Profile SFR-74

Servo-hydraulic mechanical testing facilities

USA

GENERAL INFORMATION

NAME OF THE FACILITY	Servo-hydraulic mechanical testing facilities
ACRONYM	n.a.
COOLANT(S) OF THE FACILITY	n.a.
LOCATION (address):	Oak Ridge National Laboratory (ORNL)
OPERATOR	Mechanical Properties and Mechanics Group, Materials Science and Technology Division
CONTACT PERSON (name, address, institute, function, telephone, email):	Donald Erdman, One Bethel Valley Rd, Oak Ridge, TN37831-6091 ORNL, 865-576-4069, erdmanl@ornl.gov

STATUS OF THE FACILITY	Available for a wide range mechanical testing including tensile, compression, bending, torsion high/low cycle fatigue, creep fatigue, auto-creep, high strain rate testing, etc. at different temperatures and under vacuum or inert environment
Start of operation (date):	n.a.

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

Servo-hydraulic mechanical testing facilities belong to the Mechanical Properties and Mechanics Group (MP&M) in Materials Science and Technology Division, ORNL, which performs characterizations on the material mechanical properties for both structural and functional applications. The facilities are available for a wide range mechanical testing at different temperatures and under vacuum or inert environments. The group's research programs are sponsored by the U. S. Department of Energy (DOE), DARPA, NASA, and

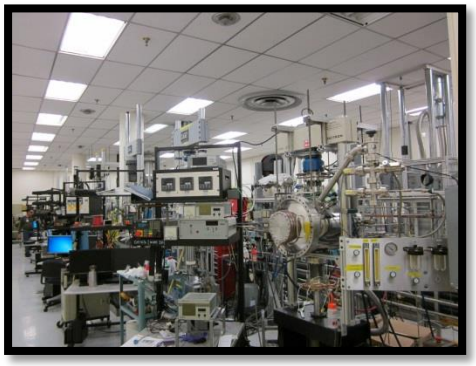
DOD, as well as cooperative research with industrial companies and non-profit industrial associations.

Acceptance of radioactive material
No

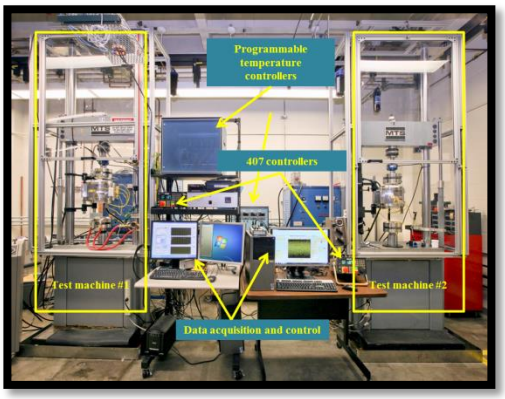
Scheme/diagram
n.a.

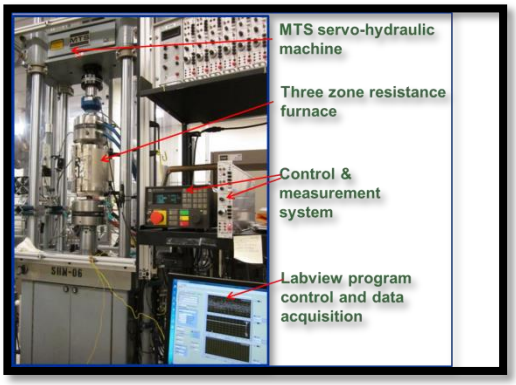
3D drawing/photo

Servo-hydraulic machines



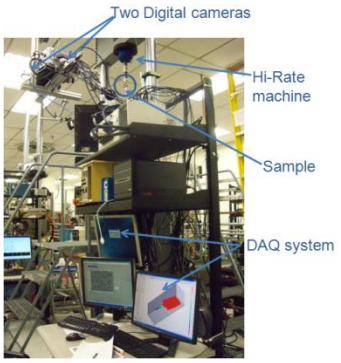
Thermal ratcheting and creep fatigue testing capabilities





Axial-Torsional test machines

High rate servo-hydraulic machine with Digital Imaging



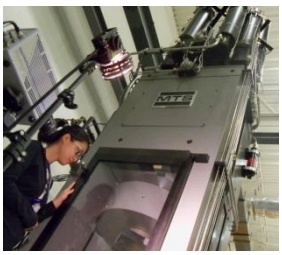


FIG. 1. Views of the Servo-hydraulic mechanical testing facilities

COMPLETED EXPERIMENTAL CAMPAIGNS: MAIN RESULTS AND ACHIEVEMENTS

PLANNED EXPERIMENTS (including time schedule)

TRAINING ACTIVITIES

n.a. (operated by trained technical staff at ORNL)

REFERENCES (*specification of availability and language*)