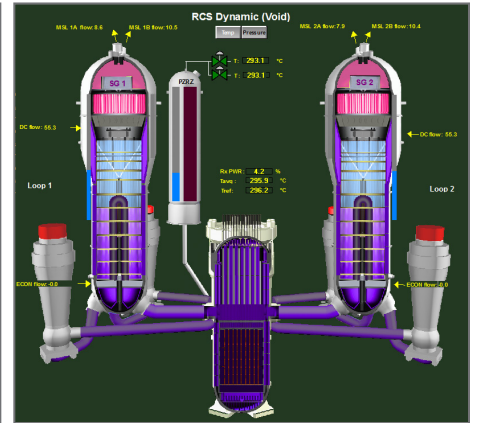
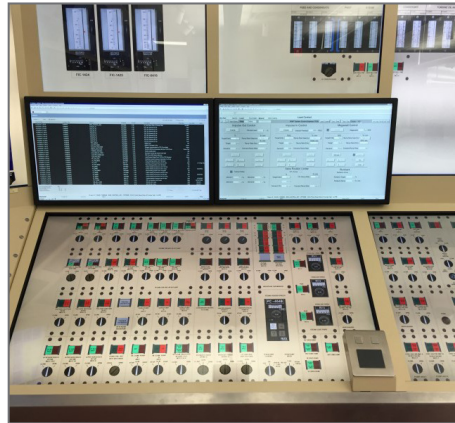


Simulation Products & Services

Simulation & Graphical Modeling Solutions



Nuclear Power Products and Services



WSC, a legacy brand of Curtiss-Wright's Simulation Group, headquartered in Frederick, MD, is a global simulation and services company. Acquired by Curtiss-Wright in 2024, WSC is recognized for the quality and efficiency of their products and flexible team-oriented approach to serving its customers.

The primary focus of Curtiss-Wright's Simulation Group is the development and deployment of advanced 3KEYSOFTWARE® simulation technology, which consists of the 3KEYMASTER simulation platform and a suite of unified graphical modeling tools. Although operator training simulators—both new simulators and the modernization or refurbishment of existing simulators—are our main revenue source, we have seen a significant growth in Simulation Assisted Engineering (SAE), based on the strengths of our “engineering-grade” simulation modeling technology. Leading power companies are the external driver for SAE, and are embedding our technology in their engineering processes to address the challenges of improving up-front quality, and reducing complex engineering development and commissioning cycles.

Curtiss-Wright is committed to continually improving the capabilities of our technology and widening the applicability of our simulation technology to complex systems. To further this goal, we have a vigorous market-focused R&D program and maintain a multi-disciplinary team of nuclear, mechanical, chemical, and electrical engineers, physicists and computer scientists, many of whom have advanced degrees, with a median experience of over 20 years in simulation and plant systems.

Through our focus on advancing simulation technology and our strong commitment to customer service, Curtiss-Wright is ready to serve you for your complete simulation needs and to address your most difficult simulation challenges.

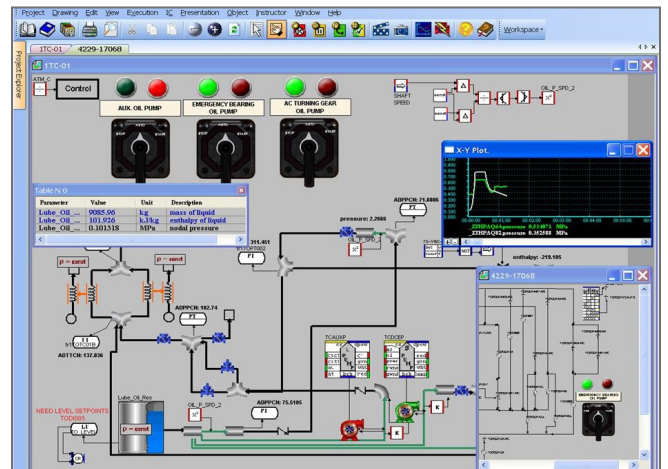
Information on Simulation Products, Solutions, and Services

The following pages of this brochure provide a brief overview of various Curtiss-Wright's Simulation Group products, solutions, and services. Additional information can be found in our product sheets or solution brochures, or visit us at www.3keysoft.com.

3KEYMASTER Simulation Platform

Our Simulation Group's comprehensive development, execution, test, integration, and deployment environment in a single, user friendly package, accessed through our Graphical Engineering Station (GES). 3KEYMASTER is used to develop custom models for all plant processes, re-host or hookup third-party code or systems, interface with I/O, create new custom modeling tools, and run the simulation in real-time or non-real-time modes.

The GES 3KEYMASTER is a full-featured GUI-based application. In its most versatile mode, engineers have access to all its features, and use it to configure and dynamically test models without interruption of the simulation.

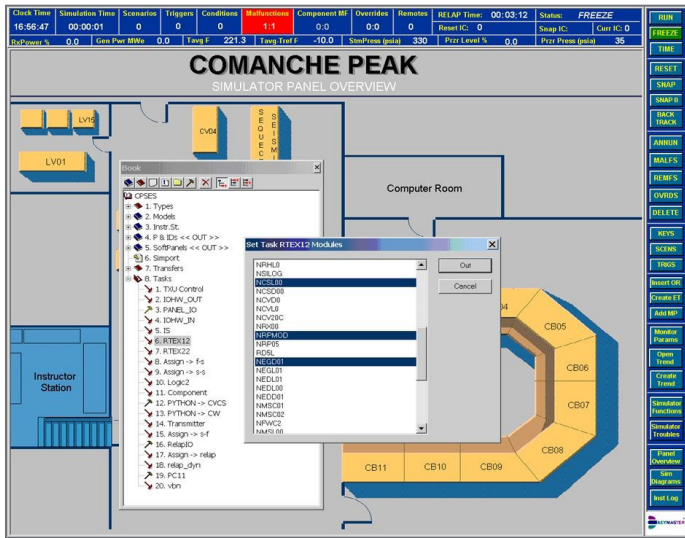


Simulation Products & Services

Simulation & Graphical Modeling Solutions

3KEYMASTER Instructor Station (I/S)

The 3KEYMASTER Instructor Station is our powerful role-based configuration of the 3KEYMASTER Graphical Engineering Station (GES). The I/S is for use by an instructor to perform simulation control, monitoring, and data visualization activities. Modeling functions, which are normally available to developers, are restricted on the I/S. Also available to the instructor are two other tools to simplify their tasks: Scenario Based Testing (SBT) Wizard and our Windows-based Tablet (3KEYTAB platform for use as a portable instructor station with a customizable configuration. 3KEYTAB can be used with Full Scope, GlassTop, or Classroom Simulators.



3KEYMASTER Modeling Tools

Our comprehensive suite of high-fidelity, efficient, object-oriented graphical modeling tools, complete with numerical solution methods and tightly integrated with the environment.

- FlowBase Thermal-Hydraulics Network Tool
- Electrical Network Tool
- Logic and Control Tool
- Relay Tool
- Component Library

3KEYRELAP5-RT™ Thermal-Hydraulic and Neutronic Codes

Our Simulation Group's adaptation of Idaho National Laboratory's (INL) RELAP5-3D thermal-hydraulic code and NESTLE neutronic code to run under the 3KEYMASTER environment, in real-time mode with graphical visualization. Both of these codes provide best-estimate models for simulating nuclear reactors and primary systems.

3KEYMASTER also provides flexibility to integrate other best-estimate codes such as MARS T-H and S3 neutronics into the simulation.



3KEYMASTER Nuclear Plant Solutions

Includes details on Curtiss-Wright nuclear simulation products and services for providing plant-specific control room simulators, including full scope hard panel simulators, part-task simulators, and full scale touch screen control room panel replica simulators.

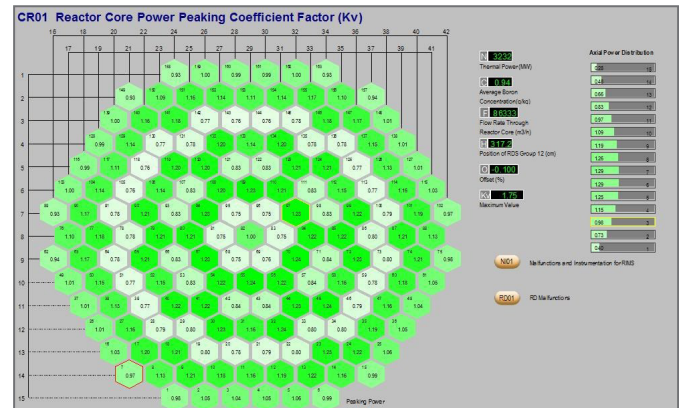


3KEYMASTER Generic Pressurized Water Reactor Simulator

Our Generic Pressurized Water Reactor (GPWR) is a 1400 MW real-time, full scope, high fidelity generic nuclear power plant simulator. The GPWR simulator is the ideal platform to provide training on nuclear power plant fundamentals, operations, transients, and exposure to the many PWR systems.

3KEYMASTER Generic VVER Simulator

Our nuclear power plant training capabilities also include our Generic VVER, Gen.3+ real-time, full scope, high fidelity simulator based on the VVER 1200 MW design with a modern DCS style HMI.



3KEYSAA™ Severe Accident Analysis

3KEYSAA is Curtiss-Wright's adaptation of severe accident modeling codes such as MELCOR and MAAP to run in the 3KEYMASTER environment integrated with RELAP5, in real-time mode with graphical visualization.

Simulation Products & Services

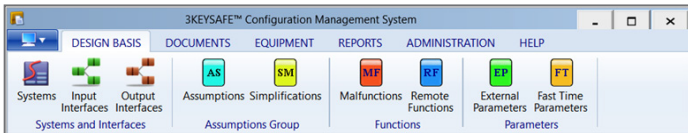
Simulation & Graphical Modeling Solutions

3KEYMASTER Distributed Control System Simulation (3KEYDCS)

Curtiss-Wright provides a full range of DCS solutions that include integration of virtual DCS systems, enhanced emulation, stimulation or a combination thereof. This brochure describes tradeoffs associated with these approaches to meet specific customer needs. We support all DCS implementation approaches to provide the best and most cost-effective solution for each customer.

3KEYSAFE™ Configuration Management System

3KEYSAFE is a comprehensive Configuration Management System (CMS) platform. It leverages powerful visual features and integration with 3KEYMASTER, together with the strengths of commercial RDBMS Systems. 3KEYSAFE ω is also now available for use over the Web.



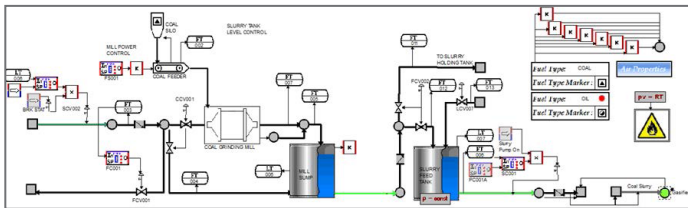
3KEYMASTER Applications for Fossil and Combined/Simple Cycle Power Plants

We have delivered over 75 Fossil-fueled (coal/oil) and Combined/Simple Cycle plant-specific simulators. The brochure includes details on our Fuel and Combustion Modeling Tool specifically designed for Fossil and CCGT simulation.



3KEYMASTER Application for Process

The 3KEYMASTER modeling tools have been extended beyond power applications to process applications allowing simulation of a variety of chemical processes. Our fluid systems modeling tools, chemical kinetics, DCS/PLC solutions, and component modeling library are used to model process plants.

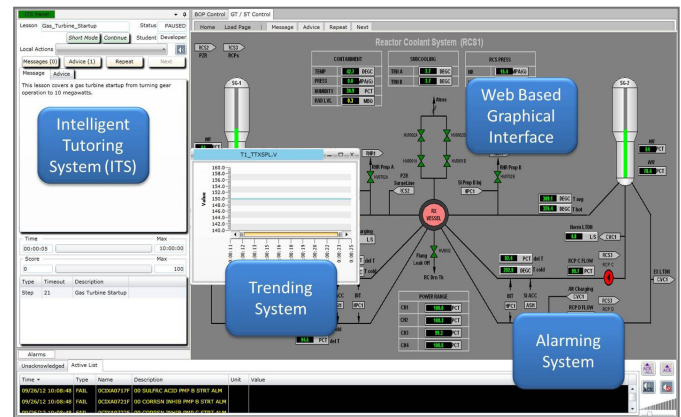


3KEYSAE™ Simulation Assisted Engineering

SAE incorporates simulation as a core engineering practice, enabling engineers to efficiently answer questions about the dynamic behavior of complex systems, components, and DCS to optimize their designs. Problems can be identified, solutions tested and incorporated earlier in the development cycle, avoiding costly and time-consuming design revisions during production, construction, or commissioning.

3KEYSTUDENT™ Learning Solutions

Full scope simulator training, made available via the web or in the classroom on a student's PC. 3KEYITS, our Intelligent Tutoring System, provides lesson-oriented, self-paced, instructorless training. 3KEYCLASS provides the classroom instructor supervision and control of multiple student PC simulators from a single GUI.



3KEYTOUCH™ Glass Top Simulator

3KEYTOUCH brings touch screens and soft-panels together, creating lifelike control room panels providing customers an alternative platform to off-load numerous tasks performed on their full scope hard panel simulator.



Simulation Products & Services

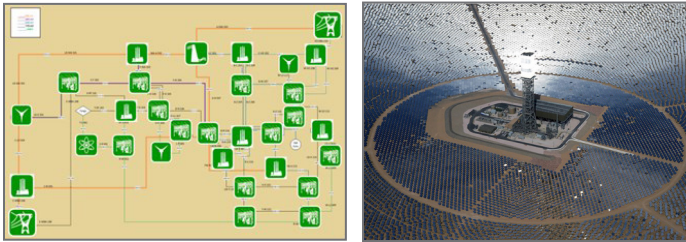
Simulation & Graphical Modeling Solutions

3KEYCATALOG™

3KEYCATALOG provides an effective tool for cataloging and archiving raw source information on equipment, managing processes for its verification and transfer to the simulation models, and making visible simulation data use.

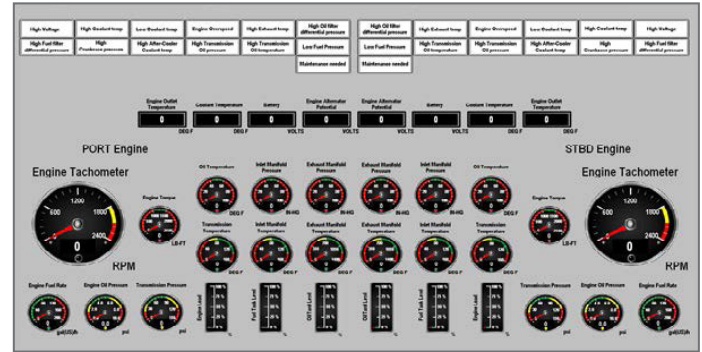
3KEYMASTER Grid & Renewable Energy Simulators

The impact of solar and wind energy is most apparent in grid management and control, making grid simulation an essential element in educating system and plant operators on frequency/voltage control and stability.



3KEYMASTER Marine System Solution

3KEYMASTER is used to develop a variety of Ship Training simulators powered by Diesel, Gas Turbine or Steam Turbine Propulsion. Our powerful modeling tools are used to develop high fidelity models from Propulsion Systems to Shipboard Hull & Machinery Systems.



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