



61508 and 61511; What Is an Operations Company Supposed to Do?

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The typical first reaction from the process operations side of the table when confronted with a new standard is, "How much will this cost and how much extra paperwork will it involve?" Depending on the organisation, the answers to these questions can vary dramatically. Unfortunately, the further question, "How can this save money?" is rarely asked, if ever. Even if it is asked, the hope of implementing a new regulation and actually saving money immediately is dismissed as an impossible dream. IEC/AS 61508 and 61511, the standards covering the design and use of safety instrumented systems to reduce process plant accidents, are no exception to this initial reaction.

However, with the 61508 and 61511 standards, there are several additional factors that come into play. The first is that the process industries in Europe, North America, and Australia are already largely required to comply with these standards, and many Asian countries are generally moving in the same direction. The second is that New Zealand law requires all reasonable measures be taken to insure worker safety. The operating company is then left with the need to show that it is unreasonable to apply these standards, despite what the other industrialised nations are doing. Even worse, this need to show that 61508 and 61511 are unreasonable usually comes after a serious accident.

This is where New Zealand is now: the choice facing the process community is whether it is cheaper and better to follow these standards, specifically 61511, or to consciously decide to ignore them. Following 61511 basically involves applying the principles of quality management to safety system specification, design, installation, operation, and maintenance through a process called the safety lifecycle. Like quality management, it can be done poorly or it can be done well.

If complying with the standards is done poorly, following the safety lifecycle model is essentially useless and typically rather expensive. If the process is done well, following the safety lifecycle model usually involves only moderate changes to existing company safety system practices, with relatively minor costs. More importantly, if the work is done well, the safety lifecycle process of "plan, do, and review" significantly reduces wasteful over-design of safety systems, as well as limiting unsafe under-design by a very efficient process.

Several studies by both private companies and major process industry organisations have shown that, in most cases, applying the 61508/61511 safety lifecycle version of good engineering practice for safety systems gives a net cost savings relative to previous practice. And that does not consider all of the various fines and penalties that may come into play if an outside investigation team comes in after an accident and decides a company has not taken all reasonable measures to insure worker safety.