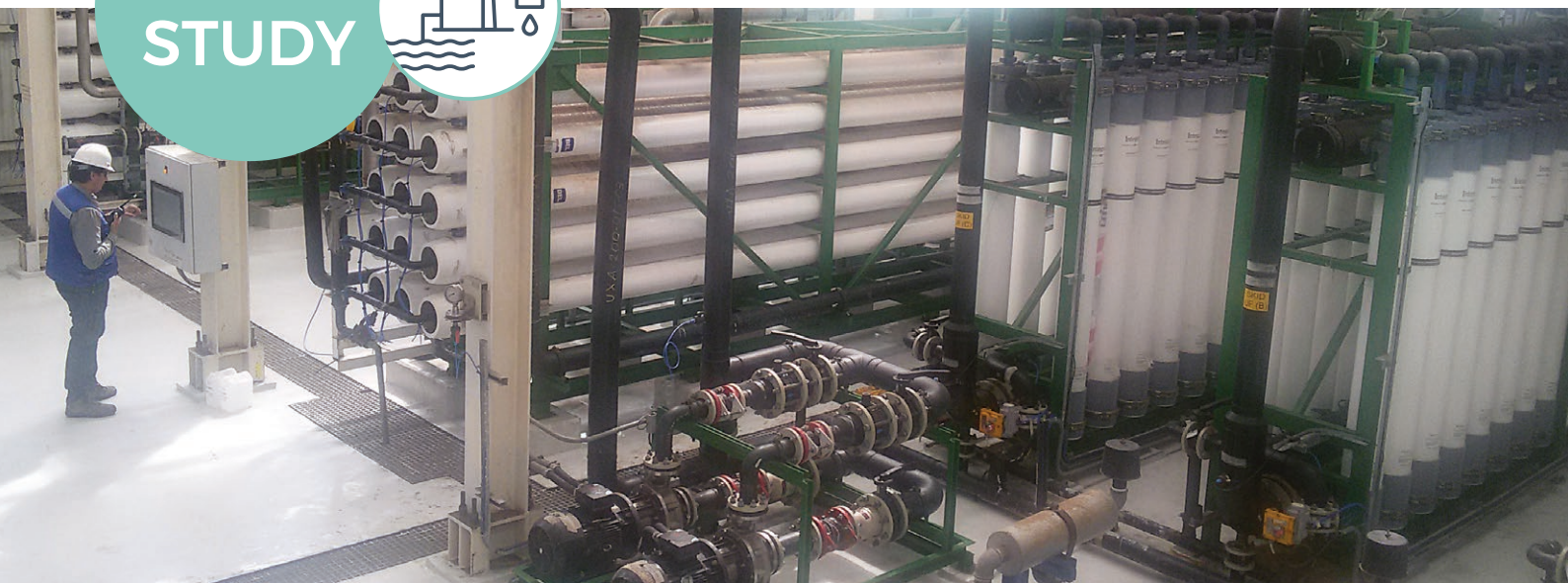


CASE STUDY



SEAWATER DESALINATION TO SUPPLY FLUE GAS DESULFURIZATION SYSTEM

Desalinated water supply helps plant meet strict environmental regulations

- **Location:** Tarapaca, Chile
- **Customer:** STX Heavy Industries, ENEL CHILE
- **Capacity:** 2,400 cubic meters a day
- **Solution:** Dual-train desalination system to supply process water needs

Background

STX Heavy Industries, a Korean EPC, recently implemented a flue-gas desulfurization (FGD) system at a coal-fired power plant in Chile in order to comply with the country's strict environmental regulations. The FGD process requires large amounts of high-quality water. STX

chose Fluence to design, manufacture, supply and commission, a seawater desalination plant at the CELTA power plant in Tarapaca, Chile. The new plant provides 2,400 m³/d of high-quality, desalinated process water for the FGD and other needs.

Challenges

One of the main challenges the project faced was the very limited footprint available for the desalination plant. Because the CELTA power plant is located in a zone of high seismic activity,

all metal structures, tanks, and other equipment had to be engineered to meet Chile's strict seismic standards.

CASE STUDY

Seawater Desalination to Supply
Flue Gas Desulfurization System

Desalinated water supply helps plant
meet strict environmental regulations



The Solution

To ensure a steady supply of desalinated water, the system was designed with 100% installed duty-standby redundancy across all aspects of the plant, including electromechanical

equipment and PLC, as well as pretreatment and desalination units.

Results - The system is working at full capacity in compliance with water quality specifications.

The Technology

- Pre-treatment: Automatic screen filtration, ultrafiltration membranes
- Desalination: Two parallel trains of seawater reverse osmosis equipped with state-of-the-art energy recovery devices
- CIP with a chemical neutralization system consist of circulation pump and chemicals dosing to ensure outfall comply with the strict environmental regulations

