culture

Shop floor management is done with visual display of various parameters by deploying lean management tools like GEMBA, PDCA, 4Q, penetrating to the last level of operation and thus living the actual “Lean” and “Continuous Improvement Process (CIP)” Culture.

This helps in achieving:

- Highest quality
- Highest efficiency
- Highest safety

Testing facilities

The testing facility in Dammam has the capability do routine testing up to 420 kV for GIS, including partial discharge detection, mechanical tests, leakage tests and high-voltage tests according to IEC 62271-203 and IEC 62271-1 standards.

1 Incoming goods inspection | 2 Inside factory (overview) | 3 Packing area | 4 Testing area
Factory Acceptance Test (FAT) and Remote Factory Acceptance Test (RFAT)
A customer lounge is available to host our guests in the most efficient way to complete the FAT procedures and issue the relevant test protocols in the shortest time.

– From the lounge, the customer can interact with the testing engineers performing various tests in the lab
– Glass windows have also been provided in the lounge for having panoramic view of the entire test lab (both mechanical test rooms and dielectric test rooms) and the assembly area

If customers are not able to travel to the factory, we bring the FAT to them. The test area is equipped with live cameras and with an internet connection, customer can witness the testing of their GIS on their computers remotely from the comfort of their own offices.

Installation and Commissioning
Fully trained ABB experts provide on-site installation and commissioning for high reliability and optimum life-cycle performance from the first operation. Our facility is fully equipped with tools and test equipment for fast and reliable installation and commissioning.

Training center
ABB Learning Zone with it’s state-of-the-art facility offers classroom, and internet based product and service training that covers both theory and practical exercises.

Service capabilities
ABB’s service portfolio offers comprehensive solutions that extend the operating asset life while reducing maintenance costs. Our service departments are positioned locally to ensure that your entire installed base is taken care in the fastest possible time. With technology development at the forefront of everything we do, upgrade and retrofitting are just two of our many offerings which can help you modernize and extend the life of your existing equipment.

– 24/7 hotline ensures quick reaction time
– Diverse training courses for your personnel
– Customized maintenance and retrofit solutions to extend your GIS lifetime and to increase the reliability of your equipment to its maximum level
– Capability of bay extensions for any GIS, including non-ABB switchgears
– Options to adapt your GIS to future requirements including rating upgrades and layout modifications
– Service agreements to match your needs, including: risk assessments, warranty extensions, diagnostics, consulting and much more