providing critical solutions to the power industry
SPX FLOW helps customers across the power and energy industry meet key business challenges, including the increasing demand for power generation and distribution. We provide the solutions needed to establish new power plants and enhance existing ones, and leverage our expertise in aftermarket services to ensure the optimization of ongoing power plant operations – as we strive to minimize environmental impact and provide efficient and low-cost products.

In addition to our vast experience with traditional power plants, we apply our innovative, proven solutions to help advance the efficient, more cost-effective use of traditional fuel sources as well as alternative energy sources such as wind, solar, geothermal and biomass.

Wherever power is needed in the world, SPX FLOW is ready with the technologies, services and product solutions to make it happen.

SPX FLOW Brands Serving the Power & Energy Industry:

- APV®
- Bolting Systems®
- Bran+ Luebbe®
- ClydeUnion Pumps
- Copes-Vulcan®
- Dollinger
- Hankison®
- Jemaco
- Johnson Pump®
- Lightnin®
- Plenty®
- Pneumatic Products®
- Power Team®

www.spxflow.com
For coal-fired power generation, SPX FLOW offers not only an extensive product range for steam cycle cooling and control, but also decades of experience helping power utilities throughout the world get the most from their assets.
As a global company, SPX FLOW manufactures critical components for the nuclear power industry, providing high quality products with on-the-ground support around the world.
For gas turbine power generation, SPX FLOW offers an extensive range of flow, temperature and pressure control equipment. SPX FLOW also offers an extensive range of water, gas, oil and air filters to protect the turbine and the environment.
PUMPS

Bran+Luebbe
- Process Pumps
- Chemical Injection Systems
- Plunger Pumps
- Metering Pumps

ClydeUnion Pumps
- Boiler Feed and Boiler Feed Booster Pumps
- Circulating Water and Auxiliary Pumps
- Condensate Extraction Pumps
- Cooling Water Pumps

Plenty Pumps
- Screw Pumps
- Rotary Vane Pumps

Johnson Pump
- Heavy-Duty Centrifugal Pumps
- Internal Gear Pumps
- Centrifugal Pumps
- Positive Displacement Gear Pumps

ANALYZERS

Bran+Luebbe
- Analyzers

PLATE HEAT EXCHANGERS

APV
- Plate Heat Exchangers

HYDRAULIC & PNEUMATIC TOOLS

Power Team
- System Installation Tools
- System Operation Maintenance and Repair Tools

CONTROL VALVES

Copes-Vulcan
- Control Valves and Desuperheaters
- Turbine Bypass Valves

AIR/GAS DRYERS & PURIFIERS

Hankison / Jemaco / Pneumatic Products
- Cooling Water Filters
- Instrument Air Dryers
- Hydrogen Coolant Purifiers

STRAINERS & FILTERS

Dollinger / Plenty Filters
- Filters
- Strainers
- Insulating Oil Treatment

OIL MIST ELIMINATORS - AIR/GAS FILTERS

Dollinger
- Filtration
- Fuel Gas Filters / Air Filters
- Turbine Lubricating Oil Mist Eliminators
- Gas Turbine Inlet Filters
- Skid Solutions
  - Closed Cooling Water
  - Service Cooling Water
SPX FLOW provides components to help capture the power of the sun. Our engineering teams can design and install the components you need for a successful solar thermal project.
**PUMPS**

- Bran+Luebbe
  - Process Pumps
  - Chemical Injection Systems
  - Plunger Pumps
  - Metering Pumps

- ClydeUnion Pumps
  - Boiler Feed Pumps
  - Cooling Water Pumps
  - Condensate Extraction Pumps
  - Heat Transfer Pumps
  - Auxiliary Pump Services

- Plenty Pumps
  - Screw Pumps
  - Rotary Vane Pumps
  - Lubrication Pumps

- Johnson Pump
  - Heavy-duty Centrifugal Pumps
  - Internal Gear Pumps
  - Centrifugal Pumps
  - Positive Displacement Gear Pumps

**MIXERS**

- Lightnin
  - Top-Entry Mixers
  - Vertical Side-Entry Mixers

**PLATE HEAT EXCHANGERS**

- APV
  - Plate Heat Exchangers

**HYDRAULIC & PNEUMATIC TOOLS**

- Power Team / Bolting Systems
  - System Installation Tools
  - System Operation Maintenance and Repair Tools

**CONTROL VALVES**

- Copes-Vulcan
  - Control Valves
  - Turbine Bypass Valves

**AIR FILTERS**

- Hankison / Jemaco / Pneumatic Products
  - Air Filters

**STRAINERS & FILTERS**

- Dollinger / Plenty Filters
  - Filters
  - Stainers
  - Insulating Oil Treatment
Plate Heat Exchangers

KNOWLEDGE

SPX FLOW offers an extensive portfolio of plate heat exchanger solutions for heat transfer applications in the power industry that historically were served by shell-and-tube technology. The range of APV plate heat exchangers is widely used in conventional and nuclear power stations, peak load stations, combined heat and power stations, geothermal schemes, and district heating.

APV plate heat exchanger solutions have proven reliable and efficient, helping customers to run their processes safely and effectively and meeting the need for energy conservation. Whether recovering waste heat or isolating the cooling system from the cooling source, SPX FLOW has the application knowledge and product solutions to provide efficiency and performance.

APPLICATIONS

APV plate heat exchangers are used in several different applications ranging from cooling and heating to condensing and evaporating. Within power generation and district heating, APV plate heat exchangers play an important role in:

- Central (closed loop) cooling
- Generator cooling
- Lubricating oil cooling
- Water pre-heating
- Condensate cooling/heating
- Auxiliary cooling systems (emergency cooling)

www.spxflow.com
Plate Heat Exchangers

**GASKETED PLATE HEAT EXCHANGERS**
A wide range of gasketed plate heat exchangers suited for a large variety of cooling and heating duties, liquid as well as gaseous, and high-capacity utility cooling solutions. The optimized plate design maximizes energy use and cost effectiveness thanks to maximum heat recovery effect.

- Easy operation and maintenance – easy gasket mounting and plate alignment systems help reduce service downtime

**HYBRID FULLY-WELDED PLATE HEAT EXCHANGER**
A range of welded plate heat exchangers combining highly efficient plates and a strong vessel construction. Designed to operate under challenging conditions where other heat exchangers may be restricted due to temperature and pressure limitations; allowing extremely low pressure drop if required. With its compact and flexible design the APV hybrid heat exchanger offers efficiency in a small installed footprint. The latest TuplaFlow plate design provides excellent conditions for steam condensing allowing high heat transfer coefficient at low pressure drop and fast condensate removal.

- Standard and custom-made solutions available
Valves

SPX FLOW develops solutions for applications found in power generation, Petrochemical, Pulp & Paper other industries. Products include control valves, turbine bypass valves/systems complete with a full portfolio of steam and gas desuperheating equipment.

Control and Isolation Valves

SPX FLOW provides a wide range of valves for fossil fuel, biomass, solar and nuclear power plants. Typical applications include; boiler feed water control, boiler feed pump minimum flow recirculation, drum level, pegging steam, continuous blowdown, steam vent, HP, HRH and LP steam turbine bypass, interstage attemperation, etc. Products include DSCV-SA TBV, Severe Service and General Service globe, angle and Z form control valves, desuperheaters, noise & cavitation control trims such as the multi disc, multi labyrinth RAVEN™ trims, Multi Stage HUSH™ trims, Double Plug Soft Seated very tight shut off trims, high turndown CASCADE trims, GAD external seated trims, nuclear control valves and steam let-down stations, gas compressor anti-surge valves as well as custom-designed specialty valves.

THESE PRODUCTS FEATURE

• Multiple types of body and bonnet styles
• Standard sizes from DN20 (0.75”) to DN600 (24”)
• Custom sizes manufactured to project specifications
• Pressure class: ASME 150 – 4500 and PN 10 - 250
• Available in carbon steel, chrome-moly, stainless steel and forged equivalents
• Certified to ISO 9001, ASME Sections I and III and Pressure Equipment Directives (PED 97/23/EC)

www.spxflow.com
Nuclear Control Valves

SPX FLOW has engineered and manufactured valves for the nuclear industry for over 40 years under the Copes-Vulcan® brand. Products include specialty globe, gate, swing, check, butterfly, ball and sampling valves for nuclear customers, and are all ASME Section II “N” and “NPT” Stamp certified.

NUCLEAR APPLICATIONS INCLUDE

- Feedwater
- Steam dump
- Pressurizer spray
- Reactor coolant
- Sampling
- Service water
- Safety injection
- Power-operated relief

COPES-VULCAN VALVES FOR

- Boiling water reactor (BWR)
- Heavy water reactor (CANDU)
- Pressurized water reactor (PWR)

Global Supplier

SPX FLOW has supplied valves to Japan, China, South Korea, the United States, Canada, Mexico, Switzerland, United Kingdom, Brazil and more.

PROJECT REFERENCES

Gaozi Power Plant
China

Taishan Power Plant
China
Pumps

Chemical Injection

Pumps

SPX FLOW provides a wide range of pumps for transporting and metering liquids in power plants. Pumps include: Diaphragm, Plunger, Screw, Vane, Heavy-Duty Centrifugal and Internal Gear.

LIQUIDS HANDLED
• Toxic or chemically aggressive liquids
• High- and low-viscosity liquids
• Long service life of diaphragm in pumps with remote alarm to signal failure

BENEFITS
• High volumetric efficiency
• Low vibration, low noise
• High reliability, long lifetime
• Low running cost, easy maintenance
• Custom designs

PUMP TYPES
• Diaphragm pumps
• Plunger pumps
• Screw pumps
• Vane pumps
• Heavy-duty centrifugal pumps
• Internal gear pumps
• Metering pumps

www.spxflow.com
Chemical Injection Systems

SPX FLOW provides turnkey metered blending systems for the treatment of boiler feedwater in all types of power plants.

ADVANTAGES
• Cost savings by automatically adjusting treatment based on water analysis
• Safety and protection against hazardous chemicals for operators and surroundings
• Remote operation with automatic stroke control of pumps
• Long service life of diaphragm pumps with remote alarm for failure
• Can add heads for future injection points
• Can add variable-speed motor or stroke control for automatic injection in proportion to the main flow

Measuring Instruments

SPX FLOW provides on-line measurement for the continuous supervision of silica, sodium, phosphate, chloride, hydrazine or hardness concentration in boiler feedwater or during water treatment.

ADVANTAGES
• Cost savings by monitoring the important water parameters continuously
• Fully automatic operation with remote maintenance and network ability
• CAN bus, Profibus and Modbus connectivity
• Minimum operating cost due to long maintenance intervals and small reagent consumption
• Connection of up to 100 external physical-measurement sensors pH, conductivity and a.s.o.
• Easy to read interface with interactive touchscreen operation

PROJECT REFERENCES

Qinshan Project
China

Ling Ao Project
China
KNOWLEDGE
While the name is relatively new, the ClydeUnion Pumps brand is known worldwide for supplying reliable and robust engineered pumping solutions stemming from over 140 years of industry expertise. Our experience spans across several complex industries including oil and gas, nuclear and conventional power generation, desalination and other key markets relevant to our product portfolio. In December 2011, ClydeUnion Pumps, became part of SPX FLOW Inc. allowing SPX FLOW to grow its network of pump expertise and operations including seven additional manufacturing facilities and 25 global service centers. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

APPLICATIONS
- Boiler Feed Water
- Reactor Feed Water
- Reactor Core Isolation Cooling
- Cooling Water
- Condensate Extraction
- Reactor Coolant
- Main / Auxiliary Feed Water
- Safety Injection
- Residual Heat Removal
- Charging
- Auxiliary Services
- Containment Spray

TECHNOLOGY
At ClydeUnion Pumps we understand the specialized needs of the nuclear and conventional power sectors. We draw on over 100 years of pump experience to provide pumps for the most demanding duties in the power industry. With experienced local partners in China and India we are a major global supplier of pumps for power generation. Three of the facilities across the globe are fully qualified with ASME “N Stamp” and/or RCC-M qualifications, and two facilities have HAF604 qualifications.

ClydeUnion Pumps boasts over 50 years of experience in providing coded, safety related and balance of plant pumps for all nuclear reactor types.

SERVICE
ClydeUnion Pumps provides world class aftermarket support for all types of pump brands via our worldwide network of manufacturing facilities, service centers and approved service providers. Our experienced aftermarket personnel provide round the clock support to all industry sectors and focus on ensuring availability, safety and life extension of pumping technologies.  

www.spxflow.com
Pumps for Nuclear Applications

ClydeUnion Pumps involvement in the nuclear power market began with the first ever industrial scale nuclear power plant. Since then we have been central to most major nuclear power programs globally. Our ability to design a reliable solution for the specific needs of the overall nuclear plant, allied to our comprehensive service provision means ClydeUnion Pumps has nuclear pump installations in many operational nuclear power plants worldwide across many technologies. In addition to our involvement in the commercial nuclear power market we continue to provide pumping solutions to the world’s naval nuclear fleets, research reactors and other nuclear facilities. Our market focused research and development programs ensure that our solutions match the demanding requirements of current and future technologies, such as generation IV, fusion and small modular reactors.

NUCLEAR ISLAND

While many pump manufacturers have been unable to acquire or maintain the high standards required to design and build nuclear coded pumps, ClydeUnion Pumps has three coded facilities with a long history of excellence in the design and manufacture of Class 1, 2 and 3 equipment. In addition we have a global aftermarket organization that is able to offer full service and upgrade capabilities.

The systems served by ClydeUnion Pumps include:

- Auxiliary Feedwater (Motor Driven & Turbine Driven)
- Reactor Core Isolation Cooling
- Safety Injection
- Containment Spray
- Residual Heat Removal
- Charging
- Component Cooling Water
- Essential Service Water
- Auxiliary Services
- Reactor Coolant

BALANCE OF PLANT AND TURBINE ISLAND

- Main Feedwater
- Start-up Feedwater
- Cooling Water
- Condensate Extraction
- Auxiliary Services
Pumps for Coal Fired Applications

Coal fired power stations rely on pumps at several key points in the process, including the delivery of deaerated water into the boiler, the circulation of water and the extraction of condensates. ClydeUnion Pumps, an SPX FLOW Brand, recognizes the inherent customizable nature of large scale thermal power stations and works with our clients using a tailored approach to ensure that our pumps offer maximum through-life reliability and seamless start-up and commissioning.

CUP-FK PUMP RANGE

Our CUP-FK range of high pressure pumps is a preferred choice for boiler feed applications. Featuring a barrel-type design with full cartridge withdrawal for fast and easy maintenance without any need to disturb alignment or pipework, it is capable of delivering up to 2,500 m³/h (11,000 gpm) at a head of 5,000 m (16,400 ft), at water temperatures of up to 250°C (482°F).

Pumps for Combined Cycle Applications

The development of effective single-pressure heat recovery steam generators introduces an additional pumping system with its own very demanding parameters. In addition to providing the absolute reliability required throughout the power generation industry, these systems must be capable of meeting wide variations in operating conditions, and must be able to deal with starting and stopping at peak loading multiple times a year without impairing efficiency or long-term dependability.

CUP-FT PUMP RANGE

The ClydeUnion CUP-FT range of ring section type pumps meet the requirements of boiler feed applications in combined cycle plants. Ring sections are clamped together using high-strength tie bolts that remove any risk of pressure loss even during thermal shock arising from rapid temperature change. Highly polished flow areas optimize efficiency between stages. The CUP-FT range is capable of withstanding suction transients, and combines the reliability of barrel casing design with the lower cost of ring-section technology.

ClydeUnion Pumps offers many other pumps suitable for thermal and combined cycle applications, including boiler feed booster pumps, a choice of concrete volute and vertical turbine pumps for circulating and cooling water, pumps for extracting and transferring condensates and auxiliary pumps.

www.spxflow.com
Pumps for Concentrated Solar Power

From boiler feed pumps, which deliver water to the boilers that subsequently drive the main generating turbines, to heat transfer pumps which transport fluids around the solar field, pumps are mission critical to the operation of a concentrated solar plant. Concentrated solar power plants operate on a daily cycle of generating during daylight and shutting down at night. In reality, the start-stop cycle is often far more frequent since factors such as weather can have an enormous impact, and the plant is only started when a worthwhile net gain is expected. This places a severe burden on the pumping equipment used to manage the steam cycle and perform ancillary duties.

**CUP-FT/FK and CUP-BB3**

ClydeUnion Pumps can provide pumps for the key applications in a concentrated solar power station, including boiler feed, cooling water, condensate extraction and heat transfer pumps. Boiler feed pumps are one of the most critical pieces of equipment in a concentrated solar power plant. They deliver the boiler feed water which is heated by solar energy to form steam driving the plant’s main generating turbines. ClydeUnion Pumps can provide boiler feed applications on solar power projects from our extensive range of multi-stage dual volute and double case diffuser pumps.

- Designed with a higher head per stage capability than industry standards, meaning that fewer stages are needed, resulting in improved shaft deflection characteristics of the pumps
- These pumps have an inherent advantage in the demanding regime of stop-start operation in a concentrated solar plant

Pumps for Geothermal Power

Geothermal power plants draw on the extremely high temperatures deep within the earth to generate electricity. All types of geothermal technology, dry steam, flash steam, binary power and hot dry rock require specialist pumps which are designed to handle the extreme pressures and temperatures of the geothermal process as well as cope with the presence of impurities and hazards such as minerals and corrosive salts. ClydeUnion Pumps can provide a choice of pumps designed for the arduous conditions of a geothermal plant. These include hot well pumps for transferring fluid out of the ground, condensing pumps for drawing water from the condenser, vacuum pumps for non-condensable geothermal fluids, circulation pumps for moving the condensate through the system, and injection pumps for transferring the fluid back into the geothermal chamber.

**HYDRAULIC SUBMERSIBLE PUMP RANGE**

ClydeUnion Pumps’ Hydraulic Submersible Pump (HSP) is particularly suited for high temperature enhanced geothermal applications enabling higher energy outputs than conventional lower depth wells. The HSP is turbine driven, requiring no electricity supply, and can withstand extreme temperatures.
SPX FLOW manufactures filters and complete systems to remove moisture and contaminant from air, gas, fuel, lubricating oil and insulating fluids.

**Strainers and Filters**

SPX FLOW offers a range of industrial filtration solutions for multiple process industries worldwide. Products include simplex and duplex cast and fabricated strainers, self-cleaning and back-flushing strainers, high-pressure gas filters and fabricated bathtub strainers. These products provide protection for pumps, plate heat exchangers, lube oil, bearing cooling and bearing lubrication.

**THE FILTERS’ DESIGN FEATURES INCLUDE:**

- A wide variety of materials and design codes
- Standard designs available for a variety of process applications
- Custom designs to meet customers’ specific operating conditions and parameters
- Easy maintenance to ensure continuous operations
- Fine woven wire mesh inserts offer absolute filtration of liquids & gases in critical applications

**Customized Skid Packages**

- Complete skid packages built to your specification and process parameters using all SPX FLOW preferred products
- Service & closed cooling water modules
- Demineralized water forwarding modules
- Fuel gas conditioning skids
- Diesel fuel forwarding skids

www.spxflow.com
Air Intakes and Filters

SPX FLOW manufactures a wide range of static & self-cleaning air intake filter systems for gas turbines & turbo compressors. Our team of engineers have decades of experience in the design, manufacture and installation of complete air intake filter systems in a broad spectrum of operating environments.

Custom designed filter systems incorporate ASHRAE rated panel filters and pulse-jet cartridges certified to ARAMCO standards to ensure system performance under the most demanding operating conditions.

Lubricating Oil Mist Eliminators

Oil Mist Eliminators are designed to extract and recover microscopic oil droplets from the atmospheric vent of lube oil reservoirs to ensure complete compliance with environmental, health & safety regulations. Our Oil Mist Eliminators are easily retrofitted to existing turbine lube oil systems or diesel engines to bring them into compliance with today’s stringent emissions requirements.

Fuel Oil, Fuel Gas and Lubricating Oil Filters

With a reputation for unsurpassed quality & performance, many of our gas & oil filters are specified as original equipment by the world’s leading producers of gas turbines for power generation. We offer complete modular filtration skids that may incorporate instrumentation, pumps, valves and other critical components to meet the needs of a specific power plant and incoming fuel supply.
With over 90 years experience in mixing technology, process knowledge and technological innovation, the SPX FLOW Lightnin® brand manufactures durable, long-lasting mixers, agitators, aerators and flocculators for fluid processing systems, FGD applications and molten salt mixing globally.

**TOP-ENTRY MIXERS**
There are three types of top entry mixers for the power industry. They are built to handle the severe duty of solids suspension and re-suspension, blending and gas dispersion.
- Series 10 — smaller vessels, sumps, solids suspension and re-suspension
- 70/80 Series — FGD process mixers (limestone, gypsum slurries)
- 700/800 Series — large storage tanks and absorber agitators

**VSF SIDE-ENTRY MIXERS**
Side-entry mixers specially designed for flue gas desulphurization (FGD), the pollution control system in power plants.
- Mechanical seal designed to function in a harsh FGD environment. Engineered to operate with no outside flush liquid
- Seal shutoff to provide maintenance on unit while absorber is in operation
- A-312 hydrofoil produces more flow per unit of power than a traditional propeller. This enhances solid suspension, gas dispersion and blending.

**HIGH-EFFICIENCY IMPELLERS**
- Hydrofoil impellers for top and side-entry applications
- Delivers operating cost savings while maintaining performance
- Reduces required capital cost for desired performance

**SX IMPELLER**
SPX offers a corrosive-resistant resin system that incorporates high-efficiency operation. For use in corrosive slurries, the SX system provides a robust and effective design that reduces the possibility of lining failure. The SX system is:
- More efficient than traditional metal impellers
- Inherently corrosion resistant (Derakane® 470 resin)
- Less weight for easier installation

www.spxflow.com
Air and Gas Dryers

**INSTRUMENT AIR DRYERS**

SPX FLOW provides compressed-air dryers and filters that remove oil, water, dirt, rust and pipe scale. Contaminants found in compressed air can adversely affect all components of an air-distribution system, and can cause a malfunction of pneumatic control in the instrument air system. Properly treated compressed air can improve work efficiency and reduces maintenance. Desiccant and refrigerated type compressed air dryers are used in the control air systems of power plants.

Desiccant air dryers incorporate these quality features:

- Lowers water vapor content in compressed air
- High quality process switching valves deliver consistent repeatability to ensure system integrity and long component life cycles
- Precision timing circuits control process valve sequencing protocols to deliver optimum dew point stability and energy efficiency
- Calculated desiccant bed construction ensures ideal tower velocities to absorb moisture, stabilize dew points and prevent bed movement

The benefits of utilizing a refrigerated air dryer include:

- Lowers water vapor in the compressed air
- Modular design allows ease of installation and add-on capability
- Redundancy in critical components provides fault-tolerant operation
- Integral filtration removes solids and oil delivering clean, dry air to pneumatic controls

**PROJECT REFERENCES**

- **Sidi Krir and El Atf Combined Cycle Power Plant**
  Egypt
- **Daharki Combined Cycle Power Plant**
  Pakistan
- **Glow 115 MW CFB3 Project**
  Thailand
SPX FLOW is a global supplier of high-force, high-performance hydraulic and pneumatic products and systems.

High Force Hydraulic Tools and Equipment

SPX FLOW is a global leader providing professional hydraulic tools and equipment to global customers in the power industries, such as wind power, nuclear power and coal-fired power. Marketed under the Power Team® brand, the product range includes high-quality hydraulic tools, such as cylinders, pumps, and pullers that are used to install and maintain power systems.

HYDRAULIC CYLINDERS
• General and special-use cylinders

HYDRAULIC PUMPS
• Manual pumps
• Powered pumps

HYDRAULIC TOOLS
• Hydraulic presses
• Flange spreaders
• Nut splitters
• Bearing pushers/pullers
• Post-tensioning jacks

RUGGED PULLERS
• Mechanical
• Hydraulic

WIDE RANGE OF JACKS
• Post tensioning
• Portable high-tonnage
• Inflatable
• Bottle
• Toe
• Sidewinder

MAIN APPLICATIONS IN POWER INDUSTRIES
• Steam turbine installation and deviation correction
• Open and installation of steam turbine cover
• Disassembly of corrosion or thread-damaged bolts in pipe flanges and fans
• Bearing disassembly in high-power generating sets
• Bolting applications with high-torque requirements
• Lifting of huge coal pulverizer
• Heavy equipment installation and maintenance
• Wind-power tower installation and maintenance

www.spxflow.com
Bolting Systems is the SPX FLOW product line of controlled bolting solutions, and provides numerous products and services for the power generation industry. Included are square drive and low clearance hydraulic torque wrenches, topside self-returning stud tensioners, subsea stud tensioners, nut splitters, flange management database software, system rentals and accredited training programs. These bolting solutions are designed for use in a variety of construction, operations and maintenance applications within power generation facilities, as well as oil and gas facilities.

**HYDRAULIC TORQUE WRENCHES**
- Square drive and low clearance
- Low-weight, high-strength steel construction
- Fine-tooth ratchet
- Floating piston design

**HYDRAULIC STUD TENSIONERS**
- Topside
- Subsea

**HYDRAULIC PUMPS**
- 700 bar / 10,000 psi torque wrench pumps
- 1,500 bar / 21,500 psi tensioner pumps

**JOINT MONITORING AND BOLT LOAD CALCULATION SOFTWARE**
- Advisor controlled bolting load calculator
- Flange Pro joint integrity software

**MAIN APPLICATIONS IN POWER INDUSTRIES**
- Steam turbine installation and deviation correction
- Open and installation of steam turbine cover
- Disassembly of corrosion or thread-damaged bolts in pipe flanges and fans
- Bolting applications with high-torque requirements
- Wind-power tower installation and maintenance
Centers of Excellence

Manufacturing and Technical Facilities

AMERICAS
Brazil
Sao Paulo
Canada
Brockville, ON
Burlington, ON
USA
Canonsburg, PA
Charlotte, NC
Dallas, TX
Delavan, WI
Goldsboro, NC
Houston, TX
McKean, PA
Newport, NC
Ocala, FL
Rochester, NY

EMEA
Belgium
Brussels
Denmark
Kolding
France
Annecy
Germany
Moers
Neubeckum
Norderstedt
Wenden
Hungary
Budapest
Ireland
Killarney
Netherlands
Assen
Etten-Leur
South Africa
Kelvin
Midrand
Nigel
UAE
Dubai
UK
Glasgow
Macclesfield
Newbury
Penistone
Winsford
Worcester
International Customer-Focused Service Platform

AFTER-SALES, SERVICE AND PARTS SOLUTIONS FROM SPX FLOW

SPX FLOW brands offer a full range of after-sales products to ensure that the original equipment continues to operate at its maximum performance.

• Repair and exchange services
• Equipment upgrade services
• Installation and start-up support
• Predictive and preventive maintenance
• Remote Diagnostics
• Process and mechanical consulting
• Asset management
• On-site field support
• Training

SPX FLOW provides innovative ways to improve your productivity and profitability. We’ll help you minimize your asset investments while ensuring that you continue to meet your production requirements. Multiple service facilities are strategically located throughout the world, providing a wide range of support 24 hours a day.

Service locations are the hub for our parts distribution. We can analyze your spare parts inventory to identify critical, damaged and obsolete spare parts, and help you create an inventory reduction program.

• High quality OEM spare parts and consumables
• Quick-ship delivery services available
• Engineering support

To learn more about aftermarket services, visit www.spxflow.com.

www.spxflow.com
Qualification Standards

ISO9001
ISO PED Category III
ASME
• Section I, S Stamp
• Section II, N and NPT Stamp Class 1, 2 and 3
• Section III, NCA 4000
• Section VIII
10CFR50 Appendix B Program
ASME NQA1
CSA Z 299.3
CSA Z 299.4
RCC-M
RCC-MX
HAF 604
API 598
API 674
API 675
ANSI
• B 16.34
• N 45.2
• B 31.1
MSS SP61
Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE:FLOW) is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts, serving the food and beverage, power and energy and industrial end markets. For more information, please visit www.spxflow.com.

SPX FLOW is ready with the product brands, technologies, energy engineering and equipment to keep the world powered up and powering on.

SPX FLOW, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spxflow.com.

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