Toyobo’s reverse osmosis membrane module Hollosep® for producing freshwater from seawater has been adopted for use in a large-scale seawater desalination plant to be built in Shuqaiq, Saudi Arabia (Red Sea coast). This decision follows the previous adoption for use in the Rabigh plant. Hollosep® modules have also been adopted for use as replacement membranes at an existing large-scale seawater desalination plant in Al Jubail (Arabian Gulf).

1. **Use in one of the Middle East’s Largest Seawater Desalination Plant Being Built in Shuqaiq**
   a. The plant is being built by Mitsubishi Heavy Industries, Ltd. under contract from Shuqaiq Water and Electric Company (SqWEC), a Saudi Arabian special purpose company (SPC) providing electricity and drinking water in Saudi Arabia. The plant is part of a project that also includes a power plant for Shuqaiq, and is planned to commence operation in May 2010.
   b. The desalination capability of this plant will be the largest in the Gulf Cooperation Council (GCC) using reverse osmosis membrane modules. The Hollosep® modules at this plant will produce 240,000 m³ of freshwater per day from seawater.
   c. The plant requires durability and stability in its operations, and the delivery and performance of Hollosep® modules at other sites in Saudi Arabia was one of the determining factors behind this decision.

2. **Use as a Replace Membrane at the Al Jubail Desalination Plant**
   The Al Jubail Desalination Plant owned by the Saline Water Conversion Corporation (SWCC) is one of the largest reverse osmosis plants on the Arabian Gulf Coast of Saudi Arabia (producing 90,000 m³ per day). Hollosep® modules are used as replacement membranes in eleven of the fifteen module trains.

   The plant originally used membranes from a different company when it commenced operations in 2000. Hollosep® was adopted for use as long-term verification tests conducted at the site demonstrated that the cellulose triacetate hollow fiber membranes provided more stable operating performance, with their superior chlorine resistance to prevent the growth of microorganisms and algae. Five of the eleven module trains ordered are already in operation. The remaining six will be successively converted to Hollosep®.
About Hollosep®

1. Hollosep® employs cellulose triacetate hollow fiber membranes to provide superior chlorine resistance to prevent the growth of microorganisms and algae by chlorine injection. The modules have demonstrated excellent operating performance at many plants in Japan and around the world.

2. Overseas, Hollosep® modules have been adopted for use in numerous seawater desalination plants, such as the world’s largest desalination plant in Rabigh, Saudi Arabia (daily output of 218,000 m³), as well as plants in the cities of Yanbu (128,000 m³ per day) and Jeddah (114,000 m³ per day). Hollosep® modules boast a greater than 50% share of the market for seawater desalination modules in the GCC., which faces some of the most severe water shortages in the world.

3. The proven performance of Hollosep® to stably produce good-quality water at numerous desalination plants located along the Red Sea coast, including those at Yanbu and Jeddah, was one of the main factors behind the adoption of Hollosep® for this latest project in Shuqaiq, Saudi Arabia along the sea’s southern coast.

4. In Japan, Hollosep® is being used at the Umi-no-nakamichi Nata Seawater Desalination Center in Fukuoka City, the country’s largest seawater desalination plant (operation commenced in June 2005, producing 50,000 m³ per day).

For more information
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