### THE WET COOLING UNIVERSE OF BALCKE AND MARLEY



# WET COOLING IS OUR

#### SETTING INNOVATIVE BENCHMARKS

In the energy generation world and in many industrial processes, cooling is of primary significance. In this respect, SPX Cooling Technologies is at the forefront worldwide. As pioneers and innovative leaders, we offer our clients customised solutions which set benchmarks in production efficiency, cost effectiveness and reliability. Our experienced teams have successfully applied this technology in many projects globally. The experience, first-rate references, and the entire expertise gained from numerous innovative solutions, make us confident in continuing to be market leaders in the future. All this provides sustainable benefit to our customers.













1894: Balcke's first chimney cooler

1930: Marley's first mechanical draught cooling tower

1952: Marley begins using GRP materials

2000: Balcke builds the tallest natural draught cooling tower with integrated flue gas discharge system

**2008:** SPX Cooling Technologies completes the largest

tower for seawater application



### PROGRESSIVE





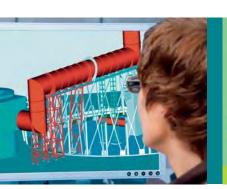
#### **GLOBAL ORIGIN**

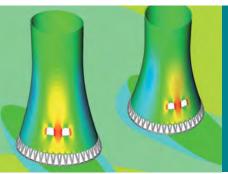
More than 100 years ago, two ingenious pioneers laid the foundation for SPX Cooling Technologies. In Germany in 1894, Hans-Joachim Balcke invented the chimney cooler, the first natural draught cooling tower. In the USA in 1936, L. T. Mart, having established The Marley Company, developed the first crossflow mechanical draught cooling tower. This innovative spirit prevails today in the SPX Group.

#### DYNAMIC FUTURE

Although our company has become synonymous with cooling technologies – particularly in the energy industry – we will not rest on our laurels. Innovative ideas and excellent engineering, combined with consistent efficiency and proactive service, are at the heart of our corporate philosophy and committed partnership with our clients.

Natural draught cooling towers with treated gas discharge
Cell-type cooling towers made of GRP, concrete or timber
Fan-assisted natural draught cooling towers
Hybrid (wet/dry) cooling towers
Seawater cooling towers
Cooling towers for operation at -30 °C ambient air temperature









### PLANNING WITH INSTIN

#### CONCEPTION

From the start of the project, analysis, communication and conceptual design are carried out in close consultation with the client. Our experts – specialising in thermodynamics, hydraulics, process engineering, instrumentation and controls as well as structural and civil engineering – ensure that all planning and approval steps are coordinated with the development of the unit as a whole. Each project is completely customised, which involves developing new ideas and innovative solutions.

#### CONSTRUCTION

SPX Cooling Technologies' wet cooling portfolio comprises individual components and complete turnkey systems with fewer interfaces and maximised system efficiency. The SPX Cooling Technologies erection team ensures that the construction of new

cooling towers is carried out in the same experienced and timely manner as for refurbishment work, outage inspections and overhauls. This is guaranteed.

#### **MAINTENANCE**

Existing systems should run optimally without any downtime and achieve the best possible performance at the lowest operating costs. We provide services ranging from repair work to retrofitting and upgrading existing cooling towers to enhance efficiency. A wide variety of advantages is achieved by retrofitting various components: longer service life, greater cooling performance, lower power consumption, reduced drift loss and noise emission, and abatement or elimination of the visible plume. We support our clients after they have purchased a system by providing regular testing, inspections and maintenance.







## A GLOBAL TEAM, A LOCA

#### INTERNATIONAL SPIRIT

Competencies of our experts from around the world are incorporated in projects, which SPX Cooling Technologies is awarded internationally. Our regional and local knowledge is crucial for wet cooling.

#### LOCAL PROXIMITY

In addition to our headquarters in Ratingen, Germany, and Kansas City, USA, SPX Cooling Technologies has subsidiaries and offices in Italy, Belgium, Spain, France, the United Kingdom, Croatia, China, Dubai, Saudi Arabia, Egypt and other countries. This means we are in close proximity to our clients and local involvement is considerable. We are aware of our responsibility towards our clients and know that reliability and quality are top priority. SPX Cooling Technologies therefore constantly trains its employees, provides them with top quality equipment and defines and applies strict quality targets. Regular international employee exchanges ensure an optimal communication flow. This leads to the highest conceivable standard for our systems and services anywhere in the world.







GERMANY - ITALY - FRANCE - SPAIN

UNITED KINGDOM - CROATIA - UNITED ARAB EMIRATES

TURKEY - QATAR - SAUDI ARABIA - GREECE





Niederaussem, BOA 1, Germany - Belchatow, Poland - Hellisheidi, Iceland

Burj Dubai, United Arab Emirates - Thessaloniki, Greece - Sharq, Saudi Arabia

N2000, Trinidad - Arrúbal, Spain - Rijnmond, Netherlands

Bugey, France - Elbistan B, Turkey - Sarlux IGCC, Italy

Neckarwestheim, Germany - Didcot, UK - Ras Laffan Power B, Qatar

Kerawalapitiya, Sri Lanka - Kaeng Khoi 2, Thailand - Salawat Russia, Russia

Tessenderlo, Belgium - Lenzing, Austria - Tahaddart, Morocco - Suez, Egypt

### INTERNATIONAL FOCUS

#### PART OF THE PHILOSOPHY

In the past, the technical idea and its implementation were the initial key focus. Today the requirements and wishes of our clients are crucial to all of our actions. We do not consider our assignment to be fulfilled until maximum efficiency, best cost effectiveness, minimum maintenance time, optimal conformance to the environmental conditions, and the targets set by our customers have been achieved.

#### PART OF A REFERENCE NETWORK

The leading role in a keenly competitive market is primarily attributable to the large and constantly growing number of satisfied customers. Our reference list provides impressive proof of this. Very few international power generation projects do not include wet cooling from SPX Cooling Technologies. We are also in demand as a partner in other sectors, such as refineries, chemical, petrochemical, steel and fertilizer industries. Our presence in these markets will continue to grow.













#### **COOLING TECHNOLOGIES**

ERNST-DIETRICH-PLATZ 2 40882 RATINGEN GERMANY +49 (0)2102 1669-0 cw@spx.com

#### spxcooling.com

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