

Algorithmic Simulation



Your Requirements:

- Train control room operators for efficient response to normal and abnormal plant operation
- Verify control logic prior to implementation in the “live” control system
- Develop and validate best practice operating procedures
- Study plant responses to basic “what-if” operating scenarios
- Implement within a condensed schedule to meet immediate training needs

The Best Scenario:

Scenario™ algorithmic simulation uses models created with Ovation™ control system algorithms designed specifically for the power generation industry. Your plant’s actual Ovation control logic, graphics, and database are used as the foundation of this simulation solution. Scenario’s algorithmic simulation can be readily available to train operators on information acquisition and diagnostic skills. In addition, you will gain the ability to demonstrate existing operating procedures, validate new procedures, and show the affect of equipment malfunctions on your unit’s operating processes.

Algorithmic models are created with powerful, fully integrated sets of advanced software programs used to create and maintain expert control system strategies, process graphics, point records, I/O placement, and report generators. The Scenario algorithmic simulation model builder is a user-friendly, intuitive software package that automatically generates executable code for download to the Scenario controllers.

Algorithmic simulation models are developed to present a realistic indication of plant activities during steady-state operation; and during periods of dynamic response to equipment operation, control actions, and malfunctions. Scenario algorithmic models simulate all plant operating modes including startup (checks/hot/cold), shutdown, load control, normal operation, and under process upset conditions.

Scenario algorithmic simulation uses an efficient modular design that provides the flexibility to simulate specific plant equipment or individual subsystems. Scenario capabilities can be easily expanded or updated as your needs or the plant configuration change.

Benefits

- Provides realistic process simulation based on your plant’s actual control logic, graphics, and database
- Prepares utilities to quickly meet immediate training needs when compared to higher fidelity solutions
- Tests and validates new or changed control strategies prior to live operation
- Fine-tunes and verifies control system design prior to plant startup to minimize commissioning time
- Assists in development of best-practice operating procedures for efficient unit operation
- Transfers knowledge from experienced staff to new employees
- Enhances operator confidence for quick response to dynamic operating conditions

(Continued)

Scenario Simulation Solutions

Function	Tie-back	Algorithmic	First-principle
Models			
Built from Ovation control system algorithms developed specifically for the power generation industry	X	X	
Built using high-fidelity, thermodynamic, first-principle mathematical models		X	X
Functionality			
Control logic testing and verification	X	X	X
Operator training and qualification	X (limited)	X	X
Procedure development and validation	X (limited)	X	X
Engineering test bed for normal and abnormal operations		X	X
Engineering analysis for "what-if" scenarios		X	X
Full Instructor functionality with trainee evaluation tools		X	X

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