

PROCESS ECONOMICS PROGRAM

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Expires: July 1, 1981

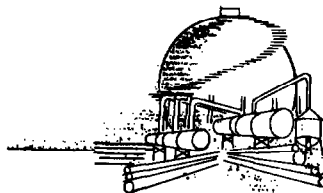
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Abstract

Process Economics Program Report No. 133

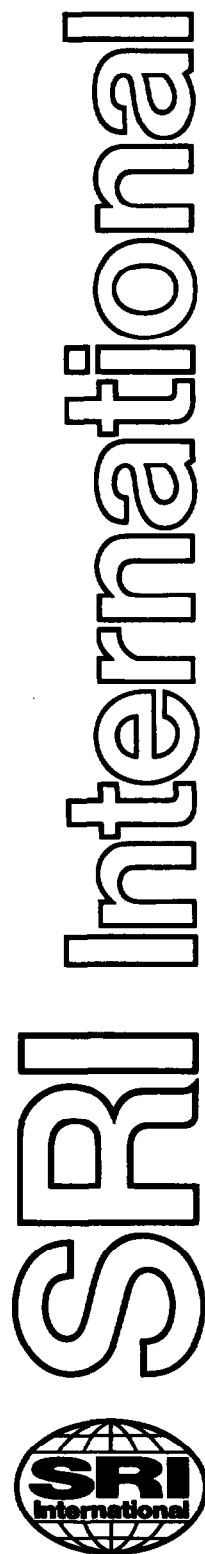
DESALINATION

(October 1980)

Desalination refers to the removal of salts from seawater or brackish water to make the water fit for drinking or for other purposes. The major desalination processes are distillation and the membrane processes--reverse osmosis and electrodialysis. Distillation is used mainly for desalting seawater. Most of the large installations are in the Middle East, where they have a long history of successful operation.

The membrane processes are used mostly for brackish waters, though recent developments in membranes have made seawater reverse osmosis practical. Equipment for reverse osmosis and electrodialysis is commercially available. Reverse osmosis is the most rapidly growing process and is second only to distillation in installed plant capacity.

This report includes process descriptions and cost estimates for multistage flash, multiple-effect distillation, and reverse osmosis seawater desalination plants. Capital costs and production costs are also given for reverse osmosis and electrodialysis plants for brackish waters.



Report No. 133

DESALINATION

by GRANT E. RUSSELL

October 1980

A private report by the
PROCESS ECONOMICS PROGRAM

Menlo Park, California 94025

For detailed marketing data and information, the reader is referred to one of the SRI programs specializing in marketing research. The CHEMICAL ECONOMICS HANDBOOK Program covers most major chemicals and chemical products produced in the United States and the WORLD PETROCHEMICALS Program covers major hydrocarbons and their derivatives on a worldwide basis. In addition, the SRI DIRECTORY OF CHEMICAL PRODUCERS services provide detailed lists of chemical producers by company, product, and plant for the United States and Western Europe.

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