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WHS Major Hazards Safety Cases – Insights and learnings from regulator and operators to achieve mutual benefit

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ABSTRACT

The Australian harmonised Work Health and Safety (WHS) Act and Regulations (Regs) were introduced in 2011. This legislation was initially adopted in Queensland, New South Wales, Australian Capital Territory (ACT) and Northern Territory in 2012 followed by South Australia in 2013. MHF (Major Hazard Facility) Safety Case development under the WHS Act and Regs 2011 has matured significantly over this thirteen year period. Multiple MHF safety cases have now been developed across all the respective states/territories and assessed by the respective regulators prior to MHF licence to operate issue and/or renewal.

I worked as a MHF safety case assessor for the Queensland MHF regulator from 2011 to 2015 followed by then developing three (3) brownfields complex MHF safety cases from 2016 to 2024 for operators as a process safety engineer. My most recent development experience transitioning a legacy MHF safety case to fully compliant and operationalised at the facility in one year led to reflection on ways to improve the safety case development process for mutual benefit to both the regulators and operators. This paper explores insights and learnings identified from both the regulator and operator perspectives across all the stages of MHF safety case development with recommendations proposed for improvement.

Examples of insights from the regulator perspective include: justification regarding exclusion of any incidents involving schedule 15 chemicals such as minor quantities or consequence modelling results not included; different sections of the safety case are not integrated together to provide the SFAIRP demonstration; cumulative risk of major incidents as well as individual major incidents is not adequately covered; and there is insufficient description provided of processes and systems implemented at the MHF including demonstration through use of examples.

Examples of learnings and insights from the operator perspective include: quantity of work required in safety case development and completion of associated risk assessments and studies is often under estimated; operators frequently do not reference the available MHF safety case guidance documents to correctly interpret what is required to address the prescriptive elements for the emergency response plan, safety management system and safety case in the WHS Regs schedules resulting in non-compliances;and success of the safety case development requires a leadership sponsor, planning and progress reporting.

Some key recommendations are: start development early (minimum eighteen months), complete a gap analysis to legislative requirements, involve frontline personnel and consult with the regulator regularly regarding methodology and progress.

KEY WORDS

WHS Act and Regulations, Major Hazards, Safety Case, regulatory assessment, development, learnings, insights

BIOGRAPHY

Olivia is an experienced chartered professional process safety engineer. Olivia worked for the Queensland Major Hazards Facility (MHF) regulator for 5 years assessing harmonised Australian Work Health and Safety (WHS) Act and Regulation 2011 safety cases including auditing of facilities. Olivia successfully developed two Queensland operator brownfields complex MHF safety cases (explosives manufacture and LNG). A third brownfields complex MHF safety case was recently developed for a Northern Territory LNG Facility. Olivia works as a senior risk consultant facilitating risk studies; developing process safety management systems, bowties, process safety studies, SFAIRP demonstration; and providing industry technical authority services.

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