



*Chemeca 2025 and Hazards Australasia
28 – 30 September, Adelaide, South Australia*

Effective hazard identification and risk assessment

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ABSTRACT

Every designer has a duty to make their designs safe so far as is reasonably practicable (SFAIRP), and every person in charge of workplace must ensure that the health and safety of other persons is not put at risk. Hazard identification is a vital step in producing a safe design, and safe places of work.

This presentation will propose a process for hazard identification and risk assessment. Based on the requirements of Australian WHS legislation, participants will learn how to meet their obligations and accurately estimate risk once hazards are identified.

Participants will be equipped with a practical process that they can apply to make hazard identification studies more effective. They will be taught how to explore all reasonably foreseeable activities, how to ensure systematic coverage of the asset / design/activity limits, how to identify hazards and control them, to start hazard identification early in a design process, and to document their work.

The second half of the presentation will cover effective risk assessment. Participants will learn how to estimate risk accurately and defensibly in relation to safety, and the importance of communicating hazards and risks to the end users. The presentation will demonstrate how risk assessment provides further context of a hazard to improve controls and outcomes, and informs urgency and priority for control implementation, especially when the cost-benefit impact needs to be carefully considered.

Hazard identification studies and risk assessments are becoming increasingly common; the workshop seeks to equip participants to improve the quality of their practice so that these activities are value adding exercises with a positive impact on safety.

The learning outcomes of this presentation are:

- *Know how to prepare for an effective hazard identification activity*
 - *Be able to systematically review a design to identify hazards*
 - *Understand and use the Hierarchy of Controls*
- *Know the components of risk and ways to estimate them*

KEY WORDS

Hazard identification, Risk assessment

BIOGRAPHY

Trevor Zwar is a Principal Systems Engineer with over 17 years' professional engineering experience across multiple industries including defence, mining, agriculture, infrastructure and manufacturing.

He has practiced in the electrical (hardware), mechanical and control systems disciplines, and has worked across the engineering lifecycle.

Trevor has a passion for safety in engineering and is a TÜV Rheinland certified Functional Safety Engineer. Trevor has worked collaboratively with research institutions to develop new technologies, including two patented designs, and has presented his work at workshops and conferences. Trevor holds bachelor's degrees in mechatronic engineering (hons) and economics, is a fellow of Engineers Australia and a chartered professional engineer in the mechanical and electrical disciplines.

CONFERENCE PROGRAM

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