
Grundfos dosing pumps play important role in Indian desalination plant

IN MINJUR, A TOWN IN THIRUVALLUR DISTRICT OF CHENNAI IN INDIA, WILL SOON BE ABLE TO OVERCOME A HURDLE FACING MANY GROWING URBAN AREAS: AN ADEQUATE SUPPLY OF DRINKING WATER. GRUNDFOS DOSING PUMPS HELP SOLVE THIS PROBLEM BY CONTRIBUTING TO ONE OF THE WORLD'S LARGEST SEAWATER DESALINATION PLANTS. THIS 100-MILLION LITRES PER DAY (MLD) DESALINATION PLANT IS BEING BUILT BY CHENNAI METROWATER AND TECHNOLOGY PARTNER BEFESA CONSTRUCCION Y TECNOLOGIA AMBIENTAL OF SPAIN. IT TREATS SEAWATER THROUGH REVERSE OSMOSIS (RO) TO MAKE IT POTABLE.

Spread out across a 60-acre site, the plant contains five modules of 20 MLD each. Among impressive details are an intake tower that draws sea water from 10 metres below sea level, and separate pipelines to draw raw water and discharge wastewater.

An important part of the entire process is chemical adjustment both before and after the removal of salts. Befesa turned to Grundfos for custom-made dosing solutions to fit the bill.

THE SITUATION

The sea water desalination plant in Minjur will draw over 230 million litres of seawater each day in order to produce 100 million litres of potable water each day. This is equal to 100,000 m³/day. The RO process can be divided in 3 main processes:

Pre-treatment: Seawater is filtered and chemically adjusted before proceeding.

TOPIC:

Over 100 million litres of drinking water a day will soon be flowing to the residents of Minjur, thanks to Grundfos dosing pumps.

LOCATION:

Chennai in India

COMPANY:

Chennai Metrowater and technology partner Befesa Construccion y Tecnologia Ambiental of Spain

Reverse Osmosis: Seawater passes across the membranes for salt removal

Post-treatment: The treated water is chemically adjusted in order to make it drinkable.

For the pre and post-treatment steps, several chemicals need to be dosed. Flow rates can vary from very low to very high, depending on the number of RO trains that are running at a time.

The customer, Chennai municipality also wished for a turnkey solution that would fit perfectly into the rest of the plant.

THE GRUNDFOS SOLUTION

Grundfos DME dosing pumps, with its unique digital dosing system, were selected as the absolute best solution to satisfy their needs. A complete dosing skid, equipped with three or four dosing pumps (depending upon needs) was therefore designed by Grundfos. The dosing team at Bombas GRUNDFOS España S.A. included the pumps, a pulsation dampener, a flow meter, and a counter pressure valve.

A total of 28 Grundfos DME dosing pumps went into the total package including the customised skids. All design, construction, and delivery work was done by Bombas GRUNDFOS España S.A..

THE OUTCOME

Since being delivered, Befesa, the company building the system has been very satisfied. According to Jose María Centeno, Befesa International Operations Manager, the technical characteristics and capabilities of the Grundfos DME dosing pumps have proven to be excellent.

“We are also very pleased that the design of the skids was made suitable for requirements of the project. We worked well with Grundfos, who asked very important questions when creating dosing skids. Furthermore, we feel very confident in installing these pumps, thanks to the qualified staff from Grundfos India, who can provide local service support. We will operate the plant for the next 25 years, so this is an important factor for us,” he states.

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The DME/DMS/DDI dosing pumps are designed for handling chemicals