The future of Chemical, Oil & Gas

ABB Ability™ building tomorrow’s operations
ABB Ability™ solutions for Industry 4.0

1712 – Industry 1.0
Thomas Newcome builds the first steam engine

1870 – Industry 2.0
Electricity is used for Industrial Production

1969 – Industry 3.0
Programmable logic

Today – Industry 4.0
Communications between people, services, and things

Do more
- Know more: Visibility: assess, inform, measure
- Connectivity: monitor, control, manage

Do better
- Predictability: optimize, predict, simulate
- Adaptability: collaborate, advice, re-think

Together

Data collection

47 Yrs.

99 Yrs.

158 Yrs.
Chemical, Oil & Gas operations
ABB Ability™ values for Chemical, Oil & Gas electrification

Chemical, Oil & Gas operations of tomorrow

- Safety
- Asset reliability
- Process continuity
- Easy to deploy

Global lifecycle service and support
Safety

People protection
MV and LV certified switchgears against internal electrical arc fault.

Active people and equipment protection
Fast acting and coordinated arc protection systems applicable on MV and LV systems, and on new and existing switchgear, to increase safety and minimize downtime.

Digital asset
Personnel not exposed to high-voltage with sensor technology during testing
Self-monitored digital communication bus and devices
Asset reliability

**Condition monitoring**
Sensors to detect possible asset aging and failure causes
Temperature monitoring of key components

**Predictive maintenance**
Site and multi-site asset health analysis to predict and notify potential faults, minimizing maintenance, while increasing safety and asset lifetime

**Cyber asset management**
Electronic devices inventory, configurations traceability, security firmware updates notification, plant data and documentation back-up
Process continuity

Power availability
Load-shedding and peak-shaving to keep up and running critical loads
Automatic transfer system ensuring power supply
Power management for critical processes

Power quality and stability
Integrated capacitor banks for power factor correction.
Modular and combined Uninterruptible Power Supply solution
Energy Storage modules

Troubleshooting
Events analysis providing possible causes and suggesting remedial actions, to minimize outage time
Easy to deploy

Digital switchgear and eHouse
MV/LV systems configurable and upgradable during lifetime reducing spare parts
Containerized pre-tested MV/LV systems to reduce on site time and risk ensuring rapid commissioning

All-in-one protection
Modular hardware and software solution to protect the electrical network, and adapt easily
Easy integration of renewables with automatic-synchronization function

Smart substation protection and control
Centralized substation protection and control, ready to follow the plant evolution, with extensive application coverage
Fully modular and upgradable software
ABB Ability™ global and local support

10 Digital solution centers

40 Digital service centers
ABB Ability™ electrification offering

INTEGRATION
- Electrical and Automation system 800xA

EFFICIENCY
- Electrical control system ABB Zenon

FLEXIBILITY
- Substation protection and control SSC600, REX640, Relion®
- Load shedding and peak shaving PML630
- Switchgear condition monitoring SWICOM
- AIS / GIS, primary and secondary MV Digital switchgear

AVAILABILITY
- MV-Switchgear
- LV Motor control centers
- LV Power centers

RELIABILITY
- Electrical system asset health MyRemoteCare
- Cyber asset management Data Care
- Automatic bus transfer SUE3000, Relion®, Emax2

SAFETY
- Arc detection and suppression REA, TVOC, UFES
- Condition and energy monitoring MNS® Digital, NeoGear™ Digital

INTEGRATION + EFFICIENCY + FLEXIBILITY + AVAILABILITY + SAFETY

Electrical house (eHouse)
Optimized packaged solution of MV/LV electrification