

Thermal-Hydraulics Test Facility

CAPABILITY SHEET - HT/HP EXPERIMENTAL TEST LOOP - ENGINEERED TO ORDER

THE SYSTEM

WHAT	A thermal-hydraulics test facility is a test loop that recreates a plant's or reactor's coupled heat-and-flow conditions on the ground, so they can be measured.
OUR ROLE	Neometrix engineers and fabricates the HP loop, the test section, the pressuriser, the condensers, the structure, the safety and the instrumentation/DAQ integration.
STATUS	Engineered to order; sized to the test envelope. No specific delivered facility is claimed on this sheet.

THE IDEA

RECREATE	Safety-critical heat-and-flow behaviour can't be tested in a running plant, so a loop recreates the high-temperature, high-pressure conditions on an instrumented rig.
MEASURE	The loop measures the coupled thermal-hydraulics - heat transfer and fluid flow together - including critical heat flux, two-phase flow and natural circulation.
VALIDATE	The measured data validate the design, underpin the safety case and check the analysis codes engineers rely on to predict plant behaviour.

THE LOOP

HEATED SECTION	A heated test section with electrical heater rods puts a real, measured heat flux into the flow, recreating the geometry under study (rod bundle, channel, tube).
PUMPS + PRESSURISER	Circulation pumps drive the flow (or natural circulation, no pump); a pressuriser holds the loop pressure; condensers reject the heat and close the loop.
INSTRUMENTATION + DAQ	Dense temperature, pressure, flow and void-fraction measurement, with high-speed data acquisition and control - the loop's whole purpose is to measure.

DISTINCT & HONEST

PHENOMENA	It studies critical heat flux (the boiling crisis), two-phase flow, natural circulation and flow-accelerated corrosion - the hard, coupled phenomena.
OUR FRANCHISE	It is a high-pressure-vessel, thermal, fluid-system, test-rig and instrumentation problem - our competence; the heater rods, pumps and instruments are bought-in.
ENGAGEMENT	Send the test envelope and the phenomena to sales@neometrixgroup.com for a clause-by-clause compliance matrix in two working days.

PROJECTS DESK

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