

Gas Turbine

Turbine Functional Safety Course



3 Day training course with certification

Energy & OHS regulations in Australia imposes a duty of care on owners of rotating machinery, to ensure that the instrumented protective functions are maintained at the levels of effectiveness assumed in the original design.

The Turbine Functional Safety Competency course is designed to provide an understanding of the framework of the relevant standards, AS61511 and AS3814, including API and ISO-21789 where required. On completion of the training, students will undertake a recognized competency assessment.

The course syllabus and instructor have been assessed by Energy Safe, Victoria and it is considered prudent practice for operator/maintainers to seek Turbine Functional Safety Competency accreditation.

The course director, Paul Van Dyk, is a turbo-machinery consultant with over 20 years of safety instrumented system design experience. Paul is EnergySafe, Type B Advanced Gas Safety accredited and a Functional Safety Expert (TÜV Rheinland #215/13). Paul also hold a US Patent for continuous on-line Safety Integrity Level calculation methods.



PANTAC
SYSTEM CONTROL

Turbine controls
Simulators
Human Machine Interface
Battery management

PanSIL safety manager
SIL workshops
Generator controls
Compressor controls

Course Content

Understanding of applicable standards

- Australian, American and International Standards
- Best practice
- Certification and licensing

Understanding of risk assessment techniques

- Safety instrumented function identification

Understanding of risk level assignment

- Safety instrument function SIL assignment

Understanding of safety validation techniques

- Safety instrument function SIL validation

Understanding of designing for safety

- Fault tolerance
- Fail Safe
- Independence
- Common cause

Understanding of proof testing

- Benefits of proof testing
- Self-checking, pre-post start.
- Voting and trend comparison.
- Calibration versus proof testing

Understanding of typical safety instrument function

- Speed, flame detection
- Pressure – Oil, Bearings, engine, rotor
- Level – Steam drum, condenser
- Flow – Surge
- Position – valves,

Understanding of purge requirements

- Isolation – gas, liquid, gas starters
- Venting
- Leak testing
- Critical time calculation
- Purge flow requirements

Understanding of programmable Electronic systems (PES) program requirements

- Forcing points
- Modifying program elements
- Version control & security
- Change management

Understanding of the Safety Instrumented System (SIS or PES) life cycle

- Risk assessment
- SIF identification and SIL assignment
- Safety Requirement Specification
- EnergySafe gas submission
- Design quality assurance
- Operate & Maintain
- Installation & Commissioning
- Modifications & De-commissioning

Who Should Attend

Operators and Maintainers of Turbines, superintendents, plant engineers, gas turbine technical regulators and consulting engineers.

Successful completion of the exam is evidence of competency in safety instrumented system design and proof testing requirements in accordance with current regulations, including over speed protection, high vibration, loss of lubrication, flameout and other combustion anomalies.

Course fee: \$2,500 pp less 10% discount for multiple registrations from the same company

Courses conducted in each state

To register expression of interest (no charge) email sales@pantac.com.au



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