



# Letters to the Editor

## “Safer than Safe Enough” – Australia leads the way?

The technical paper in the International System Safety Society’s (ISSS) *Journal of System Safety* Winter 2017 issue on “How Safe is Safe Enough? Acceptable Safety Criteria from an Engineering and Legal Perspective” by Martin Chizek is an interesting read, especially for Australian readers.

This letter briefly talks about how Australian Workplace Health and Safety (WHS) legislation provides a framework for “Safer than Safe Enough” from a different engineering and legislative perspective.

Recent WHS laws in Australia, promulgated in 2011, consist of a three-tiered structure: the *WHS Act*, the *WHS Regulation* and *Codes of Practice* designed to protect the health, safety and welfare of persons at work and those who may be affected by work activities undertaken by others. A code of practice is a practical guide to achieving the standards of health, safety and welfare required under the WHS Act and the Work Health and Safety Regulations (the WHS Regulations). The main objective of the Australian WHS Act is to provide for a balanced framework to secure the health and safety of workers and workplaces. It does this by laying down the duties of persons conducting business or undertaking (PCBU) that design, manufacture, supply, import, install, construct or commission plant, substances or structure. It utilizes hierarchy of controls in eliminating the risks to health and safety and if not possible to eliminate, minimize it to *So Far as Is Reasonably Practicable* (SFAIRP). The international community (mostly) uses what is widely known as the “*As Low as Reasonably Practicable* (ALARP)” framework for risk management from an engineering and legal perspective.

The concepts SFAIRP and ALARP may appear synonymous, but are conceptually quite different. Whereas ALARP essentially revolves around acceptable/tolerable risk levels, SFAIRP is a precautionary risk management system. The expected end result from both these processes is perhaps the same — i.e., to demonstrate due diligence is applied to satisfy “safe enough” requirements. ALARP analyses the risk, identifies controls and then considers if the risk can be brought to an acceptable/tolerable level. The SFAIRP, on the other hand, requires identification of all the possible controls and then applies hierarchy of controls and *reasonably practicable* tests to decide on the controls to minimize the risk. The interpretative guideline — *Australian WHS Act* — provides the meaning of “Reasonably Practicable” as:

- a. The likelihood of the hazard or the risk concerned occurring
- b. The degree of harm that might result from the hazard or the risk
- c. What the person concerned knows, or ought reasonably to know, about the hazard or risk, and ways of eliminating or minimizing the risk
- d. The availability and suitability of ways to eliminate or minimize the risk
- e. After assessing the extent of the risk and the available ways of eliminating or minimizing the risk, the cost associated with available ways of eliminating or minimizing the risk, including whether the cost is grossly disproportionate to the risk.

To identify what is or was reasonably practicable, all of the relevant matters must be taken into account and weighed, and a balance achieved that will provide the highest level of protection that is both possible and reasonable in the circumstances. Some matters may be relevant to what *can* be done, while others may be relevant to what is *reasonable* to do. It is reasonably practicable for a duty holder to proactively take steps to identify hazards and characterise the risk (paragraphs a and b above) what is traditionally known as assessing the *Risk Level*. Paragraph (c) in conjunction with paragraphs (a) and (b) implies what a *reasonable person* in the duty holder’s position would reasonably be expected to know. For example, it is reasonable to expect that an electrical tradesperson would know about the potential hazard, consequences, likelihood and precautions that must be taken while conducting electrical work. It is also expected that such a person would know potential failure modes culminating in different hazards and should be able to identify ways (paragraphs d) to eliminate or, if not possible to eliminate, minimize the risk by identifying practicable mitigations. There may be many different ways of eliminating or minimizing risks. The duty-holder should identify as many of these as they reasonably can, to give them the greatest scope to choose (cost in terms of time and effort, as well as money, is just one factor to consider when determining the best control option — paragraph e) and apply the most appropriate means to eliminate or minimize a risk. The cost of controlling a risk may be taken into account in determining what is reasonably practicable, but cannot be used as a reason for doing nothing.

During the early days of Australian WHS legislations, I posed a question: “What is the difference between

ALARP and SFAIRP” to two professors (one teaching WHS law and the other teaching WHS engineering risk management at a post graduate WHS program). The law professor came back with “What is ALARP?” and the risk professor with “What is SFAIRP?” Clearly, the risk community was more familiar with ALARP, but the legal community was quickly coming to grasp SFAIRP considerations. Things have matured since then and it has now become obvious that the ALARP principle may not be good enough in the context of Australian law and that risk management needs to apply SFAIRP. The term SFAIRP has now become common engineering, risk management and legal terminology in Australia.

Risk management is not a one-off activity; rather, it is a continual process. There is no tolerable/acceptable target level that, once achieved, means the risk can be considered closed. It is a continual process and *all* possible controls are to be considered (continually) to ensure the risk is eliminated or, if not possible to eliminate, is minimized to SFAIRP.

Though it is early, there is some evidence that since the introduction of WHS laws, the frequency rate of serious claims has fallen by 23 percent and there has been an 18 percent reduction in the number of claims (source: Safe Work Australia, National Data Set for Compensation-based Statistics, 2015-16). Worker fatality numbers, which have been falling since 2007, have fallen further. Obviously, more data needs to be considered and the reasons for this improvement need to

be analyzed to understand that the contribution of the new WHS legislations to improved statistics — while also considering that the nature of work in Australia (and internationally) is changing, along with demographic and social changes.

Within the context of “how safe is safe enough,” it is difficult to say if these legislations and more specifically, SFAIRP, hierarchy of controls, and different governance models used in implementing WHS legislation, have made the systems safer. It is, suffice to say, that these legislations have brought increased WHS focus from senior executives in most Australian organizations and that workers and executives are now striving to be safer than safe enough.

As I write this, Australian WHS law is undergoing a holistic review [2018 *Review of the Model WHS Laws Discussion Paper*, Marie Boland, February 2018] as part of a five-year review by an independent reviewer to understand what is working and why; what does not work and why; and what can be done to make it work. It is expected that this review will provide recommendations aimed at further improving workers’ health and safety. I believe this lateral thinking will set up best international practices for managing WHS risks and providing for a “Safer than Safe Enough” workplace internationally.

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## Generating Sustainable Income for ISSS

I carefully read the points raised by Charles Hoes in his “TBD” column published on pages 6 and 7 of the Spring 2016 issue of *Journal of System Safety*. He raised some important issues concerning the future of the International System Safety Society (ISSS) and shared other thoughts regarding funding, vision and the relevance of the Society.

In his words, “Basically, I believe the Society needs to rebrand itself as the world’s source of knowledge of how to provide high-quality, highly effective system safety practices to achieve enhanced safety, quality, reliability and environmental impact for all products and services.” This is undeniably a thinking pattern with the potential to launch the Society from where it has gotten to over the past 35 years to where it desires to be in the future. Unfortunately, all the beautiful ideas and insights shared by Charles Hoes, and many others, to position our Society as the leading authority in system safety professions cannot be realized unless we “evolve the funding

model from its current dependence on membership dues and Conference fees to a different approach.” (Charles Hoes, *JSS*, Spring 2016). I also believe that we need to shift our focus from the perspective of a “volunteer organization” to a “professional organization” having a sustainable income source so that it can have enough pulling and pushing force to assert itself as the world’s reference for matters relating to system safety standards, principles and procedures, among others. Becoming an economically viable organization, the members will also have the privilege of reaping a better reward for their professional practices, sacrifices and volunteering efforts. These form the basis for my idea and recommendations, as I focus on training and certifications as a sustainable revenue source in this contribution.

Having good knowledge of the operations of various organizations similar to ISSS in nature and jurisdiction, I have discovered that being a not-for-profit nongovernmental organization may not permit them to do business like other profit-making organizations. Nevertheless, the need for reliable sources of revenue is inevitable because the issue of inadequate funding has remained a major

setback to the progress of such organizations that solely depend on members and volunteer supports for funding.

Organizations that operate like this are always less relevant than others because their fates depend on the commitment and willingness of some active members. This calls for a way forward and a new revenue generation model if ISSS is to remain relevant and strong globally. The approaches recommended may be subject to local laws and regulations, but I believe they can be implemented in many places around the world, including the United States of America.

**Professional Training and Certifications:** Evidently, most professional organizations that are thriving around the world are actively engaged in some form of professional training and certification on a regular basis.

I have studied some local and international organizations, such as the Institute of Safety Professionals of Nigeria; Occupational Safety and Health Association, United Kingdom; Nigerian Red Cross Society; World Safety Organization; Nigerian Society of Engineers; American Society of Civil Engineers; Society of Petroleum Engineers; and the National Association of Corrosion Engineers, among others. I have ascertained that revenues from training and certifications form a significant part of their funding sources. Not only does funding through this medium keep the organizations strong financially, it also creates businesses for their members who are engaged directly by the societies or accredited as independent training providers. Of course, this is a major attraction for more people and corporate establishments to become members, owing to the business opportunities.

Along the same line of reasoning, organizations involved in active training and certifications tend to have more acceptance and are viewed to be more professional in practice by the world at large. They also have a competitive advantage over others that are not into training.

Coming back to ISSS, apart from the workshops and tutorials usually conducted during the International System Safety Conference (ISSC), the organization needs to draw training curriculum in its areas of professional coverage and engage members to undertake this training. Many corporate establishments will also be willing to become affiliated if that is considered. There should be procedures for accreditation of independent training providers around the world. Also, the Society will need to set itself as the ultimate organization for certifications in the areas of system safety and other courses offered through the Society. That means, all training providers must get valid certificates from ISSS and award the same to their successful trainees.

**Generating Revenue from Training and Certifications:** There is a direct linear relationship between

income and the strength of an organization. Without a doubt, training and certifications will prove to be a life-long source of income to boost the strength of the Society. First, the Society will make money from the training and certification offered directly through its competent members. Second, all accredited training providers will have to pay a fee for the award of ISSS certificates to their trainees globally each time they conduct a successful training. Third, independent training providers will have to pay a fee for accreditation of their centers. Fourth, this will draw the attention of the global community and result in more members and more revenue from membership subscriptions. Lastly, other establishments and government bodies worldwide can count more on the ISSS for consultation services, which will also be provided at a fee.

The benefits of training and certification will also extend to the establishment and strengthening of many ISSS chapters around the world. The ultimate result is a stronger Society. I believe that this approach is within the jurisdiction of ISSS as a not-for-profit organization. We will promote the vision and improve standards of system safety practices through active training and certification, improving confidence and gaining the trust of professionals. People will need to make some payments for this, as is done in many organizations, such as those cited earlier.

Other revenue sources will also include setting industry standards and codes of practice for system safety and developing safety products through the members. The option of using standards can be explored, such as NACE and ISO. Some of the safety products that can be developed include reference materials and textbooks owned by the Society, personal protective equipment and system safety software, among others. All these will be exchanged for money and help keep the Society ahead in the profession globally.

Though some of these will require initial investments, these investments can be strategized and optimized through deliberate planning of resources over time. I suggest that we start with the intellectual resources — developing training curricula and adopting a certificate design that will be used globally, developing industry standards and codes of practice for system safety professional practice, and developing Society-owned software for safety investigations, security, systems monitoring, reliability and QAQC, for instance. These can be pushed by the already existing networks of the ISSS.

I am convinced that the narratives will change if some of these options are considered.

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