

# Tie-back Simulation

### Your Requirements:

- *Basic operator training on specific plant processes*
- *Gain familiarity on standard operator and engineer functions*
- *Test and verify control system strategies*

### The Best Solution:

Ovation™ tie-back simulation generically models your plant using control system algorithms designed specifically for the power generation industry. Tie-back simulation models key processes with simplistic accuracy to allow for fundamental power plant operator training and familiarization with workstation functions and control system navigation.

A subset of the process inputs and outputs from the control system used in factory testing are connected to the Ovation tie-back logic. Scenario simulation models drive the associated I/O and the control system's outputs to become the simulation model inputs and thereby closing the control loops. These inputs are fed to virtual controllers to create the tie-back simulation environment for training and control logic testing.



Simulation detail can vary depending upon the type and complexity of the systems that are modeled. Tie-back simulation can be used to verify analog controls and graphics, provide feedback on equipment such as motors, and simulate digital point feedback including on/off or open/closed status. Scenario tie-back typically includes the modulating and binary control loops as part of the standard simulation process.

### Benefits

- Presents cost-saving alternative to higher-fidelity simulation
- Provides real-time basic operator training prior to plant startup
- Includes existing DCS graphics and control logic
- Uses simulated software logic that interacts with your control strategies
- Employs models based on algorithms designed specifically for the power generation industry
- Verifies logic prior to downloading to the "live" control system

(Continued)

## Ovation Simulation Solutions

Function	Tie-back	High-fidelity
<b>Models</b>		
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
<b>Functionality</b>		
Control logic testing and verification	X	X
Operator training and qualification	X (limited)	X
Procedure development and validation	X (limited)	X
Engineering test bed for normal and abnormal operations		X
Engineering analysis for "what-if" scenarios		X
Full Instructor functionality with trainee evaluation tools		X

\* High-fidelity simulation projects implemented by Emerson will use Ovation control system algorithms. Models provided by a third-party will use that vendor's modeling tools.

The contents of this publication are presented for informational purposes only, and while every effort is made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our software licensing agreement, and terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our product at any time without notice.

© 2016 Emerson Process Management Power & Water Solutions, Inc.

The Emerson logo is a trademark and service mark of Emerson Electric Co. Ovation, Scenario, SmartProcess, SureService, PlantWeb, and AMS Suite are marks of Emerson Process Management. All other marks are property of their respective owners.

**Emerson Process Management  
Power & Water Solutions, Inc.**

200 Beta Drive  
Pittsburgh, PA 15238  
USA

Phone: 1-412-963-4000

Fax: 1-412-963-4447

[www.EmersonProcess-PowerWater.com](http://www.EmersonProcess-PowerWater.com)