Desalination Plants-Data Analytics

Reliability & Thermal Performance Analysis

Desalination Plants

Desalination is a process of removing minerals from saline water. Saltwater is desalinated to make it suitable for human consumption. Real time monitoring of Reliability and Performance helps maintain health and efficiency of Desalination plants.

Our **ProcDNA** software has the capability to analyze both critical aspects of Desalination plants – **Reliability & Performance**.

Reverse Osmosis Desalination Plant

- Process Modelling
- Real time Data Analytics
- Remote Monitoring
- Diagnostics
- Alerts & Notifications
- Offline Simulation
- Historian Implementation
- Reports & Automation

Reliability

ProcDNA can monitor the health of various critical components of industries in real time. A combination of **Artificial Intelligence**, **Statistical methods** and **Thermodynamics** are used for this purpose. Some components in Desalination plants whose anomalies can be detected at the onset -

- Filtration systems
- Evaporators
- Condensers
- Heat Exchangers
- Major Pumps
- Compressors
- Anomalies in Motors
- Anomalies in Generators & Transformers
- Cooling Towers

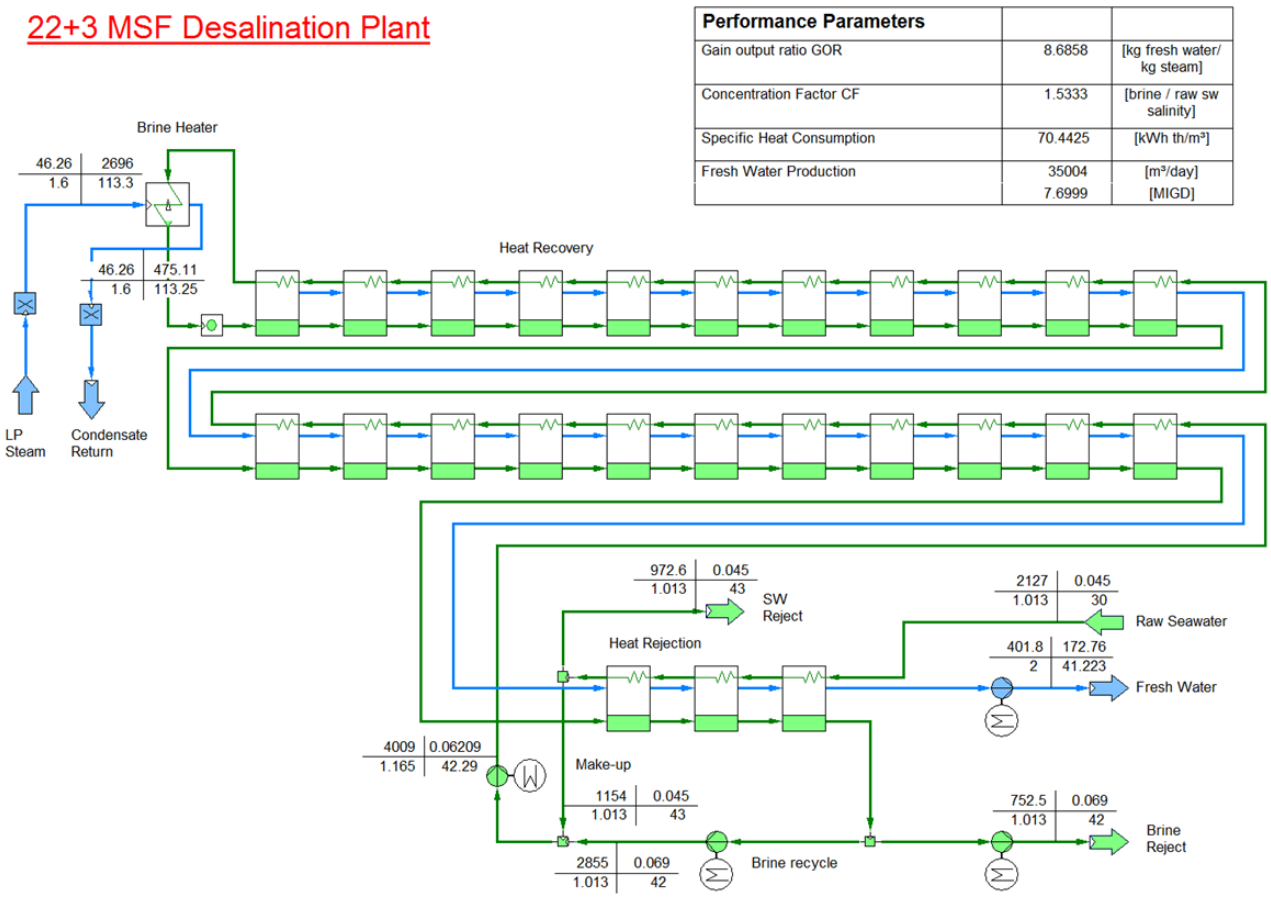
In many places, Power & Desalination plants are common as waste heat from Gas Turbines/Diesel engines is used to generate steam and is used in MSF distillation desalination plants. In such cases, ProcDNA can analyze data of both Power and Desalination plants!

Thermal Performance

ProcDNA uses SimTech's IPSEpro thermodynamic engine to analyze thermal performance of desalination plants.

Besides Multi-Stage Flash distillation(MSF), IPSEpro also supports multiple effect distillation (MED), mechanical and thermal vapor compression (MVC and TVC) and reverse osmosis (RO)

MSF Desalination plant model built in SimTech's IPSEpro



Desalination - Performance modeling using IPSEpro

- Mass & Energy balance is maintained
- Very detailed component level performance analysis in real time
- Can perform Design and Off-design calculations of all equipment
- Models provide detailed analysis of "Current" and "Clean performance" and calculate component level degradation accurately
- Capability to run detailed thermal performance simulation

To know more about our software and solutions, please visit www.patsimo.com or write to us at "info@patsimo.com"