

Premier Consulting Services Common Questions

## **Why Should Process Safety Engineers Be Certified?**

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The typical answer to this question is initially very defensive. Certified to what? By whom? Who mandates certification of plant personnel? Why? What does this buy me?

The truth is that none of the safety standards (IEC 61508/ IEC 61511 / ANSI S84.01, etc) nor any of the safety regulatory bodies (OSHA / EPA / HSE, etc) mandate plant personnel certification by any specific organization. As a matter of fact, safety standards don't even mandate certification of Safety Instrumented Systems (SIS) equipment by any specific testing lab (TÜV / F.M., etc).

However, what the standards and regulatory agencies do require is that certain target safety measures be met. For example, logic solvers used in a SIL 1 through SIL 3 safety instrumented function (SIF), shall be designed to meet IEC 61508 or be documented to meet the requirements of "proven in use".

The problem here is that documenting that a logic solver meets the standards' "proven in use" criteria, with all the hardware and software target measures, fault insertion tests, safety manual documentation, etc., becomes an insurmountable task for an end user. The cost would be prohibitive and the liability is not something the plant would want to undertake.

Therefore, when it comes to SIS logic solvers, the process industry has reached a consensus in generally specifying that the equipment be third party certified to meet IEC 61508 parts 2 and 3. Although it is technically accepted that the certification be performed by an NRTL (Nationally Recognized Testing Laboratory), process plant specifications mostly require that the certification be issued by TÜV, recognizing this lab as the safety system's "mark."

So, if it is an industry recognized requirement that the SIS hardware and software be certified by TÜV, why not certify the engineers that design, integrate, program, install, operate and maintain the SIS?

IEC 61508/ IEC 61511 / ANSI S84.01 and other international and national safety standards, as well as national regulatory agencies, require that all personnel involved in any stage of the SIS safety life cycle have proven and documented competency for the tasks they are assigned.

IEC 61511-1 Functional Safety – Safety Instrumented Systems for the process industry sector. Paragraph 5.2.2.2 : Persons, departments or organizations involved in safety life-cycle activities shall be competent to carry out the activities for which they are accountable.

As with SIS hardware and software certification, competency assessment of plant or contractor engineers is best served by third party certification. Furthermore, TÜV is best suited for this certification through the TÜV ASI- Rheinland Functional Safety Program. Full details of the TÜV Functional Safety Program can be reviewed at <http://www.tuvasi.com>.

In the same way that all project specifications now require that SIS logic solvers carry a TÜV certificate to the appropriate SIL, the tendency is to also require that engineers specifying, integrating, programming, installing and maintaining these systems have a TÜV ASI – Rheinland certification of competency. After all, what good is it to have the best hardware in the world if the engineers implementing the project cannot prove competency for the task they are assigned?

The main driver is Process Safety. However, a significant motivator is the avoidance of litigation actions in the case of process hazard incidents where competency of personnel requires recognized third party documentation of training and certification.

Premier Consulting Services (PCS), in cooperation with TÜV Industrie Service ASI, Rheinland-Germany, has developed the Premier Functional Safety Engineering (PFSE) training course, which has been reviewed, assessed and accepted by TÜV-ASI as an integral part of the TÜV Functional Safety Program for Safety Instrumented Systems. PCS course instructors are certified TÜV Functional Safety Experts. As a matter of fact, PCS instructors became the first two "experts" certified by TÜV-ASI-Rheinland on a world-wide basis.