PUBLIC COMMENT

Consultation on the model Work Health and Safety Regulations relating to Major Hazard Facilities

Instructions

To complete this online submission:

- Download and save this submission document to your computer.
- Use the saved version to enter your responses under each question below. These questions are from the Consultation Paper on the model Work Health and Safety Regulations relating to Major Hazard Facilities (MHFs).
- Once you have completed your submission, save it and upload it using the upload your submission link on the Engage submission form.
- You can also upload any other documents needed to support your submission to the Engage submission form.

Submissions will be accepted until **11:59 pm (AEDT) on Thursday 3 November 2022.**

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- submissions containing views or information identifying parties involved in hearings or inquests which are currently in progress.

Your details and background

(Please leave blank if you wish to remain anonymous)

1. Name or organisation

Qenos Pty Ltd ABN 62 054 196 771

2. Email used to log into Engage

[redacted]

Questionnaire

(Consultation document questions)

Your response should identify the specific regulation/s involved and, where possible, provide evidence to support your statement.

Evidence demonstrating issues raised in the Review (Section 4.1)

4.1a) What evidence do you have of inconsistencies in the application of the model WHS Regulations relating to MHFs across jurisdictions?

N/A

4.1b) What are the issues around duplication for businesses with MHFs, particularly those that fall under multiple jurisdictions?

Victorian OHS Regulations deviate from the Model Regulations by requiring Property Protection Assessment [Vic OHS Reg Div 7 Clauses 382, 383 & 387 (1) c)]. This is of little value and does not align with the policy objectives of:

• protecting workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work

• maintaining and strengthening the national harmonisation of laws relating to WHS, and

• facilitating a consistent national approach to WHS.

Please ensure that Property Protection Assessment does NOT creep into the Model Regulations

4.1c) What concerns do you have with expectations of what should be included in a safety case?

A Safety Case is a window into an MHFs safety management system and a demonstration of the identification of all Major Incident hazards and the adequacy of controls to eliminate, prevent & mitigate the risk of these hazards to SFARP. The size (breadth & depth) of supporting documents illustrating the functioning of the SMS and the controls is very difficult to "get right" and cannot proxy field audits by the regulator. Improved guidance and consistency

between state jurisdictions on the supporting information required to be submitted as part of the Safety Case would be beneficial. An example of this discrepancy would be NSW interest in quantitative risk assessment (numerical expressions of risk) versus Victoria's more qualitative focus on SFARP documentation including additional controls considered and reasons for being rejected.

4.1d) What duplication or overlap is there between the MHF Regulations and other legislation?

In NSW the Department of Planning & Environment Triennial Hazard Audit (HIPAP 5) required as a Condition of Development Consent under the State Environmental Planning Policy for Potentially Hazardous and Offensive Developments (SEPP33) overlaps heavily with the SafeWork NSW Major Hazard Facilities regulatory regime (including 5 yearly Licence renewal). To avoid unnecessary overlapping industry and Regulator burden, the triennial hazard audit requirement should be updated to allow it to be satisfied under an MHF Licence regime. Hazardous Chemicals requirements also overlap with MHF requirement - refer to discussion on labelling & signage of pipe work detailed in attachment at Q21.

4.1e) What do you consider contributes to regulatory complexity for MHFs?

No Answer

Technical and administrative amendments needed in the MHF Regulations (Section 4.2)

4.2a) What administrative or technical changes could be made to the current MHF Regulations to improve application and consistency of the MHF laws across jurisdictions?

1. Eliminate Victorian Property Protection Assessment [Vic OHS Reg Div 7 Clauses 382, 383 & 387 (1) c)]

2. Remove prescriptive nature of Model Regulation Clause 343 Labelling hazardous chemicals—pipe work replace with a risk based performance outcome - refer to separate detailed submission rationale for this improvement (Q21 attachment).

3. Update Model Regulation 572 Information for local community—general to allow for placing community information on company website rather than outdated physical publications in community libraries.

4. Problem of "5 yearly" review and if necessary, revision of risk assessments and risk control measures wording - refer to separate detailed submission rationale for this issue (Q21 attachment).

5. Whilst the principle of SFARP is helpful in creating and maintaining a proactive process safety culture the implementation of SFARP is still subject to the real world law of diminishing returns. To fully satisfy all aspects of SFARP requires significant resources to be deployed to demonstrate that the risk is indeed at SFARP (in absolute terms). The legal obligation to demonstrate that the risk has been eliminated/reduced SFARP, often adds little or no actual process safety risk benefits. Ultimately, the deployment of these resources in the demonstration of SFARP rather than actually addressing identified risks and areas of inadequate controls is deleterious to process safety - refer to separate detailed submission rationale for this improvement (Q21 attachment).

4.2b) What other non-regulatory changes could be made (e.g. additional or improved guidance) to improve application and consistency of the MHF laws across jurisdictions?

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Other issues with the model WHS regulations for MHFs? (Section 4.3)

4.3a) How well do you think the current model MHF Regulations meet the intended policy objectives outlined in section 2 of the model WHS Act, particularly with advances in technology and emerging industries?

4.3b) What other issues do you have relating to the model MHF Regulations that were not raised in the Review of the model WHS laws or otherwise addressed in the previous questions?

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- What changes to the model MHF Regulations do you consider would address these issues?

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- What new or updated guidance would assist in addressing these issues?

  Click or tap here to enter text.

4.3c) Are there any aspects of jurisdictional MHF laws or international regulatory frameworks for MHFs that you think should be considered for the model MHF Regulations?

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2022 Review of the Model WHS Regulation
Qenos Submission – 27 October 2022
Contact: [redacted]

This submission supplements the survey responses by providing a more detailed explanation of three important aspects of the Model WHS Regulations as they relate to Major Hazard Facilities:

A. **Adverse effect of Clause 343 upon Major Hazard Facilities**
B. **Implications of a time based trigger criteria "5 yearly review and if necessary, revision" wording in Clause 569**
C. **When SFARP is No Longer Reasonably Practicable**

Part A: Adverse effect of Clause 343 Labelling hazardous chemicals—pipe work

Summary

Clause 343 Labelling hazardous chemicals—pipe work is overly prescriptive and the labelling/signage requirement is impractical (not reasonably practicable) for large scale facilities such as chemical manufacturing and petroleum refineries. This overly prescriptive clause should revert to the requirement stated in the original Occupational Health and Safety Regulations (still in force in Victoria – refer to Victorian **Occupational Health and Safety Regulations 2017 Clause 160 Identification of hazardous substances in plant**). Better still would be to define a clear performance outcome requirement that addresses the risk concern.

Note 1: A similar submission was made on this highly problematic issue for the 2018 Review of the Model WHS Regulation. It continues to cause problems for both the regulatory authority constrained to enforce it and the MHF operator burdened both by its demands and the potential risk it poses.
Note 2: The SWA *Labelling of Workplace Hazardous Chemicals: Code of Practice* (September 2015) section *3.4 Hazardous chemicals with known hazards that are not supplied to another* workplace does allow for "reduced labelling" that "communicate[s] enough information on the hazards as necessary to ensure its safe use" [p15] but still requires labelling on or near the pipe work as the prescribed method of control.

Details

Clause 343 Labelling hazardous chemicals—pipe work of the Model WHS Regulations *prescribes* that pipe work needs to be "identified by a label, sign or another way on or near the pipe work". Part 7 of the Model Regulations relates to Hazardous Chemicals **therefore has a direct bearing on MHFs which due to their scale may have hundreds of pipes where labelling in the field may not be practicable and indeed potentially problematic leading to human error and may increase the risk of a Major Incident.**

Legislation should, wherever possible, identify the concern and require the owner/operator to eliminate or control the risk exposure posed by that concern by means *best determined*

by the owner/operator. Using such a risk based approach allows for the *full context of the operation* to be taken into consideration rather than specifying an isolated prescriptive requirement which may be quite unsuitable in the context of a large and complex operation such as an MHF. Whilst not explicitly stated, the concern being addressed by the clause is the need to make persons aware of the hazardous chemicals that are contained within the pipe work so as to eliminate/prevent/mitigate those persons being exposed to the hazardous chemical contained therein. Not only are there ways, other than signage and labelling, to address this concern it can be argued there are more robust and holistic ways, to address the concern of chemical exposure - methods that do not suffer from the well-known limitations of low order administrative *(weak)* controls such as signage and labelling. Of additional concern is the diminished responsibility of the owner/operator and potential transference of liability to the regulator by enacting this type of non-risk based, prescriptive legislation. It also places the regulatory authority in an untenable position of having to enforce prescriptive requirements even when abundant evidence of the risk exposure being appropriately managed by other means are clearly being demonstrated by the owner/operator.

In addition to the shortfalls of prescriptive legislation, the clause in question is impractical, cost prohibitive, and inessential for large scale chemical manufacturing and petroleum refining facilities. A typical chemical manufacturing facility can contain hundreds to thousands of lines of pipe work. Much of this pipe work also requires insulation to conserve heat, control noise or protect personnel from hot surfaces (*Clause 209 Guarding and insulation from heat and cold*) which adds complexity to managing labelling and signage. Pipe work may contain mixtures of chemicals rather than single pure components, in addition the composition may change depending on production grade slates and altered feedstocks rendering static labelling inadequate, so generic to be of no safety value or even potentially misleading. Pipe work may extend for hundreds of metres and change elevation, which raises the question of how often should a label be applied along a length of pipe work and with what changes in elevation, aspects not addressed in the prescriptive wording of the clause rendering the clause ambiguous and insufficient. Such approaches are also in danger of giving excessive importance to an Australian Standard (e.g. AS 1345-1995 Identification of the contents of pipes, conduits and ducts) which *may be* appropriate for certain industries (e.g. Queensland Mining) but inadequate for other industries (e.g. chemical manufacturing). The SWA Labelling of Workplace Hazardous Chemicals: Code of Practice (September 2015) also provides insufficient guidance for pipe work situations. Section *2.6 Pipe work* does provide a number of methods for identifying hazardous chemicals in pipe work including: “schematic layouts displayed prominently” whilst this list of methods is not intended to be exhaustive and Piping and Instrument Diagrams (P&IDs) are a form of schematic layout the requirement for them to be “displayed prominently” and the legislative wording indicating this information is on or near the pipework (in the field) makes the use of P&IDs difficult for the regulator to accept. The Code of Practice does provide guidance for labelling hazardous chemicals in *special situations*, however, these requirements are still in the form of *reduced labelling* rather than alternate means of identification and risk controls. If the Code of Practice would be changed to recognise an MHF as a special situation it would still require the removal of the prescribed labelling requirement (reduced or otherwise) hence a change in the Model Regulations is recommended.

Pipe work must also be regularly inspected and maintained. Due to the amount and complexity of pipe work far more sophisticated systems including Piping and Instrument Diagrams (P&IDs), isometric drawings, pipe work registers, line numbering systems (which include unique identifier, insulation requirements, fluid type, pipe specification), etc. are typically required to identify and manage pipe work at Major Hazard Facilities. The Safety Management System *Permit to Work* ensures that pipe work is appropriately isolated and decontaminated prior to maintenance personnel working on and opening pipe work. Excavation permits involving surveys to *identify* underground services (pipe work, power, etc.) are required before ground is penetrated. Major Hazard Facilities typically use a grey colour to signify process pipe work (understood through training and inductions to contain hazardous chemicals), in addition, selective use of alternative colours on piping may be used to *identify* particular chemical hazards (e.g. use of yellow to denote piping that carries a Class 4 pyrophoric material) or utilities such as air, water, steam and nitrogen are colour coded to ensure they are not incorrectly connected to process piping and equipment which may result in a reactive chemistry hazard. These comprehensive systems of work are mature and have been used by MHF industry for many decades and do not necessarily involve the labelling and signage in the manner prescribed by Clause 343.

It is also important to recognise the context in which the pipe work is operated and maintained. A pipeline that leaves the owner/operator's site boundary and traverses public land clearly requires signage and labelling that includes a general warning, identification and contact details prior to digging, etc. **Whereas pipe work within the secured perimeter of a chemical plant or refinery presents a very different context** including:

- Visitors are inducted and escorted at all times,
- Contractors are inducted and must work under a Permit to Work system,
- Operators are trained and competency assessed to ensure a thorough understanding of the chemical hazards, including how the process works and what is contained within the pipe work that they are operating
- Pipe work is understood in relation to the equipment it is connected to, a competent chemical plant technician understands these relationships to correctly identify pipe work and the hazardous chemicals it contains
- Emergency services are met on arrival by the same highly trained personnel operating the facility 24/7 to aid emergency services in the correct identification of plant equipment and piping and most importantly how and where to best isolate the hazardous chemicals.

Finally, human factors must also be considered when operating and maintaining an MHF. Human error has long been identified as a contributing factor to incident causation. Whilst a prescriptive requirement to apply signage and labelling to every piece of pipe work seems intuitive to minimising human error it is possible to have the opposite effect. For example, labelling all of the pipe work in an MHF containing hundreds of pieces of pipe work may cause information overload particularly with the labels and signs each demanding equal attention. Another well-known phenomenon associated with signs and warning labels is that they become so common place as to become ineffective or "invisible". It is also possible that an operator becomes less skilled and less competent as they become less engaged with

the activity they are tasked with. A good example of this is the loss of panel operator skills associated with the implementation of advanced process control systems.

The chemical plant/refinery context allows for, indeed demands, a different approach to the identifying and controlling of exposure to hazardous chemicals contained inside pipe work.

In the References section provided below there is a survey of current and former legislation in NSW and Victoria as it relates to this clause or its equivalent. The current Victorian OHS Regulation *Clause 160 Identification of hazardous substances in plant* **clearly states the concern and allows the owner/operator to determine the means by which identification will be achieved, *importantly without prescribing the type of control to be applied*.** The repealed NSW OHS Regulation *Clause 173 Employer to identify hazardous substances in enclosed systems* used a similar approach. It is only the current Model WHS Regulation (Clause 343) and similar state regulations (e.g. NSW WHS Regulations *Clause 343 Labelling hazardous chemicals—pipe work*) that both fail to clearly state the concern as well as over prescribe the type of control to be used. **The current wording of the clause does include a "so far as reasonably practicable" test which may be used to support not applying labels and signage to every line of pipe work, however the framework of the WHS clause places an unnecessary burden upon owner/operators of complex facilities to make a defence when they choose not to apply the prescriptive method set out in the clause at the same time causing undue constraints upon the regulator to apply discernment when alternative forms of control are provided other than that prescribed**

Recommendation

Remove the prescriptive requirement for labelling of pipe work in the field, replacing it with a clear statement of the concern and allow the owner/operator to determine the means by which the risk exposure of hazardous chemicals within pipe work is identified and controlled within a facility.

Part A References

Model Work Health and Safety Regulations (as at 14 April 2022)

343 Labelling hazardous chemicals—pipe work

A person conducting a business or undertaking at a workplace must ensure, so far as is reasonably practicable, that a hazardous chemical in pipe work is identified by a label, sign or another way on or near the pipe work.

Maximum penalty:

In the case of an individual—$6 000.

In the case of a body corporate—$30 000.

Victoria: Occupational Health and Safety Regulations 2017 (S.R. No. 22/2017)

160 Identification of hazardous substances in plant

An employer must ensure that a hazardous substance contained in a pipe, piping system, process vessel, reactor vessel or any plant that forms part of a manufacturing process is identified to employees who may be exposed to the substance.

Repealed NSW Occupational Health and Safety Regulation 2001

(Repealed version for 7 June 2011 to 31 December 2011)

Chapter 6 Part 6.4 Clause 173

173 Employer to identify hazardous substances in enclosed systems

An employer must ensure that the identity of any hazardous substance contained in an enclosed system at the employer's place of work (such as a pipe or piping system, or a process or reactor vessel) is notified to a person who could be exposed to the substance.

Maximum penalty: Level 1.

NSW Work Health and Safety Regulation 2017

(Current version for 29 January 2018 to date)

Chapter 7 Part 7.1 Division 2 Subdivision 3 Clause 343

343 Labelling hazardous chemicals—pipe work

A person conducting a business or undertaking at a workplace must ensure, so far as is reasonably practicable, that a hazardous chemical in **pipe** work is identified by a label, sign or another way on or near the **pipe** work.
Maximum penalty:

(a) in the case of an individual—$6,000, or

(b) in the case of a body corporate—$30,000.

Part B: Implications of a time based rather than event based criteria - "5 yearly review and if necessary, revision" wording in Clause 569 Review of risk management

Summary

Clause 569 Review of risk management states that "(1) The operator of a licensed major hazard facility must *review and as necessary revise* the following, in accordance with this regulation:

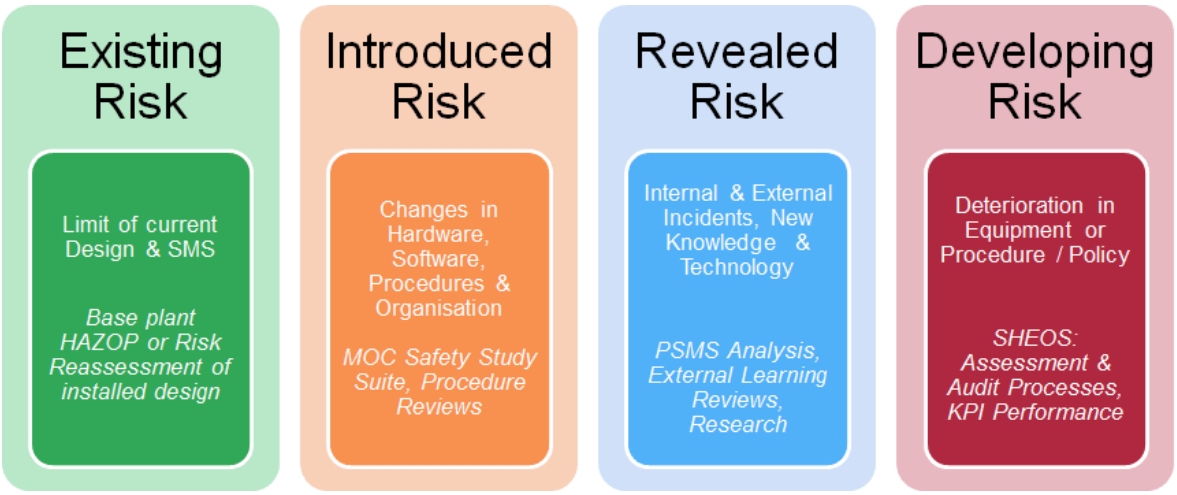
(a) the safety assessment for the facility in order to ensure the adequacy of the control measures to be implemented by the operator;
(b) the major hazard facility's emergency plan;
(c) the major hazard facility's safety management system."

The clause then goes on to list a range of **event based trigger criteria** [569 (2) a) to f)] that require such a review and, as necessary, revision. **This comprehensive list of event based trigger criteria should account for all known mechanisms that would necessitate a review of (1) a) safety assessment and adequacy of the controls.** Despite this the regulation adds a further and final **time based criteria** to also review, and as necessary, revise the safety assessment and adequacy of controls "at least once every 5 years" [569 (2) g)]. Whilst the time based criteria may align with the licence renewal cycle, and may be appropriate for the emergency plan (1) b) and safety management system (1) c), this additional time based criteria is both unnecessary and illogical when applied to the risk assessments and adequacy of controls as these do not change due to the passage of time. Instead, they change because of event based triggers such as new information, external learning incidents, control of change, etc. Most importantly, the time based criteria is a highly inefficient use of operator resources by forcing them to engage in low value repetitive, instead of higher value, hazard identification and risk reduction activities. The wording is also framed in a manner that implies every risk assessment and control must be individually reviewed, which limits the use of more holistic review methods that may more efficiently interrogate collective data (e.g. reviewing controls by type, or reviewing hazards by mechanism or outcome). **It is recommended that the time based criteria be removed (addressed by a comprehensive list of event based triggers) or at least reframed to allow for more efficient methods of reviewing collective data.**

Details

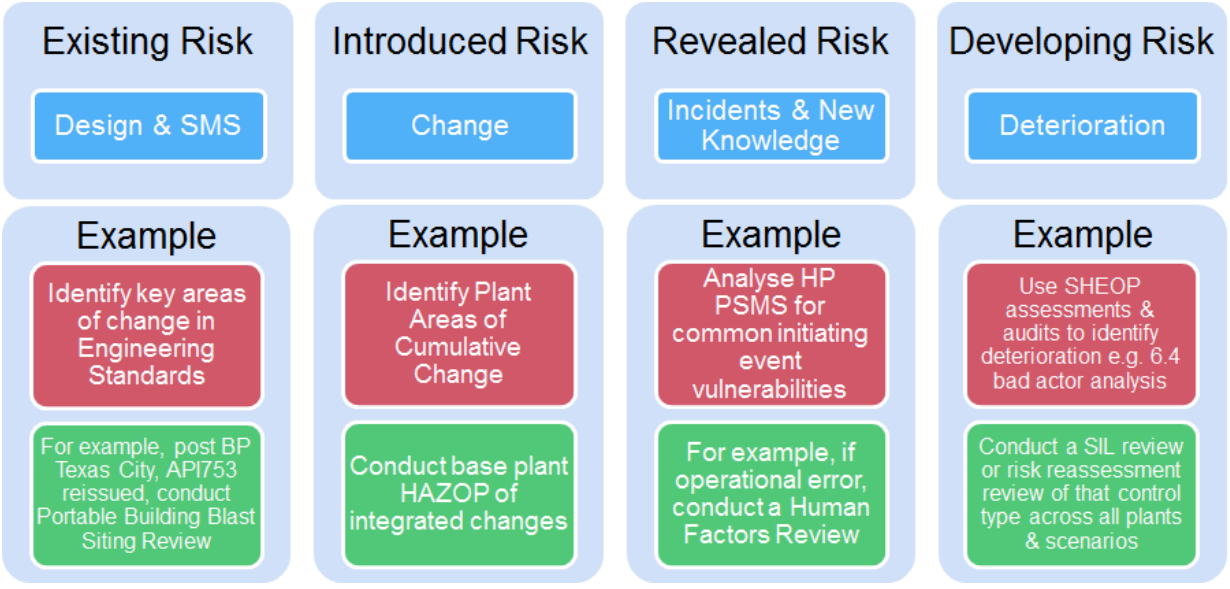
Qenos has developed the following model identifying the event based triggers that would necessitate a review of its risk assessments and adequacy of controls. Importantly, these event based criteria provide a mechanism to maintain the MHF Risk Register in an evergreen state and optimise the deployment of its resources in identifying and eliminating/reducing risk SFARP without the need to default to an inefficient "catch all" time based trigger criteria.

Qenos recognises that risk either already exists, is introduced, revealed or develops due to deterioration of SMS compliance. This model of potential risks includes examples of how each type of risk can be identified – refer to the following diagram:



Historically, Qenos has completed more than three rounds of base plant HAZOPs of its Victorian Altona facilities, each round completed for the entire MHF site within the 5 year licence renewal cycle. An analysis of these three rounds of safety assessment reviews demonstrated a sharp *diminishing of returns* for the second and third round, as looking at the same section of plant using the same hazard identification method became less and less effective in identifying hazards and/or inadequacy of controls simply due to the passage of time. Far more efficient and effective is the use of different safety assessment methods combined with a data driven approach to ensure best utilisation of resources. The following diagram shows how the model of potential risks can be more effectively reviewed.

The data driven safety risk assessment program examines the four key areas where potential risk exposures exist, may be introduced, revealed by incidents and new knowledge, or developed as a result of deterioration. The program then uses a risk assessment method tailored to the area of concern. The Risk Identification Model diagram below shows some examples in each of the four areas of risk.



*HP PSMS = High Potential Consequence Process Safety events

It is also worth noting that the Model WHS Regulations includes a number of similar *review and as necessary revise* clauses. Some include only event based trigger criteria (LHS) whilst others include both event based plus the additional 5 yearly time based criteria (RHS). Refer to Table below for some examples of each, as well as commentary where retention of a 5 yearly time based trigger criteria may be appropriate for certain clauses (e.g. lead and hazardous chemical SDS) but is unnecessary for an MHF already operating on the basis of a defined 5 yearly licence renewal cycle and therefore making this additional time based criteria redundant.

Event Based Trigger Criteria Only	Inclusion of 5 Yearly Time Based Trigger
Part 3.1 Managing Risks to Health and Safety *Cl. 38 Review of control measures* Review and as necessary revision can be adequately covered by time of use (event based) triggers	***Part 7.1 Hazardous Chemicals*** *Cl. 330 Manufacturer or importer to prepare and provide safety data sheets* Given that multiple parties are involved in the provision and receipt of SDS as well as the high potential consequence of chemical exposure and problematic definition of all event based criteria a time based criteria is appropriate
Part 4.3 Confined Spaces *Cl. 66 Managing risks to health and safety* Review and as necessary revision can be adequately covered by time of use (event based) triggers	***Part 7.1 Hazardous Chemicals*** *Cl. 352 Review of control measures* Follows on from Cl. 330 perhaps and there is no other statutory time based trigger other than hazardous chemicals notifications but this does not drive a safety assessment
Part 6.3 Duties of Person Conducting Business or Undertaking ***Division 2 High risk construction work—safe work method statements*** *Cl. 299 Safe work method statement required for high risk construction work* Review and as necessary revision can be adequately covered by time of use (event based) trigger rather than elapsed time	***Part 7.2 Lead*** *Cl. 401 Review of control measures* Perhaps lead is seen as a high hazard with few event based triggers requiring an overall time based trigger to ensures currency
Part 6.4 Additional Duties of Principal Contractor *Cl. 311 WHS management plan—review* Review and as necessary revision is driven by a general remaining current criteria (i.e. ensure fit for purpose)	***Part 8.3 Management of Asbestos and Associated Risks*** *Cl. 430 Review of asbestos management plan* Same as Lead
Part 9.3 Duties of Operators of Determined Major Hazard Facilities *Cl. 559 Review of risk management* *Also Cl. 563 Review* Relates to first round Safety Case submission	***Part 9.4 Licensed Major Hazard Facilities—Risk Management*** *Cl. 569 Review of risk management* *Also Cl. 570 Safety case—review* 5 yearly criteria is not required given that the safety assessment and adequacy of controls can be adequately described by event based

	triggers AND the 5 yearly MHF licence renewal cycle also ensures timely but targeted (event based) review and as necessary revision without the need to stipulate "at least once every 5 years"
Part 9.4 Licensed Major Hazard Facilities—Risk Management *572 Information for local community—general* An example of a MHF requirement that is clearly linked to the 5 yearly licence renewal cycle without having to include specific time based criteria to review and as necessary revise	

Note: Victorian OHS Regulations also include requirements to manage the hazards of crystalline silica similar to Hazardous Chemicals and Lead and requires a 5 yearly time based review trigger. The use of a time based trigger criteria along with event based criteria makes sense to drive improved compliance in the high risk crystalline silica industry, which does not function in a 'licence to operate' regime as is required of MHFs.

Recommendation

Remove the unnecessary time based trigger criteria from the review and revision of safety assessments and adequacy of controls analysis, and instead rely on event based trigger criteria appropriate to the mechanisms that affect risk. Failing removal of the time based trigger criteria, reframe the prescriptive/literal interpretation of what is required with a time based review and as necessary revision of the safety assessments and adequacy of controls may entail. This reframing of the requirements should allow for more efficient use of resources to focus the review and revision of safety assessment and adequacy of controls where the operator believes it will be of most benefit in reducing risk.

Part B References

Model Work Health and Safety Regulations (as at 14 April 2022)

569 Review of risk management

(1) The operator of a licensed major hazard facility must review and as necessary revise the following, in accordance with this regulation:

(a) the safety assessment for the facility in order to ensure the adequacy of the control measures to be implemented by the operator;

(b) the major hazard facility's emergency plan;

(c) the major hazard facility's safety management system.

Maximum penalty:

In the case of an individual—$6 000.

In the case of a body corporate—$30 000.

(2) Without limiting subregulation (1), the operator must conduct a review and revision in the following circumstances:

(a) a modification to the major hazard facility is proposed;

(b) a control measure implemented under regulation 566 does not minimise the relevant risk so far as is reasonably practicable;

Example

An effectiveness test indicates a deficiency in the control measure.

(c) a new major hazard risk is identified;

(d) the results of consultation by the operator under Part 9.5 indicate that a review is necessary;

(e) a health and safety representative requests a review under subregulation (5);

(f) the regulator requires the review;

(g) at least once every 5 years.

(3) In reviewing and revising the safety assessment, the operator must comply with the requirements set out in regulation 555(2), (3) and (4).

(4) In reviewing and revising the emergency plan, the operator must consult with the emergency service organisations referred to in regulation 557(2).

Victoria: Occupational Health and Safety Regulations 2017 (S.R. No. 22/2017)

319G Manufacturer or supplier to give information about crystalline silica substances

(1) A manufacturer or supplier of a crystalline silica substance must give the following information to a person referred to in subregulation (2)—

(a) the proportion of crystalline silica contained in the substance, expressed as a percentage;

(b) the name, address and telephone number of—

(i) the manufacturer of the crystalline silica substance in Australia; or

(ii) the importing supplier of the crystalline silica substance in Australia;

(c) exposure controls, exposure standards, engineering controls and personal protection information in relation to the crystalline silica substance;

(d) information relating to the handling and storage of the crystalline silica substance, including how the substance may be safely used.

Note

Act compliance—sections 29 and 30 (see regulation 7).

(2) The information required under subregulation (1) must be given—

(a) in writing; and

(b) to any person to whom the crystalline silica substance is supplied on or before the first occasion that the crystalline silica substance is supplied to that person; and

(c) on request, to an employer who proposes to use the crystalline silica substance at a workplace.

Note

Act compliance—sections 29 and 30 (see regulation 7).

319H Review and revision of information

(1) A manufacturer or supplier of a crystalline silica substance must review and, if necessary, revise the information referred to in regulation 319G(1) for that substance—

(a) as often as is necessary to ensure the information is current and accurate; and

(b) at least every 5 years.

Part C: When SFARP is No Longer Reasonably Practicable

Summary

Whilst the *principle of SFARP* is helpful in creating and maintaining a proactive process safety culture the *implementation of SFARP* is still subject to the real world law of diminishing returns. To fully satisfy all aspects of SFARP requires the deployment of significant resources to demonstrate that the risk is indeed at SFARP (in absolute terms). The legal obligation to *demonstrate* that the risk has been eliminated/reduced SFARP*, often adds little or no actual process safety risk benefits*. **Ultimately, the deployment of these resources in the demonstration of SFARP rather than actually addressing identified risks or inadequate controls is deleterious to process safety.**

It is not just the MHF operator's resources that are tied up in the demonstration of SFARP. It also generates a regulator behaviour that continually needs to ask for more information and evidence as they test whether in fact SFARP has been reached/demonstrated. This has the potential to transfer liability of what risk is "acceptable" onto the regulator. For example, in the pursuit of finding adequate evidence to support SFARP demonstration the regulator creates an ever increasing request for information and activity. These regulatory requests will invariably dictate the priorities of the MHF operator's finite resources. The consequences of these ever increasing demands may affect both the well-being of the workforce as well as the potential viability of the enterprise. There are very different standards of demonstration required in the different state jurisdictions.

Detail

To help illustrate this issue I have provided a few case study (examples).

Risk matrices have been around a long time, comprising of a range of Consequences on one axis and a range of Likelihoods (probabilities) on the other. The product of the Consequence x Likelihood gives an expression of Risk. Qenos prioritises its SHE risk exposures into 4 risk categories – for the purposes of this example let's call them *High, Medium, Low* and *Negligible* (where negligible does not necessarily mean that the risk has been demonstrated as being SFARP, but is of significantly lower concern compared to the other risk categories). Behind each risk matrix is an assumption of Acceptable, Tolerable and Unacceptable risk and the concept of acceptable risk criteria that define acceptable end points for expressions of risk (refer to NSW *Hazardous Industry Planning Advisory Paper No. 4 Risk criteria for land use planning* – the ALARP carrot diagram). The benefit of a Risk Matrix approach is that it provides a straightforward method for prioritising risks and the deployment of Qenos resources to address them.

From a regulatory perspective risk matrices are based on the principle of ALARP, and Qenos accepts that of themselves they are not a suitable demonstration of SFARP. The problem arises when the regulator requires evidence be produced that lower order risks categorised as “Low” and “Negligible” have also been reduced to SFARP, *even when this activity means diverting Qenos resources away from addressing higher category risk exposures of greater importance*. Whilst one could posit an argument that further reducing the risk of the negligible risk exposure is aligned with the policy objective of “protecting workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work”, it would be disingenuous to do so at the expense of a higher risk exposure.

Another example of SFARP becoming impractical is the issue of engineering standards. Standards are subject to review and improvement primarily to address or improve safety but other drivers may also be included for changes in standards. One expression of SFARP demonstration is simply asking the question: “What else can be done?” Clearly a change in engineering standards represents opportunities (an obligation) to revisit every SFARP demonstration in light of those changes.

Some engineering standard changes are notable, for example the high temperature hydrogen attack of a carbon steel pressure vessel (heat exchanger) process safety incident required the Nelson Curves of API RP 941 to be revised and for industry to re-examine any vessel operating outside of those revised safety limits. However not all engineering standards impact on Major Incident outcomes. Furthermore, there are many engineering standards employed across the engineering disciplines around the world which may or may not have an impact on process safety. The resources required to review every engineering standard change for its relevance against the SFARP criteria and the contribution it may provide in eliminating or reducing risk, *even when the risk has already been engineered to a negligible risk exposure level,* is typically disproportionate to the benefit. In the current regulatory environment it is not sufficient to use a generalised argument to support this position. The regulator can and will ask the operator about any engineering standard change and whether it has been considered in detail. This burden is not sustainable and potentially counter-productive to the safe operation and maintenance of Major Hazard Facilities.

In conclusion, the legal requirement to be able to demonstrate SFARP distracts the MHF operator from higher value activities associated with safely operating and maintaining the existing facilities. The Commission into the Esso Longford Gas Plant Accident highlighted the impact of organisational changes as “relevant to the matters under investigation. These changes [included] the relocation of engineers from Longford to Melbourne …” The effect of shifting engineers to Melbourne was to lessen, in the Commission’s view, the ready availability of specialist engineering knowledge (e.g. materials and process). The demonstration of SFARP to achieve diminishing returns on process safety most significantly

affects the engineering personnel. The redirection of these critical resources is in effect equivalent to the physical relocation of these resources from the site to head office. They are not available to work on matters of greatest importance due to the excessive demands of SFARP demonstration. The great strength of the SFARP Principle, when overused, becomes its greatest weakness.

Recommendation

The ever increasing evidentiary burden is another example of how pervasive regulation that yields little benefit threatens the viability of Australian manufacturing. Regulations need to be worded to avoid extreme absolutes and allows scope for the regulator to use discretion. Specifically, regulations should clarify that the evidentiary burden for demonstrating SFARP must be proportional to the risk being addressed.