

# Testing Facilities

## at Horn Rapids Road

AREVA's Product Development Test Facility (PDTF), a 4,400 square foot facility located at its nuclear fuel manufacturing facility in Richland, WA, offers a full-spectrum of testing capabilities to the global nuclear industry. Encompassed in one location, our highly flexible and customizable facility has allowed us to provide services for a wide variety of U.S. and international customers.

With a commitment to advancing safety and reliability of nuclear fuel and fuel-related components in the nuclear industry, our expertise in methodology and evaluation programs extends more than 40 years of testing success and compliance with the U.S. Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) standards and regulations.



### Hydraulic

- Full Scale and Partial Scale
- Pressure Loss Coefficients
- Thermal Mixing and Flow Development
- Liftoff (PWR)
- Fretting

### Mechanical

- Full Scale Seismic Including Modal Testing
- Component Tensile, Compressive and Cyclic

## Areas of Expertise

We have a wide range of hydraulic and mechanical testing experience with boiling water reactor (BWR) and pressurized water reactor (PWR) fuel designs as well as new and emerging fuel design technologies such as

small modular reactors (SMR) and traveling wave reactors (TWR). We have partnered with and provided testing services to a wide range of customers including utilities, national laboratories and universities.

**4,400**  
square foot facility

**40+** years  
of testing success

# Hydraulic Testing Facilities

## Portable Hydraulic Test Facility

The Portable Hydraulic Test Facility (PHTF) incorporates a closed recirculating loop designed to measure the hydraulic characteristics of full scale nuclear fuel assemblies. This loop is rated for 200 psia and 300°F with volumetric flow rates up to 1850 gpm.

## Fuel Cooling Test Facility

The Fuel Cooling Test Facility (FCTF) is a flexible and reconfigurable system, capable of running at either low pressure, high-temperature for loss-of-coolant accident (LOCA) Emergency Core Cooling System (ECCS) testing or heated bundle steady state testing for BWR and PWR reactor types.



## Mini-loop Facility

The Mini-loop facility performs partial scale hydraulic testing of fuel assembly components including spacer grids and tie plates. Testing of FUELGUARD® debris filters, air/water testing of spacer grids, and counter current flow limitation testing have all been performed in this customizable facility.

## Small Array Reflood Facility (SMART)

The SMART facility is similar to the FCTF but has a 6x6 array of heater rods allowing the configuration burst testing of rods to determine post LOCA behavior.

# Mechanical Testing Facilities



## Seismic Test Stand

This monolith enables testing on complete fuel bundle assemblies in the vertical position. Our seismic testing capabilities for fuel test assemblies and analysis procedures have been developed to meet the latest NRC requirements.

## Component Testing

The Material Testing System (MTS) is an advanced load frame that incorporates a closed-loop electrohydraulic control system. The electronics monitor the strain, force, and displacement imposed on the specimen with respect to pre-selected parameters.

## AREVA Inc.

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