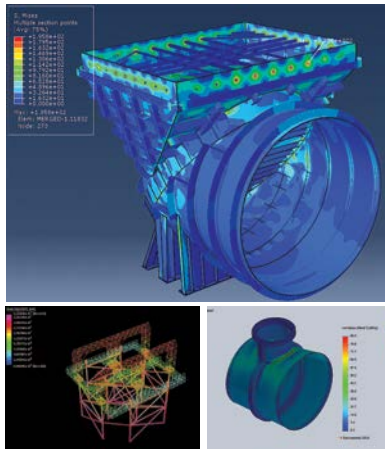


# Dry Cooling Systems Services

Solutions for improved performance, efficiency and reliability



ENERGY | ENVIRONMENTAL



## Solutions for improved performance, efficiency and reliability

SPIG S.p.A. (B&W SPIG) operates globally supplying an extensive range of turnkey cooling systems. Since 1936, we have designed, engineered, installed, upgraded and serviced cooling systems for a wide range of industries, including oil and gas, petrochemical, power generation, cogeneration and combined cycle, and district heating and cooling, to name a few.

Promptly responding to customers' requirements, the B&W SPIG service team provides customized solutions to improve performance, efficiency and reliability of existing equipment, and help to reduce shut down periods for scheduled maintenance.

Specialized services include preventive maintenance, equipment upgrades, replacement and spare parts, online performance monitoring, and a commitment to research and development to continually seek new and better cooling solutions.

B&W SPIG can provide services to most any manufacturer's dry cooling systems, including air-cooled condensers and air fin coolers. We can also service air heaters and economizers.

### Dry cooling system services, upgrades and maintenance

B&W SPIG's worldwide team of service technicians and engineers are available to support dry cooling system maintenance, service and upgrade requirements, including the execution of long-term service and maintenance agreements.

Our range of capabilities includes basic technical assistance, and field service support as well as installation, commissioning and start-up, performance testing and optimization, including recommendations for upgrades and conversions.

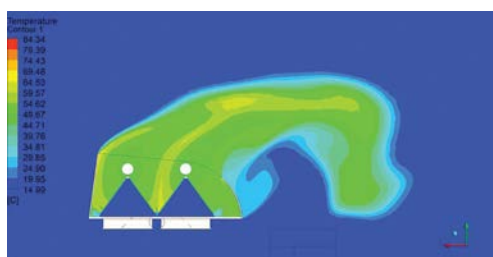
Onsite operational and maintenance training is also available to help keep your plant running at the highest level of efficiency.

### Service engineering capabilities

- Piping & instrumentation diagrams (P&ID) and process schematics
- Equipment specification and evaluation
- Cycle optimization studies
- Piping mechanical design and stress analysis
- Pipeline and yard piping
- Foundation load design
- Structural design and analysis
- Plant instrumentation and control logics
- Noise abatement studies
- Computational fluid dynamics (CFD) analysis

### Field service capabilities

- Project management
- Seasonal testing, data recording, trend analysis and reporting
- Procurement, delivery and installation of spare parts
- Heat exchanger reconditioning
- Inner surface and extended surface cleaning
- Maintenance program execution and assessment
- Vibration measurement and analysis
- Field noise testing
- Inspecting and cleaning heat transfer surface
- Inspecting air flow rate and fans reconditioning
- Infrared camera scanning
- NDT eddy current tube testing





# Dry Cooling Systems Services

## Performance improvement and upgrade capabilities

After thorough analysis, B&W SPIG can recommend and execute performance improvement and upgrade projects on existing equipment or by plant expansions. Upgrades can be made on both pressure parts and non-pressure parts, including fans, tube bundles, stacks, ducts, structural components and auxiliary systems.

## Online monitoring

B&W SPIG developed UNICO, a global service online system designed to help improve plant efficiency. This continuous monitoring system analyzes and processes a wide range of parameters and equipment conditions, providing optimized cooling system efficiency, reduction of maintenance costs, and helps to avoid unexpected equipment failure.

A network of localized smart sensors collects data which are converted into digital form and sent to a supervisory system using wireless technologies. The supervisory system validates and integrates the data in a single database, processes the information to check process parameter variability and equipment reliability, detects potential problems, generates alarms and determines responses, constantly providing the plant operator with expected design feedback versus measured performance.

A web-based interface displays real-time critical information and equipment performance trends in a user-friendly interface, accessible from any device connected to the Internet.

## Replacement components

B&W SPIG provides comprehensive after-sales service including training, operational support, maintenance and spare and replacement parts. Our replacement components are competitively priced and are available from a worldwide network of service locations on short notice to provide our customers with continuous and safe plant operation.

Highly qualified technicians, supported by advanced measuring instruments, inspect and test existing installations and advise on the most prudent course of action for improved operation. Detailed inspection reports with clear recommendations provide the operator with the confidence of working with B&W SPIG.



## About B&W SPIG

B&W SPIG, a subsidiary of The Babcock & Wilcox Company, is an Italian-based global provider of custom-engineered cooling systems and services. Established in 1936, B&W SPIG has project-related operations in nearly 50 countries and employs approximately 250 people in locations worldwide. We have been providing an increasingly extensive range of high quality cooling towers, air-cooled condensers and related services.

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### Quality

Many of our products have been manufactured under the controls established by a Bureau Veritas Certification approved management system that conforms with ISO 9001:2008. Bureau Veritas Certification Certificate Number 211427. B&W SPIG is ISO 14001 and OHSAS 18001 certified.

ISO 9001  
ISO 14001  
OHSAS 18001  
BUREAU VERITAS  
Certification



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B&W SPIG is a subsidiary of The Babcock & Wilcox Company (B&W). Established in 1867, Babcock & Wilcox is a global leader in renewable, environmental and thermal technologies and services for power and industrial applications.

For more information or to contact us, visit our website at [www.babcock.com](http://www.babcock.com).