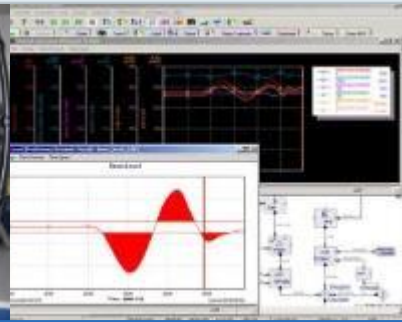




# Training Program Services

## TRAX Energy Solutions

**TRAX**  
Energy Solutions



# TRAX International

- Parent company founded in 1979
  - Headquartered in Las Vegas, NV
- Employee-owned company
  - Over 2,500 experienced employees
  - Multiple U.S. and international locations
- TRAX LLC, Energy Solutions
  - Energy market focus
  - Power generation, T&D, substations, renewable energy, oil and gas, chemical, industrial process



# TRAX Energy Solutions

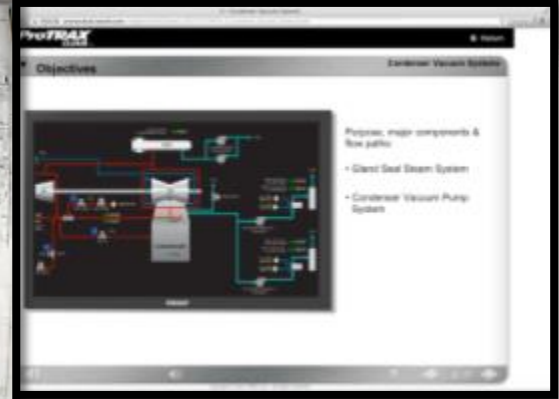
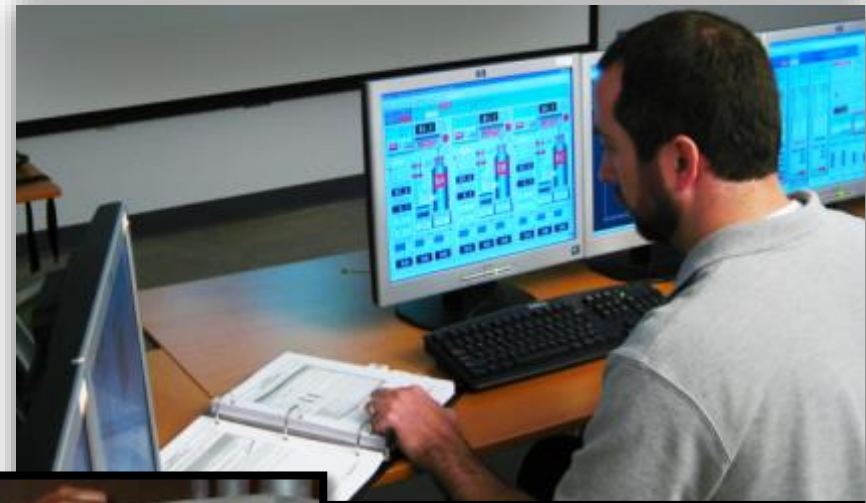
- 56,000 ft<sup>2</sup> facility total space in Lynchburg, VA
- Engineering, software dev., and management support staff
- Simulator laboratory
- Simulator training area
- Corporate and customer data center
- TRAX Asia
- International partners:
  - ITVANE, Korea
  - Technatom, Spain
  - STEAG, India



# TRAX Energy Solutions

## Product & Service Capabilities

- Modeling and simulation
- Engineering services
  - Engineering studies
  - Consulting services
  - Operation analysis
  - Controls development validation
- Multi-platform training
  - Operations and engineering
- Engineering support services
  - Lifecycle Services
  - Engineering Delivery Services





# TRAX Training Programs

TRAX provides individual or blended training program services that include the following components:

- Assessments of training needs
- Learning management system services
- Cloud-based online training program
- Customized training services
- Generic simulators
- Site-specific full-scope simulators
- Virtual group training



# TRAX Training Programs

## Markets Served

- Utilities - power generation, transmission & distribution
- Renewable energy
- Water & wastewater
- Oil and gas
- Chemical
- Pulp & paper
- Pharmaceutical
- University education
- US government
- DOD, DOE
- Manufacturing
- Commercial



# TRAX Learning Management System (LMS)

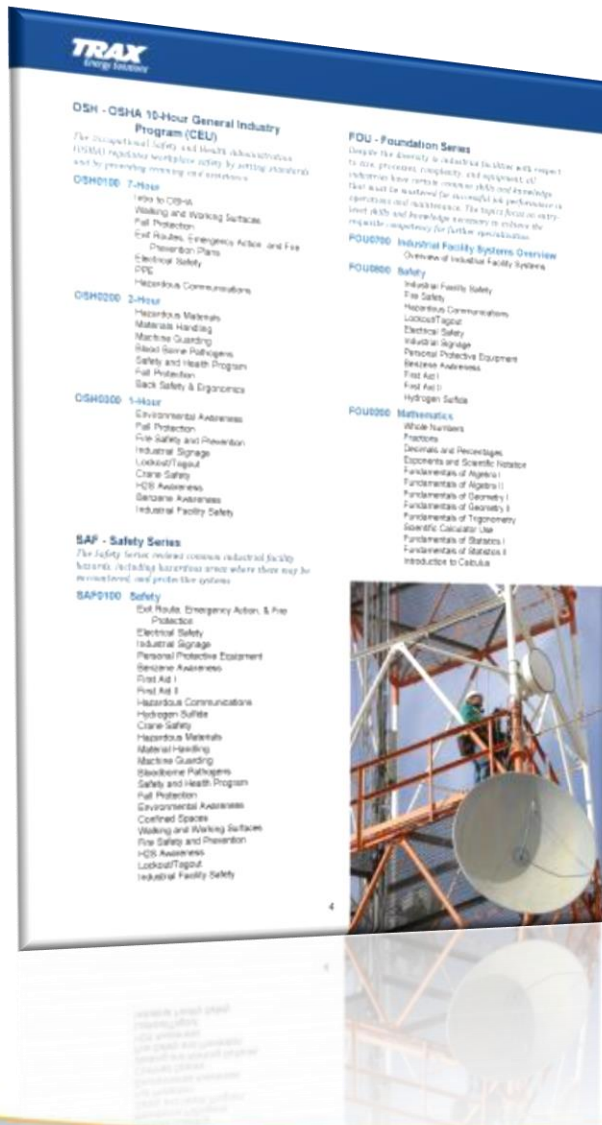
TRAX LMS service offers your team the ability to:

- Track and manage employees' training progress
- Customize training site with logo, colors, layout, and web domain
- Let users browse and subscribe to course through TRAX or your own course catalog
- Create learning plans
- Schedule and manage instructor-led training
- Allow introduction of the role of coach
- Track actions with audit trail
- **Customer enrollment rules**
- Add, delete, and update courses
- Build rules notifying users about events
- Use subscription codes to make enrollment quick and automatic



# Cloud-based Online Training

## TRAX Online Learning Training Catalog



- Over 400 industrial process lessons
- Lessons approximately 30 minutes
- Testing and documented results
- 24/7 available productivity
- Employment screening
- Eliminate travel cost
- Earn Continuing Education Unit(s) (CEUs)
- Assess training effectiveness
- Employee evaluation or development tool
- Customer branding available
- Combined cycle power plant simulation class
  - Operator training
  - Start-up, steady-state, and shutdown



# Combined Cycle On Line Training

## Plant Details

- 860 MW 2-2-1 configuration
- Two 267 Mitsubishi 501G1 gas turbines with steam cooling
- One 328 MW Toshiba steam turbine
- Two 3-pressure heat recovery steam generators
- Full HP, IP, and LP steam bypass systems
- BOP support systems
- Emerson-based emulated DCS
- GE Cimplicity-based emulated HMI



# Combined Cycle On Line Training

## Features

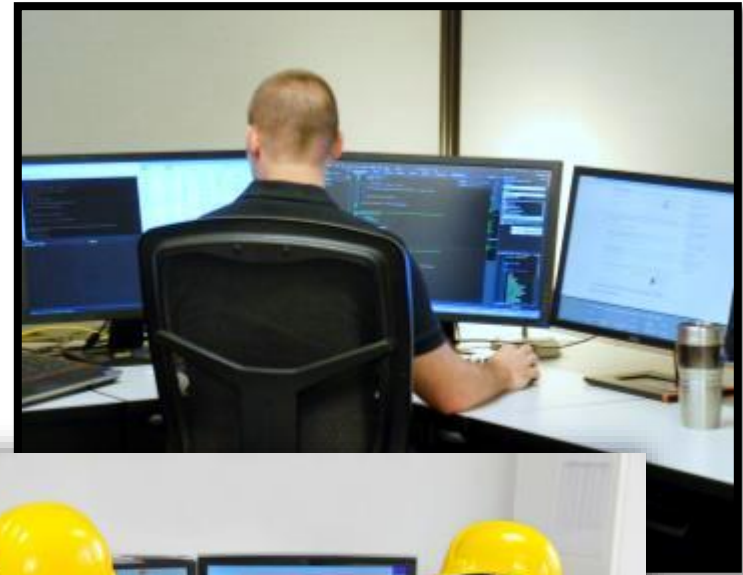
- Teaching Assistant – student mentoring
- Startup, steady state & plant shutdown
- Plant operating procedures & HMI screens
- Free play mode with access to all systems
- Tooltips available for student hints
- On-demand collaboration or remote monitoring
- Add multiple HMIs – HTML 5 image resolution
- Supports latest browsers and operating systems
- No plugins required – runs on the Cloud



# Customized Training

## TRAX provides customized training services:

- Training needs assessments
- Designing training programs
- Curriculum development
- Position and job tasks descriptions
- Skill appraisals
- Operating procedures
- Instructor-led classes
- Hiring and screening support
- Alarm response and troubleshooting training
- Failure mode analysis
- Course development - 30 minute classes
- Generic simulators





# Generic Simulation Training



## Plant Simulators

- Plant ratings – 100 to 1250 MW
- Coal or gas
- Major boiler types
- Environmental – SCR, SNCR, baghouses, FGD, ACI
- Common DCS types
- Multi-site utilization
- Purchase or lease options



# Generic Simulation Training

## Generic Simulator

### Example: Combined Cycle Simulator

- 720 MW 2-2-1 configuration
- Two 225 MW GE gas turbines
- One GE D11 steam turbine with reverse flow
- GE MKV controls with Cimplicity® HMI graphics
- Two 3-pressure heat recovery steam generators
- Full HP, IP, and LP steam bypass systems
- BOP support systems
- ABB Symphony Infi-90 emulated DCS



# Site Specific Simulators

***TRAX** is the world's leading supplier of high-fidelity, operator training simulators*

- More than 25 years' experience
- Delivered over 300 simulators worldwide
- Industry-leading simulation software



# Training Simulators

## Georgia Power Plant McDonough



- Delivery included Simulator Training Program (STP) w/ Teaching Assistant
- 840 MW 2x2x1 CCGT configuration
- Ovation DCS-virtual
- MHI M701G2 gas turbines
- Toshiba steam turbine
- Nooter-Eriksen HRSGs



# Training Simulators

## Duke Energy Cliffside Unit 6



- 905 MW supercritical balanced draft boiler
- Ovation DCS - virtual
- Toshiba STG with TOSMAP emulated turbine controls
- GE Mk VI BFPT virtual controls
- **Fully modeled wet FGD, dry FGD and SCR systems**
- Includes Simulator Training Program (STP)



# Training Simulators

## Alabama Power Plant Barry Unit 6



- Delivery included Simulator Training Program (STP) w/ Teaching Assistant
- 500 MW 2x2x1 CCGT configuration
- Ovation DCS-virtual
- GE 7FA gas turbines w/Mk V controls
- GE D11 steam turbine w/Mk V controls
- Vogt-NEM HRSGs

# Training for the Future is Here

## The Next Step:

### Only TRAX

has successfully combined high-performance virtual environment with the high-fidelity accuracy of an actual power plant simulation. The immersive 3-D experience is made even more authentic with avatar based co-workers in the control room and the plant.



# TRAX Training Program

## Benefits

- Increase reliability and safety
- Greater productivity
- Eliminate travel cost
- Flexible options
- Assess training effectiveness
- Documented performance
- Accelerate operator qualification
- Employee evaluation
- Continuous development of workforce
- Employee retention
- Energy-focused program







Thank you

**TRAX**  
Energy Solutions

