Premier Consulting Services Common Questions **Why conform to Safety Standards?**	
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Why conform to Safety Standards?

Compliance to National and International safety standards is enforceable if the standards are listed or referenced in the country's legislation. These references are sometimes called "good engineering practices." The Occupational Safety and Health Administration (OSHA) USA law and the Australian Occupational Health and Safety (OHS) are examples of this legislation. Other countries e.g. Germany and the UK are required to adopt IEC-61508 /61511 when applying safety instrumented systems to process hazards. Since most major process companies are international, they have adopted the IEC standards. There is also growing support from liability insurance providers requiring the insured embrace the IEC standards to reduce risks associated with the process industries especially off shore installations. Perhaps the biggest incentive for companies to adopt requirements of the safety standards is the potential for liability suits after an event. The punitive sanctions of regulatory agencies are minimal as compared to the enormous awards made to plaintiffs in past litigation. Finally, it has been shown that it makes excellent business sense to follow these good engineering practices by reducing the risk of personal injuries and also maintaining reliable production.

OSHA

OSHA's CFR 1910.119 "Process Safety Management of Highly Hazardous Chemicals" (Feb. 1992) established the requirements for a broad based performance specification to reduce or minimize the frequency and consequences of chemical releases, fires, and explosions. Of the many articles contained in this document, several refer to or specifically apply to critical hazards assessment, safety system design, testing, and use.

Key articles and elements are as follows:

- Paragraph (e) - Process Hazards Analysis The PHA shall address:
    1. The hazards of the process...,
    2. The identification of any previous incident which had a likely potential for catastrophic consequences...,
    3. Engineering and administrative controls.... And their interrelationships such as (early warning methods) which might include process monitoring and control instrumentation with alarms,... (including redundancy in instrumentation)
    4. Consequences of failures of engineering and administrative controls....
    5. A qualitative evaluation of a range of the possible (safety effects) of failure of controls on employees in the work place.

- Paragraph (j) - Mechanical Integrity
    1. Application (Applies) to the following process equipment:
        1. Emergency Shutdown Systems
        2. Controls (including monitoring devices and sensors, alarms, and interlocks)...
    2. Quality Assurance
        1. In the construction of new plants and equipment, the employer shall assure that the equipment... is suitable for the process application for which (it) will be used,
        2. Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions,
        3. The employer shall assure that maintenance materials, spare parts, and equipment are suitable for the process application for which they will be used.

Additionally, training, operating and maintenance procedures, compliance audits, and management of change articles and paragraphs also involve these areas. The intent is to show proper consideration, implement adequate systems, achieve appropriate documentation, and implement good engineering and management practices to ensure compliance.

OSHA measures performance based on the specific requirements of the rule, and good engineering practice based on majority peer and industry accepted guidelines and standards. The most recent and predominant standard directly involves the mitigation or reduction of risk through safety systems. This is an ANSI standard and therefore considered good engineering practice. This standard is the ISA-S84.01.

ANSI/ISA-S84.01-1996/2004 IEC-61511-1

The ISA-S84.01-1996/2004, is the good engineering practice and ANSI standard defining the criteria for defining and applying Safety Instrumented Systems (SIS). SIS's are also known as Extrinsic Safety Systems, or systems that lie external to a process. Extrinsic Safety systems are utilized if an inherently safe or intrinsically safe process cannot be designed, and if risks cannot be sufficiently reduced to an acceptable level utilizing Independent Protection Layers (IPL). The newly released document is included in Section 10.4 for reference.

Companies should be aware of the increasing threat of litigation by overzealous attorneys and juries that have no sympathy for companies who do not follow standards in their designs.

The punitive sanctions of OSHA, EPA, or other country legislation requirements, are insignificant as compared to the class action awards plaintiffs are receiving.