SALINE WATER CONVERSION CORPORATION

CHALLENGE, ACHIEVEMENT AND FUTURE PROSPECTIVE

Presented by:
Eng. Mohammed Al-Ghamdi
Jeddah Plants Manager

Saudi Arabia, Kingdom of Humanity
Kingdom of Saudi Arabia was totally dependent on ground water resources.

1928 Late King Abdulaziz ordered to buy 2 distillation units with capacity of 300 Cubic Meters/day for Jeddah to serve the Pilgrims and Jeddah population.

1942 Conducted a survey of water resources in the Kingdom

1968 Two Test plants were constructed in Al-Wajh and Dhuba with capacity of 200 m3/day for each.
In the mid nineteen hundreds it was realized that there was a need to support the ground water resources, a means of producing potable water for the populous of the Kingdom had to be found, hence the birth of: SWCC IN 1974
1998  15 sites are operating multiple phases at most sites and production increased from 400 m³/day in 1968 to 2 million m³/day.

Now  Total Water Production at 3 million m³/day.
ACHIEVEMENT
Responsibilities of SWCC

1) Construction of desalination, power plants and pipe lines in order to keep up with the future development demand for water and power.
2) Operation and Maintenance,

- The operation of the thermal and desalination plant is a skillful job and with the rapid advancement in computer technology,

- New control and operation techniques are being adopted, to improve and maintain higher efficiencies.

- An extensive maintenance program exist to ensure the plant and pipe line availability remains high.
3) **Export of Water and Power**

- Every effort is made to maintain the daily target of water and power production,

- The aim of SWCC is to deliver best international quality water to the people.
SWCC is providing desalinated water from its 30 plants distributed on 15 Sites as follows:

- **12** sites at West Coast (Red Sea) - 24 plants
- **3** sites at East Coast (Arabian Gulf) - 6 plants
Total Desalinated water & Power Production

SWCC Total Desalinated Water Production is about 3 million m³/day.

Representing 60% of the daily consumption in KSA

Total export of power 3426 Megawatts

Representing 18% of the Kingdoms electrical load

Representing 17% of total world desalinated water production

Total Desalinated water & Power Production
Type of plants at SWCC

1) Multi Stage Flash - MSF

Heating
- Steam from Boiler

Flash Evaporation and Heat Recovery

Chemical Injection
- Seawater Feed

Product Water
- Blowdown 42°C

Brine Heater
- 90.6°C

Condensate To Boiler

Steam Injection

Feed
- Chemical Injection

Seawater
- Product Water
2) Reverse Osmosis

Reverse Osmosis Plants basically pump high pressure filtered sea water through semi-permeable membranes reversing the osmosis pressure phenomena to producing water.
FUTUER
PROSPECTIVE
SWCC Experience

Research and Training Center in Jubail
SWCC’s vision

Pioneering The Sea Water Desalination Production and Transmission.

The Mission of SWCC

To meet Kingdom's Desalination Water Contributing to Economic and social Growth, by Effective Investment in Human and Physical Assets Resources.
SWCC has invested more than US$16 billion in construction of dual purpose plant, pursuing the latest technology in desalination and power plant and pipelines.
Rehabilitation Project

- Rehabilitation of major plants is already in progress.

- This program will extend the life of plants from 25 to 40 years.
Planning for Future

- Four Major projects will be under construction in the next 3 years in Independent Water & Power Project (IWPP) aspect with private sectors.

- Water production will be increased over the next 20 years to meet the projected demand of 9 mm3/day.
Extensive feasibility study is currently taking place.

The aim is to privatize SWCC forming a privet sector which will be the largest entity in sea water desalination and transmission in the world reaping the benefits of privatization and modern technology.
Thank You

Saudi Arabia,

Kingdom of Humanity