

STEAM SYSTEMS

FEED WATER

Root cause analysis of pump NPSH problems.
Analysis of feed water heater tube breaks.
Cavitation/phase change detection.



HEAT EXCHANGERS

Calculating heat transfer and pressure drop for various geometries: finned tube, shell and tube, tube-in-tube, plate heat exchangers.

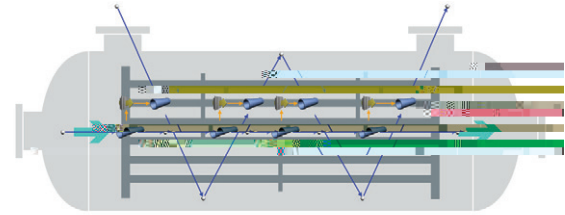
Calculating the heating or cooling requirement for various processes: evaporation, condensation or temperature control.

Calculation of natural circulation evaporators recirculation rate.

Simulation of transient behavior for startup, shut-down or process upset conditions.

Calculation of temperatures and boiling pressure drop.

Calculation of metal temperature change rates during transients.



LIQUID HANDLING SYSTEMS

- Calculation of pressure drop for gases or liquids.
- Pump and pipeline sizing.
- Pump performance adjustment for viscosity.
- Sizing of control valves and orifices.
- Design of liquid distribution systems.
- Flow balancing in branching networks.
- Analysis of transient events like pressure wave (water hammer/ surge) propagation.
- Control philosophy development and testing using the built-in PLC function block diagrams.
- Sizing of pressure safety valves.
- Simulation of a valve failure event.
- Calculation of heating or cooling requirements for various processes.
- Heat loss/pickup calculations.
- Insulation sizing.