



GAS POWER - CUSTOMER TRAINING SIMULATOR OFFERINGS

Knowledge Is Power

- Your power plant personnel need the skills to improve equipment availability and mitigate risk. With hands-on learning opportunities that use the latest tools and technologies, GE Vernova helps you improve your plant's availability, reliability, and flexibility.



High-fidelity Simulation for Risk-free One-to-One Skills Training

GE Vernova offers a variety of training simulator solutions to help meet your needs—whether you require an onsite simulator tailored to your equipment or remote access to a technology-specific simulator. These simulators are effective, convenient, and comprehensive, while posing no operational risk to GE Vernova's OEM equipment.

With both cloud-based and onsite simulator offerings, your employees gain unlimited, 24/7 simulator access from the convenience of your plant so they can safely practice control room skills at their own pace. They can collaborate while supervisors monitor their progress and offer “over-the-shoulder” support.

GE Vernova's Training Advantages

- **Risk-free, Controlled Learning.**
Your private, secure simulator helps employees hone real-world skills, establish unified procedures, and build teamwork proficiency in a risk-free, controlled learning environment enhanced by GE Vernova's OEM expertise.
- **Knowledge Building.**
With simulator learning, your personnel quickly and effectively build their knowledge base, enabling them to more confidently respond to real-life challenges.
- **Hands-on Training.**
If you purchase Gas Power site-specific classroom courses from GE Vernova, instructors can use your simulator when applicable to the course curriculum.



Site-Specific Plant Simulator

Custom created by the GE Vernova engineering team that developed your gas turbine and engineered equipment package, the Site-Specific Plant Simulator provides a comprehensive, high-fidelity replica of your plant's turbine control room environment. Your Plant Simulator can simulate any of the following components at your GE Vernova plant: gas turbines, steam turbines, generators, heat recovery steam generator systems, specific control systems, and balance-of-plant equipment.

The simulator can be either hosted remotely (accessible from any computer via a website) or onsite at your facility using a local dedicated Controls Server with Human Machine Interfaces (HMIs). Our engineering teams develop a comprehensive replica of your plant's turbine control room environment that addresses your specific equipment technology types, plant configuration, and process needs. We use advanced models from our performance, accessories, and operations teams to more accurately replicate your specific turbine and related equipment processes for realistic learning experiences. Your model will be based on your:

- System piping and instrumentation diagram (P&ID)
- Instrumentation, such as units conversion data and slew time
- Physical dimensions of process equipment
- Heat and mass material balance
- Equipment-specific parameters, such as pump and valve curves
- Control parameters and initial condition information, including base load and part load data
- HMI graphics

Operational Benefits

- Enhance site-specific operations training
- Improve operator reaction time
- Train/mentor new operators in a safe environment
- Develop skills to navigate and read operator displays
- Develop fault scenarios to evaluate operator actions
- Test and improve plant procedures by simulating events

Troubleshooting and Maintenance Benefits

- Improve handling of alarms and abnormal operating situations
- Help avoid potential shutdown through expert intervention
- Reduce downtime by creating and reviewing trip logs to determine potential causes
- Identify issues earlier by developing trends and watch windows for site HMIs
- Gain insights to help plant competitiveness through expert review of operator display functions (CIMPLICITY*)

Simulator Support Throughout Your Plant's Lifecycle

When you invest in a Site-Specific Plant Simulator, GE Vernova can keep your simulator in tune with your plant's ever-changing needs. Our service agreements provide biannual system maintenance to help ensure that your simulator remains properly aligned with your plant's controls platform. Simulator upgrades also are available when you make impactful plant changes such as adding new equipment, upgrading equipment, or changing control systems.





Site-Specific Gas Turbine Simulator

The Site-Specific Gas Turbine Simulator uses your site's controls software and HMI applied to a comprehensive, high-fidelity model of a GE Vernova gas turbine. Your Gas Turbine Simulator can simulate a GE Vernova gas turbine and generator connected to your unit's control system. The simulator can be either hosted remotely (accessible from any computer via a website) or onsite at your facility using a local dedicated Controls Server with HMIs.

For this simulator, GE Vernova's engineering teams develop a comprehensive replica of your turbine's operator interface that reflects your site's software and HMI screens. Using advanced models from our performance and operations teams, we can more accurately recreate your gas turbine for realistic learning experiences. Your model will be based on your:

- Gas turbine frame
- Control software
- HMI graphics

Operational Benefits

- Enhance site-specific operations training
- Improve operator reaction time
- Train/mentor new operators in a safe environment
- Develop skills to navigate and read operator displays
- Develop fault scenarios to evaluate operator actions
- Test and improve operation procedures by simulating events

Troubleshooting and Maintenance Benefits

- Improve handling of alarms and abnormal operating situations
- Help avoid potential shutdown through expert intervention
- Reduce downtime by creating and reviewing trip logs to determine potential causes
- Identify issues earlier by developing trends and watch windows for site HMIs
- Gain insights to help plant competitiveness through expert review of operator display functions (CIMPLICITY*)

Simulator Support Throughout Your Turbine's Lifecycle

When you invest in a Site-Specific Gas Turbine Simulator, GE Vernova can keep your simulator in tune with your unit's ever-changing needs. GE Vernova service agreements provide biannual system maintenance to help ensure that your simulator remains properly aligned with your unit's controls platform.





Remote Technology-Specific Turbine Operations Simulator

GE Vernova's remote simulators give your employees 24/7 web-based access to risk-free learning in a realistic control room environment for a heavy duty gas turbine or a steam turbine. While our Technology-Specific Turbine Simulators are not site-specific, they are OEM frame-specific for GE Vernova turbines. You select the best fit for your plant from a variety of available simulator configurations.

Using only an internet-connected computer and standard web browser, your employees can log into a unique private portal that connects to a technology-specific virtual HMI in the cloud.

Simulator Content

GE Vernova's remote simulator lets your employees practice a variety of skills, including:

- Turbine operation
- Alarm troubleshooting
- Software tracing
- Trending data
- Working with CIMPLICITY* screens
- Building and downloading software
- Reviewing hardware configurations

Key Features

- Continuous, unlimited remote access to the standard turbine operations simulator for your site—for the length of your contract
- Multiple simultaneous secure connections on a per-site basis for team collaboration
- Virtual HMI in English

Benefits

- **Convenient and Flexible.**
Employees can simulate realistic turbine operating conditions from a comfortable, convenient location whenever their busy schedules allow.
- **Cost-effective.**
Remote simulator training delivers a fast learning curve at an affordable cost. With our cloud-based simulator solution, travel costs, equipment shipping expenses, and the need to maintain specialized simulation equipment onsite are eliminated.

Extended Access to a Classroom Training Simulator

Many of GE Vernova's Site-Specific Training Courses employ the use of course-specific remote training simulators to enhance the hands-on learning environment. To continue the learning experiences of your participants after the training session is complete, you can purchase Extended Access to the remote simulator used during the training course for a defined period of time.

With this Extended Access, course participants will be able to continue to practice on the simulator(s) used during the training via 24/7 web-based access.





GE VERNOVA'S GAS POWER SIMULATOR COMPARISONS

	Classroom Training Simulator Extended Access	Remote Technology-Specific Turbine Operations Simulator	Site-Specific Gas Turbine Simulator	Site-Specific Plant Simulator
Commercial offering				
Commercial ownership	Lease	Lease	Own	Own
Standard contract duration	3 months	5 years	One-time	One-time
Features				
High-fidelity site-specific models	-	-	-	●
Screens and software customized to your specific site	◇	-	●	●
Control room replica hardware configuration	-	-	○	●
Onsite Control Server	-	-	●	●
Cloud server	●	●	○	○
Standard GE Vernova HMI for operators	●	●	●	●
Simulates full plant operations	◇	-	-	●
Continuous, unlimited access	●	●	●	●
Multiple simultaneous secure connections to your private, riskfree learning environment	●	●	-	-
Number of simultaneous users	◇	10	†	†
Acceptance testing	-	-	○	●
Management				
Consolidated user interface for controlling simulation	●	●	●	●
Predefined training scenarios such as failed devices and active alarms	◇	●	○	●
New training scenario creation and management	-	-	●	●
Simulation pause and restart	◇	●	●	●
Save and restore operating and initial conditions	◇	●	●	●
Execution speed adjustment	◇	●	●	●
Watch and trend simulation variables and signals	◇	●	●	●
Aftermarket Services				
Introduction to simulator training	-	○	●	●
Remote help desk simulator support	●	●	‡	‡
Multi-year service agreement for simulator	-	-	○	○
Upgrades for simulator	-	-	○	○

- Standard
- Available upon request
- Not available
- † Dependent on number of operator workstations purchased
- ‡ Available with purchase of service agreement
- ◇ Dependent on the classroom training scope

Helping to Meet Your Continuous Learning Needs

A continuous path of learning helps your plant personnel gain the knowledge and skills needed to run an efficient, successful plant. In addition to our simulator training solutions, we can suggest the right mix of additional training options to align with your plant configuration, equipment technology, employee audience, and time constraints.

- **Site-Specific Courses.**

Our highest value training service offers a variety of 200 courses tailored to your specific site by an assigned GE Vernova instructor and personal training project manager. These courses are delivered either at your site or at one of GE Vernova's Gas Power global learning centers in the language of your choice, and on a schedule that works for you. Courses may contain a mix of classroom learning, site walkdowns, and hands-on training.

- **Open Enrollment Courses.**

With technology-specific content, our Open Enrollment training offers a comprehensive selection of more than 75 English language courses designed for small staff or new team member training or to expand the skills of select employees. Your employees train at one of GE Vernova's Gas Power learning centers with students from around the world. Courses offer a mix of classroom learning techniques, and may contain walkdowns and/or hands-on training.

- **Online Courses.**

A cost-effective solution for a broad range of employees, our Online English language courses let you train your personnel anytime, anywhere, and at their own pace. Each course ranges in duration from one to four consecutive hours, and can be started and stopped at the student's discretion.

- **Multi-Year Training Agreements.**

Simplify your training budgeting and planning efforts with our long-term flexible training offering. This agreement entitles you to a fixed number of annual training days for GE Vernova's Site-Specific and/or Open Enrollment courses, unlimited use of all our available Online courses, plus exclusive access to our Remote Turbine Operations Simulator. We work with you throughout your plant's lifecycle to help you select the training solutions that best meet your evolving needs.



Contact your Gas Power representative from GE Vernova for more information.

Visit www.governovatechtraining.com for additional details and course registration.

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