

## **ABB – Dedicated Products, Systems and Services for the Power Generation Industry**



**ABB**

## **ABB – Now, More Than Ever, your Dependable and Focused Power Generation Partner**

It is estimated that the North American demand for energy will grow 30% by the year 2025. This means your generation assets are being taxed hard and having a reliable partner for products, systems and services is more important than ever. Since ABB can maintain, upgrade, and retrofit all brands of products, your solution is simple. ABB is the answer.

### **ABB for optimized power delivery**

At ABB we are entirely focused on power reliability and advanced automation while minimizing environmental impact. We have been serving the power industry for more than 100 years and we're the global leader in automation technologies. This experience is backed by an unequalled portfolio of products, systems and services designed to optimize the day-to-day operation of your facility.

### **Products and systems**

ABB offers the broadest inventory of products and systems to maximize production in virtually all types of power generation plants. The portfolio includes excitation systems, transformers, breakers, switchgear, instrumentation, motors, drives and controls systems.

### **Service**

When it comes to service, ABB's target is the same as yours – more uptime, greater safety and increased profitability. From our mature transformer management program to providing upgrades on integrated control systems, ABB has the service support you need. In short we're dedicated to maintaining your productivity, not just your plant.

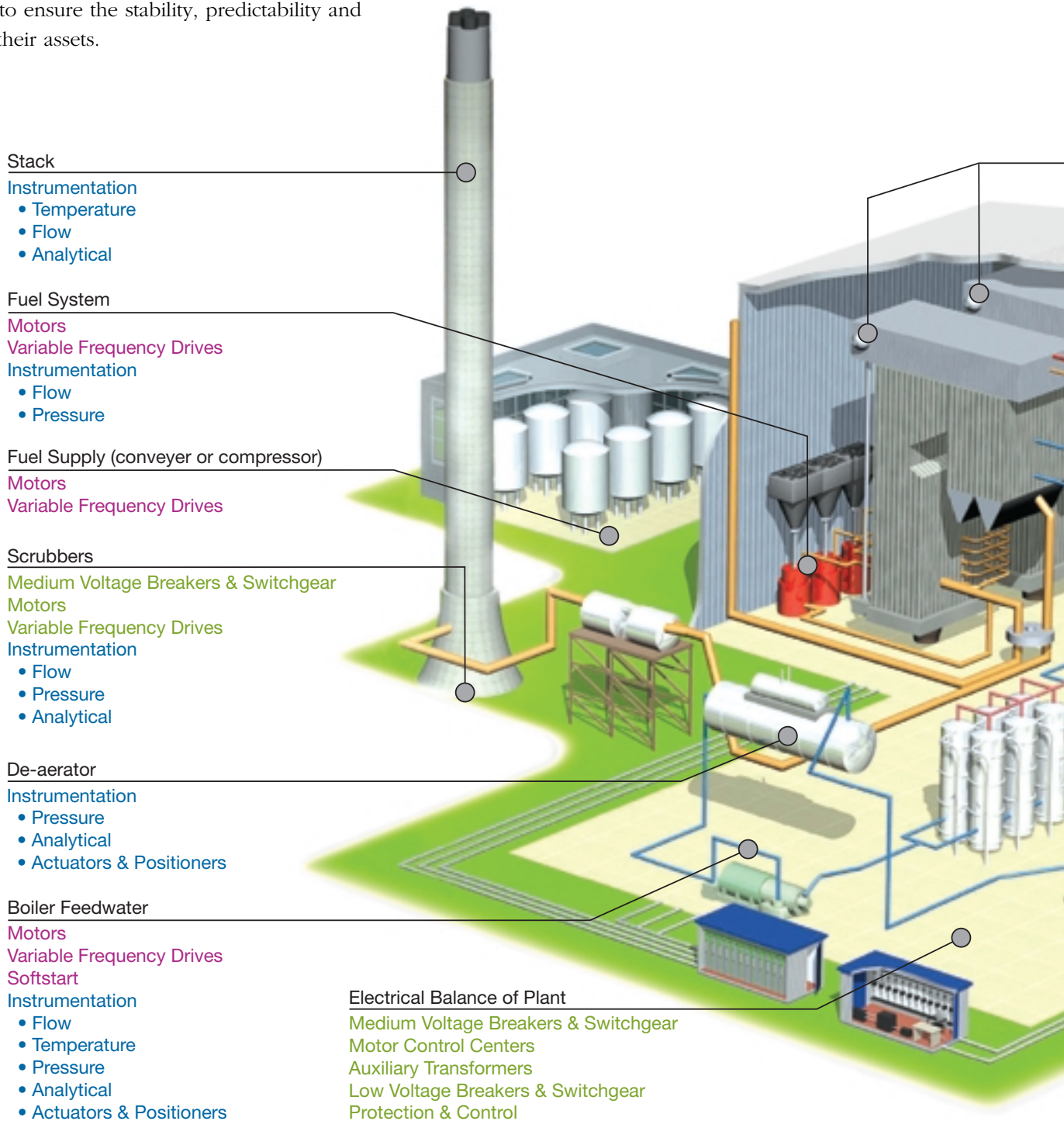
### **Why ABB is your best choice**

Focused and dedicated with over a century of experience, ABB has the credentials and the performance record to be your partner. Producing maximum power from your generation plant, whether it's a fossil, hydro, co-gen or nuclear, requires a partner that can deliver the right products, systems and services. ABB has what it takes.



## ABB – Your Focused Partner

Regardless of the type of power generation plant you operate (fossil, hydro, co-gen or nuclear), it takes a committed and reliable partner to assure that your plant is running at peak efficiency. While many suppliers are invested in other businesses that might distract them from responding to your needs, ABB remains focused. This is one of the many reasons customers in the power industry choose ABB to ensure the stability, predictability and reliability of their assets.



## ABB Offers Expertise in Four Key Areas

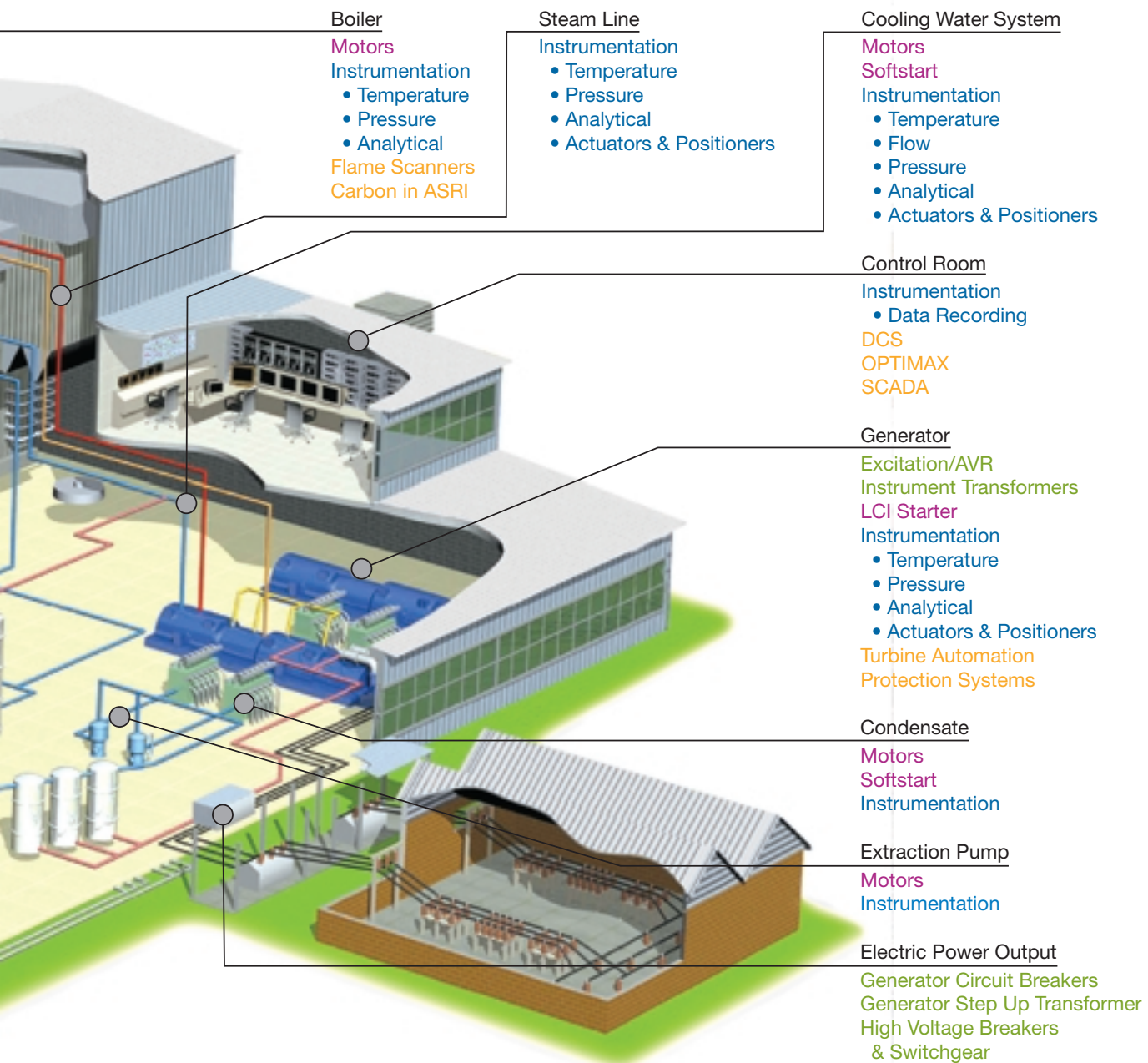
**Electrical Balance of Plant** – ABB has more than 100 years of electrical power experience, with a roster of proven legacy product brands.

**Motors and Drives** – ABB is well suited to design, manufacture and service low and medium voltage AC motors and generators to meet the challenging power industry demands.

**Instrumentation** – ABB supplies an unparalleled selection of instrumentation equipment and systems for use through all phases of power generation.

**Controls** – ABB has the largest installed base of power plant controls, worldwide.

LEGEND: Electrical – Green    Motor/Drives – Violet    Instrumentation – Blue    Control – Orange



## Electrical Balance of Plant

No other resource affects plant availability and the bottom line like reliable power. ABB is a global leader in providing reliable station power and electrical balance of plant service. Our legacy includes more than 100 years of power generation applications and solutions. And we apply that in-depth expertise to make sure your plant operates at peak efficiency at all times.

### Project management for turnkey solutions

ABB provides a full range of turnkey solutions to meet your most demanding cost and schedule requirements. Our highly skilled and experienced professionals have successfully managed full scope electrical, instrument and controls projects. ABB can completely manage a project from contract award through the engineering, procurement, construction and site testing phases. Our project business is based on the principle of creating value for our customers through the delivery of fully engineered systems which incorporate ABB's world class power and automation technology.

### Excitation systems

By optimizing the dynamic performance and availability of generators, excitation systems ensure the quality of generator voltage and reactive power. ABB's UNITROL® product is at the heart of our excitation systems. It is designed using a modular approach that allows more than 80% of all systems to be made from type-tested system components. This guarantees higher quality and shorter delivery times. ABB's UNITROL system is one of the only Digital Automatic Voltage Regulator & Power Systems Stabilizer (PSS), based on IEEE Standards.

ABB is staffed and trained to provide full start-up and service throughout North America. We have years of experience retrofitting exciters for various generator types and brands. By designing custom cubical layouts, we can retrofit to existing space restrictions.



### Transformers

When it comes to operating your power plant, ABB can ensure you get maximum usage from your power transformers, by leveraging a cost-effective portfolio of services and ABB's depth of knowledge and experience. ABB and our legacy brand power transformers comprise the vast majority of the installed base giving us access to valuable design and performance specifications.

ABB leads the way in transformer life cycle management with the Mature Transformer Management Program™ for Fleet Risk and Life Assessment. ABB also offers all standard testing along with advanced diagnostic analysis such as Dielectric Spectroscopy and Frequency Response Analysis. These and other patented processes enable repairs to be scheduled prior to costly failures.

With the largest and most experienced power transformer field service group in the industry, ABB can often repair and retrofit transformers and specialty transformers on site, eliminating the cost of transporting the equipment. In those cases when a transformer must be removed, our experienced professionals perform all repairs, including redesign, rebuild and comprehensive electrical testing, at our ISO 9001 registered factory. ABB also provides full logistical support to assure trouble-free transportation and installation of your power transformers.

## High voltage breakers

Through extensive research and development, ABB continues to maintain its position as industry leader in the power circuit breaker market. Our high voltage dead tank SF<sub>6</sub> circuit breakers provide exceptional control of power through a variety of exclusive designs. ABB supports a broad lineage of high voltage breakers with factory-authorized replacement parts, life extension kits, diagnostics, uprates and retrofits to new technology. We also offer fleet assessments and lifecycle support. Field service engineers are available 24/7 for technical assistance, turnkey installation of new breakers, as well as on-site service and training of new and existing installations.



## Generator circuit breakers

ABB is the global leader in generator circuit breakers, providing 80% of the world's supply. We specialize in packaging generator breakers with generator bus auxiliaries in new as well as existing power plants. We also refurbish, overhaul and replace virtually all types and brands of generator breakers. ABB will even retrofit power plants that were originally built without any generator breakers. We have an extensive inventory of spare parts that are available for quick repairs as well as planned retrofits.



ABB offers turnkey field service for installation and maintenance. We will assess your plant's operating performance, recommend plant upgrades and conduct feasibility studies. In addition, we provide comprehensive training so your staff has the skills and knowledge they need to keep your plant up and running.

## Switchgear

From authentic replacement parts to total breaker management, we keep your power plant switchgear operating at peak performance.

**Refurbishment & reconditioning** – Offered for most all manufacturer's circuit breakers, refurbishment is an excellent choice when the breaker is basically sound and renewal parts are available. Typically candidates are 10-20 years old and at the end of their lubrication life. ABB also provides complete nuclear safety related refurbishment services for its lineage products.

**Retrofit** – For low voltage circuit breakers in relatively good condition, a trip system retrofit adds new trip features

and/or communication capabilities that were unavailable at the time of original manufacture. This retrofit is typically for 15-25 year old breakers. For medium voltage retrofits or conversions, the air magnetic breaker is upgraded to vacuum technology.

**Retrofill breakers and cells** – When replacement of existing switchgear is impractical due to space, foundation, location or other configuration restraints, a retrofill solution may be best. This is often the case with 50+ year-old switchgear in which a new breaker and cell are installed within the existing cubicle.

**Roll-In replacement breakers** – For users with good condition switchgear but poorly performing low or medium voltage circuit breakers, roll-in replacements deliver a completely new breaker that matches the original in form, fit and function, with high performance and new technology.

### Motor control centers

Motor Control Centers featuring Advance and arc resistant SafeGear technology offer a complete range of options for control of gas compressors, circulation pumps and fans. Vacuum contactors, power fuses and protection relays are packaged to provide optimum control over various loads such as motors, capacitor banks and auxiliary service transformers.

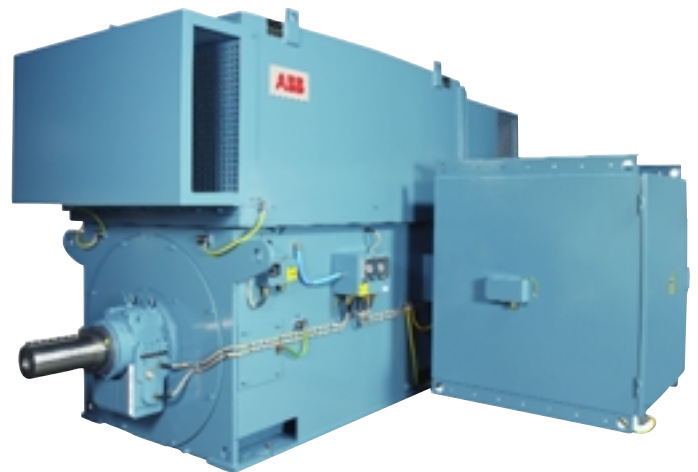
### Instrument transformers

ABB manufactures instrument transformers found in the generator breakers, plant switchgear, and all types of power transformers and breakers (oil, air, vacuum or SF6 gas).

### Motors

With over 100 years of experience in designing and manufacturing low and medium voltage AC motors and generators, ABB is well suited to meet the challenging demands of efficient power production.

Our product portfolio is the most modern in the market place. We offer the lowest life cycle cost for each motor and generator, driving higher productivity, higher operating efficiency and minimized environmental impact. A complete range of designs and enclosures from standardized designs to highly customized solutions are available to meet your most demanding applications.



## Drives

ABB is the world's leading supplier of variable speed drives and offers a full range of low and medium voltage drives. These drives are based on leading edge frequency converters that significantly reduce power losses and permit more frequent starts. Converters provide rapid, accurate and stepless control from zero to full speed through ABB's patented Direct Torque Control (DTC) technology, and are easy to adapt to any process. By reducing or eliminating high starting current and torque, they extend the life of the motor and the driven machine.



The use of medium voltage drives is a must to achieve sufficient plant efficiency in applications such as turndown of ID/FD fans and boiler feed pumps. Additionally, ABB has a range of starting systems suitable for pumped storage plants and starting of gas turbine sets.



## Instrumentation

ABB delivers the knowledge and global experience required to keep your instrumentation assets operating at peak reliability and accuracy. We provide a full scope of services for flow, temperature, pressure, recorders and controllers, analytical, actuators and positioners.

- Installation and commissioning
- Consulting
- Preventive services
- Training
- Calibration services
- Migration/upgrades
- Maintenance
- Parts and repair





## **ABB: The Complete Package for Increased Uptime, Safety and Profitability**

Now's the time to utilize the special capabilities of a company that's 100% committed to your success. At ABB, we've spent more than a century developing products, service and maintenance solutions that are geared specifically to the power industry. Since we understand your needs better than anyone, we deliver safer, more effective ways to assure grid reliability.

To meet the power demands of the future ABB's proven portfolio of products, systems and services is designed to keep you running at maximum efficiency – every day of every year. We look forward to discussing your plant's needs in more detail, very soon.

### **ABB and the legacy brands:**

- **ABB**
- **Moloney Electric**
- **National Industri**
- **Kelman**
- **ASEA**
- **Brown Boveri**
- **Fischer & Porter**
- **Kent**
- **Schoppe & Faeser**
- **Bailey**
- **Sensycon**
- **Bush Beach Engineering**
- **Taylor**
- **Hartmann & Braun**
- **GE**
- **Westinghouse**
- **Fromberg**
- **Gould**
- **Gould/Brown Boveri**
- **Gould/ITE**
- **ITE**
- **Stromberg**



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