

# Wind Turbine Generator Control eLearning | Operation & Troubleshooting

**Power Generation - WX20014-BC01JEN-E1**

Objective 1: Describe the Basic Operation of a Utility Scale Wind Turbine Power Generation System

**Inverter Enabled**

When the **TCU** receives the minimum voltage signal, it sends a command back to the **GCU** to enable the inverter, close the contactor to connect the inverter's AC output to the PDP, and to draw DC current from the generator via the DC bus at a particular level to produce AC power.

Enabling the inverter causes the IGBT matrix to begin converting the DC power to AC power at the current level commanded by the TCU.

TCU

Generator

700 to 1100 RPM

900 to 1400 VDC

GCU (Inverter Inside)

PDP

PMT

Grid

AMATROL

Page 7 of 100

## eLearning Course: M20014

Amatrol's Wind Turbine Generator Control eLearning teaches utility scale power generation, system operation, and generator control troubleshooting for large wind turbines. Learners are introduced to a GCU with an emphasis on safety. Turbine generator control covers fiber optic communications, typical software used to control a GCU, typical system components like rectifiers, power-on and power-off processes, commissioning tests, and troubleshooting a broad array of possible problems such as operational, line, generator, temperature, and drive faults.

## Teach Generator Control

### Wind Turbine Generator Operation and Components

Through this course, users will learn a variety of skills, including operating states of a wind turbine generator control unit and wind turbine generator safety rules. Users can also expect to learn about the correct operation of components such as a power distribution panel, pad mounted transformer, shunt trip breaker, and more.

## Multimedia Course

### Wind Turbine Generator Control eLearning Features Engaging Multimedia

Amatrol's extensive, thorough [multimedia](#) covers green energy basics such as wind turbine generator control. Interactive screens paired with instructive graphics teach an array of wind turbine generator control topics from power generation to system operation. With the optional hardware, learners can then apply this theoretical knowledge to immediate hands-on skills. For example, learners study system data collection and then manually configure data-charting software and view generator control parameters for practice. This combination of theory and practice ingrains concepts in a learner's mind and makes more advanced topics easier to comprehend. (References [950-TGC1](#))

## Additional Info

**Requirements:**

- Computer (See [Computer Requirements](#))

**Referenced Equipment:**

- Turbine Generator Control Troubleshooting Learning System ([950-TGC1](#))

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