framatome

KOPRA - Valve Test Section

For valve and safety valve testing

Qualification tests for all types of valves

Challenge

Testing of valves for qualification, design validation, mechanical or thermal-hydraulic studies purposes requires well equipped laboratories, qualified personnel and a demanding quality management system to allow cost effective test campaigns.

Solution

Framatome operates the KOPRA valve test section, which consists of 2 closed circuit water loops and 2 pressurizers.

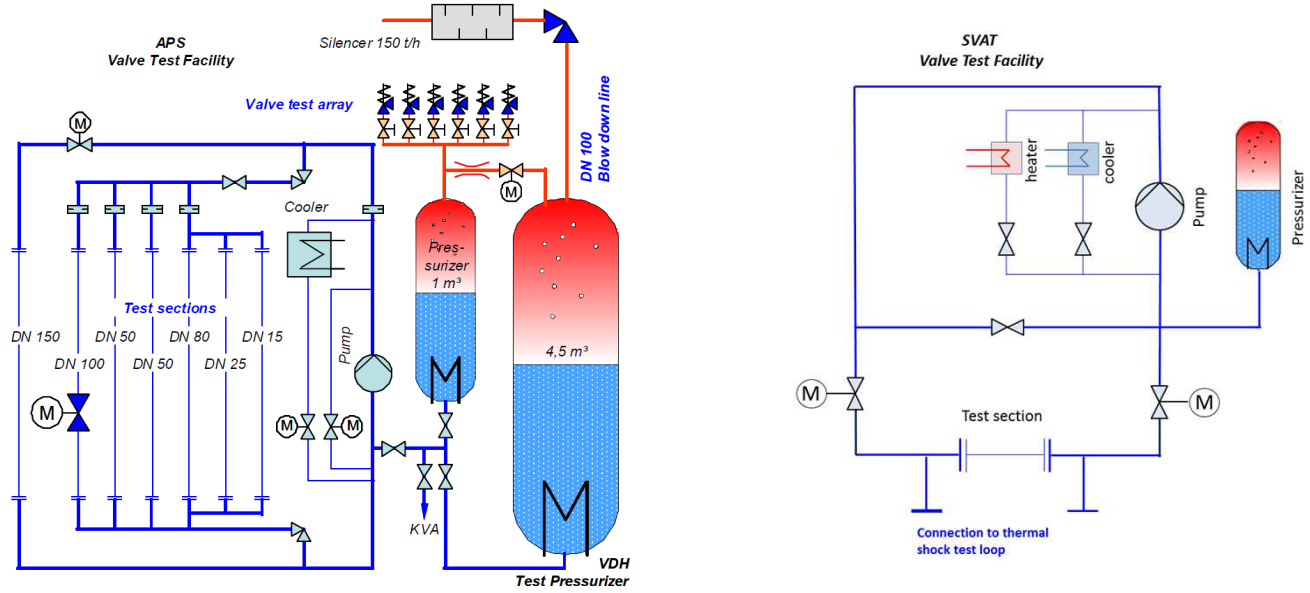
One loop (called APS) has a nominal diameter of DN150 with a circulation pump, various test sections ranging from DN15 to DN150 and two pressurizers. Valves up to size DN250 can be tested in this loop.

The second loop (called SVAT) has a nominal diameter of DN200 and can be used for testing of valves with lenghts up to about 2 m. A thermal shock test facility can be connected to this test loop.

By combining the two pressurizers, tests with temperature transients can be performed in the closed water loop. It enables also to test safety valves with one- or two-phase flow (open loop). A valve test array is used for setting the response pressure of safety valves with steam as in-service periodic testing.

Customer benefits

- Significant test results thanks to high diameter test section and original boundary conditions for full scale test
- Optimal performance: personnel with long experience in valves to support your tests
- Reliable test results through accreditation as test and inspection body in accordance with ISO 17025 and 17020, accepted by ILAC



KOPRA Valve Test Section

Your performance

is **our** everyday **commitment**

Technical information

Valve testing scope

Valve testing and qualification at the KOPRA Valve Test Section include the following activities:

- Qualification of prototypes of all types of valves (mechanical cycling, thermal cycling, high energy pipe break, active water with debris)
- Performance of tests for determining functional, material and loading behavior and for trouble-shooting
- Generation of data for valves relevant to safety and operation. This data can represent a baseline measurement for valve diagnostic systems such as ADAM® and form a reference for future in-service tests
- Performance of functional and setting tests for safety valves by simulating operational transients
- In-service hot adjustments for safety valve pilots and safety valves
- Determining flow coefficients (C_v value) of valves up to DN100 in a separate cold-water test section

Parameters

Pressure: up to 194 bar

Temperature: up to 360°C

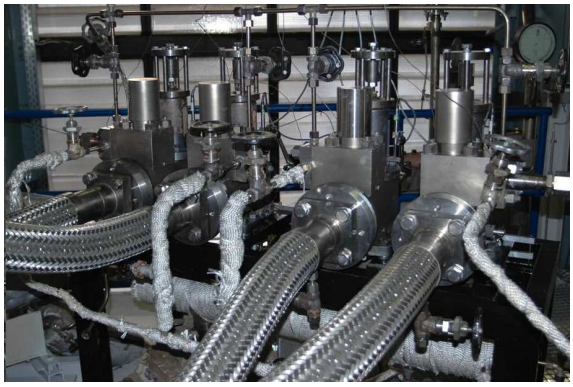
Nominal flowrates closed loops

- APS Loop: 600 m³/h
- SVAT loop: > 2,000 m³/h

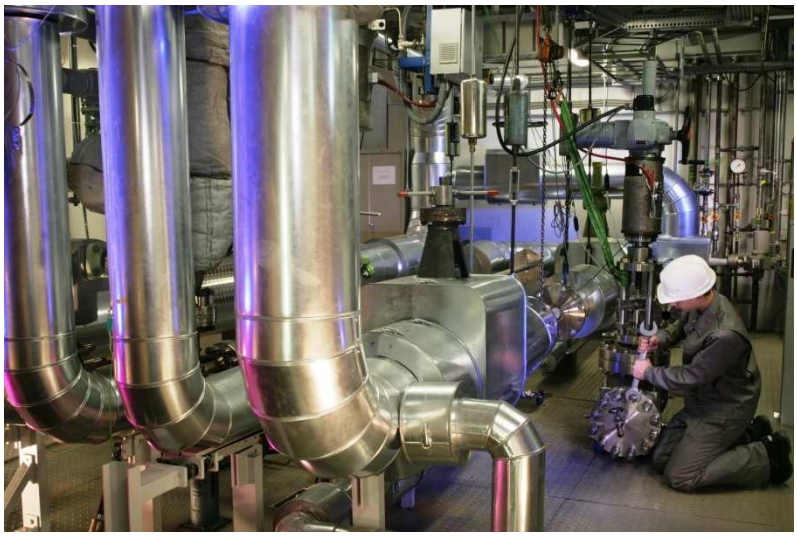
Mass flow open loops:

- Water: up to 400 kg/s
- Steam: up to 40 kg/s

Functional test of a safety valve under operational and accident conditions on open test loop



Test set-up for hot adjustment of pilot valves on the valve test array



Closed water loop for valve testing

Contact: test-labs@framatome.com
www.framatome.com