

# PLC/SCADA Control System for the Award Winning Largest RO Plant in Middle-East For Hail Al-Shuqaiq N. F. Plant - 150,000 m3/day

Utilities

Drinking Water Supply

Water Treatment Plant



## Contact:

Prudent Solutions WLL  
P. O. Box 11091,  
Manama,  
BAHRAIN  
Phone: +973 1745 6180  
Fax: +973 1745 6190  
www.prudentolutions.net

## Founding year:

1999

Solution  
Partner

SIEMENS

Automation

Sheet 1

Solution Partner: Prudent Solutions WLL

Customer: EMCO Engineering / SBG-PCM

Segment: Water Treatment

## Requirements of the customer:

- Providing pure drinking water for one million people in Hail province, the New Hail RO plant with capacity of 150,000 m3/day is the largest of its kind in the Middle East and the second largest nano-filtration system worldwide (Source H2O Magazine - Jan 2012)
- For the complete Automatic Operation of this Plant with various Subsystems, a new - state of the art "Process Control System" was required that offers high reliability / integrity in industrial applications, modular design which is easily expandable & offers long operational life.
- The control architecture is to based on a concept of a distributed intelligence network, where each functional unit has its own resident CPU with all control logic and safeties incorporated in its own program.



## Short description of the solution

Totally Integrated Automation (TIA) Solution based on Siemens S7-400 System and WinCC Visualization Platform to include one Main PLC and 4 Distributed Station PLC's each with Redundant CPU's, Power Supply & Communication Interface with Simplex Input / Output Modules, and provided with Dual Ring Fiber Optic Network to communicate to the new Central WinCC SCADA Servers.

ANNUAL H2O AWARDS 2011

**WINNER: EMCO  
ENGINEERING /  
SBG-PCM**

**BEST  
WATER  
PROJECT**

**NOMINATION:** *Nanofiltration water purification plant in Hail, Saudi Arabia.*

# PLC/SCADA Control System for the Award Winning Largest RO Plant in Middle-East For Hail Al-Shuqaiq N. F. Plant - 150,000 m3/day



## Contact:

Prudent Solutions WLL  
P. O. Box 11091,  
Manama,  
BAHRAIN  
Phone: +973 1745 6180  
Fax: +973 1745 6190  
www.prudentolutions.net

## Founding year:

1999

Solution  
Partner

SIEMENS

Automation

Sheet 2

## Implementation by the Solution Partner:

The primary elements of the offered Control System comprised of: -

- Main PLC system S7-412H with ET200M IO's – 1 no.
- Distribution Station PLC System S7-412H with ET200M IO's – 4 nos.
- Redundant Wincc SCADA Server / Clients
- Dual Ring Fiber Optic Network with Managed Ethernet Switches



## Benefits for the customer:

- High Availability, Modular Design
- High Level of Diagnostics
- High throughput, flexibility and uniformity
- Ease of Operations
- Best in-class Alarming, Security, Data Logging & Archiving
- Automatic Reporting Facility

