

Profile LFR-27

BACCARA

FRANCE

GENERAL INFORMATION

NAME OF THE FACILITY
ACRONYM
COOLANT(S) OF THE FACILITY
LOCATION (address):
OPERATOR
CONTACT PERSON (name, address, institute, function, telephone, email):

BACCARA
Banc de Caractérisation d'Assemblages de Réacteurs Avancés
Water
CEA Cadarache building 728
David GUENADOU, CEA Cadarache 13108 Saint Paul lez Durance, reaserch-engineer, +33 4 42 25 47 64, david.guenadou@cea.fr

STATUS OF THE FACILITY
Start of operation (date):

Ready for operation
2015

MAIN RESEARCH FIELD(S)

- Zero power facility for V&V and licensing purposes
- Design Basis Accidents (DBA) and Design Extended Conditions (DEC)
- Thermal-hydraulics
- Coolant chemistry
- Materials
- Systems and components
- Instrumentation & ISI&R

TECHNICAL DESCRIPTION

Description of the facility

The BACCARA facility is dedicated to the study of the fast neutron reactor fuel assemblies. The power of the pump is 115 kW. It can feed the experimental channel at a maximal flow rate of 250 m³/h. The water is deionized and can reach a temperature of 110°C and a pressure of 1.5 MPa. All those parameters are automatically controlled.

Vibrations measurement or cavitation observation can be carried on with the windows located along the test section. The water chemistry (pH, boron...) is controlled by injection of the required products.

Acceptance of radioactive material

No

Scheme/diagram

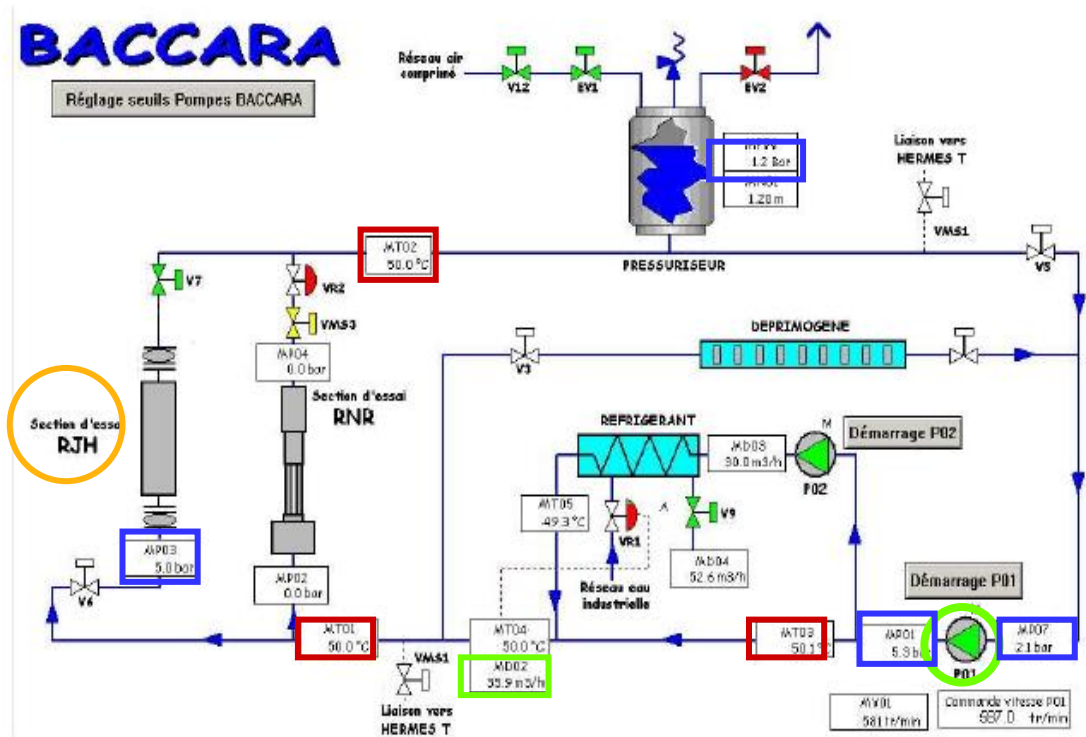


FIG. 1. Scheme of the BACCARA facility

3D drawing/photo

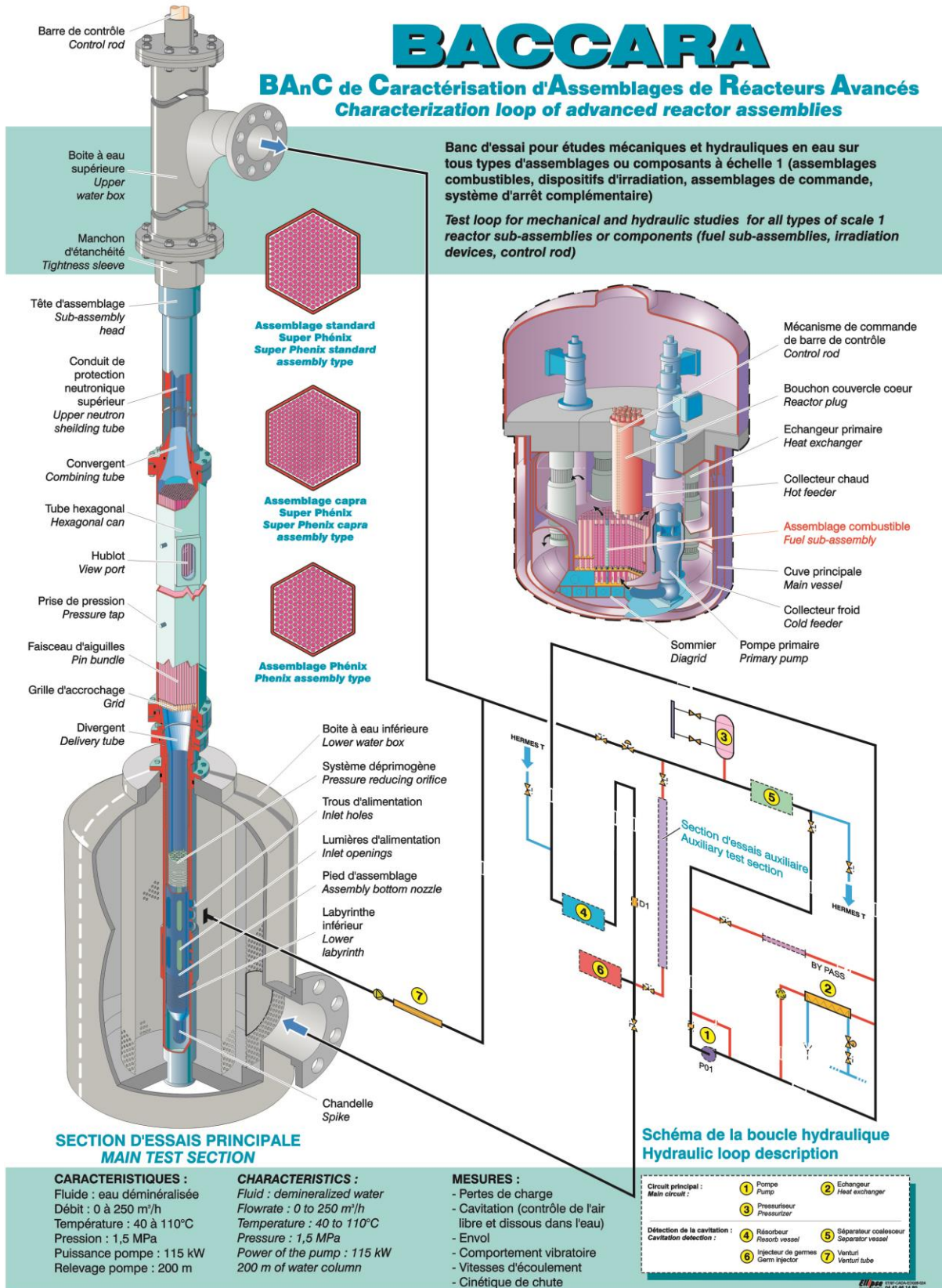


FIG. 1. Schematic view of the BACCARA facility

Parameters table

Coolant inventory	
Power	115 kW
Test sections	
TS #1	<u>Characteristic dimensions</u> 3 m long
	<u>Static/dynamic experiment</u> Dynamic experiment
	<u>Temperature range in the test section (ΔT)</u> 20-110°C
	<u>Operating pressure and design pressure</u> 15 bar
	<u>Flow range (mass, velocity, etc.)</u> <250 m ³ /h
Coolant chemistry measurement and control (active or not, measured parameters)	Water chemical quality is controlled. Flow, temperature, pressure drop are measured. Locally velocity can be determined through windows by laser techniques.
Instrumentation	

COMPLETED EXPERIMENTAL CAMPAIGNS: MAIN RESULTS AND ACHIEVEMENTS

PLANNED EXPERIMENTS (including time schedule)

TRAINING ACTIVITIES

REFERENCES (*specification of availability and language*)