Cortest HPHT Recirculating Flow Loop Systems are typically used to test materials in high purity, supercritical water environments. The complete system includes a flow loop with pumping system, preheaters, heat exchangers, filters, thermocouples, and dissolved oxygen, dissolved hydrogen, pH, and conductivity probes and instruments. The flow loop feeds conditioned water to the autoclave and CERT/SSRT load frame. Tensile tests, slow strain rate, corrosion fatigue, and crack growth studies are performed using Cortest’s proprietary pull-through autoclave. Control of the flow loop, autoclave, load frame, and crack growth measurements are integrated into a single computer and control module.

CATEGORIES: NUCLEAR | RESEARCH

**SYSTEM FEATURES**
- Materials of Construction: 316 S.S. and Inconel 625
- Pressures Up to 35 MPa (5,076 PSI)
- Temperatures Up to 600°C (1,112°F)
- Recirculating Flow Rates Up to 150 mL/min
- 7.5-Liter Glass Water Column with Gas Sparging Tube
- Demineralizers and In-Line Filters to Ensure High Purity Flow
- Heat Exchangers for Rapid Cooling and Heating
- CERT/SSRT Load Frame
- HPHT Pull-Through Autoclave

**CONTROLS**
- Cortest Proprietary System Control
- Test Loop Control Enclosure with the Following Displays
  - Autoclave Return and High Pressure Pump Pressure Display
  - Autoclave Supply/Return and Heat Exchanger Temperature Display
- Preheater Temperature Controls with High-Limit Set Points
- Over Temperature and Variable Pressure Safety and Alarms
- Default Data Acquisition System Records the Following Data
  - All Test Loop Sensors
  - Test Loop Thermocouples
  - Test Loop Pressure Transducers
  - Test Loop Flow Rate
  - Test Duration

**TYPICAL APPLICATIONS**
- Supercritical Steam
- Nuclear Research
- Crack Growth Studies (DCPD)
- High Temperature, High Pressure Stress Corrosion Cracking