Desalination and Water Treatment
www.deswater.com

doi: 10.1080/19443994.2013.808401

52 (2014) 27–47
January

Taylor & Francis
Taylor & Francis Group

Thermal desalination in GCC and possible development

Mohamed Ali Darwish

Qatar Environment and Energy Research Institute, Qatar Foundation, Doha, Qatar
Tel. +974 6640 2650; email: madarwish@qf.org.qa

Received 17 April 2013; Accepted 23 April 2013

ABSTRACT

The Water Desalination and Reuse Center in King Abdulla University of Science and Technology, in Saudi Arabia, held a workshop on thermal desalination on the 11th and 12th of March, 2013. This paper was presented as part of a lecture at the workshop. It presents the status and possible developments of the two main thermal desalination systems processing large quantities of seawater in the Gulf Cooperation Council, multi-stage flash, and thermal vapor compression systems. Developments of these systems were presented to show how these systems are competing with the more energy-efficient seawater reverse osmosis desalting.

Keywords: Multi-stage flash desalting systems; Desalination; Multi-effect; Thermal vapor compression; Falling film evaporators; Top brine temperature; Pumping energy; Gain ratio; Performance ratio; Equivalent work; Feed salinity; Brine salinity

1944-3994/1944-3986 © 2013 Balaban Desalination Publications. All rights reserved.