



# **MAJOR HAZARD FACILITIES: Safety Cases**

**MAY 2017**



# **This guideline offers advice on how to prepare a safety case that meets the requirements of the Health and Safety at Work (Major Hazard Facilities) Regulations 2016.**

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## **ACKNOWLEDGEMENTS**

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WorkSafe would also like to acknowledge the following organisations for providing information used to develop this guideline:

- > Health and Safety Executive (UK)
  - > National Offshore Petroleum Safety and Environmental Management Authority (Australia)
  - > Safe Work Australia
  - > WorkSafe Victoria (Australia).
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## **SAFETY CASES KEY POINTS:**

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**Operators of designated upper tier major hazard facilities (UTMHF) must prepare and revise safety cases.**

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**The safety case is a written demonstration that you have the ability and means to control major incident hazards effectively.**

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**Use the safety case as a check that process safety is well understood and managed.**

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**Operators must engage with workers when preparing or revising a safety case. Plan to engage with workers, other stakeholders, and WorkSafe at an early stage to help with developing the safety case.**

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## INTRODUCTION

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### IN THIS SECTION:

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| <b>1.1 Purpose and scope of this guideline</b>                           | <b>1.6 Responsibilities in the safety case process</b>    |
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| <b>1.5 Worker engagement, participation and representation practices</b> |   |

This guideline will help an operator prepare a safety case. A safety case will assure the operator, workers, emergency services, community, and WorkSafe that the potential for major incidents has been systematically assessed and that effective and suitable controls are, or will be, in place.

### 1.1 PURPOSE AND SCOPE OF THIS GUIDELINE

The Health and Safety at Work (Major Hazard Facilities) Regulations 2016 (the MHF Regulations) identify the facilities to which the MHF Regulations apply. The status of a facility depends on the types and quantities of specified hazardous substances present or likely to be present, among other factors.

Table 1 presents an overview of the different types of facilities and the corresponding obligations imposed by the MHF Regulations. The focus of this guideline is on the safety case required by WorkSafe from a designated upper tier major hazard facility (UTMHF).

DUTIES	EXISTING FACILITY	PROPOSED FACILITY	DESIGNATED LOWER TIER MAJOR HAZARD FACILITY	DESIGNATED UPPER TIER MAJOR HAZARD FACILITY
Notification	✓	✓		
Design notice (For a proposed facility that may exceed the upper threshold only)		✓		
Major accident prevention policy (MAPP)			✓	
Safety management system (SMS)			✓	✓
Emergency plan			✓	✓
Safety assessment			✓	✓
Safety case				✓

**Table 1:** Overview of duties under the MHF Regulations

This guideline is relevant to you if you're an operator of a UTMHF that must prepare and submit a safety case or revised safety case to WorkSafe. It explains the requirements and provides recommendations that will help in preparing a useful, high-quality safety case.

The intent of a safety case is to state your 'case' that the MHF will operate safely and:

- > meet the requirements of the MHF Regulations

- > demonstrate the adequacy of the controls being implemented to prevent major incidents or to minimise the risk of such incidents to the extent that is reasonably practicable
- > demonstrate the adequacy of the controls being implemented to minimise the consequences of any major incidents that do occur.

### **1.2 WHAT IS A SAFETY CASE?**

A safety case contains all matters required in Schedule 7 of the MHF Regulations. This includes the safety assessment, emergency plan, and SMS as well as additional information as required by the MHF Regulations. The safety case is a written demonstration that you have the ability and means to control major incident hazards effectively. Use it as a check that:

- > major incident controls and the SMS are in place and work as they should
- > process safety is well understood and managed
- > there is a well-planned, effective and practised emergency plan.

The safety case should:

- > be a living document, up-to-date and accurate
- > reflect continual improvement and revision of the SMS and all safety considerations
- > demonstrate that the methods used to identify risks and controls are systematic
- > demonstrate the adequacy of measures you will implement to control the risks associated with the MHF, should a major incident occur
- > demonstrate and document worker engagement and consultation with:
  - neighbouring MHFs
  - emergency services

- the local community
- the local authority.

A safety case does not guarantee that major incidents will not occur at the UTMHF. However, the safety case, alongside a robust SMS and an open dialogue with WorkSafe, can form the basis of safe operation.

Operators must prepare a safety case for each UTMHF. As the safety case is site-specific, operators with more than one UTMHF cannot submit one safety case to cover them all. However, if you have more than one UTMHF that share common resources, you may submit the safety cases with a common core, with site-specific differences. In this case you should clearly identify which parts of the safety case are common and those that are site-specific. If this situation is likely to apply, discuss this with WorkSafe before preparing the safety case.

Schedule 7 details all the information required in a safety case for a UTMHF.

### **1.3 HOW YOU CAN USE THIS GUIDELINE**

This guideline is for MHF operators, process safety engineers, managers, and workers of MHFs. It is for all facilities designated as UTMHFs and is non-industry specific. This guideline will help you with preparing and submitting safety cases required by the MHF Regulations.

Coloured boxes summarise sections of the MHF Regulations or the Health and Safety at Work Act 2015 (HSWA).

Grey boxes contain examples. These expand on the content of the section and help in providing further clarification.

1.4 HOW THIS GUIDELINE FITS INTO THE SUITE OF GUIDELINES

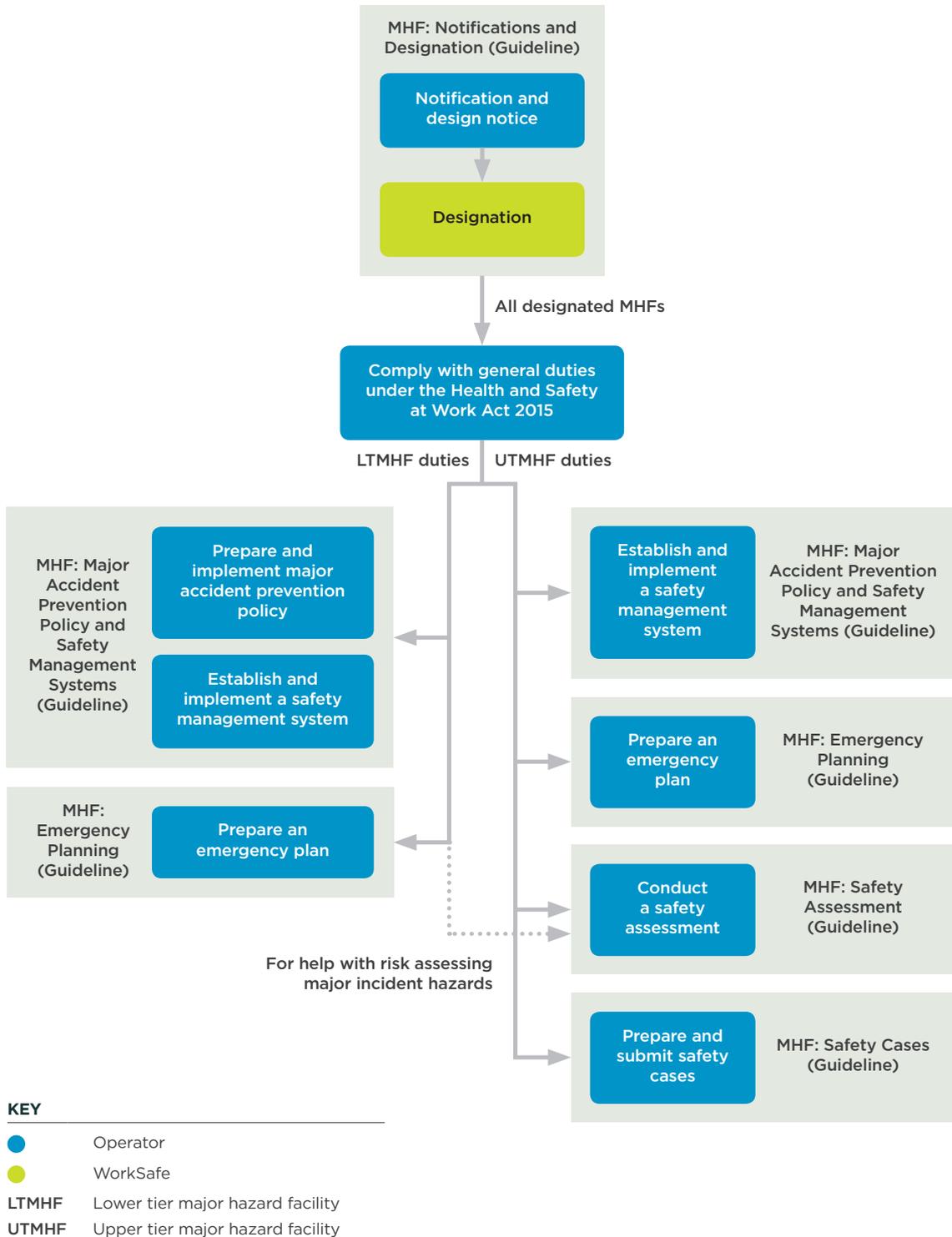


Figure 1: Overview of major hazard facilities guidelines

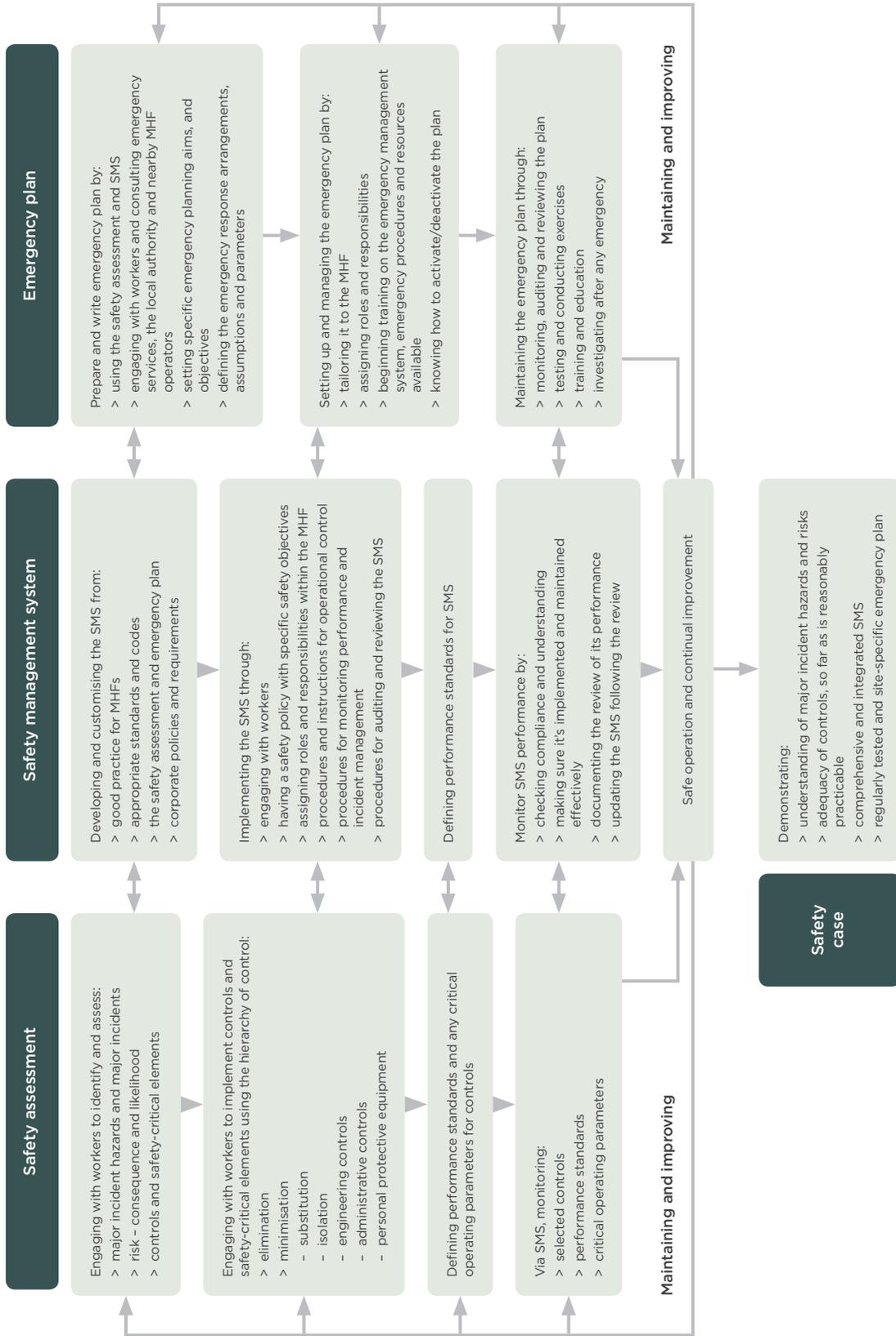


Figure 2: Summary of the links between the SMS, safety assessment, emergency plan, and safety case

Figure 1 describes how the suite of major hazard facilities good practice guidelines (GPG) interacts. Figure 2 describes the links between the SMS, safety assessment, emergency plan, and safety case.

This guideline form part of a set of guidance that includes information on:

- > Emergency planning
- > Major accident prevention policies
- > Notifications and designation
- > Safety assessment
- > Safety management systems.

### **1.5 WORKER ENGAGEMENT, PARTICIPATION AND REPRESENTATION PRACTICES**

Both you, as the operator, and workers have general health and safety duties of care. Figure 3 shows your twin duties to engage with workers and to have effective worker participation practices.

For certain duties under the MHF Regulations you must engage with, and make sure there is participation of, workers and any worker representatives who are:

- > identifiable at the time
- > working, or likely to be working, at the MHF.

These are stronger requirements than the twin duties placed on a person conducting a business or undertaking (PCBU) under HSWA. The set of workers the duties apply to also differ. The twin duties under HSWA only apply to workers who carry out work for the business or undertaking. In comparison, the duties under the MHF Regulations apply to any identifiable worker 'working, or likely to be working,' at the MHF.

For more information, see WorkSafe's *GPG Major Hazard Facilities: Major Accident Prevention Policy and Safety*

*Management Systems* and WorkSafe's GPG *Worker Engagement, Participation and Representation*, which:

- > describes a PCBU's two duties:
  - to engage with workers
  - to have effective worker participation practices
- > provides practical advice on how to engage on health and safety matters
- > describes effective worker participation practices, including representation, with examples.

### **1.6 RESPONSIBILITIES IN THE SAFETY CASE PROCESS**

#### **OPERATOR**

As the operator, you have the primary responsibility for understanding the UTMHF, controlling any risks, and making sure that if a major incident occurs, the consequences are minimised so far as is reasonably practicable. The SMS should show the controls are adequate and specific to the nature of the UTMHF, and that you have eliminated or minimised risks so far as is reasonably practicable.

You have a responsibility to plan, develop, and implement the safety case at the UTMHF. This includes:

- > implementing the controls and the SMS supporting them
- > consulting and engaging
- > informing and training workers and others
- > putting adequate and documented systems in place to prevent major incidents
- > minimising the effects of major incidents that might occur at the UTMHF.

Once WorkSafe accepts the safety case, you must operate the UTMHF in accordance with its safety case, and review and revise the safety case as required.

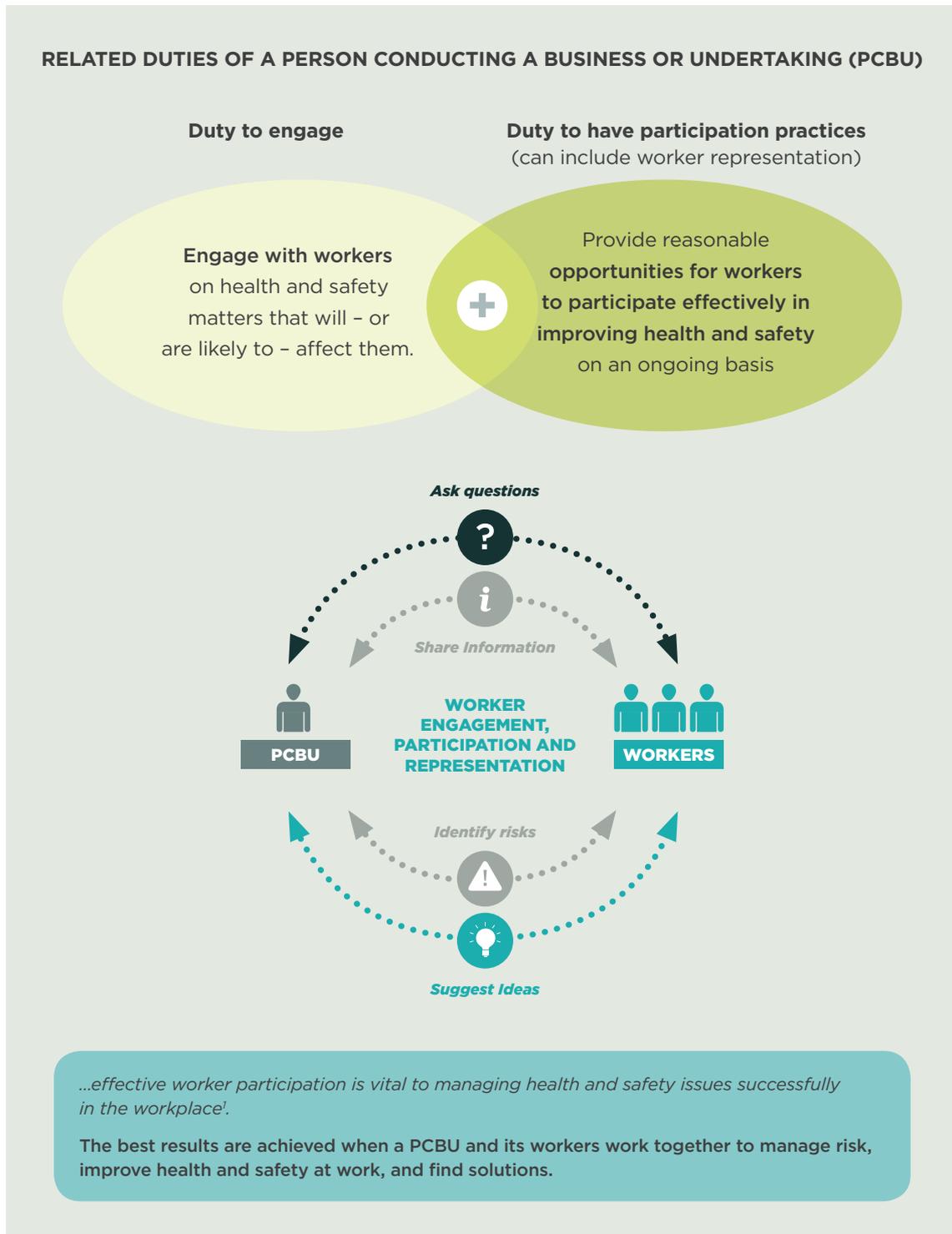


Figure 3: Worker engagement, participation and representation at a glance

<sup>1</sup> The Report of the Independent Taskforce on Workplace Health & Safety: He Korowai Whakaruruhau (2013) <http://hstaskforce.govt.nz>

## WORKSAFE NEW ZEALAND

WorkSafe's role is to engage with operators, provide information and guidance and to enforce where necessary. WorkSafe will conduct periodic reviews and site inspections to confirm you are meeting the objectives and standards declared in the safety case. A key part of these reviews will be to monitor your adherence to the commitments made in the accepted safety case.

WorkSafe needs to be satisfied you have taken adequate measures to eliminate or minimise the risk of major incidents, so far as is reasonably practicable. You must also have controls in place to minimise, so far as is reasonably practicable, the consequences of any major incident that may occur.

When deciding to accept a safety case, WorkSafe must use the following criteria:

- > the safety case contains all the information required under Schedule 7
- > the operator has engaged workers of the UTMHF in preparing the safety case (in accordance with Regulation 65)
- > based on the information included, compliance with the safety case is likely to constitute compliance with the requirements of the MHF Regulations
- > there is no reason to believe the operator will not comply with the safety case
- > the safety case is appropriate for the UTMHF and for the activities to be conducted there.

Regulation 49 details the criteria WorkSafe must use for acceptance of a safety case. Regulation 50 allows WorkSafe to impose limitations or conditions when accepting a safety case.

## 1.7 SUBMITTING A SAFETY CASE

Well before the intended submission date, inform the High Hazards Unit (HHU) MHF inspectorate of the title of the document, and its document reference number. Send the safety case on a USB stick or CD in searchable .pdf format, and two hard copies, to the postal address on WorkSafe's website: [www.worksafe.govt.nz](http://www.worksafe.govt.nz)

The relevant fee (including GST) must accompany the safety case you give to WorkSafe. The fee can be paid in advance, and it's worth requesting an invoice a month before you expect to submit your safety case.

Also submit a concordance document listing the safety case components in the MHF Regulations. The concordance document is available at: [www.worksafe.govt.nz](http://www.worksafe.govt.nz)

**Note:** WorkSafe will only accept submissions via data rooms if the files can be downloaded in an unencrypted format.

For more information on the safety case submission process, see Appendix A: New and revised safety case submission processes.

Discuss any possible submission with WorkSafe as soon as possible.

### WHEN TO SUBMIT A NEW SAFETY CASE?

#### AN EXISTING UTMHF

You must submit the safety case to WorkSafe between 4 December 2016 and 4 April 2018 or by any later date WorkSafe specifies in writing.

#### A PROPOSED FACILITY

You must submit the safety case to WorkSafe at least 6 months before you intend to commence operating the facility, or by any later date that WorkSafe specifies in writing.

## 1.8 RECOMMENDATIONS FOR FORMATTING

There is no standard template for a safety case.

All information in the safety case and supporting documents should be legible. Font sizes should be large enough, and diagrams and plans should be at an appropriate scale and resolution for details to be readable.

Set it out in a clear and logical manner with headings, section numbers and a table of contents.

Explain site-specific or industry-specific terminology and abbreviations, preferably in a separate glossary.

Each page should include in the header or footer enough information to identify the UTMHF, for example:

- > the company or other name
- > the suburb or town
- > the facility identification number assigned by WorkSafe (if any).

Include enough information in the header or footer to identify the document of which it forms part, including:

- > the date
- > version number
- > section number
- > page number (in the form 'page X of Y').

Include a cover page listing:

- > the name and address of the UTMHF
- > the facility identification number assigned by WorkSafe (if any)
- > the name, title and contact details for the person WorkSafe should contact if details in the safety case need clarification
- > date of preparation and version number of the safety case.

Cross-reference plans, maps, diagrams and other attachments to assist the reader's understanding.

Site location maps and plans should, wherever possible, include colour maps.

References to separate documents, such as safety assessments, SMS, and emergency plans should clearly identify the document by title and version or revision date.

Where the safety case covers a matter in the SMS, specify the SMS page number.

Clearly mark any changes in a new revision of the safety case as a revision.

## 1.9 REVIEWING AND REVISING AN ACCEPTED SAFETY CASE

You must submit a revised safety case under Regulation 54 to WorkSafe by the fifth anniversary of the safety case being accepted, even if a revised safety case has been accepted during the five-year period. WorkSafe may extend this period if a revised safety case has been accepted within the last 5 years.

The review and revision of the accepted safety case also occurs in other circumstances. See section 8 for more information about the review and revision requirements of the safety case.

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## PLANNING

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### IN THIS SECTION:

- 2.1 Communicate with WorkSafe early in the process
- 2.2 Preparing a safety case for a proposed facility
- 2.3 Preparing a safety case for an existing facility
- 2.4 Steps in preparing a safety case

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## Good planning and engaging with workers, other stakeholders and WorkSafe at an early stage can help to streamline development of the safety case.

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Developing and setting up a site-specific SMS managing the major incident controls is a critical activity supporting the safety case. It should occur alongside developing the safety case.

### **2.1** COMMUNICATE WITH WORKSAFE EARLY IN THE PROCESS

Contact WorkSafe as early as practicable about your potential status under the MHF Regulations. This includes proposing to build a new facility or expanding an existing lower tier major hazard facility to hold specified hazardous substances above the upper tier threshold. For more information about notifying and what designation means, see WorkSafe's *GPG Major Hazard Facilities: Notifications and Designation*.

### **2.2** PREPARING A SAFETY CASE FOR A PROPOSED FACILITY

A fully operational facility might be able to prepare the required documents (SMS, emergency plan etc) at the start of designation; however, this may not be the best approach for others. It may be worthwhile if you're an operator of a proposed facility to start preparing the required documents early. For example, you could draft a safety case outline before the proposed facility is designated an UTMHF.

### **ENGAGING WITH WORKERS AS EARLY AS POSSIBLE**

Engaging workers is a requirement, but it may not be feasible until workers are hired. That is usually at later stages of the project. However, the experience of plant operators, maintenance, and engineering workers is usually valuable when developing an effective safety case. Involve workers with similar experience so far as is reasonably practicable in the safety assessment and other relevant activities as early as possible. One alternative might be to engage with workers from similar facilities you own, until workers for the proposed facility can be engaged.

### **PREPARING A SUMMARY OF THE EMERGENCY PLAN EARLY IN THE DESIGN PHASE OF THE PROJECT**

Certain conceptual or detailed design decisions will impact on the emergency plan. For example, some matters to capture at the design stage and during early safety case development are:

- > type and capacity of fire protection systems
- > nature and scale of major incidents to be dealt with by protection systems
- > access and egress at the facility.

### **USING THE OUTPUT OF SAFETY CASE PREPARATION TO START PREPARING TRAINING PACKAGES**

Compile safety case content into draft training packages for future workers, even if these packages are not finalised until later. For example, information about the identified major incident hazards, information about the selected controls and underlying rationale for the selection/rejection of controls.

### **DEVELOPING THE SMS EARLY**

A SMS cannot be fully implemented until the MHF is close to completion and entering commissioning stages. However, you can develop policies and objectives, procedures and documentation for the SMS early and integrate them with the safety case and other project documentation (eg operating manuals, maintenance schedules and procedures).

Make SMS 'design' choices relatively early in the project. For example whether you adopt or modify the corporate system, develop a unique system or use a particular standard or model.

### **DEFINE WHO HAS MANAGEMENT RESPONSIBILITY AT EACH STAGE**

When greenfield sites are developed by an independent PCBU, it is important to define early on who has management responsibility. Decide who is responsible for the site, at what stage, and whose SMS will operate at what stage (another PCBU or yours). For example, whose permit-to-work system will be used during commissioning?

### **CO-ORDINATING WITH NEARBY UTMHFs**

Make sure you're aware of nearby UTMHFs, as WorkSafe can require you to co-ordinate with them when preparing safety cases. All UTMHF locations are available at: [www.worksafe.govt.nz](http://www.worksafe.govt.nz)

Information gained during co-ordination will likely affect major incident and major incident hazard identification, safety assessments, selection of controls and emergency planning. When two or more UTMHFs are close or the operations are linked in some way, their hazards and risks can interact. A major incident could result and the consequences may escalate. For more information see section 3.

### **2.3 PREPARING A SAFETY CASE FOR AN EXISTING FACILITY**

An existing facility which already has a safety assessment, SMS and emergency plan should first review them against the requirements of the MHF Regulations. They make up the largest part of a safety case, so make sure they're up-to-date, comply and fulfil their purpose. If the SMS and safety assessment adequately control all risks, the emergency plan is robust, tested, and are all regularly reviewed and revised, the safety case development should be straightforward.

### **2.4 STEPS IN PREPARING A SAFETY CASE**

Sections 3 to 7 of this guideline explain the process for developing a safety case for a representative UTMHF, what should be included, and how to obtain the relevant information.

#### **PREPARING THE SAFETY CASE**

Preparation of the safety case is not a one-off, finite process. It should be a process of continual improvement. It should accurately reflect the level of safety and the state of safety management at the UTMHF.

You are responsible for four key duties:

- > conducting a safety assessment to understand the hazards, assess risks to health and safety and demonstrate adequacy of controls at the MHF

- > developing an emergency plan
- > developing and implementing an SMS for maintaining safe operation at the MHF
- > developing and maintaining a safety case and operating the MHF in accordance with it.

The following factors are critical to developing a successful safety case:

- > having effective worker engagement, participation and representation practices
- > including major incident safety in the facility's design and construction (for operators of proposed facilities)
- > effective timing of all notifications to WorkSafe, to allow sufficient time for safety case preparation and assessment
- > committing the necessary resources to safety case development
- > tying the safety case into other planning priorities (ie make the safety case a part of the business plan).

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## ENGAGEMENT AND CO-ORDINATION

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### IN THIS SECTION:

- 3.1 Worker engagement and participation in the safety case
- 3.2 Co-ordinate with neighbouring UTMHFs

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## Describe how you will engage with workers and neighbouring facilities in the continual development of the safety case.

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### 3.1 WORKER ENGAGEMENT AND PARTICIPATION IN THE SAFETY CASE

When preparing or revising the safety case you must engage with, and make sure there is participation of, workers and any worker representatives identifiable at the time. Involve workers working or likely to be working at the facility.

The safety case must demonstrate effective worker engagement has occurred while preparing the safety case. Engaging workers when developing and revising the SMS, safety assessment, and emergency plan and documenting this in the safety case, helps to meet this requirement.

#### Example 1: Descriptions of engagement with workers

Ways of demonstrating effective engagement could include:

- > lists of workers engaged and the basis on which they were selected
- > summaries of issues discussed, agreements reached and any unresolved issues
- > minutes of meetings when the safety case was discussed, with attendees listed
- > evidence that any issues, concerns, or suggestions raised by workers are adequately evaluated and either accepted or not. In either case, document the reasons for accepting or not
- > lists of workers involved in the safety case process and their involvement (eg major incident hazard identification workshops).

Regulation 65 requires the operator to engage with workers when preparing and revising the safety case.

### 3.2 CO-ORDINATE WITH NEIGHBOURING UTMHFs

WorkSafe may require you to co-ordinate safety case development where it is necessary for the safe operation and effective safety management of two or more facilities, such as where a major incident at one UTMHF may cause one at another. Co-ordination may be required with neighbouring UTMHFs or UTMHFs with linked operations (eg via a pipeline, shared utilities or other similar connections).

Aim for a clear understanding about what you're co-ordinating. The SMS for each UTMHF should manage all risks arising from any neighbouring or connected UTMHFs.

Regulation 46 describes when WorkSafe can require the co-ordination of safety cases between two or more UTMHFs.

#### HOW MUCH INFORMATION IS ENOUGH?

If co-ordinated preparation is required, provide enough information for other UTMHF operators to:

- > implement adequate systems and controls
- > manage potential impacts on their UTMHFs
- > fully document the risks.

In particular the exchange of information should allow them to understand:

- > major incidents and hazards which could affect the equipment and workers at their UTMHF. For example, a release at a neighbouring UTMHF makes an evacuation point or route inaccessible or unsafe
- > major incident hazards which could create a major incident at their UTMHF (eg a fire at a neighbouring UTMHF may cause a fire at your UTMHF because of equipment near the boundary between the sites)
- > controls on their site that may reduce the risk at their UTMHF from major incidents at other UTMHFs (eg isolation of shared lines, utilities, provision of mutual aid)
- > the consequences of major incidents at a neighbouring UTMHF on their UTMHF. For example, an explosion at a neighbouring UTMHF could damage the control room or fire systems
- > roles and responsibilities relating to shared plan, utilities, fires systems, services etc.

At the end of the co-ordination process, you should have the following information to include in the safety case:

- > detailed information on the adverse events from neighbouring UTMHFs that could affect the UTMHF
- > detailed information on the adverse events arising at your UTMHF that could affect neighbouring UTMHFs
- > information on the likelihood of these events occurring.

Other information to co-ordinate might be:

- > risk at each UTMHF, due to hazards and potential major incidents at other UTMHFs
- > 'knock-on' effects (potential for major incidents at one UTMHF to spread to neighbouring UTMHFs, which in turn may initiate further major incidents)

- > common connections between the UTMHFs (eg pipelines)
- > shared resources such as:
  - access routes
  - security workers
  - fire water supplies
  - essential utilities
  - operations/maintenance workers
  - equipment
- > cumulative risk from all UTMHFs, including the possible escalation across site boundaries
- > SMSs, and in particular, the impact of any changes to hazards and controls relevant to the co-ordinated UTMHFs
- > emergency planning, including:
  - response arrangements
  - communication systems
  - emergency response facilities
  - on site and off site response
  - sharing emergency response resources (equipment and workers)
  - communication with emergency services and local councils
- > consistent community information, including:
  - the nature of the hazards
  - major incidents
  - emergency response requirements.

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## **INFORMATION ABOUT THE MAJOR HAZARD FACILITY**

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### **IN THIS SECTION:**

- 4.1 Describing the UTMHF's operations and activities**
- 4.2 Diagram and scale plans of the UTMHF**
- 4.3 Controls and verifying safety-critical elements**
- 4.4 Officer's signed statement**

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## The safety case must include specific information about the UTMHF and the operations and activities conducted there.

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### 4.1 DESCRIBING THE UTMHF'S OPERATIONS AND ACTIVITIES

Include sufficient descriptive information in the safety case to allow WorkSafe to understand and evaluate the identification and control of major incidents at the UTMHF.

The safety case should include:

- > a description of the nature of the UTMHF and its operation. This should include a description of the main activities, particularly those that involve any specified hazardous substances
- > a description of the engagement carried out with workers in the preparation of the safety case
- > a summary (eg in a table) of all relevant New Zealand and international standards that have been applied, or will be applied, for the facility or the plant used in connection with the facility. That is, only relevant standards to major incident prevention that apply, or will apply (eg for an inspection program based on a standard, summarise that standard and where it's applied). Where a standard makes reference to additional standards, it is unnecessary to list those referenced standards, unless it helps to provide clarity
- > a description of the specified hazardous substances and any other hazardous substances that are expected to be present. This includes:
  - raw materials
  - process intermediaries
  - processing aids and catalysts
  - hazardous waste streams
  - final products
  - hazardous substances in storage
- > information about each hazardous substance including:
  - their identification by name and by any other means necessary for clear identification
  - their quantity present or likely to be present at the UTMHF
  - their physical, chemical, and toxicological characteristics (and any other hazardous characteristics, both immediate and delayed)
  - their physical and chemical behaviour under normal conditions of use or under foreseeable abnormal conditions
- > a description of the physical and chemical processes associated with the specified hazardous substances, including:
  - the main units of plant used in those processes
  - process flow diagrams
  - descriptions of the processes, including process conditions.

### PIPELINES

The safety case must include a description of any pipeline connected to the UTMHF that has the potential to cause or contribute to a major incident. A summary table, or plans showing pipeline locations coming in or going out from the UTMHF is acceptable.

Include details about the pipeline, specifically:

- > substances that it conveys, including the design pressure (maximum allowable operating pressure) and temperature of its contents
- > its dimensions and layout
- > its contained volume at declared maximum allowable operating pressure (ie the maximum contained volume that can enter the facility). The contained volume should only be the quantity present at the facility and up to the first valve isolating the pipeline from the facility
- > any equipment intended to ensure safety (eg isolation valves).

#### OPERATING AND ENVIRONMENTAL CONDITIONS

The safety case must describe the particulars of the design or operational limits associated with environmental conditions in which the UTMHF has been designed to operate. It could also describe how the UTMHF's structures were designed and are maintained for those conditions.

Some operating conditions to consider are:

- > process (ie fluid, equipment, etc) operating conditions:
  - pressure
  - temperature
  - flow rate
  - composition
  - normal/abnormal operating ranges
  - design pressures and temperatures
- > environmental conditions:
  - prevailing winds
  - seismic activity
  - flood potential
  - temperatures

- what standards the UTMHF is built to
- what environmental conditions the UTMHF is built to withstand (eg a 1 in 10 year event, a 1 in 100 year event, a 1 in 1000 year event etc).

#### 4.2 DIAGRAM AND SCALE PLANS OF THE UTMHF

The safety case must include a diagram of the UTMHF and a detailed scale plan of the UTMHF and its surrounding area. The GPG *Major Hazard Facilities: Emergency Planning* gives further details of what to show on the map for emergency planning purposes.

The layout plans of the UTMHF should show:

- > a diagram of the UTMHF's general layout showing the location of:
  - main process units
  - main storage areas
  - control rooms
  - administrative buildings
- > scale plans of the UTMHF and its surrounding area showing:
  - the location of the UTMHF within the surrounding area
  - topographical information
  - land uses and occupancy (ie the land use zonings in the surrounding area, shown as a description of each zoning, such as 'residential', not just the zoning number) within 2 km
  - activities in the surrounding area within 2 km. That means actual activities that occur in the surrounding areas, such as other MHFs or other hazardous substance storage sites you know of, retail businesses and sports
  - the location of any identified external conditions that could affect the safety of the UTMHF.

The following information and data may also be contained in the scale plans (but a written description is also acceptable):

- > graphically presented demographic information about the local community within 2 km, including surrounding land uses permitted by the local authority
- > meteorological data relevant to the estimation of the effects of any major incident.

In addition, include the following where relevant:

- > a brief description of the nature of storage and handling including a reference to the scaled map/s to show the area on the site where each activity occurs. This includes:
  - warehouse
  - bulk
  - packaged
  - tankage
  - decanting
  - receiving
  - loading
  - transferring
  - processing
  - reacting
- > a description of the main raw materials and finished or end products of the UTMHF. A process flow diagram may be included to aid the description.
- > diagrams or pictures of relevant sections, pipelines or equipment in an appropriately larger scale.

The layout plans of the UTMHF should show:

- > the location and name of depots or storage areas included in any hazardous substances notification
- > the location and quantities of specified hazardous substances

- > control rooms and offices
- > emergency plant and equipment (eg fire water ring main and other fixed firefighting equipment, emergency control centre)
- > escape routes from the UTMHF
- > emergency assembly areas. You may need more than one assembly area where an incident could release toxic gases or smoke
- > the proximity to:
  - protected places. This means legally protected areas like Crown conservation estate, regional parks, public places (roads, etc), watercourses, drinking water catchment areas and agricultural land
  - neighbouring occupancies and land uses, including residential premises
  - sensitive land uses, such as hospitals, schools, retirement homes and day-care centres.

### 4.3 CONTROLS AND VERIFYING SAFETY-CRITICAL ELEMENTS

Take an inclusive view of what safety-critical elements cover. You should consider the need to ensure the health and safety of any person at or near the UTMHF. The safety case must include:

- > a detailed description of major incident controls and their performance standards
- > a list of roles, responsibilities, and any other resources (internal and external) able to intervene if a control fails.

For more information to help with describing performance standards for controls, see WorkSafe's GPG *Major Hazard Facilities: Major Accident Prevention Policy and Safety Management Systems*.

A safety-critical element is any part of a facility or its plant (including a computer program) that:

- > has the purpose of preventing, or limiting the effect of, a major incident, and
- > the failure of which could cause or contribute substantially to a major incident.

**Example 2: Safety-critical elements**

Safety-critical elements can include:

- > equipment or plant that detects smoke, fire or accumulations of flammable (and other hazardous) gases, leakages of flammable liquids, and other events that may require an emergency response
- > an audible or visual alarm system
- > overflow or overpressure protection
- > primary or secondary containments system.

The safety case must include a description of the arrangements in place for independent and competent persons to verify the safety-critical elements are suitable and remain in good repair and condition throughout the life cycle of the UTMHF. The safety case should describe:

- > the nature and frequency of examination and testing, demonstrating how examination and testing is carried out frequently enough to make sure safety-critical elements:
  - remain suitable, in good repair and condition over the life cycle of the UTMHF
  - are managed, monitored and maintained to the standards described in the safety case
- > examining documents and the physical appearance of the safety-critical elements. This should extend to the safety-critical elements of work-in-progress activities, like changes under the management of change (MoC) process
- > managing change. The safety case should set out arrangements that identify changes to the safety-critical elements so they remain in good repair and condition

- > arrangements for making and preserving records (see section 9).

For more information on safety-critical elements, see WorkSafe’s GPG *Major Hazard Facilities: Safety Assessment*.

**INDEPENDENT AND COMPETENT PERSONS**

Anyone verifying safety-critical elements should have appropriate industry background and be able to demonstrate competence in the safety-critical element they’re verifying.

While verification may be carried out in-house or by a third party, it is important that those doing it are impartial and independent from pressures, financially or operationally, which could affect sound judgement. They should not verify their own work, and their management lines should be separate from those whose work they are checking.

Consider whether you need more than one independent and competent person, based on the safety-critical elements to cover and the competences required.

SELECTION PROCESSES FOR AN INDEPENDENT AND COMPETENT PERSON

If possible, use inspection bodies that meet suitable accreditation requirements. For example, *AS/NZS ISO/IEC 17020 ‘Conformity assessment – Requirements for the operation of various types of bodies performing inspection’*.

**4.4 OFFICER’S SIGNED STATEMENT**

The safety case must include a signed and dated statement by your most senior officer in New Zealand stating that:

- > the information in the safety case is accurate and up-to-date, and
- > all people involved in implementing the SMS have the knowledge and skills necessary to carry out their role safely and competently, and

- > the controls to be implemented will eliminate or minimise, the risk of a major incident occurring to the extent that is reasonably practicable, and
- > in the event of a major incident occurring, the controls will minimise the magnitude and severity of its health and safety consequences, to the extent that is reasonably practicable.

Schedule 7 details all the information required in a safety case.

# 05/

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## **SUMMARISING THE SAFETY ASSESSMENT**

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### **IN THIS SECTION:**

- 5.1 Including a summary of the safety assessment**

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## The safety case must demonstrate how you have developed a safety assessment that adequately identifies and controls all major incident hazards.

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The safety case needs to include sufficient information to allow WorkSafe to understand the safety assessment. The level of detail should be sufficient to demonstrate you have a detailed understanding of all aspects of risks to health and safety associated with major incidents.

The safety case should demonstrate:

- > the degree of detail of the analysis is proportionate to the level of complexity of the UTMHF, the nature of the hazards and the possible consequences
- > the methodology used; specifically that the process has used assessment methods that are suitable for the hazards and major incidents
- > the assessment process has been carried out by people with knowledge and skills appropriate to the nature of the UTMHF and the operations being analysed
- > all identified major incidents are listed
- > there is a clear link between the identified hazards, incident scenarios, and selected controls
- > appropriate methods were used to identify all possible controls; those currently adopted and those that are being considered; and which are of particular significance
- > appropriate criteria were used to select or reject controls
- > engagement and consultation has been appropriate and documented.

### 5.1 INCLUDING A SUMMARY OF THE SAFETY ASSESSMENT

The summary information needs to be sufficient to let WorkSafe understand and evaluate the:

- > process to identify all major incidents and hazards
- > adequacy of the controls in place.

The summary should include:

- > for a proposed facility designated as a UTMHF, a description of the steps taken to ensure that safety has been incorporated into the design and construction. This applies whether you are directly engaged in the design and construction or engaged another person to carry it out. Make sure the SMS reflects the ongoing maintenance of the design and construction features
- > a summary of the documentation for identifying all the UTMHF's major incident hazards and major incidents
- > a complete list of major incidents that could occur at the UTMHF.

Safety cases may contain examples where you have compared alternative controls before deciding on which to adopt for specific scenarios.

In the safety case, confirm the safety assessment's currency. It should explain how and when the safety assessment will be reviewed and maintained so it will continue to accurately represent the UTMHF's risks. The approach used to present the information will vary between operators, and will depend on their operation's size and complexity.

**Example 3: Safety assessment summary information in the safety case**

An operator uses a database system to record identified hazards and major incidents during the safety assessment. In their safety case, they include one major incident hazard with screen shots of the database entries made during the assessment to let WorkSafe evaluate the safety assessment process they've used. They also include a table of the identified major incident hazards and their selected controls, plus those that were considered and rejected, with reasons for rejection.

The safety case should also include a clear statement of any risk criteria you adopt and whether the criteria are for a single incident or cumulative whole-of-site risk. Any criteria should be justified as appropriate for the nature of the activities at the UTMHF. However, while criteria are useful for risk screening and prioritisation, note the MHF Regulations require the elimination or minimisation of risks so far as is reasonably practicable.

For more information see WorkSafe's GPG *Major Hazard Facilities: Safety Assessment*.

Schedule 7 requires the safety case include a summary of the safety assessment.

**PROVIDING EXAMPLES TO DEMONSTRATE THE SAFETY ASSESSMENT PROCESS**

Summarise all of the potential major incidents and major incident hazards identified by the safety assessment in the safety case and describe the safety assessment's methodology. To clarify how this methodology was used, provide examples (eg use the incident with the greatest consequence and the one with the greatest likelihood). This should show how risk has been eliminated or minimised so far as is reasonably practicable.

The examples should demonstrate, for your selected major incidents:

- > the links between the identified hazards and major incidents and the controls; that is, how the controls in place or with agreed improvements will adequately control the risks that could lead to major incidents
- > that you have considered a range of controls
- > that in selecting controls, you have followed the hierarchy of controls and used appropriate risk criteria
- > there is an understanding of how each control will affect the risk levels (ie how it effects consequence or likelihood)
- > clear reasons for the selection or rejection of particular controls, in the context of reducing risk so far as is reasonably practicable (ie demonstrate the process used to select/reject a control)
- > that proportionate and appropriate performance standards apply to the selected controls
- > plans to implement additional or new controls identified within a reasonable time.

**Example 4: Providing examples of the safety assessment process**

1. For a fuel terminal, demonstrate the tanker loading facility and the tank overflow scenario that occurred at Buncefield in 2005.
2. Scenarios where previous incidents have occurred, such as transfer line failures.
3. For a more complex manufacturing facility, expected examples may include:
  - > reactor areas
  - > separation processes such as distillation
  - > major storage areas (vessels or tanks) and
  - > major product or raw material handling areas.

4. The key areas in a less complex utilities facility, like a water treatment plant, may be the main chlorine storage area, unloading of chlorine and dosing equipment (injectors and/or evaporators).

#### **DEMONSTRATING THAT RISK HAS BEEN MINIMISED SO FAR AS IS REASONABLY PRACTICABLE**

The safety case must show the adequacy of controls you will use to control risks associated with major incidents. The safety case should draw the elements of the safety assessment and the SMS together to summarise the overall approach and demonstrate the continuing integrity of these controls.

Show that required controls are in place or there is a process to put these controls in place in an acceptable timeframe. If certain controls identified in the safety assessment will not be implemented, present reasoned argument to explain the decision. The discussion should describe the monitoring, auditing and corrective processes that will ensure existing systems continue to perform at the required standard.

The safety case should show you have a clear picture of how major incidents could develop. The safety case should show a well-chosen set of appropriate controls in-place linked to meaningful performance standards. It should also show the controls will be monitored and maintained effectively by the SMS and through consultation, training and education programs. The UTMHF can then be deemed to be operating with risks eliminated or minimised so far as is reasonably practicable.

Include information demonstrating:

- > overall risk is controlled so far as is reasonably practicable
- > major incident controls are proportionate to the nature and scale of the risks

- > clear links between the controls identified through the safety assessment and the associated SMS, consultation and emergency plans
- > comprehensive management of risk through elements of the SMS
- > controls have been adequately reviewed prior to implementation.

Implement a control immediately if it's reasonably practicable to do so. It's only acceptable to plan a timeframe to implement an identified control if it's not reasonably practicable to do immediately.

#### **Example 5: Planning a timeframe to implement an identified control**

The safety assessment shows a control room is sited in an area where operators would be at risk if a major incident occurs on site. The risk can be reduced by moving the control room to a safe location on site away from the effects of the major incident. However, it may not be practicable to complete this before finalising the safety case.

In this situation put a plan in place to re-site the control room at a future date. To minimise the risk so far as is reasonably practicable use interim controls until this can be done.

If implementing a major incident control has not been completed, or if risks are not eliminated or minimised so far as is reasonably practicable at the time of completing the safety case, describe:

- > how implementing controls is prioritised, including any assumptions
- > and justify the timeframe for implementation and minimising risk so far as is reasonably practicable
- > how the UTMHF will deal with the elevated risk level. This should include for each risk or part of the UTMHF wherever possible:

- information on why the level of risk is acceptable in the short term. Address the likelihood and consequences of incidents occurring in the period before new controls are introduced (eg suspension of some parts of the operation or the use of temporary controls)
  - an implementation plan for introducing suitable controls, including their specification, timetables and resources, including appropriate workers
- > the final date by which the control(s) will be implemented and risk eliminated or minimised so far as reasonably practicable.

**06/**

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**SUMMARISING  
THE SMS**

## The safety case needs to show you have a robust and integrated SMS in place, which manages all necessary aspects of safety, and especially major incidents.

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The SMS summary should provide a general description of the SMS and provide more details on the parts of the SMS that support controls.

In particular, the summary should address each heading in Schedule 5 of the MHF Regulations and include sufficient information to show that an appropriate SMS is in place.

The summary could include sections on:

- > policy, planning and objectives
- > engaging with workers
- > organisation and personnel
- > operational controls
- > human factors
- > management of change
- > incident management
- > performance monitoring
- > audit and review
- > record management.

For more information on the requirements of a SMS see WorkSafe's *GPG Major Hazard Facilities: Major Accident Prevention Policy and Safety Management Systems*.

The safety case should include a description of the performance monitoring and audit and review arrangements of the SMS itself, including how:

- > procedures for checking the SMS is understood and complied with are adopted and implemented at the UTMHF
- > the SMS ensures the management framework (in particular, the monitoring and corrective action processes) is implemented and maintained in an effective state by appropriate monitoring and corrective action.

The SMS summary should show the SMS will continue to be effectively implemented and accurately reflect safety at the facility.

Schedule 7 requires the safety case include a summary of the SMS.

**07/**

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**SUMMARISING  
THE EMERGENCY  
PLAN**

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## The safety case should demonstrate a robust emergency plan is in place to limit the consequences if a major incident occurs.

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The emergency plan summary should address each heading in Schedule 3 of the MHF Regulations. It should include sufficient information to demonstrate that an appropriate emergency plan is in place.

The safety case should include a statement demonstrating the facility has consulted the relevant emergency services and there is adequate emergency response equipment.

Consider:

- > the codes and standards used to determine provision of fire water, hydrants and deluge systems
- > training and competency profiles for emergency response personnel
- > maintenance of emergency response equipment and supplies such as:
  - firefighting equipment
  - personal protective equipment
  - foam
  - neutralising agents
  - compatibility with equipment used by emergency services, where necessary.

Supporting information to the emergency plan summary could be:

- > how specific emergency plans and procedures were developed, based on the major incident scenarios identified in the safety assessment
- > a summary of the intended emergency response strategies and objectives to mitigate the incident scenarios

- > a discussion of the systems in place to contain and control an emergency and to mitigate its impacts. For example:
  - evacuation procedures
  - firefighting systems
  - deluge systems
  - containment
  - drainage systems
- > how workers were involved in creating the emergency plan
- > details of consultation with emergency services
- > emergency response resources
- > information provision to the local community after a major incident
- > arrangements for training staff in emergency response, such as:
  - the emergency scenarios and evacuation procedures focused on the use of emergency equipment
  - refresher courses
- > exercises and drills carried out to test the emergency arrangements at all levels, including the UTMHF's link with emergency services and the local community
- > how the SMS supports the emergency plan's reviews and updates.

For more information see WorkSafe's GPG *Major Hazard Facilities: Emergency Planning*.

Schedule 7 requires the safety case include a summary of the emergency plan.

# 08/

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## REVIEW AND REVISION

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### IN THIS SECTION:

- 8.1 Requirements for safety case revision
- 8.2 Ongoing review and revision of the accepted safety case

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## The MHF Regulations require comprehensive revision of a safety case every five years, but there are situations where it needs to be revised more frequently.

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You must review and revise the accepted safety case:

- > in certain situations
- > at WorkSafe’s request
- > by the fifth anniversary of the original safety case being accepted.

You must also review and, as necessary, revise the accepted safety case following certain circumstances.

Table 2 shows the minimum timeframes to submit a safety case or revised safety case to WorkSafe.

REGULATION	SUBMISSION	MINIMUM TIMEFRAME
<b>45, Schedule 1</b>	Safety case	For a proposed facility, either at least 6 months before you intend to commence operations, or by any later date WorkSafe specifies in writing.  For an existing UTMHF, between 4 December 2016 and 4 April 2018, or by any later date that WorkSafe specifies in writing.
<b>52</b>	Revised safety case (where change in situation)	As soon as practicable after change.
<b>53</b>	Revised safety case (Request by WorkSafe)	By the date set by WorkSafe (at least 30 days after request).
<b>54</b>	Revised safety case (within 5 years)	Within 5 years after the date the safety case was accepted.

**Table 2:** Timeframes for submitting a safety case

### 8.1 REQUIREMENTS FOR SAFETY CASE REVISION

The relevant fee (including GST) must accompany all revised safety cases you give to WorkSafe. Only after WorkSafe receives the safety case and the relevant fee will it begin to assess the revised safety case. You can request an invoice from WorkSafe a month before you expect to submit your safety case.

#### REVISION IN CERTAIN SITUATIONS

Changes to the UTMHF, or activities conducted there, which will require a formal submission of a revised safety case include:

- > The technical knowledge relied upon to formulate the safety case is outdated so the safety case no longer adequately provides the information required under Schedule 7. This includes systems for identifying hazards and evaluating risks of major incidents.

- > Plans to modify, recommission, or decommission the UTMHF or part of that facility are not adequately addressed in the safety case.
- > A series of proposed modifications to the UTMHF could result in a significant cumulative change in the overall level of risk of major incidents.
- > Any proposed significant change to the SMS.
- > The activities to be carried out at the UTMHF differ from the activities anticipated in the safety case.
- > There has been a significant increase in the level of risk associated with any major incident hazard.

Changes other than those above can use your MoC process without the need for formally submitting the safety case and having it accepted by WorkSafe. Still update and revise the safety case if minor changes occur, but you don't need to submit it to WorkSafe.

Clearly define in the safety case what types of changes can take place under the MoC process and what types of changes require the safety case to be revised. This should include the safety case revision situations of Regulation 52.

**Example 6: Where a safety case must be revised and formally submitted to WorkSafe:**

1. The composition of a hazardous substance within the UTMHF is different from that set out in the accepted safety case.
2. There are new specified hazardous substances on site in quantities that increase the UTMHF's risk profile.
3. There is new processing plant on site involving specified hazardous substances.

**Example 7: Where a safety case must be revised, but does not need to be formally submitted to WorkSafe:**

1. The quantity of a specified hazardous substance on site increases or decreases, but the level of risk does not increase.
2. A process vessel on site is replaced with a newer technology but the process and risk are unchanged.
3. Maintenance to update existing plant or equipment is carried out.
4. A new database for reporting incidents is implemented with the same or improved functionality as the previous system.

Regulation 52 requires the operator prepare and submit a revised safety case in six specific situations.

**REVISION AT WORKSAFE'S REQUEST**

WorkSafe may request (in writing) that you submit a revised safety case. Situations in which WorkSafe may request a revised safety case include if:

- > WorkSafe becomes aware of any material change in circumstances relating to any information included in the safety case; and
- > in WorkSafe's opinion, the change in circumstances may have resulted in WorkSafe initially rejecting the safety case.

WorkSafe will generally request a revised safety case in a situation where non-compliance has been identified and could lead to some type of enforcement action.

The request will state:

- > the matters to be addressed
- > instructions on whether the safety case must be revised in whole or in part

- > the date by which the revised safety case must be submitted (at least 30 days from the date the request was sent)
- > the grounds for the request.

Once you receive this request, you have at least 30 days from the date the request was sent to submit the revised safety case, or 21 days (or a longer period agreed by WorkSafe) to make a submission to either:

- > withdraw the request for the revised safety case
- > vary the matters to be addressed in the revised safety case
- > extend the date by which the revised safety case can be submitted.

WorkSafe must consider any written submission to withdraw the request, vary the matters covered, or extend the date of submission. WorkSafe must give written notice of its decision, including grounds for the decision if your submission is rejected in whole or in part.

#### NOTIFICATION OF CHANGE IN OPERATOR

One purpose of this notification is for WorkSafe to decide if it should request a revised safety case. For more information, see *WorkSafe's GPG Major Hazard Facilities: Notifications and Designation*.

Regulation 53 allows WorkSafe to request a revised safety case. The operator can then make a submission to WorkSafe and WorkSafe must respond.

#### REVISION EVERY 5 YEARS

You must submit a revised safety case to WorkSafe within 5 years of a safety case being accepted. The purpose of this is to make sure the fundamental thinking underpinning the accepted safety case is reviewed on a regular basis throughout the UTMHF's life cycle.

Develop a strategy and procedures for maintaining your safety case, to alert you when the safety case needs to be revised.

This process could be part of or closely linked with the MoC process.

This 5-year revision applies whether:

- > a revised safety case has been accepted because of a change of situation (Regulation 52), or
- > WorkSafe has requested a revision (Regulation 53), which has been accepted during the 5-year period.

WorkSafe may allow an extension to the 5-year period, if a revised safety case has been accepted within that period.

The 5-year review and revision of the safety case should be part of your internal processes. make sure this begins well before the required submission date. Ideally, continually review and update the accepted safety case so the 5-year safety case revision does not have a significant time or resource impact.

Regulation 54 requires the operator submit a revised safety case within 5 years of a safety case being accepted.

### **8.2 ONGOING REVIEW AND REVISION OF THE ACCEPTED SAFETY CASE**

You must review and, as necessary, revise the accepted safety case when:

- > ongoing review indicates a change or proposed change to the UTMHF could:
  - create a major incident hazard that had not been previously identified
  - increase the likelihood of a major incident
  - increase the magnitude or severity of the consequences from a major incident.
- > a control no longer minimises the risk so far as is reasonably practicable
- > a new major incident hazard, or risk associated with that hazard, is identified
- > the results of engagement with workers indicates that a review is necessary

- > a health and safety representative (HSR) requests a review because the HSR reasonably believes that grounds for review exist (which may affect the health and safety of workers) and you have not adequately conducted a review
- > there is a change of operator.

**Example 8: Changes at the UTMHF that will require a review of risk management**

Introducing a new toxic hazardous substance in a quantity that:

- > increases the level of acceptable risk at the UTMHF or
- > raises the potential impact from a larger toxic gas release.

A change in the environment around the UTMHF:

- > An additional subdivision close to the UTMHF changes the level of acceptable risk at the UTMHF requiring a review of risk management.

Regulation 35 requires the operator to review and, as necessary, revise the accepted safety case in particular circumstances.

**CONTROL DEMONSTRATION**

Any changes to the safety assessment, lists of controls, and any supporting SMS elements will make it necessary to revise the information in the safety case that demonstrates compliance with the MHF Regulations. If incident investigations or performance monitoring results show inadequacies in hazard management, consider the impact on your safety assessment.

Your assessment of controls, and reasons for considering them to be reliable, are a valuable source of information to WorkSafe when preparing for inspections. You could ask similar questions when conducting internal audits.

For example:

- > What sort of reliability or testing frequency was assumed in the control assessment?
- > Do incidents, inspection and maintenance records validate these assumptions? If not, the demonstration should explain what action is being taken to remedy this situation.

New operators have no historical data on the review and proven adequacy of controls to show. However, in the future, recognise where change, monitoring, or investigation identify the need for any review and revision of controls and a formal review of the safety case.

**REVIEWING CO-ORDINATION INFORMATION**

As soon as you become aware of proposed changes that may affect a neighbouring or connected UTMHF, WorkSafe expects operators of each co-ordinated UTMHF to reassess the original assumptions and share new information. At a minimum, an UTMHF is expected to review and revise its safety case at least every five years. This review is expected to include co-ordination information (see section 3).

# 09/

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## **RECORD MANAGEMENT**

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### **IN THIS SECTION:**

**9.1 Document and record control**

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**Good record management underpinned with strong review processes will enable you to effectively capture and record improvements. It will make sure any revisions of the safety case are up to date and accurate.**

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### **9.1 DOCUMENT AND RECORD CONTROL**

When planning and maintaining documentation and data control systems, consider the importance of updating records. The safety case should be a living document, reflecting continual improvement and revision of the SMS and all safety considerations. You should allow workers access to the safety case and related documents necessary for them to carry out their work safely.

All documents should be readily located in the current version, with obsolete versions removed from all points of issue and points of use or otherwise assured against unintended use. Obsolete versions should be clearly marked, and retained for at least seven years.

Good safety records management will involve systematic and consistent means of record storage and retrieval and should include:

- > identification
- > collection
- > indexing
- > maintenance
- > filing
- > retrieval and retention
- > protection and security
- > storage on site
- > storage off site, including:
  - off-site servers
  - cloud storage
  - removable media.

Decisions about the level of detail, methods used for documentation and applicable records management should consider:

- > the facility and organisation's need for ongoing learning
- > benefits of reusing information for management purposes
- > costs and effort involved in creating and maintaining records
- > legal, regulatory and operational needs for records, including information remaining available after any incident
- > ability to revisit and update information
- > retention period
- > sensitivity of information.

#### **RECORD RETENTION REQUIREMENTS**

Operators of UTMHFs must make a record of:

- > the safety case for the facility
- > any revision of the safety case
- > the findings and recommendations of any audit of the safety case and SMS
- > any actions that will be, or have been, taken to implement those recommendations.

Regulation 59 requires the operator to keep records of the safety case for at least 7 years after they were made, stored both in a secure place at the UTMHF and at a separate nominated address.

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## **APPENDICES**

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### **IN THIS SECTION:**

**Appendix A: New and revised safety case submission processes**

**Appendix B: More information**

**Appendix C: Glossary**

**APPENDIX A: NEW AND REVISED SAFETY CASE SUBMISSION PROCESSES**

At any time you may withdraw a submission or, for a new safety case, request in writing that WorkSafe give an extension of time to provide a completed safety case under Regulations 45 to 47.

Transitional provisions apply to existing UTMHFs. WorkSafe will contact you to confirm the timeframe for the safety case’s assessment.

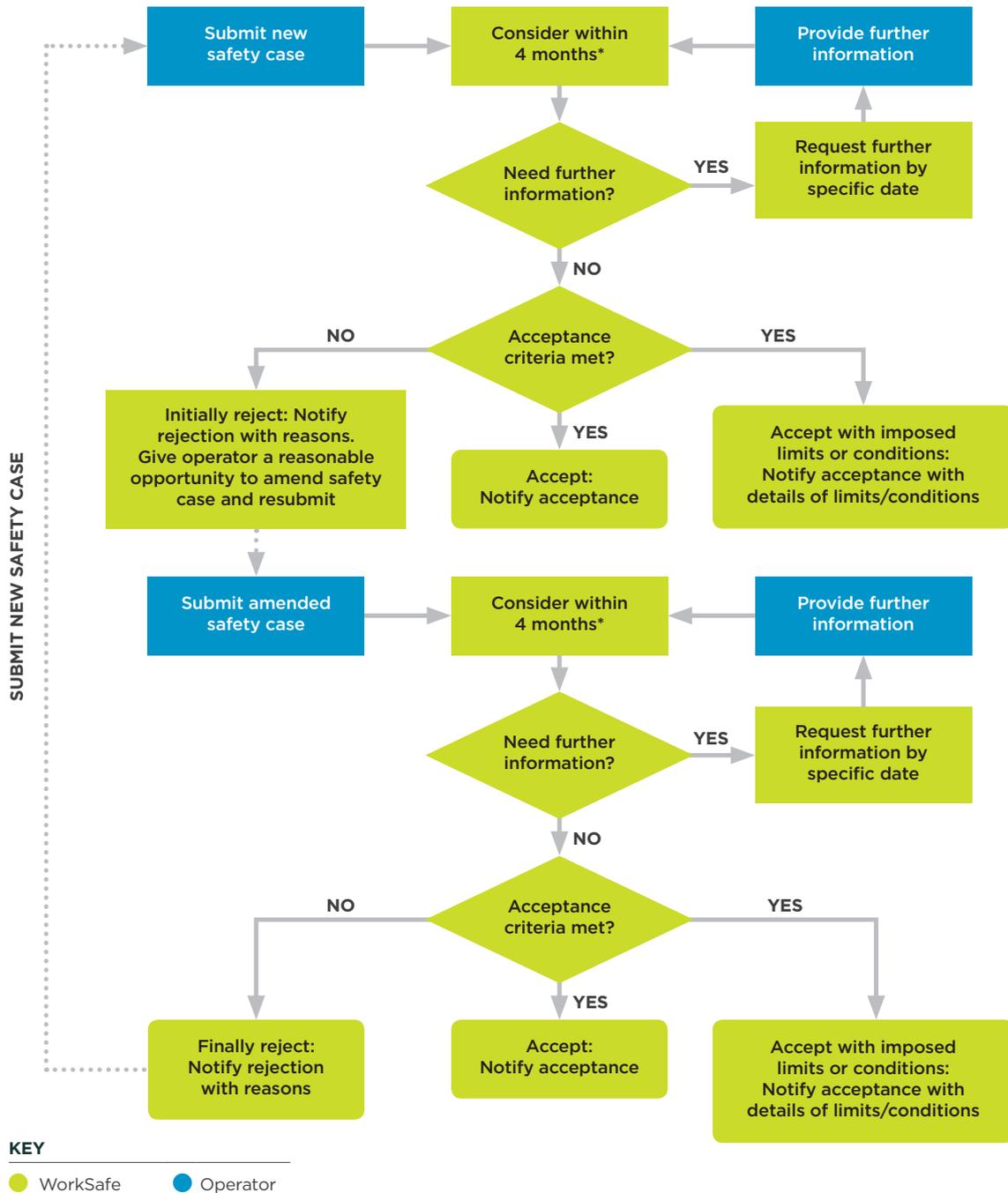


Figure 4: New safety case process

\* When WorkSafe receives further information the review period resets. If WorkSafe is unable to make a decision about a safety case or amended safety case within 4 months of receiving it, WorkSafe must notify you and give a proposed timetable for considering, and deciding on, the safety case or amended safety case.

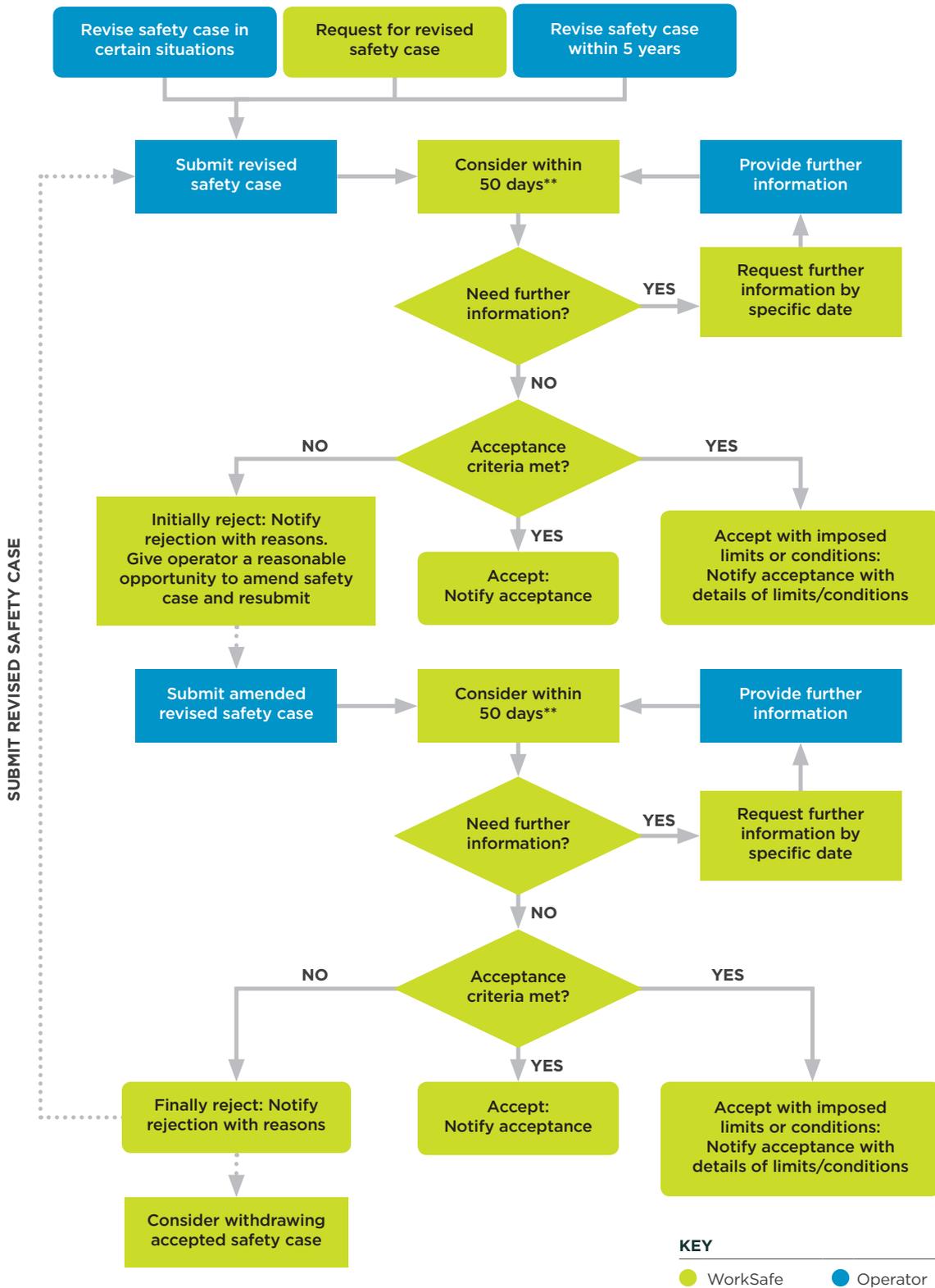


Figure 5: Revised safety case process

\*\* When WorkSafe receives further information the review period resets. If WorkSafe is unable to make a decision about a revised safety case or amended revised safety case within 50 days of receiving it, WorkSafe must notify you and give a proposed timetable for considering, and deciding on, the revised safety case or amended revised safety case.

## APPENDIX B: MORE INFORMATION

### NEW ZEALAND

#### ENVIRONMENTAL PROTECTION AUTHORITY

For information about how to manage hazardous substances visit the Environmental Protection Authority's website: [www.epa.govt.nz](http://www.epa.govt.nz) or call 0800 376 234.

#### NEW ZEALAND LEGISLATION

To access all legislation including Acts and regulations visit the New Zealand Legislation website: [www.legislation.govt.nz](http://www.legislation.govt.nz)

#### YOUR LOCAL COUNCIL

Your council might have additional rules that need to be met. Check with your local council for specific rules that apply in your region.

### INTERNATIONAL

#### EUROPEAN COMMISSION (EUROPE)

For information and guidance from the European commission's Major Accident Hazards Bureau visit their website [minerva.jrc.ec.europa.eu/publications](http://minerva.jrc.ec.europa.eu/publications)

#### HEALTH AND SAFETY EXECUTIVE (HSE) (UK)

For information and guidance about the UK's Control of Major Accident Hazards (COMAH) Regulations visit the HSE's website: [www.hse.gov.uk](http://www.hse.gov.uk)

#### NATIONAL OFFSHORE PETROLEUM SAFETY AND ENVIRONMENTAL MANAGEMENT AUTHORITY (AUSTRALIA)

For guidance to assist with preparing a safety case for a MHF visit the National Offshore Petroleum Safety and Environmental Management Authority's (NOPSEMA) website: [www.nopsema.gov.au](http://www.nopsema.gov.au)

#### SAFE WORK AUSTRALIA (AUSTRALIA)

For guidance to assist with preparing an effective safety case that meets Australia's Work Health and Safety Regulations visit Safe Work Australia's website: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

#### WORKSAFE VICTORIA (AUSTRALIA)

For guidance to assist with preparing a safety case for a MHF visit WorkSafe Victoria's website: [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au)

### FURTHER READING

For information and guidance about health and safety or to contact the High Hazard Unit visit WorkSafe's website: [www.worksafe.govt.nz](http://www.worksafe.govt.nz) or call 0800 030 040.

Related WorkSafe publications:

- > *Introduction to the Health and Safety at Work Act 2015*
- > *Major Hazard Facilities: Emergency Planning*
- > *Major Hazard Facilities: Major Accident Prevention Policy and Safety Management Systems*
- > *Major Hazard Facilities: Notifications and Designation*
- > *Major Hazard Facilities: Safety Assessment*
- > *Petroleum: Major Accident Prevention Policy and Safety Cases*
- > *Petroleum: Notifications and Submissions*
- > *Worker Engagement, Participation and Representation*

*A Guide to the Control of Major Incident Hazards Regulations 1999*

Health and Safety Executive: [www.hse.gov.uk](http://www.hse.gov.uk)

*Guidance Note: Requirements for Demonstration*

WorkSafe Victoria: [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au)

*Guidance Note: Safety Report Content and Level of Detail*

National Offshore Petroleum Safety and Environmental Management Authority:

[www.nopsema.gov.au](http://www.nopsema.gov.au)

*Guidance on the Preparation of a Safety Report to Meet the Requirements of Directive 96/82/EC as Amended by Directive 2003/105/EC (Seveso II)*

European Commission: [minerva.jrc.ec.europa.eu/publications](http://minerva.jrc.ec.europa.eu/publications)

*Guide for Major Hazard Facilities – Preparation of a Safety Case*

Safe Work Australia: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

*Guide for Major Hazard Facilities – Safety Case: Demonstrating the Adequacy of Safety Management and Control Measures*

Safe Work Australia: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

*Preparing Safety Reports: Control of Major Incident Hazards Regulations 1999 (HSG190)*

Health and Safety Executive: [www.hse.gov.uk](http://www.hse.gov.uk)

*Fire, Explosion and Risk Assessment Topic Guidance*

Health and Safety Executive – Hazardous Installations Directorate – Offshore Division:

[www.hse.gov.uk](http://www.hse.gov.uk)

*Guidelines for Integrated Risk Assessment and Management in Large Industrial Areas*

International Atomic Energy Agency: [www.iaea.org/index.html](http://www.iaea.org/index.html)

## APPENDIX C: GLOSSARY

TERM	BRIEF EXPLANATION
<b>Accepted safety case</b>	A safety case which WorkSafe has accepted under Regulation 48.
<b>Amended safety case</b>	If WorkSafe has initially rejected a safety case or revised safety case under Regulation 48, an operator may amend the safety case and resubmit it for acceptance. This is an amended safety case.
<b>Change or proposed change at a MHF</b>	Defined in the MHF Regulations. It means a change or proposed change of any kind, including: <ul style="list-style-type: none"> <li>&gt; a change to any plant, structure, process, hazardous substance or other substance used in a process, (including the introduction of new plant, new structure, new process or new hazardous substance)</li> <li>&gt; a change to the quantity of specified hazardous substances that are present or likely to be present at the facility</li> <li>&gt; a change to the operation, or the nature of the operation, of the facility</li> <li>&gt; a change to the facility's SMS</li> <li>&gt; an organisational change at the facility (including a change in its senior management).</li> </ul>
<b>Control</b>	A measure to eliminate or minimise, so far as is reasonably practicable, the risk of a major incident occurring; or to minimise so far as is reasonably practicable, the magnitude or severity of a major incident, as described in Regulation 30.
<b>Critical operating parameters</b>	The upper or lower performance limits of any equipment, process or procedure, compliance with which is necessary to avoid a major incident.
<b>Designated transfer zones</b>	Defined in Regulation 11 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.
<b>Designation</b>	A formal decision made by WorkSafe that a facility is or will be either an LTMHF or an UTMHF for the purposes of the MHF Regulations.
<b>Emergency</b>	An incident at a MHF requiring activation of the emergency plan.
<b>Environmental Protection Authority (EPA)</b>	A government agency responsible for certain regulatory functions concerning New Zealand's environmental management.
<b>Facility</b>	Defined in the MHF Regulations, means the whole area under the control of the same person where specified hazardous substances are present in 1 or more places. Two or more areas under the control of the same person and separated only by a road, railway, inland waterway, pipeline, or other structure are treated as 1 whole area for the purposes of this definition.
<b>Facility emergency control centre (FECC)</b>	An area where designated personnel co-ordinate information, develop strategies for addressing the media and government agencies, handle logistical support for the response team, and perform management functions. A centralised support facility allows emergency managers and staff to contend with incident issues more effectively.
<b>Facility emergency controller (FEC)</b>	The person in charge of managing an emergency for the facility and has overall responsibility for all functions performed by facility personnel during an emergency.
<b>Failure of a control</b>	This means if the control: <ul style="list-style-type: none"> <li>&gt; is a positive action or event: the non-occurrence or the defective occurrence of that action or event</li> <li>&gt; consists of a limitation on an operational activity, process or procedure: the breach of that limitation.</li> </ul>

TERM	BRIEF EXPLANATION
<b>GHS</b>	The Globally Harmonized System of Classification and Labelling of Chemicals, Fifth revised edition, published by the United Nations.
<b>Greenfield</b>	An area of land, or some other undeveloped site earmarked for commercial development.
<b>Hazard</b>	A situation or thing that could harm someone, and includes a person's behaviour. For example, an unguarded machine, hazardous substances etc.
<b>Hazard identification</b>	The systematic and comprehensive process of identifying hazards.
<b>Isolated quantity</b>	Defined in the MHF Regulations, means a quantity of a hazardous substance where its location at the facility is such that it cannot on its own initiate a major incident elsewhere at the facility.
<b>Knock-on effects</b>	Secondary events (such as toxic releases) triggered by a primary event (such as an explosion), resulting in an increase in consequences or in the area of an impact zone over the initial event.
<b>Local authority</b>	A territorial authority within the meaning of section 5(1) of the Local Government Act 2002.
<b>Local community</b>	This is defined in the MHF Regulations as: (a) meaning, at a minimum, all persons within a 1 km radius of any point on the perimeter of a MHF, and (b) including all persons in an area which might be affected by a major incident occurring at a MHF.  The words 'at a minimum' mean the 1 km radius does not mark the extent of the definition. Paragraph (b) may extend the scope of the definition well beyond 1 km in some circumstances.
<b>Lower threshold quantity</b>	Defined in the MHF Regulations, the quantity specified in column 4 of table 1 or column 3 of table 2 of Schedule 2, and calculated in accordance with Part 3 of the MHF Regulations.
<b>Lower tier major hazard facility (LTMHF)</b>	Defined in the MHF Regulations, a facility that WorkSafe has designated as an LTMHF.
<b>Major hazard facility (MHF)</b>	Defined in the MHF Regulations, a facility that WorkSafe has designated as an LTMHF or a UTMHF.
<b>Major incident</b>	Defined in the MHF Regulations as an uncontrolled event at a MHF that involves, or potentially involves, specified hazardous substances, and exposes multiple persons to a serious risk to their health and safety (including a risk of death) arising from an immediate or imminent exposure to: > 1 or more of those substances as a result of the event > the direct or indirect effects of the event.
<b>Major incident hazard</b>	Defined in the MHF Regulations, a hazard that has the potential to cause a major incident.
<b>Major incident pathway</b>	The process or sequence by which the major incident hazard develops into a major incident. Depending on the incident process model adopted, this includes how the initiators, contributing factors, enabling conditions, system failures and mechanisms come together into the incident.

TERM	BRIEF EXPLANATION
<b>Near miss</b>	A situation where a worker or any other person is exposed to a serious risk to their health and safety, even if no harm was incurred.
<b>Notifiable event</b>	This is defined in HSWA as: <ul style="list-style-type: none"> <li>&gt; the death of a person</li> <li>&gt; a notifiable injury or illness</li> <li>&gt; a notifiable incident.</li> </ul>
<b>Notifiable incident</b>	Defined in HSWA, generally an incident that exposes workers or other people to a serious risk to health or safety. It must be reported to WorkSafe, or the relevant designated agency.
<b>Notification</b>	The notification to WorkSafe required by MHF Regulations 12, 13, and 17. Notification is required if specified hazardous substances are present or likely to be present at a facility in a quantity equal to or exceeding the lower threshold quantity or if there is a proposed new operator.
<b>Off site</b>	Defined in the MHF Regulations, this means not on site.
<b>Officer</b>	Defined in HSWA, in summary it means a person that exercises significant influence over the PCBU's management. For example, the CEO, a director, or a partner in a partnership.
<b>On site</b>	Defined in the MHF Regulations, this means at or in a facility.
<b>Operator</b>	Defined in the MHF Regulations, the PCBU who manages or controls a facility or a proposed facility, and has the power to direct the whole facility be shut down.
<b>Person conducting a business or undertaking (PCBU)</b>	Defined in HSWA, generally any legal person running a business or undertaking. For example, includes a limited liability company, partnership, trust, incorporated society, etc.
<b>Pipeline</b>	Defined in Regulation 2 of the Health and Safety in Employment (Pipelines) Regulations 1999.
<b>Proposed facility</b>	Defined in the MHF Regulations. It is an existing workplace that is to become a facility or a facility that is to be built in the future.
<b>Qualitative risk assessment</b>	A relative measure of risk based on ranking or separation into descriptive categories such as low, medium, high.
<b>Quantitative risk assessment</b>	The use of data to determine risk. Requires calculations of two components of risk; the consequence of the hazard, and the likelihood that the hazard will occur.
<b>Risk</b>	The likelihood of a specific level of harm occurring from a hazard.
<b>Risk assessment</b>	This involves considering what could happen if someone is exposed to a hazard and the likelihood of it happening.
<b>Safety assessment</b>	Defined in the MHF Regulations, the general process by which the operator of a MHF systematically and comprehensively investigates and analyses all aspects of risks (including decisions around which controls to implement) to health and safety associated with all major incidents that could occur in the course of the operation of the MHF.
<b>Safety case</b>	Defined in the MHF Regulations, generally a written presentation of the technical, management and operational information covering the hazards and risks that may lead to a major incident at a UTMHF, and their control. It provides justification for the measures taken to ensure the safe operation of the facility.

TERM	BRIEF EXPLANATION
<b>Safety management system (SMS)</b>	Defined in the MHF Regulations, generally a comprehensive integrated system for managing all aspects of risk control at a MHF and used by the operator as the primary means of ensuring safe operation of the MHF.
<b>Safety-critical element</b>	Defined in the MHF Regulations, means any part of a facility or its plant (including a computer program): <ul style="list-style-type: none"> <li>&gt; that has the purpose of preventing, or limiting the effect of, a major incident; and</li> <li>&gt; the failure of which could cause or contribute substantially to a major incident.</li> </ul>
<b>Specified hazardous substances</b>	Defined in the MHF Regulations, these are table 1 or 2 hazardous substances.
<b>Structure</b>	Defined in HSWA, means anything that is constructed, whether fixed, moveable, temporary, or permanent; including: <ul style="list-style-type: none"> <li>&gt; buildings, masts, towers, frameworks, pipelines, quarries, bridges, and underground works (including shafts or tunnels)</li> <li>&gt; any component of a structure</li> <li>&gt; part of a structure.</li> </ul>
<b>Table 1</b>	The table of categories of hazardous substances in Schedule 2 of the MHF Regulations.
<b>Table 1 or 2 hazardous substance</b>	Defined in the MHF Regulations, this means: <ul style="list-style-type: none"> <li>&gt; hazardous substances specified in column 1 of table 2 of Schedule 2</li> <li>&gt; categories of hazardous substances referred to in column 1 of table 1 of Schedule 2.</li> </ul>
<b>Table 2</b>	The table of named hazardous substances in Schedule 2 of the MHF Regulations.
<b>Threshold quantity</b>	Defined in the MHF Regulations, means the lower threshold quantity or the upper threshold quantity.
<b>Transit depot</b>	Defined in Regulation 3 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.
<b>Union</b>	Is an organisation that supports its membership by advocating on their behalf. The Employment Relations Act 2000 gives employees the freedom to join unions and bargain collectively without discrimination. Workers can choose whether or not to join a union.  A union is entitled to represent members' employment interests, including health and safety matters.
<b>Upper threshold quantity</b>	Defined in the MHF Regulations, means the quantity specified in column 5 of table 1 or column 4 of table 2 of Schedule 2, and calculated in accordance with Part 3 of the MHF Regulations.
<b>Upper tier major hazard facility (UTMHF)</b>	Defined in the MHF Regulations, means a facility that WorkSafe has designated as a UTMHF.
<b>Worker</b>	Defined in HSWA, generally a person who carries out work in any capacity for a PCBU. It covers almost all working relationships, including employees, contractors, sub-contractors, and volunteer workers.

TERM	BRIEF EXPLANATION
<b>Worker representative</b>	<p>In relation to a worker, means:</p> <ul style="list-style-type: none"><li>&gt; the health and safety representative for the worker</li><li>&gt; a union representing the worker</li><li>&gt; any other person the worker authorises to represent them (eg community or church leaders, lawyers, occupational physicians, nurses, respected members of ethnic communities).</li></ul> <p>Workers can ask a worker representative to raise health and safety issues with a PCBU on their behalf.</p>
<b>Workplace</b>	Defined in HSWA, generally a place where work is carried out for a PCBU, including any place where a worker goes, or is likely to be, while at work.



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