



# OPERATION AND MAINTENANCE OF WATER SUPPLY SYSTEMS

Within the hydraulic infrastructure business sector, SICE provides engineering, construction, conservation, operation and maintenance services, as well as other highly qualified services resulting from its extensive knowledge of these systems and long-lasting presence on these markets. Its activity is based on the Integral Water Cycle, including collection, treatment, purification and reuse of water, before finally returning it to its natural environment.

SICE focuses its activity on everything from major infrastructure, such as dams or distribution and irrigation channels, to urban ornamental fountains, as well as water supply systems (drinking water treatment plants, piping), sewerage (waste water treatment plants, collectors, drains, reuse of effluent) and desalination.

SICE provides operation and maintenance services with its own highly qualified staff for both upstream and downstream supply networks as well as Drinking Water Treatment Plants.

Staff management, ordinary and specialized maintenance, system operation, energy management and optimization of consumption, waste management, analytical control, etc., are some of the tasks performed by SICE.

## OBJECTIVES

SICE always raises process control of water treatment, with the dual objective of achieving an uninterrupted supply service as well as achieving the best possible water quality, dealing with every requirement indicated in current legislation.

The work that makes up the operation and maintenance of a Water Supply System can be classified into two sections:

- **System operation:** Different works to manage installation through an understanding of the parameter values which define the status of different treatment processes.
- **Maintenance of the infrastructure and related systems:** A collection of activities intended to achieve fully operational facilities to ensure the capture, treatment-purification, transport and active supply of water.



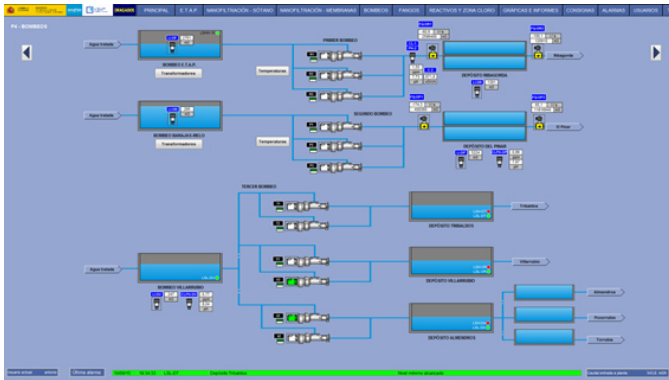
## OPERATION AND CONTROL SERVICES

### Supervision

Monitoring of each piece of machinery, equipment and constituent parts of unitary processes in accordance with their normal operation within the process.

### Operation

Management and/or operation of elements, machinery, adjustment of intervals, etc., whose operation requires manual intervention in a continuous or non-continuous way.



### Process control

Through a program for flow rates testing, water sampling at different points of the system and analysis, whose results allow action on each element, area and collection within the facilities in order to adapt to new operational conditions.

### Reports

Provision of daily facilities' operational reports, incidents and breakdown reports, preventive maintenance and system control reports.

### Waste management

Identification, segregated storage, removal by an authorized manager, production control, etc.

### Consumption Management

Optimization of electrical consumption (analysis and optimization of electricity tariffs)

### Consumption historian data

Control of reagents: (control of consumption, optimisation of dosing, analysis to use new reagents, ratios, etc.

### Risk Prevention

Risk assessment, training, PPE, medical surveillance, coordination, working protocols, etc.

### Administrative Management

Invoicing, orders, certifications, etc.

## MAINTENANCE SERVICES

SICE offers a comprehensive maintenance solution for all facilities, including:

**Preventive Electromechanical Maintenance:** All operations that are carried out to maintain electrical and mechanical equipment in order to avoid breakdowns and stoppages, reduce corrective maintenance costs and process shutdowns.

**Predictive Electromechanical Maintenance:** Operations to control the condition of equipment operations in order to predict breakdowns and carry out a rapid repair following a failure. It is based on the ongoing understanding of the condition and operation of the facilities.

**Corrective Electromechanical Maintenance:** Work to repair equipment, to detect an anomaly or stoppage of equipment and to return it to normal operations.

**Metrological Maintenance:** Regular calibration and adjustments to continuous measurement equipment and facilities' instrumentation. Requires a high level of specialization (sensors, flowmeters, etc.)

**Regulatory Maintenance:** To comply with current regulation for specific equipment, carried out by specialist and authorized companies (HV, LVP, etc.)

**Specialized Maintenance:** Maintenance of certain types of machinery and systems which due to their complexity or being subject to special regulations require maintenance by specialized companies.

**Analytical control:** Understanding the parameter values for process water.

**Upkeep:** Upkeep of facilities includes all the work required to maintain equipment, civil works, buildings and the remainder of facilities in an adequate state (painting, leaks, carpentry, gardening, rat extermination, etc.).

