



Multi-Effect Desalination – Mechanical Vapour Compression (MED-MVC)

Multi-Effect Desalination (MED) is a thermal desalination technology based on horizontal tube thin film evaporation process which produces distilled quality water directly from seawater/brackish water. MED technology along with Mechanical Vapour Compressor (MVC), known as MED-MVC, uses electrical energy for vapour recompression and reuse for desalination. BARC has successfully demonstrated this technology by setting up a skid mounted 50 cu.m/d MED -MVC plant at Trombay.



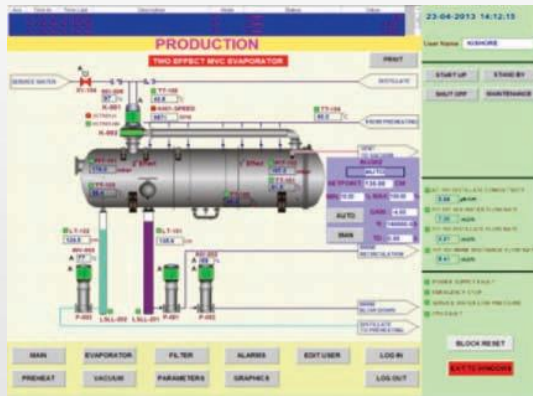
Photo of 50 m³/d MED-MVC Plant at DD, BARC, Mumbai

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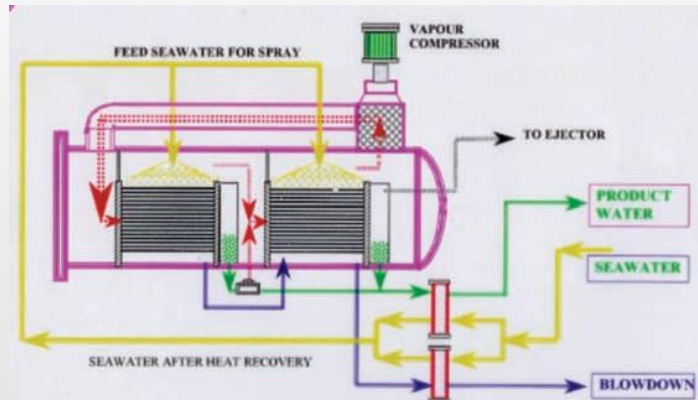
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Salient Features of Electricity Driven MED-MVC Technology

- MED-MVC is a thermal desalination technology that works with electricity alone, thereby eliminating the need of an external steam source.
- Requirements of final condenser and cooling seawater are completely dispensed.
- Power consumption in the range of 10-18 kWh/m³ of distilled water produced.
- Skid mounted MED-MVC plant has lesser footprint area.
- PLC-SCADA system of the plant allows completely automatic operation including its start-up and shut-down.
- Skid mounted 50 m³/day MED-MVC unit can cater around 500 people @ 100 litres per capita per day (lpcd).
- Capital cost of skid mounted 50 m³/day MED-MVC unit is around 300 lakhs. Product water cost is in the range of 15-25 paise/lit.
- MED-MVC plant can be further scaled up to about 1000 m³/day, however, bigger capacities are limited by the availability of lower pressure MVC's



Actual Operator SCADA Screen Shot of MED-MVC Plant



Schematic Flow Sheet of MED-MVC Technology

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