

Finished Water

A PHOTOGRAPHIC PROFILE



CH2M HILL Project Manager Ho Chee Yon and Commissioning Engineer Felix Wang (above) conclude performance tests at PowerSeraya's new SWRO plant, the world's first full-scale SWRO plant with 16-in. diameter pressure vessels.



COMPANY EXPANDS SERVICES WITH WORLD'S FIRST LARGE-DIAMETER SEAWATER REVERSE OSMOSIS DESALINATION PLANT

When PowerSeraya Ltd., one of the largest integrated energy companies in the Republic of Singapore, decided to expand its portfolio to provide water, instead of power only, it built the world's first full-scale desalination plant to use large-diameter seawater reverse osmosis (SWRO) technology. Located at the Pulau Seraya Power Station at the petrochemical hub of Jurong Island, the new plant produces two customized grades of water—domestic drinking water and high-grade service water used for power production.

CH2M HILL completed the engineering, procurement, and construction (EPC)

of the project in a fast-track 12-mo schedule. Use of the power plant's existing infrastructure of cooling water intake, discharge outfalls, and on-site storage tanks achieved capital cost savings of about 25 percent.

PROJECT SPECIFICS

Project Name: Pulau Seraya Power Station

Owner and Operator: PowerSeraya Ltd.

EPC: CH2M HILL

Completion Date: October 2007

Project Cost: About US\$14 million

Water Source: Seawater

Capacity: 10,000 m³/day (2.64 mgd)

Features: The desalination plant features granular media filtration pretreatment and a two-pass SWRO system that uses 16-in. spiral-wound reverse osmosis elements incorporated with an integrated flow distributor and electromagnetic field device. The system features a reduced footprint and the capability to operate at higher fluxes than conventional SWRO technologies, resulting in lower capital and operating costs. The industry standard for reverse osmosis and nanofiltration elements for seawater desalination and water reclamation applications has been 8-in. diameter.

Employees: 2 operators per shift

PHOTOGRAPHS: CH2M HILL