Automated Software Test Equipment Datalogger

A Need for Innovation

Recognizing the need for innovative approaches to reduce risk, improve product quality, and contribute to project cost savings and schedule adherence, BWXT Nuclear Energy Canada Inc. (BWXT) has developed a powerful automated testing, logging and analysis tool that can play a key role in any I&C system development project.

A Powerful Tool

BWXT's Automated Software Test Equipment and datalogger (ASTE/d) is a transportable, multi-purpose test and development tool designed to support rigorous formal verification and validation of I&C systems. ASTE/d's flexible architecture supports a variety of useful functions to benefit each phase of the development life cycle.

Perform Low-Cost, High Coverage Testing

Exhaustive test coverage provides the best chance of detecting latent, potentially catastrophic defects; however, the vast number of test cases and field I/O often renders manual testing infeasible and nearly impossible to execute repeatedly without human error.

High-speed testing using ASTE/d's automated scripted testing function reduces test execution time constraints, affording the ability to execute the large set of test cases needed to achieve comprehensive test coverage.

View Details of Legacy System Operation

When upgrading legacy I&C systems, the detailed information needed to define requirements for the new I&C system may not be available. Often a complete and accurate picture of the interaction between the legacy I&C system and the field equipment can only be gleaned by analyzing the behaviour of the legacy system's field I/O during online operation. ASTE/d is an invaluable tool for supporting such an investigation.
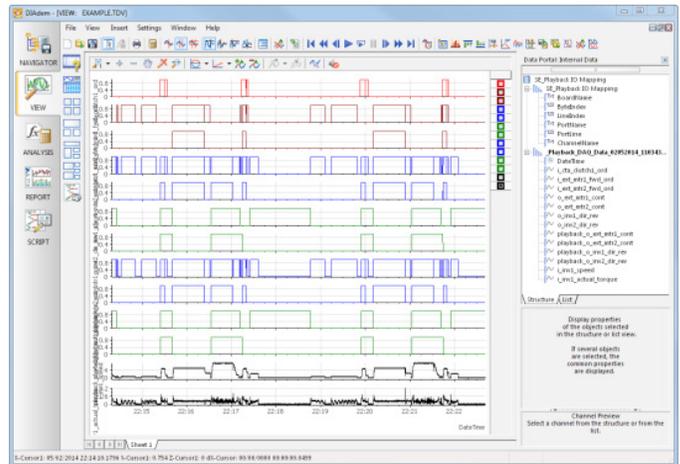
BWXT™
Nuclear Energy Canada Inc.

ASTE/d's field data logging function supports high-frequency sampling and recording of a large volume of analog and digital field I/O signals. Using this function, the field I/O signals of an in-service I&C system can be connected to ASTE/d, and data logging can proceed non-intrusively and unattended during normal system operation. Engineers can leverage an extensive suite of offline examination and analysis tools developed by BWXT to evaluate the vast amount of recorded data.

Preview System Operation Before Installation

Any validation that can be performed prior to installation builds confidence in a new system's performance as a fully functional replacement for the legacy system, and reduces the risk of finding errors post installation.

By re-applying data logs previously recorded using the field data logging function, ASTE/d's logged data playback function provides a full-scale dynamic field simulation to support validation activities, at a fraction of the cost of developing a conventional software-in-the-loop simulation.

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BWXT Nuclear Energy Canada Inc. is a subsidiary of BWXT Canada Ltd.(BWXT Canada), headquartered in Cambridge, Ontario. BWXT Canada has over 60 years of expertise and experience in the design, manufacturing, commissioning and service of nuclear power generation equipment. This includes CANDU and Pressurized Water Reactor steam generators, nuclear fuel and fuel components, critical plant components, parts and related plant services. Headquartered in Cambridge, Ontario, BWXT Canada has approximately 850 employees at locations in Cambridge, Peterborough, Toronto and Arnprior, Ontario. BWXT Canada is a subsidiary of BWX Technologies, Inc. (NYSE:BWXT).

BWXT is a leading supplier of nuclear components and fuel to the U.S. government; provides technical, management and site services to support governments in the operation of complex facilities and environmental remediation activities; and supplies precision manufactured components, fuel and services for the commercial nuclear power industry. Learn more at www.bwxt.com.

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