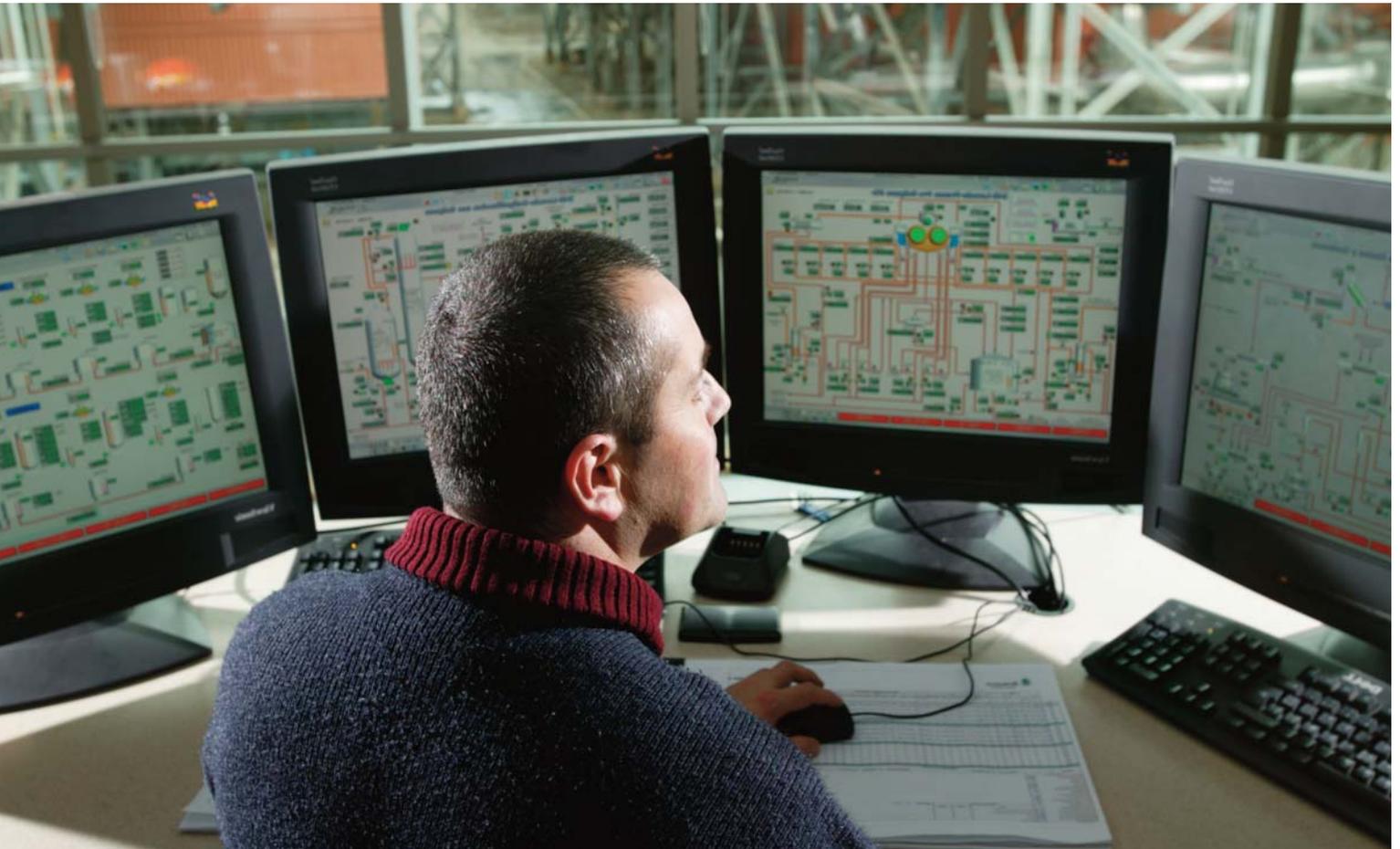


# Emerson Complete Operator Training Solutions

Reduce Risk and Improve Your Plant's Performance





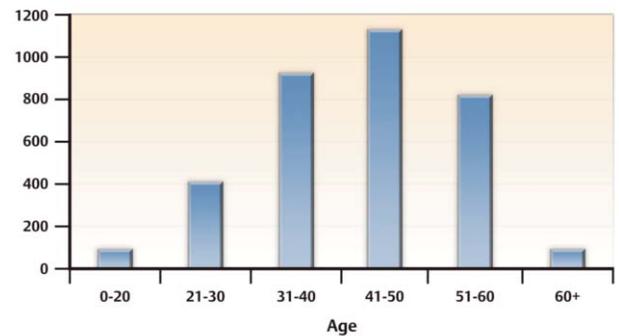
# Developed from an Educational Perspective Designed to Meet Your Needs

*Your operational concerns of an aging workforce, reducing risk, and improving performance are valid. You need quality operator training at each level that meets your budget, scheduling and production needs. Ideally, you would have web-based eLearning, traditional classroom as well as dynamic simulation-based operator training.*

Emerson's unique approach to Operator Training Solutions (OTS) focuses on a complete training program developed from an educational perspective vs. the conventional simulation-only approach.

We can develop your operations staff, from novice to advanced levels, without the complexity and cost associated with typical simulation systems.

The training difference is built in the DeltaV™ system's centric monitoring and scoring which means your staff doesn't need to learn additional interfaces. A basic



**Sample plant workforce demographic illustrates a large percentage of experienced operators will be eligible to retire in five years.**

Understanding of the DeltaV system is all that is required to maintain and build enhanced functionality.

## **Capture the knowledge of your aging workforce**

Our customers say their number one concern is how to pass the experience of their aging workforce on to younger workers. Emerson's DeltaV Operator Training Solution provides an ideal platform for sharing knowledge gained from years of experience. By combining customized courseware, dynamic simulation, scenarios and the tools provided with DeltaV OTS, you enable your new operators to gain experience at an accelerated rate.



*Upskill your workforce to fully utilize today's digital plant technologies.*

# onal Perspective— ds

## Reduce your risk

Plant safety is paramount. Operator error is the leading cause of production cost losses per incident. Emerson's Operator Training Solutions will lower your operational risk by accelerating your workforce's learning experience with realistic, hands-on training, in a safe, controlled environment without risk to plant personnel or operations.

## Improve your performance

Emerson's Operator Training Solutions provide an effective learning environment that increases profits through operational excellence. This suite of tools assists in making your operations staff more efficient by reducing start-up time, down time, off-spec product and increasing your facility's energy efficiency. A well-trained operations workforce will impact each of these areas.



## Case Study

A major refinery in Texas converted key process areas from pneumatic controls to a state-of-the-art Emerson PlantWeb architecture featuring the DeltaV digital automation system. Key to the success was a smooth transition that prepared employees with the knowledge of how to get the greatest performance and cost benefits from their



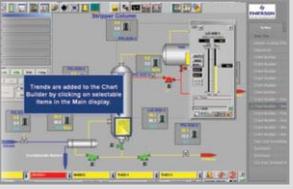
new system. Our Educational Services experts delivered an engineered, hands-on, process-specific training program. Simulations exposed operators to what they would experience in their actual control room and allowed them to practice and respond to process upsets. This enabled them to gain the confidence and experience in an off-line, no-risk environment prior to actual plant operation.

The refinery reported that the training program exceeded all of their expectations and was crucial to improvement in operational readiness and results.

The simulation-based training program will continue at this refinery as an ongoing tool to train future operators and to provide refresher training and practice for current operators in handling potential incidents.



# Scaled Operating Training Solutions From Traditional In-class to

Solution	Course#	Description	Delivery
<b>eLearning</b> 	e7012	DeltaV Operator Interface for Continuous Control	On-line
	e7014	DeltaV Operator Interface for Batch	
<b>Traditional Classroom</b> 	7012	DeltaV Operator Interface for Continuous Control	In-Class/Virtually
	7014	DeltaV Operator Interface for Batch	In-Class/Virtually
<b>DeltaV Custom Operator Training</b> 	7012C	DeltaV Custom Operator Training for Continuous Control	Customized curriculum package designed to be instructor led.
	7014C	DeltaV Custom Operator Training for Batch	
	<b>DeltaV OTS Express</b>		Single PC, Simulate Pro stand-alone, single operator station
	<b>Comprehensive DeltaV OTS</b>		Single to multiple PCs, with single or multiple operator stations. Can be identical to your control room.

# Solutions— Online and Virtual Training Options

Solution Offering	Learning Solution Advantages
<p>Interactive 12-hour on-line course with DeltaV screens including audio presentations, demonstrations, practice sessions, workshops, quizzes and a final examination.</p> <p>Interactive 16-hour on-line course with DeltaV screens including audio presentations, demonstrations, practice sessions, workshops, quizzes and a final examination.</p>	<ul style="list-style-type: none"> <li>■ Available 24 hours a day, 7 days a week</li> <li>■ Cost effective (no travel)</li> <li>■ Hands-on (learn-by-doing)</li> <li>■ Tell/Show</li> <li>■ Delivered through Learning Management System (LMS)</li> <li>■ Offers traceability (tracks student's comprehension)</li> </ul>
<p>Instructor-led 2 and 2-½ day courses using lectures and hands-on workshops to provide an in-depth overview on operating the DeltaV system.</p>	<ul style="list-style-type: none"> <li>■ Instructor led</li> <li>■ Hands-on (learn-by-doing)</li> <li>■ Workshop-based</li> </ul>
<p>Custom fixed price operator training package that includes:</p> <ul style="list-style-type: none"> <li>■ Curriculum</li> <li>■ Simple Simulation</li> <li>■ Skill Assessments</li> <li>■ Student and Instructor Guides</li> </ul>	<ul style="list-style-type: none"> <li>■ Complete operator training based on your process</li> <li>■ You own the curriculum and training package</li> <li>■ Can be used to train all plant personnel on DeltaV Operate as required</li> <li>■ Hands-on (learn-by-doing)</li> </ul>
<ul style="list-style-type: none"> <li>■ Complete, process-specific, dynamic simulation based training platform engineered to provide a rapidly deployable yet long-term training solution for your operations staff.</li> <li>■ Defined scope and fixed price that includes simulation sized into a single virtual controller.</li> </ul>	<ul style="list-style-type: none"> <li>■ Operator training based on your process</li> <li>■ Simulations used in workshops</li> <li>■ Hands-on (learn-by-doing)</li> <li>■ Grading, scoring and reporting on simple scenarios</li> <li>■ Dynamic simulation targeted to critical or priority processes that are selected, simulated, and used for training</li> </ul>
<p>Complete, process specific, dynamic simulation based training platform engineered to provide a rapidly deployable yet long-term training solution for your operations staff.</p>	<ul style="list-style-type: none"> <li>■ An instructor station that is based in DeltaV Operate</li> <li>■ DeltaV training simulators include both hardware and software that operate in your personalized configuration in a simulated environment</li> <li>■ Student scoring and grading that includes realistic failure scenarios that record actual operator responses</li> </ul>



# Improve Operator Skill Levels Regardless of Your Training B

## eLearning, the first step to an up-skilled operator

Emerson's first tier of Operator Training Solutions, Course e7012 – DeltaV Operator Interface for Continuous Control and Course e7014 – DeltaV Operator Interface for Batch, provide cost-effective, high-quality DeltaV Operate training for your operations work force. This web-based training provides skill-based learning with an interactive hands-on method of delivery. eLearning is ideal if you have operations personnel with limited or no previous DeltaV experience and a need for affordable, readily accessible training.

## Traditional classroom training

With over 65 years of training experience, Emerson Educational Services remains committed to providing the best training to our customers, when and where they need it. Each year nearly 20,000 people attend courses at one of our regional training centers, or participate locally or at their plant, in classes tailored to their particular needs. Emerson offers two instructor-led classes specifically for operators:

- Course #7012 - DeltaV Operator Interface for Continuous Control
- Course# 7014 - DeltaV Operator Interface for Batch.

## DeltaV Custom Operator Training

Educational Services offers a world class, fixed-price Custom Operator Training package that effectively trains operations personnel on the proper use of your DeltaV process automation system. Professional educational services developers produce a formal training program built specific to your plant that includes:

### Curriculum

- Performance-based with objectives and reinforced workshops
- Designed for instructor led learning
- Customized courseware utilizing your actual DeltaV operate graphics

### Model Development

- Simulation using tie-back modeling based on your database
- Simple simulation allows students to run workshops

### Skill Assessments

- A final test to verify student skills

### Documentation

- Student Guides (provided in both electronic and print)
- Instructor Guide (provided in both electronic and print)
- Installation and User Guide.

## DeltaV OTS Express—

Affordable simulation-based operator training DeltaV OTS Express is a fixed-price, process-specific dynamic model learning environment designed to up-skill your operations workforce. Operators will experience what they see in their actual control room, enabling them to learn in a lifelike, non-intrusive environment. Operators will learn DeltaV system operating concepts, while learning their actual process. The Express training solution incorporates:

- Plant system configuration database and graphics identical to operating automation system
- 1 virtual controller of configuration
- Process-specific model
- Customized courseware with workshops
- Operate graphics
- Simple scenarios
- Random scenario generator
- Scenario scoring
- 8 hrs factory acceptance testing (FAT)
- 8 hrs system acceptance testing
- 8 hrs of onsite set-up
- 16 hrs of “Train-the-Trainer”
- 40 hrs follow-up services 6-12 months from delivery
- Student and instructor books
- Workstation w/ dual monitors
- DeltaV Simulate Pro
- DeltaV “native” process simulation software
- Five seats in course e7012 or e7014.

# udget

## Comprehensive training solutions

The DeltaV OTS team uses a suite of Emerson products and services to develop world-class training solutions. This unique approach focuses on a complete training program developed from an educational perspective instead of the conventional simulation-only training. The services and capabilities offered are:

- DeltaV Simulate with complete DeltaV functionality
- Process-specific courseware
- Process modeling services
- Third-party system integration
- Knowledge-based assessments
- Skill-based assessments
- DeltaV Operate-based operator scoring
- DeltaV Operate-based instructor graphics
- DeltaV Operate-initiated scenarios
- Process scenarios
- Operator performance reporting
- Long-term system support
- Database comparison for potential model updates
- Model maintenance
- Standard operating procedures incorporated into courseware
- Suite of assessment options including web-based solutions
- Flexible architectures to meet short- and long-term training needs and budgets.

Any OPC-compliant software can be used.

## Emerson is with you for the life of your automation system

Emerson DeltaV OTS is a long-term solution providing years of training for your operations work force without prohibitive costs. Our Guardian Support ensures your DeltaV hardware and Simulate software are maintained at the same revision level as your operating automation system. Emerson also provides local support for your DeltaV hardware, Simulate software and your entire DeltaV OTS. Whether you wish to have Emerson simply maintain the revision of your DeltaV Simulate software or maintain your process models, a local factory-trained Emerson representative is there to meet your needs.

## DeltaV SIS, no problem

Since DeltaV Simulate Version 10, full DeltaV SIS simulation is available. By combining the power of DeltaV OTS with your DeltaV SIS strategy, operators can learn to recognize, react to, and prevent your worst case scenarios.

## Achieve faster, smoother startups

You know the value of starting a unit on time or ahead of schedule. Operators can be trained and build experience before actual commissioning, enabling quicker time to full production. All features and functionality supported by the DeltaV system are possible without the need for DeltaV hardware in a DeltaV OTS environment.

## Improve change management

For operations that face ongoing process and production changes, operator training prior to implementation will improve operator acceptance, confidence, and expertise with the new operating conditions. Your DeltaV OTS can also serve as an engineering platform to develop new configuration, write and test batch recipes and perform logic checkout on new configurations.



## OSHA compliance for operator training

Periodic training and certification of all operators is mandated on hazardous processes per OSHA Article 29 CFR Part 1910.119. Training, retraining, and certifying can be a constant time and resource struggle. On-site simulation training provides an ideal environment for proficiency validation and operator certification.

For more information on DeltaV Operator Training Solutions contact your local Emerson Process Management sales office.



Visit [www.EmersonProcess.com/education](http://www.EmersonProcess.com/education) for information on all educational offerings and services.

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Form B-00027 /Printed in USA/5K AQ/ 09-11

