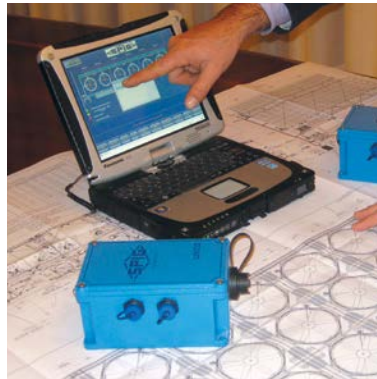


# Cooling Tower Services

Solutions for improved performance, efficiency and reliability





## 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 flexible operating solutions to improve performance, efficiency and reliability of existing equipment.

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 tower solutions.



### Cooling tower services, upgrades and maintenance

B&W SPIG's worldwide team of service technicians and engineers are available to support wet cooling tower 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, energy savings and wet-dry conversions. Onsite operational and maintenance training is also available to help keep your plant running at the highest level of efficiency.

We have successfully completed many equipment upgrade projects while the plant is operating, reducing or eliminating downtime.

A dedicated, multi-disciplined after-sales team is committed to execute projects successfully and in compliance with various international engineering standards.



### Selected Components for Maintenance/Upgrades

- Dispersion systems
- Nozzles
- Drift eliminators
- Gear box mechanical equipment
- Fan mechanical equipment
- Plume abatement systems
- Noise attenuation systems
- De-icing systems



### Replacement components and field service

B&W SPIG provides comprehensive after-sales service including training, operational support, maintenance and spare and replacement parts. Our replacement components 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 reports with clear recommendations provide the operator with the confidence of working with B&W SPIG.

We provide inspection, testing and component supply of a wide range of equipment, including fan stack, mechanical group, drift eliminator, spray nozzle and filling.



# Cooling Tower Services

## 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.

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.

## R&D/testing

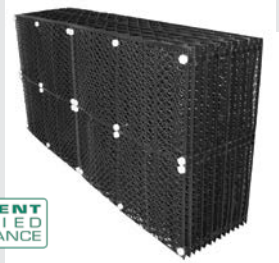
Product innovation and development is undertaken at B&W SPIG's state-of-the-art research and test facility located in Italy. At this specialized technology center, a dedicated team of experienced R&D and testing engineers conduct thermal performance research and testing, fill, nozzles and drift eliminators development, eliminators drift testing, and nozzle testing activities aimed to improve product quality and dependability.

The facility is specifically designed to analyze and test cooling towers simulating a wide range of conditions and applications. Examples of technology upgrades developed at our R&D facility include:

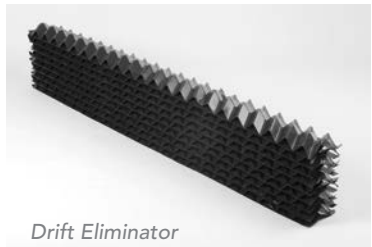
- UNICO online continuous monitoring system
- EcoJet nozzles for more uniform and efficient water distribution
- FUTURA splash filling for dirty water distribution
- H-MOON drift eliminator for low drift operation



H-MOON Drift Eliminator



High Efficiency Fill Media



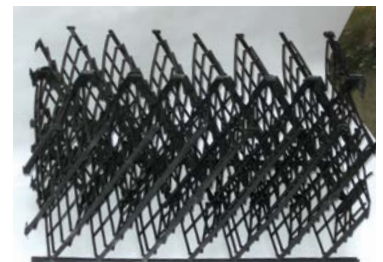
Drift Eliminator



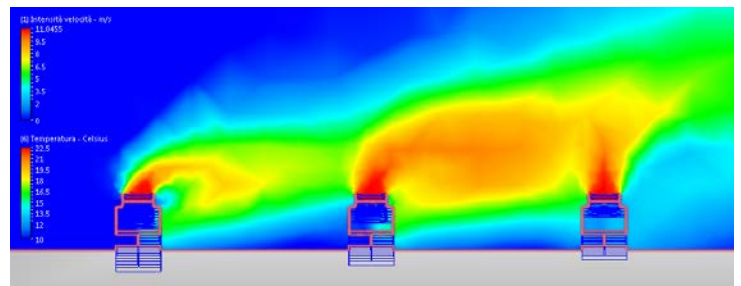
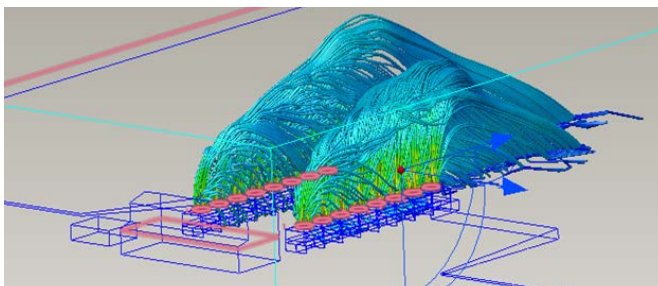
EcoJet Nozzles



Saturn Nozzles



FUTURA Splash Filling



## About B&W SPIG

B&W SPIG, a subsidiary of The Babcock & Wilcox Company, is an Arona, Italy-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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ENERGY | ENVIRONMENTAL

B&W SPIG is a subsidiary of The Babcock & Wilcox Company (B&W). Established in 1867, B&W is a global leader in advanced energy and environmental technologies and services for the power, industrial and renewable markets, with operations, subsidiaries and joint ventures worldwide.

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