

DESIGN & MANUFACTURING
SOLUTIONS FOR FLUID MEASUREMENT
AND CONTROL

FLOW • PRESSURE • ACCESSORIES

Nuclear energy market



GRUPE ALFEOR

Solutions for your nuclear power plant

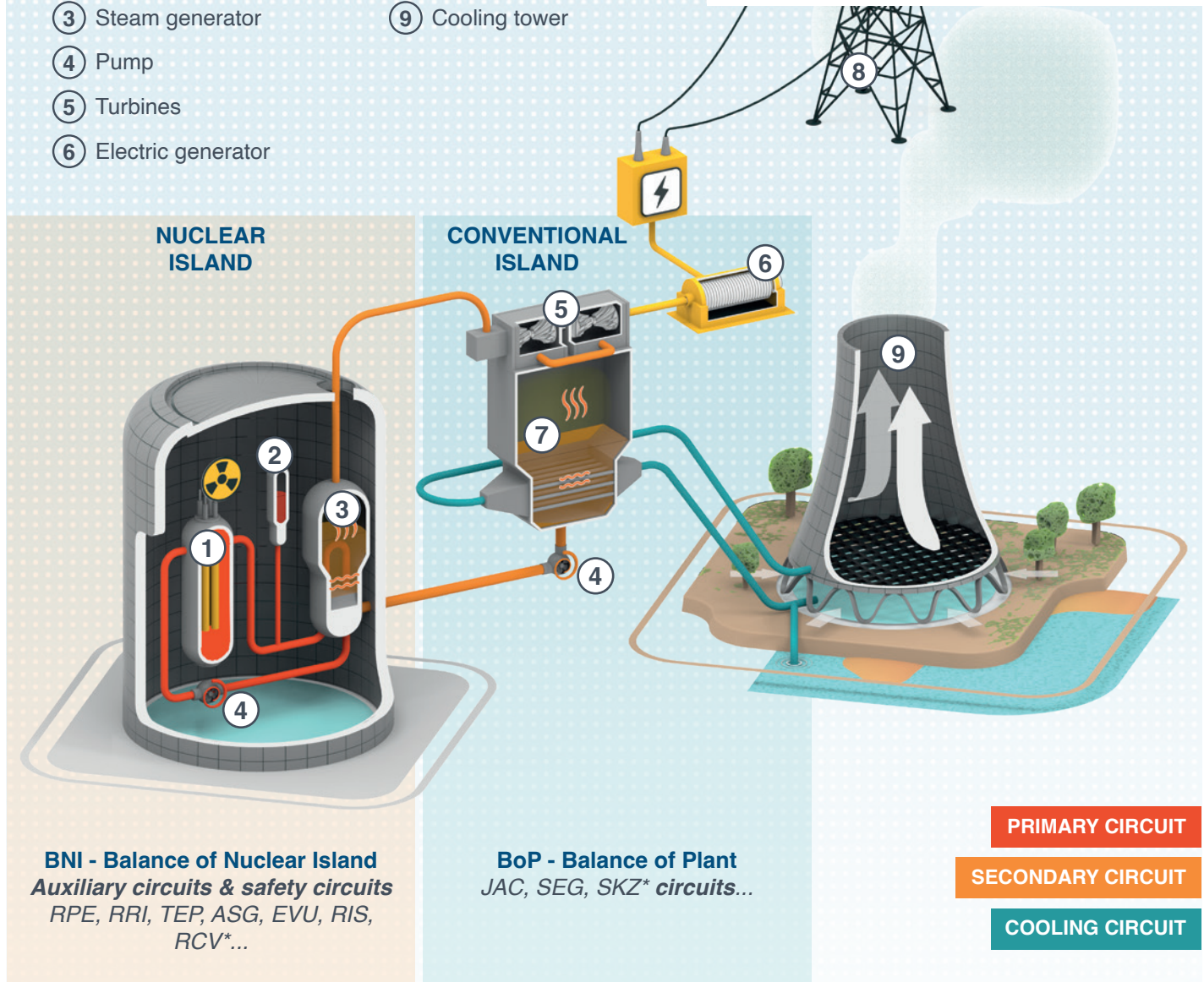
Our flow measurement, flow limitation devices and pipe accessories are used in the nuclear island and conventional island circuits of the power plant.

For example, here, equipment on the auxiliary and safety circuits of the BNI and BoP.

- | | |
|----------------------|----------------------|
| ① Reactor | ⑦ Condenser |
| ② Pressurizer | ⑧ Electrical network |
| ③ Steam generator | ⑨ Cooling tower |
| ④ Pump | |
| ⑤ Turbines | |
| ⑥ Electric generator | |

OUR REFERENCES

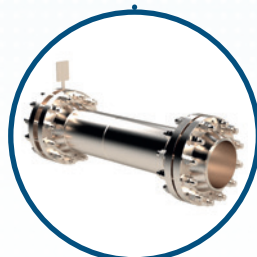
- Jules Horowitz Reactor (RJH) - CEA
- EPR Flamanville - EDF
- Hinkley Point C - NNB
- NCPF La Hague - ORANO
- All nuclear power plants in France - EDF
- TRIADE Bollène - ORANO
- Hermès test loop - CEA
- New Brunswick Nuclear Power Canada



KD - flowmeter with simple hole or multi-hole orifice plate



DI - simple stage flow restrictor



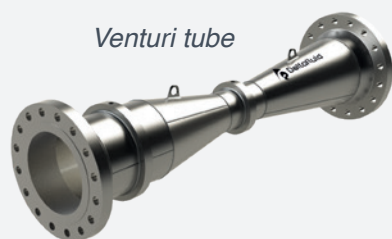
DI - multi-stage flow restrictor

System code names

- * RPE Nuclear Vent and Drain System
- RRI Component Cooling Water System
- TEP Coolant Storage and Treatment System
- ASG Emergency Feed Water System
- TEG Gaseous Waste Processing System
- EVU Containment Heat Removal System
- RIS Safety Injection System
- RCV Chemical and Volume Control System
- JAC Fire-fighting water production System
- SEG Emergency general raw water supply System
- SKZ Gaz storage and supply System

Product range

KD - FLOW MEASUREMENT



Venturi tube



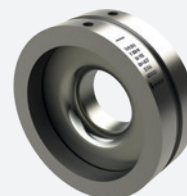
Conditioning orifice plate



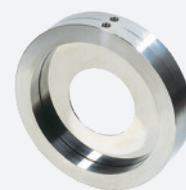
Compact flowmeter



Orifice flange flowmeter



Nozzle



Annular chamber

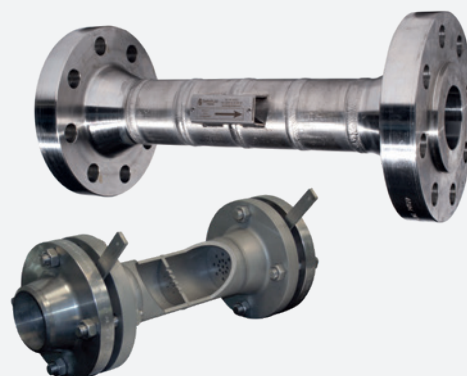
DI - FLOW LIMITATION / PRESSURE REGULATION



RTJ-F simple restriction orifice



Multi-hole restriction orifice



Multi-stage multi-hole restriction orifice

ACCESSORIES



Flow conditioner



Flow indicator



Spectacle blind



Condensation pot



Thermowell

Engineering - Design - Project management

ACCORDING TO **CONSTRUCTION CODES**

RCC-M, RCC-Mx, CODETI, CODAP, ASME, EN 13480, EN 13445

COMPLIANT WITH **REGULATORY REQUIREMENTS**

ESPN decree of December 30, 2015 (modified on September 3, 2018), PED 2014/68/UE

Important for Nuclear safety or conventional products, UKCA, CSA...

Capabilities

- Calculation & sizing
- Integration plans and diagrams
- Modellings

Standards / Reference guides

- Handbook IDEL'CIK
- ISO 5167
- ISO/TR 15377
- ASME MFC
- ISO 9300
- ASME PTC 19.3 TW

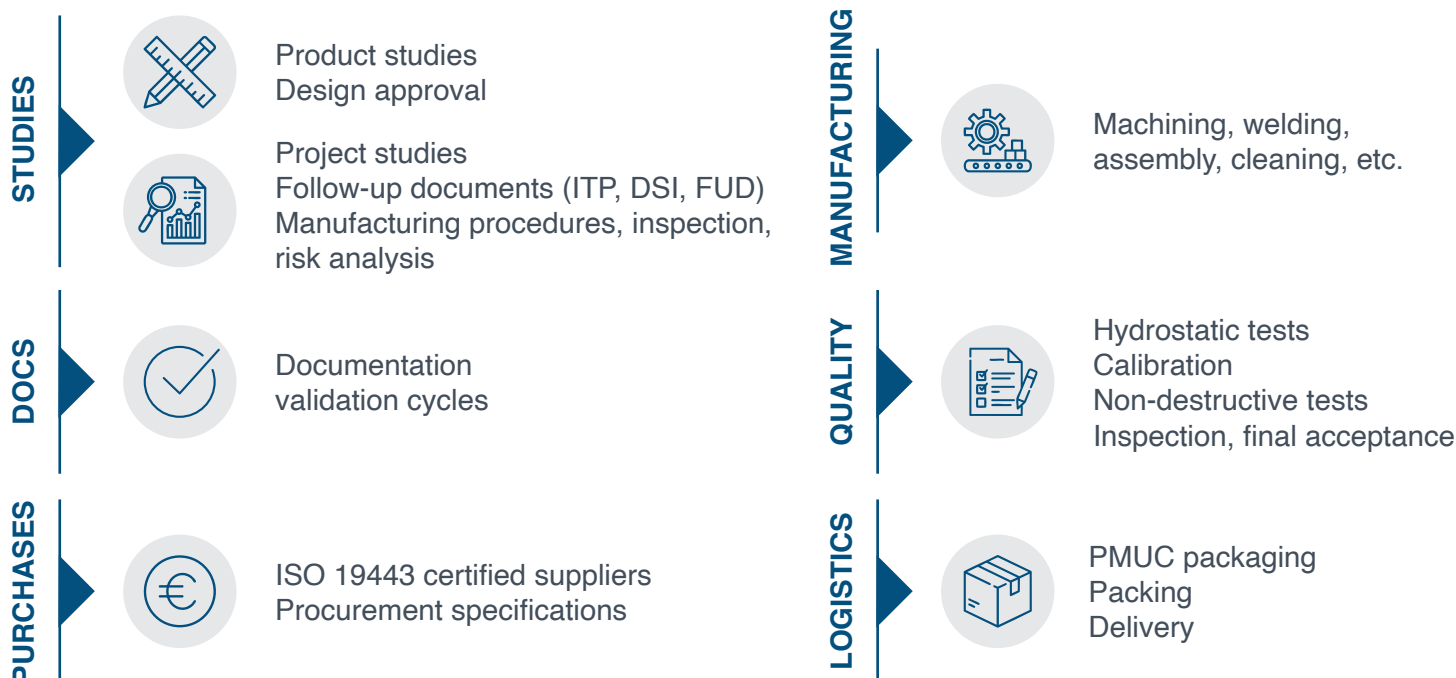
Technical and functional requirements

- Pressure drop
- Cavitation (Tullis, Thoma)
- Flow rate, velocity
- Noise level
- Critical flow
- Pressure, temperature
- Material requirements (M111.3, PMUC, NACE, NORSOK...)



A CROSS-FUNCTIONAL, **MULTIDISCIPLINARY PROJECT TEAM**

Acts in accordance with DELTAFLUID's nuclear safety policy and is committed to combating CFSI.



Production

OUR INDUSTRIAL AND MANUFACTURING CAPABILITIES

Surface

- Total area: 8,000 sqm
- Machining workshop: 1,000 sqm
- Additional workshop space: 1,000 sqm
- Nuclear-specific material stock

Machining

- Vertical turning up to Ø2700mm
- Horizontal turning up to Ø800mm over a length of 3m between centres
- Machining centre

Welding

- ARC, TIG according to construction codes
- WPS, PQR, WPQ
- Carbon steel, alloy steels, nickel base alloys, austenitic-ferritic steels

Non-destructive testing & inspection

- Dye-penetrant
- Radiography
- PMI test
- Ferrite rate
- Hydrostatic test

Cleaning & surface treatment

- Degreasing
- Pickling, passivating
- Sand blasting, painting

Air-conditioned control room

- 3D measurement
- Profile measurement
- Profile projector

Marking

- Cold marking
- Laser marking



3-axis machining center



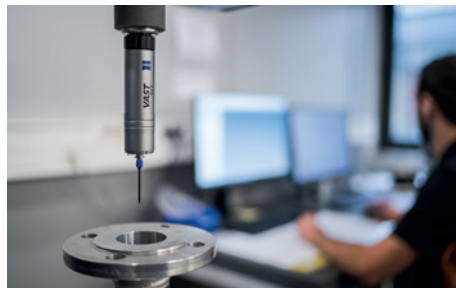
3-axis CNC horizontal lathe + C axis, high-capacity



3-axis CNC horizontal lathe



4-axis machining center



3D dimensional measurement



Welding



PMI test



Hydrostatic test

Your partner for projects
around the world

- Local agents
- French facility

They trust us

EDF, CEA, Orano, Framatome, NNB, Arabelle Solutions, Edvance, TechnicAtome, Bilfinger, Bocard, John Cockerill, Fives Nordon, Monteiro, Endel, Technoplus Industries...



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ISO 9001
ISO 19443
BUREAU VERITAS
Certification



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