

Demonstration and Testing Facilities Can Support Confirmatory Research on Advanced Plant I&C System Performance

- ORNL has unique facilities and baseline capabilities
 - Californium User Facility (radiation)
 - Environmental Effects Lab (temperature, humidity, vibration, EMI/RFI, surge)
 - I&C testbed (software-based system evaluation and hardware in the loop testing)
 - Modeling and simulation environment (Simulink, ACSL, Scicos/Scilab, Modelica, Maple, APROS)
 - Analog and digital I/O and signal processing
 - Control system implementation software (Matlab)
 - Wireless System Laboratory (communication system performance, interference, security)
 - Reactor Technology Laboratory (flow loop testing, measurement system evaluation)
- ORNL facilities have been employed to support I&C research for NRC and other sponsors
 - Environmental Effects Laboratory was used for environmental compatibility testing of the Experimental Digital Safety Channel under the NRC I&C Qualification Project
 - Wireless System Laboratory provides test capabilities and simulation tools to support the NRC Wireless System Project