Guidelines on Information Sharing

Nov 2025

About this set of Guidelines:

Under the Workplace Safety and Health (Major Hazard Installations) Regulations 2017, regulation 22, MHIs are required to share information with other MHIs that are affected in the event of a major accident. Sharing information of offsite events allows affected MHIs to assess the impact of offsite risks and take proactive steps to minimise impacts from a major accident. This guideline outlines the approach towards information sharing.

Guidelines on Information Sharing

Content Page

About this set of Guidelines:.....1

1. Why is there a need for information sharing amongst MHIs?.....3
2. Who do MHIs need to share the information with?.....3
3. What information do MHIs need to share within their designated group?.....3
4. What is considered suitable, relevant information?.....4
5. How is the information sharing going to be conducted?.....5
6. Who should have access to the shared information?.....5
7. What do I need to do after I receive information from my designated group members?.....5
8. What are the expectations for the review?.....6
9. Workflow for sharing information.....7

Appendix A – Selection of WCS, WCCS and Partial Consequence Contour.....8

Appendix B – Information Sharing Template.....9

Appendix C – Sample reference (Section 3 and Section 4).....14

Appendix D – Frequently Asked Questions.....17

1. Why is there a need for information sharing amongst MHIs?

1.1 The intent of information sharing amongst MHIs is to minimise the escalations of major accidents as well as minimise the loss of human lives or injuries. With the sharing of appropriate information related to major accident scenarios, affected MHIs can take necessary actions towards mitigating undesirable consequences in the event of a major accident. MHIs are not to use the information shared to apportion, impose or attribute blame or liability. Rather, the information shared is used to identify additional hazards and assess risks, enhancing the safety of the MHI.

2. Who do MHIs need to share the information with?

2.1 Major Hazards Department (MHD) will designate MHIs into groups ("designated group") and inform the company representative of the MHI ("Rep"). Upon notification, the MHI, through its appointed Rep, will be required to share information with other MHIs in the same designated group within the stipulated timeline in the letter.

3. What information do MHIs need to share within their designated group?

3.1 MHIs are required to share the information listed in the Fifth Schedule of Workplace Safety and Health (MHI) Regulations with other MHIs in their designated group. MHIs will be required to share the following information:

a. General information: Particulars of the MHI such as workplace details, Safety Case Lead, contact details and emergency contact numbers, and a general description of main activities in the MHI.

b. Fire and explosion scenarios: Description of dangerous substances causing fires and explosions scenarios [1] (including relevant contours), and the recommended actions to be taken by affected MHIs in the designated group, including the communication method.

c. Toxic scenarios: Description of the dangerous substances causing offsite toxic effects, and the recommended actions to be taken by affected MHIs in the designated group, including the communication method.

3.2 It is important that the information shared need to be suitable and relevant.

[1] The suggested measures provided by the risk creator are not intended to cover all possible scenarios and are proposed in good faith, without knowledge of the specific setup or limitations of the risk recipients. The risk recipients are advised to carry out their own assessments and decide on appropriate actions to be taken, based on their circumstances.

4. What is considered suitable, relevant information?

4.1 MHIs are to provide general information stated in 3.1a to all within the designated group.

4.2 MHIs are required to provide information on fire, explosion, and toxic scenarios which can impact affected MHIs. This includes **Worst-Case Scenarios (WCS)** (i.e. greatest offsite distance with respect to the risk creator) and **Worst-Case Credible Scenarios (WCCS)** (i.e. greatest offsite distance with respect to risk creator among events with likelihood greater than 1E-6).

4.3 The **WCS** consequence contours of 20kW/m^2, 2psi (fire and explosion scenarios) would be of particular importance to the affected MHIs as these are escalation scenarios which could cause not only fatalities, but also damage to process equipment or structures, resulting in escalation of major accidents. For example, 20kW/m^2 thermal radiation has the potential to thermal stress to unprotected steel structures, while 2psi blast pressures can result in partial collapse of walls and roofs and impact to cone roof storage tanks. The **WCCS** consequence contours of 4kW/m^2, 1psi and Lower Flammability Limit (LFL) would allow affected MHIs to understand extent of such scenarios which could potentially cause fatalities or injuries to people onsite so that they can consider suitable risk mitigation measures against them.

4.4 Even though the likelihood of such scenarios is very low, the sharing of such information allows affected MHIs to know the extent of the offsite impacts on their facilities and take the necessary precautions and review their emergency responses if such a scenario ever occur.

4.5 Any toxic substances which have potential offsite consequences are to be shared to all MHIs in the designated group regardless of their distances. The information to be shared includes the chemical properties, recommended actions against toxic exposure and means of communication shall be provided to affected MHIs. Unlike fire and explosion scenarios, toxic contours need not be shared.

4.6 To provide affected MHIs with a visualisation of the fire and explosion contours impacting their premises, consequence contours would need to be provided on a suitably scaled map for:

i. WCS 20kW/m^2,
ii. WCS 2psi,
iii. WCCS 4kW/m^2,
iv. WCCS 1psi, and
v. WCCS Lower Flammability Limit (LFL) leading to flash fire.

In addition, the respective recommended actions to take and communication means shall be provided for the fire and explosion scenarios.

4.7 Due to security reasons, **it is important not to reveal the source equipment** that cause any of the consequence contours provided. As such, only a partial consequence contour is needed. Refer to Appendix A for the concept on partial consequence contour.

4.8 An information sharing template and a sample are shown in Appendix B and Appendix C respectively. The Rep may also choose to provide the information in other formats.

5. How is the information sharing going to be conducted?

5.1 The Rep is required to gather all necessary information needed for the information sharing in the designated group and contact members in the designated group for dissemination of information within the stipulated timeline. It can be via face to face, emails, or registered mail. The Rep will need to get confirmation of receipt from the recipients in their designated group.

6. Who should have access to the shared information?

6.1 To encourage sharing in confidence, it is important that the Rep safeguard this information and limit access to it by granting such access only to the relevant stakeholders within the company (e.g. Safety Case team, Company Emergency Response Team or CERT) and to the regulatory authorities.

7. What do I need to do after I receive information from my designated group members?

7.1 Once the Rep have received information from other MHIs in the same designated group, the Rep is required to **evaluate all the scenarios** even if they are of low likelihood (e.g. less than 1E-8), as they would potentially still impact the MHI. Thereafter, conduct an internal assessment to review if there are substantial changes in the risk profile of the site from these offsite impacts.

7.2 MHIs need to establish contact points with other MHIs in their designated group for effective communication during any emergency, where applicable, consider planning for joint emergency response drills amongst designated group members or possible mutual aid arrangements, etc.

7.3 MHIs are also required to review their Major Accident Prevention Policy (MAPP), Safety Case and Emergency Response Plan (ERP) accordingly and submit them to MHD if requested.

8. What are the expectations for the review?

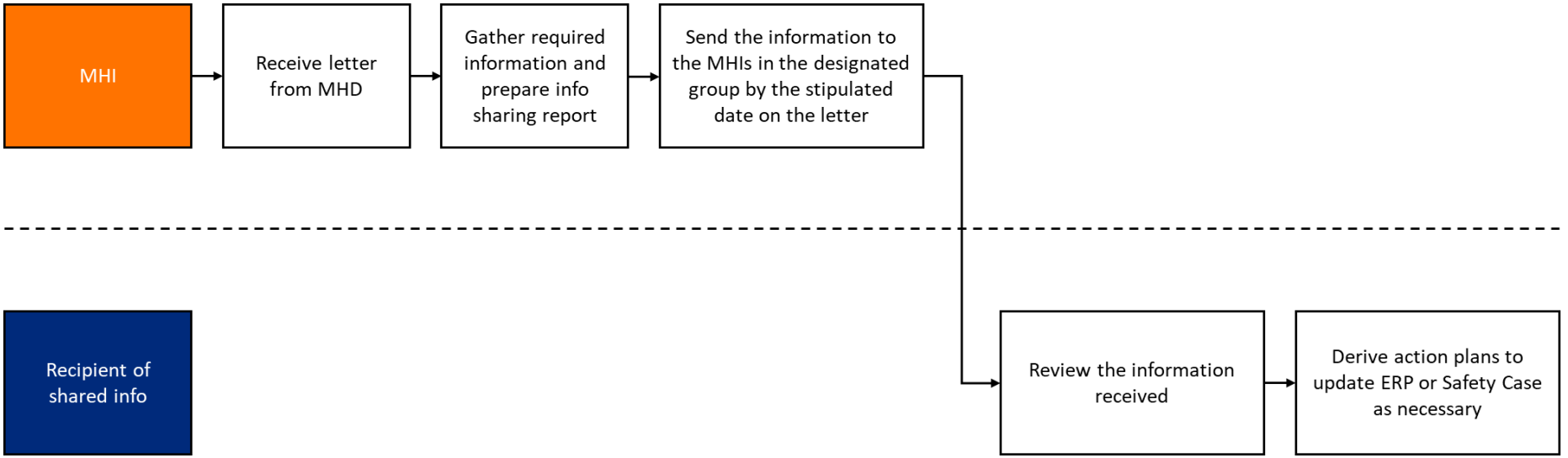
8.1 Using the information received, evaluate the adequacy of the ERP, including:

- Suitability of company assembly area locations
- Additional plans or preparations to manage offsite impacts:
  - Is there a need to conduct drills to address offsite impact scenarios?
  - What operational measures may be considered to minimise escalation of major accidents. (e.g. divert tank contents, isolate shared pipelines)?
  - Are there sufficient fire-fighting resources? Is there a need to establish a mutual aid support group?

8.2 Assess the adequacy of building construction and protection for critical equipment. If the building is vulnerable to offsite impacts, establish communications to be promptly alerted in the early onset of an incident and plan for the evacuation upon activation.

8.3 If there are concerns, affected MHIs may inform their MHD point-of-contact regarding their concerns and MHD will assist them in discussions with the risk creator for further information to confirm if there is indeed a significant increase in risk before the affected MHIs consider their options.

9. Workflow for sharing information



Appendix A – Selection of WCS, WCCS and Partial Consequence Contour

Selection of WCS and WCCS

The selection of WCS and WCCS should be based on greatest offsite distance of the specific consequence with respect to the risk creator.

Figure 1 - Overview of a consequence contour from risk creator point of view.

Partial Consequence Contour

For each WCS and WCCS, the risk creator shall only share the part of their contour encroaching into a specific MHI (refer to Figure 2). Extra caution should be taken to ensure not to reveal the source equipment resulting in the consequence contour. If this contour was manually generated and not extracted from Quantitative Risk Assessment (QRA) report, the risk creator would need to indicate it clearly.

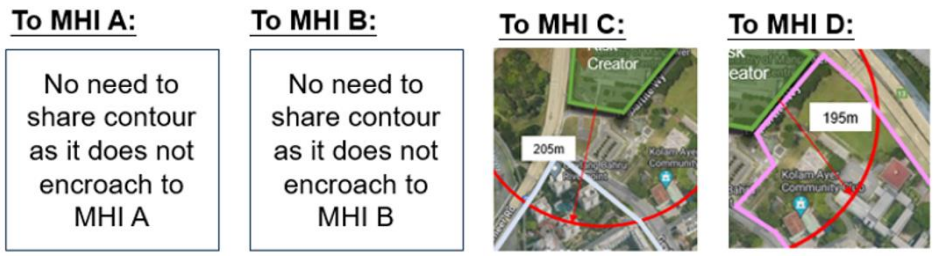


Figure 2 - Partial contours that the risk creator has to share with each MHI in its designated group.

Appendix B – Information Sharing Template

Major Hazard Installation (MHI) Information Sharing

In accordance with the Workplace Safety and Health (Major Hazard Installations) Regulations 2017, Regulation 22, MHIs are required to share information with other MHIs and workplaces that are affected in the event of a Major Accident.

"This information is prepared by _____ to meet with our obligations under regulations 22(3) of the Workplace Safety and Health (Major Hazard Installations) Regulations under the Workplace Safety and Health Act (Cap. 354A). The sole objective of circulating the information within is to share offsite impacts which could impact you and minimise the escalation of major accidents, and not to apportion, impose or attribute blame or liability. Each MHI should carry out its own assessment of the risks and hazards that is the subject of any information sharing."

1. Details of MHI			
Workplace Name			
Workplace Address			
Workplace Number(s)			
Name of Representative		**Company Position**	
Contact Email		**Contact Number**	
Emergency Response Contact Numbers	*Contact numbers for use during emergencies. Multiple numbers can be provided. An identifier for each number shall be provided.* *Example:* *6123 4567 (Control Centre)* *8234 5678 (Site Main Controller)*		

2. General description of activities

In this section, the MHI shall provide a general description of its work activities. This should include:

- *A brief overview of the installation.*
- *The purpose of the installation.*
- *A high-level overview of the main activities and production undertaken within the MHI.*

3. Fire and explosion scenarios				
Scenarios	**Dangerous Substances**	**Contour**	**Recommended Actions[1]**	**Communication Method**
*Derive relevant information for the **5 fire and explosion consequence scenarios** (indicate NA when scenario does not exist, do not leave it blank).* *WCS denotes Worst Case Scenario regardless of likelihood. Please indicate in the checkbox if the likelihood is <1E-8 or ≥1E-8.* *WCCS denotes Worst Case Credible Scenario and should have likelihood >1E-6.*	*State the name of dangerous substance, CAS, and GHS classification or attach relevant SDS.*	*Refer to Appendix A for an example on partial consequence contour.*	*Recommended actions that affected MHIs should consider to protect lives or mitigate knock on effects.* *These can include things such as initiating safe shutdown of plan, activation of emergency deluge system or any other emergency response procedures.*	*The communication method for each scenario should be clearly stated (e.g., phone call, broadcast messages, type of sirens, public warning system).* *Details should include who (e.g., Site Main Controller, shift duty manager etc) and when the neighbours would be informed (e.g., neighbour will be informed upon activation of SCDF).*

1 *The recommended actions are not meant to be exhaustive and is made in good faith without context of the risk recipients' setup or constraints.*

3. Fire and explosion scenarios				
Scenarios	**Dangerous Substances**	**Contour**	**Recommended Actions[1]**	**Communication Method**
20kW/m2 fire scenario (WCS) Likelihood: ☐<1E-8 ☐≥1E-8				
2 psi explosion (WCS) Likelihood: ☐<1E-8 ☐≥1E-8				
4kW/m2 fire scenario (WCCS)				
1 psi explosion (WCCS)				
LFL scenario (WCCS)				

4. Toxic scenarios			
Scenarios	**Dangerous Substances**	**Recommended Actions**	**Communication Method**
The number of scenarios is dependent on number of toxic substances causing offsite toxic consequences	*Toxic substances include those that have potential offsite consequences are to be shared to all MHIs in the designated group regardless of their distances.*	*Recommended actions that affected MHIs should consider to protect lives or mitigate toxic effects*	*The communication method for each scenario should be clearly stated (e.g., phone call, broadcast messages, type of sirens, public warning system).* *Details should include who (e.g., Site Main Controller, shift duty manager etc) and when the neighbours would be informed (e.g., neighbour will be informed upon activation of SCDF).*
1. [Toxic Substance 1] release scenario			
2. [Toxic Substance 2] release scenario *…*			

Appendix C – Sample reference

3. Fire and explosion scenarios				
Scenarios	**Dangerous Substances**	**Contour**	**Recommended Actions**	**Communication Method**
20kW/m2 fire scenario (WCS) ***Likelihood:*** ☐*<1E-8* ☑*≥1E-8*	***Name:*** *Ethylene oxide* ***CAS:*** *75-21-8* ***GHS Classification:*** • *Refer to attached SDS*	*See attached contour.*  Contour.pdf	*Eliminate ignition sources if possible and stay indoors. Initiate safe shutdown of plant if necessary. Activate emergency deluge for tanks if affected.*	*Upon notifying SCDF to contain the situation, our duty shift leader will immediately contact your control centre via phone call for you to take necessary emergency response.*
2 psi explosion (WCS) ***Likelihood:*** ☑*<1E-8* ☐*≥1E-8*	*Ethylene Oxide - same as above*	*See attached contour.*  Contour.pdf	*Stay indoors in blast proof buildings or evacuate to evacuation assembly area.*	*Upon significant loss of containment, we will immediately contact your control centre via phone call for you to take necessary emergency response.*
4kW/m2 fire scenario (WCCS)	*Ethylene Oxide - same as above*	*See attached pdf file.*	*Avoid fire and stay indoors. Initiate safe shutdown of plant if necessary.*	*Upon notifying SCDF to contain the situation, we will immediately*

		Contour.pdf		*contact your control centre via phone call for you to take necessary emergency response.*
1 psi explosion (WCCS)	*Ethylene Oxide - same as above*	*See attached pdf file.* Contour.pdf	*Avoid standing near non-blast proof windows until window integrity has been assessed. Assess building structure integrity (if possible) and evacuate to assembly area if building structure has been compromised.*	*Upon significant loss of containment, we will immediately contact your control centre via phone call for you to take necessary emergency response.*
LFL scenario (WCCS)	*Ethylene Oxide - same as above*	*See attached pdf file.* Contour.pdf	*Eliminate ignition sources if possible. Avoid fire and stay indoors.*	*Upon significant loss of containment, we will immediately contact your control centre via phone call for you to take necessary emergency response.*

4. Toxic scenarios			
Scenarios	**Dangerous Substances**	**Recommended Actions**	**Communication Method**
Ethylene Oxide release scenario	***Name**: Ethylene oxide* ***CAS**: 75-21-8* ***GHS Classification:*** • *Refer to attached SDS*	*Ethylene Oxide is denser than air and reacts with water to become less hazardous. Use water curtain if available.* *Keep personnel away and stay on the upwind side. Please be aware of pits and confined spaces.* *You may consider implementing In Place Protection (IPP) or provide respirator or self-contained breathing apparatus for critical personnel.*	*Upon significant loss of containment, we will immediately contact your control centre via phone call for you to avoid evacuation pathways upwind of the release.*
Chlorine release scenario	***Name**: Chlorine* ***CAS:** 7782-50-5* ***GHS Classification:*** • *Refer to attached SDS*	*Keep personnel away and stay on the upwind side. Please be aware of pits and confined spaces.* *You may consider implementing In Place Protection (IPP) or provide respirator or self-contained breathing apparatus for critical personnel.*	*Upon significant loss of containment, we will immediately contact your control centre via phone call for you to avoid evacuation pathways upwind of the release.*

Appendix D – Frequently Asked Questions

1) **As the risk contours from an MHI can go beyond its own boundary, would the MHI be exposing itself to legal liabilities from sharing the required information?**

An MHI's compliance with regulations 22(3) and 23 of the Workplace Safety and Health (Major Hazard Installations) Regulations, is in the interest of preventing undesirable knock-on effects between workplaces and should not result in any civil legal lawsuits to claim costs for mitigation controls.

2) **I have concerns about confidential information of my company being shared. What should I do?**

In the guidelines, the information to be shared has been narrowed down to broad aspects such as the general properties of the substances that could go off-site and partial contours that impacts the respective MHIs. There is no need to include the source of these contours in the information to be shared.

3) **Should the recommended actions fail to work for the affected MHIs, would there be any liability on the risk creator?**

The recommended actions by the risk creator are provided in good faith and non-exhaustive for the affected MHIs' information. Affected MHIs should evaluate for themselves, whether the recommended actions were suitable or if more needs to be done. Each workplace has a duty to implement effective risk controls for continued safe operations, including using information it receives from external parties to mitigate undesirable events.

4) **I am facing difficulties with developing appropriate recommended actions to be taken by affected MHIs.**

The recommended actions could be broad-based generic recommendations. Some suggestions include taking relevant information from safety data sheets, using established publications produced by reputable entities such as the International Association of Oil & Gas Producers (OGP) or adjusting existing emergency response plans to suit the target audience of an affected MHI.

5) **After receiving and reviewing information shared, I realised that civil structures/ process equipment in my MHI are not able to withstand blast pressures from neighbouring MHIs. Is there any expectation to enhance strength in the identified civil structures/ process equipment?**

The minimum expectation is to use the information shared and incorporate appropriate mitigation measures into the existing emergency response plan. However, if the offsite risk is assessed to be intolerable, MHIs may prioritise to address it immediately. In certain cases, authorities may intervene and require additional measures to be taken.

6) Is information sharing a once-off exercise or is there an expectation to review it periodically, like the Safety Case regime?

Generally, information sharing is a once-off exercise. However, MHIs will be required to carry out information sharing when:

a) There is a new MHI added into the designated group.
b) An MHI has a plant expansion or change that results in a significant change in the risk profile.
c) Required by the WSH Commissioner.

7) When there is a new MHI added into the designated group, how will information sharing be carried out?

When an MHI is added to an existing designated group, MHD will notify all MHIs in the group and information sharing will be carried out by a stipulated deadline.

8) After receiving the information shared by other MHIs, am I required to review my Safety Case?

Safety Case is a "live" document, reviewed and updated with changes and developments, including receiving shared information from other MHIs in your designated group.

9) In the event of a dispute over the information shared/received, what should I do?

In the case of any dispute arising from the shared or received information, MHIs should first communicate with greater clarity, to gain a better understanding or resolve miscommunications. If the dispute cannot be resolved through more direct and clearer communications, MHIs could seek assistance from MHD.

10) How should the required information be shared with affected MHIs in the same designated group?

MHIs may provide a customised report to other MHIs in the designated group, either in hardcopy or softcopy. In all cases, MHIs should obtain an acknowledgement from other MHIs of the information received. The use of information received by MHIs will be verified during discussions with MHD.

11) If I do not have any scenarios that encroach onto any MHIs in my designated group, do I still need to notify them that I do not have any information to share with them?

The MHI would still be required to notify other MHIs that they do not have any scenarios that encroach onto them and that they do not have any scenario related information to share with them. Moreover, the MHI would still need to share general information such as their emergency contact information so that other MHIs can coordinate with them during an emergency. This information exchange can be done via email.

12) How do I share the harm footprints, 20kW/m² and 2psi if my latest approved Quantitative Risk Assessment (QRA) does not have these footprints?

If the MHI's existing approved QRA was conducted in accordance with the previous QRA guidelines, it may not have the harm footprints listed.

In this case, the MHI could use the following estimations for the footprints:

- 20kW/m^2 – 0.8 X distance of the 4kW/m^2 footprint
- 2psi – 0.6 X distance of the 1psi footprint

For tank overfilling scenarios, use 400 metres as the consequence distance, as stipulated in the revised QRA guidelines.

When the MHI is required to submit a new QRA, e.g. plant expansion or major modifications, the MHI should engage the consultant to derive the 20kW/m^2 and 2psi harm footprints using actual consequence modelling and update the information shared.