



Department of **Energy, Mines,
Industry Regulation and Safety**



WorkSafe
Western Australia

INTERPRETIVE GUIDELINE

Development and submission of an onshore facility – drilling operations safety case

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Foreword

Western Australia's work health and safety (WHS) legislation came into force on 31 March 2022. This legislation resulted in the amendment of the various petroleum Acts and the repeal of the associated regulations so that all onshore and offshore petroleum, pipeline and geothermal energy operations are now subject to the requirements of the:

- *Work Health and Safety Act 2020* (WHS Act)
- Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022 (WHS PAGEO Regulations).

A key responsibility for the WorkSafe Group (WorkSafe) of the Department of Energy, Mines, Industry Regulation and Safety is the ongoing risk management and safety requirements for the onshore and offshore petroleum, pipeline and geothermal energy operations. To support these requirements guidance previously developed have been updated to assist operators to meet their commitments under the WHS Act and WHS PAGEO Regulations.

Using this Interpretive guideline

The regulator publishes interpretive guidelines to provide guidance on how key concepts in the WHS Act and regulations will operate.

You should use this Interpretive guideline if you are:

- the operator of an onshore or offshore petroleum, pipeline or geothermal energy operation under the WHS Act, and
- required to develop and maintain a safety case under the WHS PAGEO Regulations.

There are separate Interpretive guidelines for the development of the following:

- *Development and submission of a safety case*
- *Development and submission of a diving safety management system.*

WHS legislation

Under the WHS Act, the WorkSafe Commissioner is responsible for performing the functions and exercising the powers of the regulator. Each safety document must be submitted for acceptance by the regulator.

WorkSafe assists the regulator in the administration of the WHS Act and the WHS PAGEO Regulations, including the provision of inspectors and other staff to oversee compliance with the legislation.

The WHS PAGEO Regulations provided for transitional provisions in relation to facility operators and safety cases in place or submitted before the commencement of the WHS legislation.

For facilities outside the Western Australian waters, the WHS Act does not apply and guidance should be sought from National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). If a vessel does not fall under the definition of “facility” in the WHS Act, operators should contact the Australian Maritime Safety Authority and the Department of Transport.

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1 Safety case required for operations

WHS PAGEO Regulations r. 20

Facility must have operator

WHS PAGEO Regulations r. 27

Safety case required for operations

WHS PAGEO Regulations r. 28

New or increased risks

The safety case must be in force before any petroleum or geothermal energy operations are commenced or undertaken. The safety case outlines the:

- type of facility and the activities undertaken
- types of safety studies undertaken
- results of those studies
- safety management arrangements to address the findings of those studies
- emergency response plan (ERP) for the facility.

The content of the safety case is the basis against which WorkSafe Petroleum Safety inspectors (inspectors) will conduct periodic inspections and assessments of the operator's activities on the facility. It should cover all activities likely to take place on the facility, including those of all workers. Workers under the WHS Act includes contractors and subcontractors.

In the event of an accident or incident, the safety case may form part of evidence in legal proceedings. A safety case accepted by the regulator must be in force for all phases of the operation, including:

- construction
- commissioning and operations
- modifications, upgrades and significant changes to the facilities
- decommissioning.

The operator must ensure that there is a process in place for the smooth transition for update, review and acceptance of the safety case before any prescribed activity commences on the facility.

If new or increased risks are identified that are not adequately covered in the safety case, then a person must not engage in that operation until the safety case is updated, reviewed and accepted by the regulator.

No petroleum or geothermal operations can be conducted on any onshore or offshore petroleum, pipeline or geothermal energy operations unless the facility has an operator registered in accordance with the requirements of WHS PAGEO Regulations.

The operator is considered to be a person conducting a business or undertaking (PCBU) under the WHS Act. Refer to the *Interpretive Guideline: The meaning of 'person conducting a business or undertaking' (PCBU)* for further information regarding duties under the WHS Act.

The registered operator is responsible for submission of safety cases to the regulator under the WHS PAGEO Regulations. It should, therefore, be noted that while there may be a number of facilities covered by a safety case, all of these facilities must have the same registered operator. It is no longer possible to submit safety cases to the regulator covering multiple facilities with different registered operators.

For more information on facility operators, refer to the *Guide: Nomination of an operator*.

2 Preparation of safety case documentation

2.1 Compliance checklist

A compliance checklist (Appendix 3) has been developed alongside this Interpretive guideline to assist operators to prepare safety case documentation. It is suggested that operators include a compliance checklist in an appendix to the safety case, listing the regulations and applicable section that cover the requirements of those regulations.

Completion of a compliance checklist during the development and internal review of the safety case should verify that sufficient information has been included and each element of the legislation has been covered. The compliance checklist can act as a self-assessment tool for the operator and assist in avoiding potential delays in the acceptance of the safety case by the regulator.

2.2 Planning and liaising with inspectors

Operators should ensure that appropriate planning is in place for the development of the safety case for each phase of the operations.

It is strongly recommended that operators meet with inspectors prior to the development of a new safety case, or a five yearly update of a safety case. The process for reviewing and gaining acceptance of safety case documents is extensive and cannot be completed quickly. By meeting early in the development process with inspectors, operators will be able to review and discuss the proposed activities to be conducted on the facility as well as the operator's approach to managing those activities. It should be noted that the regulator does not provide a consultancy service to review drafts prior to formal submission for acceptance (Section 4.1).

These meetings should also include discussion and agreement on the scope of any validations required for the various phases of the facility operations.

Developing this interaction with inspectors early in the process provides the basis of a good working relationship and an understanding of requirements between the operator and the regulator. This will also serve to identify and eliminate possible adverse effects on such things as the calculation of the safety levy applicable to the facility, and any inconsistencies arising throughout the safety case that could be addressed prior to completion and submission for review and acceptance by the regulator (Section 4.4).

2.3 Bridging documents and simultaneous operations requirements

The safety case for a drilling rig should include a reference to the requirement to have bridging documents in the form of a drilling plan to cover the simultaneous operations that may take during drilling operations (Section 3.3.15).

For more information, refer to the *Guide: Bridging documents and simultaneous operations (SIMOPS)*.

2.4 Content of the safety case

The safety case should demonstrate two key points.

First, it should describe the systems used by the operator to define:

- how hazards are identified and risk assessed
- how the risk is managed so far as is reasonably practicable (SFAIRP), verified, validated and kept up-to-date.

Second, it should show the outcomes from applying those systems to define:

- what hazards are on site
- what is the risk associated with the hazard
- results of the SFAIRP risk reduction, verification and validation.

The operator is required to divide their safety case into four divisions; namely operations description, safety management system, formal safety assessment and emergency response plan; however, it is beneficial to also have an introduction section as indicated below. After the introduction, each division has defined content:

- Introduction outlines the scope and purpose of the document, the legislation, principal standards and codes of practice covering the facility, approval and custodian details of the safety case, address for delivery of communications regarding the safety case and other administrative requirements (Section 3.1).
- Operation description provides a concise overview of the facility, its function and control systems (Section 3.2).
- Safety management system (SMS) provides a detailed description of the management systems in place to maintain the safety of the facility and workers. This includes performance standards for safety critical elements (SCEs) and supports the findings from the formal safety assessment (FSA) (Section 3.3).
- Formal safety assessment provides a detailed description of the risk management methodology in place for the facility, a summary of the risk assessment consultations, details of identified major accident events (MAEs), demonstration of risk reduction SFAIRP and bowtie diagrams (Section 3.4).
- Emergency response plan provides a detailed description of the ERP for the facility including evidence that the ERP complies with the WHS PAGEO Regulations (Section 3.5)

The safety case should emphasise consultation, worker participation and a continual improvement approach to health and safety and risk management. The reader should be assumed to be non-technical and independent.

It is the responsibility of the operator, not the regulator, to specify what is required for safety and legislative compliance. In the safety case, the operator should:

- clearly define the activity
- identify the process of how the activity will be conducted safely
- show SFAIRP risk reduction justification
- summarise the activity within the safety case.

The safety case content is the basis against which inspectors will conduct periodic inspections and assessments of the operator's activities on the facility. It should cover all activities likely to take place on the facility, including those of contractors and subcontractors.

In the event of an accident or incident, the safety case may form part of evidence in legal proceedings.

The operator of the drill rig is required to ensure the safety case is reviewed and updated regularly to include any significant changes for new or increased risks, equipment or operational changes. A full review of the content of the safety case must be undertaken at five yearly intervals after the safety case was first accepted by the regulator (Section 3.1.5).

2.5 When does a safety case apply or not apply

The safety case for a drill rig is applicable at all times when the rig is on a licensed site conducting any petroleum and geothermal energy operations, including any maintenance to the drill rig.

If the drill rig is not on a licensed site but stacked up in the operator's workshop or storage yard, the safety case does not apply and any maintenance or service work conducted on the drill rig is covered by the Work Health and Safety (General) Regulations 2022.

This is covered further in Section 4.9 Suspension of a safety case.

2.6 Referencing and hyperlinking within the safety case

Throughout the safety case there are many requirements to reference the operator's procedures and other documentation summarised within the safety case. As many operators now maintain their documentation within online databases, it is preferred that, where possible, these referenced documents are hyperlinked to provide ease of access.

Operators should avoid the inclusion of large amounts of text, plant and equipment diagrams and drawings in the safety case as this duplication of information could result in the safety case being out of date if the duplicated information is changed within the original document. A brief description and reference to the original document/drawing title and document/drawing number should be sufficient to cover the requirements of the safety case.

If an operator wishes to refer to another document from within the safety case, this subordinate document needs to be:

- explicitly identified in the safety case
- identified in some manner as being linked to the safety case
- available to the regulator for review as part of the overall review and assessment of the safety case
- able to be used as the basis for inspection to confirm that the document complies with legislation and that the organisation is conforming with the document
- maintained under document control to ensure that only the current version is available to workers and previous versions have been archived
- a controlled document that is subject to the same change controls as the parent safety case and all changes are recorded and available for review
- subject to the same internal compliance quality assurance and quality control as the parent safety case to ensure that referenced documents meet the legislation and are being complied with
- the safety case should include a concise overview of the content of the referenced document provided with the hyperlink. A single sentence under the heading of a regulatory requirement that includes the hyperlinked document is not sufficient content for the safety case.

2.7 Involvement of workers

WHS PAGEO Regulations r. 38
Involvement of workers

The operator of the facility should ensure that workers are involved in the development or revision of the safety case for the facility.

For more information, refer to the *Guide: Involvement of workers*.

2.8 Safety case – supporting documentation

WHS PAGEO Regulations r. 54
Regulator may request more information

The regulator may request the operator to provide further information in the form of written documentation about any matter required by the WHS PAGEO Regulations to be included in a safety case.

The information provided will be formally considered as part of the safety case submission. Typical examples of information requested are:

- any procedures or plans referred to within the safety case as containing pertinent information supporting that required by the WHS PAGEO Regulations. This includes document control, records management and ERPs
- quantitative and qualitative risk assessments
- consequence analyses
- SFAIRP risk reduction assessments
- hazard and operability study (HAZOP)
- hazard analysis (HAZAN)
- hazard identification (HAZID)
- layer of protection analysis (LOPA)
- failure mode effects analysis (FMEA)
- fire and explosion risk analysis (FERA)
- engineering studies and analyses
- external certification.

2.9 Safety case level of detail

The safety case is a roadmap to ongoing health and safety processes and risk management on the facility and is a standalone document. It must be auditable; that is, make statements that the operator can objectively prove have been achieved.

Reference other documents within the safety case should be sufficiently detailed to enable all readers to understand the operations of the facility, the associated risks and systems in place without referring to other documents.

Some common issues identified in safety case submissions are:

- inadequate identification of MAEs
- vague statements, rather than specific facts about the facility
- discrepancies between the FSA and other parts of the safety case
- inclusion of assertions, independent of the risk assessment, about the overall acceptability of the design
- provision of too much operational detail so the currency of the document is difficult to maintain
- discrepancies in facts provided
- discrepancies between written descriptions and figures or drawings
- poor cross-referencing
- lack of review or quality assurance processes
- illegible drawings or figures
- preparation in isolation without managerial and technical input
- preparation in isolation without worker input
- assuming that compliance to a standard is sufficient
- writing the safety case as though the regulator is the intended audience, rather than the operator's workers.

2.10 Maintaining records for the safety case

WHS PAGEO Regulations r. 31

Maintaining records for safety cases

WHS PAGEO Regulations r. 50

Arrangements for records

An operator of a facility must ensure all documents required by the safety case in force are maintained in accordance with the manner set out in the safety case.

The safety case for an operation must include arrangements for making a record of the safety case in force for an operation at any particular time and each revision of the safety case. It is also required that a record must be available for each written audit conducted against the safety case.

These documents and records must be made available to workers who need to be aware of the contents.

Documents and records must be securely stored at an address nominated for the operation and in a manner that facilitates their retrieval as soon as practicable.

The safety case in force for an operation must be kept for 5 years after the date of acceptance of the document by the regulator. Written audit reports for a safety case must be kept for a period of 5 years after the date of receipt by the operator.

2.11 Compliance with safety case

WHS PAGEO Regulations r. 29

Compliance with safety case

WHS PAGEO Regulations r. 30

Persons to comply with safety case

WHS PAGEO Regulations r. 57

Consent to undertake activities in manner different from safety case requirements

Operators must ensure that any persons engaging in an activity do so in accordance with the safety case in force for the operation. This includes persons at or in the vicinity of a facility at the invitation of or implied consent of the operator.

An exception to this requirement is for a person who engages in an activity in accordance with consent given for the operation to be carried out in a manner that is different from the requirements of the safety case in force for the operation.

2.11.1 Access to safety case

WHS PAGEO Regulations r. 49

Access to safety case

The operator of a facility must ensure that upon request, the safety case is readily available to:

- any worker at the facility
- any health and safety representative for workers at each facility
- the regulator.

3 The safety case

WHS PAGEO Regulations Subdivision 3 – Contents of safety cases

WHS PAGEO Regulations r. 32

Operation description, formal safety assessment, safety management system and emergency response plan

3.1 Introduction

The introduction of the safety case covers the administrative requirements for the document and gives an overview of the structure of the safety case.

This section should also include details of the registered operator under the WHS PAGEO Regulations who is responsible for the day-to-day management, control and safe operation of the facility.

3.1.1 Scope and objectives

Briefly outline the scope and objectives of the safety case demonstrating the operator has a management system capable of systematically and continuously identifying, assessing and eliminating/minimising the hazards and risks to persons in the vicinity of the facility.

Include an overview of the management of the safety case demonstrating that the operator has a management system capable of systematically and continuously identifying, assessing and eliminating or minimising the hazards and risks to persons in the vicinity of the operation.

Include an overview of the management of the safety case taking into account the effective start and stop dates of when a drill rig is active and how this will be tracked and communicated to the regulator. It is suggested that the operator will need to include details of this in the management of change section of the safety case which should be cross-referenced to this section. (Section 3.3.17) For a drill rig to be classed as inactive there must not be any activities taking place while the drill rig is located within a licenced area. Rig maintenance performed as part of a drilling operation does not equate to the rig being inactive. (Section 2.5) Effective management of this process is critical to accurate calculation of the safety levy applicable to the facility.

Cover the requirement for the safety case to be in force for the operation being undertaken and that prevents a person engaging in an operation where any new or increased risks have been identified which are not currently covered in the safety case in force

Interaction with other safety cases and projects will need to be summarised under this area with a reference to the requirement for the development of bridging documentation; that is, a drilling plan and simultaneous operation (SIMOPS) requirements. Cross-reference to the management system section on simultaneous operations and bridging documents (Section 3.3.15) providing more details on this requirement.

3.1.2 Legislation

Include a list of all legislative and statutory requirements covering the drill rig operations.

It is recommended these legislative requirements are clearly set out in table format for ease of reference. Include details of how these requirements are monitored for any changes so that the information in the changed legislation can be reviewed and the safety case updated as required. Any changes should be updated through the operator's management of change process (Section 3.3.17).

3.1.3 Definitions and abbreviations

Definitions and abbreviations need to be included for any acronyms or terms used in the safety case, either in the introduction or in the appendices. If they are in an appendix, then this should be noted in the introduction.

For accuracy and consistency the operator should use the definitions within the WHS Act and the WHS PAGEO Regulations in the safety case where able to do so.

3.1.4 Approval and custodian details

The safety case needs to be approved by the relevant officer of the operator prior to submission to the regulator for review and assessment. The operator or operator's representative approving the safety case must have the authority to impose the requirements of the safety case on all workers, including joint venture partners and contractors.

This section should include the address for delivery of communications relating to the safety case, and the name of the person who is the nominated custodian of the safety case. This may or may not be the same person as the officer authorised to approve the safety case.

3.1.5 Safety case revision requirements

The safety case is a dynamic instrument requiring monitoring and updating as and when the operator identifies the need to do so – either to incorporate significant changes in the way safety is being managed on the facility, new or increased risks identified, or when there is a requirement for SIMOPS and bridging documentation to include activities not already covered in the safety case.

It is important that the operator ensures that any proposed revisions are done taking into account the timescales set out in the WHS PAGEO Regulations and that the revised safety case can be reviewed and accepted by the regulator prior to any changes taking place on the facility.

This includes revision:

- because of changing circumstances or operations – the operator of a drill rig must submit a revised safety case as soon as practicable after the occurrence of any significant changes to the drill rig or systems.
- on the regulator's request – the regulator may request additional or changed information be included in the safety case and the document be re-submitted for review and acceptance within a certain time period.
- after five years – the safety case is required to be updated and re-submitted five years after the formal acceptance of the first version of the safety case regardless of any interim changes and updates that have been reviewed and accepted by the regulator, and every subsequent five years following acceptance of a revised safety case. Section 4.6 details the timeline for these five yearly reviews.

Further details on these requirements are outlined in Section 4 of this Interpretive guideline.

3.2 Operation description

WHS PAGEO Regulations r. 32(2)
Operation description

3.2.1 Drill rig overview

The safety case operation description is an overarching description of the drill rig and operations within the valid period of the safety case, providing a non-technical reader with a good understanding of the facility, equipment, operation and safety critical systems including their operational parameters.

Where applicable, details should be included for the management of:

- rigging up – covers the setup of the drill rig and associated equipment
- normal operations – most activities operating correctly with no or minor issues
- irregular operations – significant issues encountered during the operations on the drill rig
- shutdowns – how the operation of the drill rig is managed during shutdowns
- rig maintenance – the restricted operations on the drill rig during routine maintenance
- remote control – the areas of the drill rig where operations can be managed through remote control
- rigging down – covers the requirements to be put in place for the management of health and safety, identification of risks and how they are controlled during a rigging down operation.

The content and level of detail should be sufficient to show how equipment will function within the drill rig and to gain an appreciation of the hazard potential of the systems to people at or near the drill rig.

Following is an indication of the details that should be included in the operation description for a drill rig:

- overview of the drill rig including rig type, where and when built, description of the activities normally performed on the drill rig (i.e. drilling contractor's scope of operation)
- details of any certification and registration applicable to the drill rig
- description of the mobilisation/demobilisation process of the drill rig including rigging up/down
- description of the drill rig layout with specific reference to primary equipment and health and safety equipment/systems, include copies of layout drawings showing relative positions or reference the drawing number that shows these details
- include details of any modifications or upgrades to the drill rig which have significantly changed the original designed operating capabilities
- include details of operating limits/design criteria
- overview of drilling operations and how these are managed
- drilling, completion, work overs and well control including:
 - hoisting and tubular handling
 - mud and cement system
 - blow out preventer systems

- well testing – describe well testing set up and layouts that have been assessed
- hazardous areas and management of those areas
- external interference protection, including facility security
- primary systems and functions including integrity, overpressure protection, fire detection, gas detection, fire extinguishing systems
- emergency shutdown and isolation equipment installed
- MAEs and safety critical elements and reference to associated performance standards
- key drawings for the operations.

3.2.2 Drill rig layout

The drill rig layout and configuration should provide an effective overview of the location of key physical elements of the drill rig, including:

- primary safety systems and functions including fire pumps, deluge, fire and gas detection
- emergency and evacuation equipment including lighting and communication
- service systems including power, water, heating, ventilation and air conditioning, communication, including backup provisions in the case of an emergency
- utility equipment or packages including:
 - power generation and distribution for drilling and emergency operations
 - fuel/lube oil system
- lifting equipment and material handling
- identified hazardous areas
- storage of hazardous substances and dangerous goods, including storing and handling of explosives/flammables
- include estimated inventories to be stored and used at the facility.

3.2.3 Major modifications and upgrades

Describe any modifications or major upgrades that may have been made and which have significantly changed the originally designed operating capabilities of the drill rig or that have affected the health and safety management.

Include details of any changes from the design specification and/or formal exemptions given from relevant certification bodies, including any operational limitations imposed on the drill rig.

3.2.4 Drill rig moves including rigging up/down

A brief description of the mobilisation/demobilisation process of the drill rig into and out of a licenced area should be included with reference to the drilling contractor's policy, procedures and practices for traffic and transport management procedures to safely control rig site operations during this process.

Include an overview of the tasks, activities and operations associated with rigging up/down and how they will be adequately controlled and managed. If appropriate, include a description of any specific heavy lift operations and how they will be adequately controlled and managed. This requirement should be cross-referenced to the area of the safety management system (SMS) covering safe operating procedures (Section 3.3.20).

3.2.5 Primary structure

Operating limits/design criteria

Provide a broad description of the conditions within which the drill rig has been designed to operate. Include details of the codes and standards used to assess the design and construction of the facility (e.g. API, ASME, ISO).

Structural integrity

Describe the main structural components of the drill rig and, where appropriate, include details of fire ratings of the main structural components including inspection reports from recognised specialist organisations.

Include details of:

- primary dimensions and construction materials
- integrity analyses including, where appropriate, fatigue studies (if available)
- inspection/non-destructive testing (NDT) and survey programs.

Foundation stability

Details of specific foundation requirements that need to be in place to safely support the drill rig and all its components. The details in the safety case should be supported by any site specific requirements included in the bridging documentation between the drill rig safety case and the client facility safety case (i.e. drilling plan for specific site).

Include details of foundation requirements based on *API Specification 4F Drilling and Well Servicing Structures* for the design loading of a drill rig.

3.2.6 Drilling, completion, workover and well control

Hoisting and pipe handling

Include a general description, with details of ratings/capabilities and relevant standards of the:

- mast structure
- hoisting system
- top drive and rotary systems
- pipe handling systems (e.g. pick up/lay down machine)
- mechanised operations (where installed).

Include details of inherent features of installed equipment/systems which are intended to prevent or mitigate risk escalation, including the elimination of manual handling and impact on the environment to support the drill rig health and safety management.

Details of how the drilling contractor aims to minimise manual handling. This should be cross-referenced to Section 3.3.20 Safe operating procedures.

Mud system

Describe the mud system arrangements and capabilities. Include details of ratings/capacities and relevant standards (API or ISO) of the:

- mud pits
- mud pumps
- mud lines (including choke and kill manifold)

- mud treatment system (e.g. shale shakers, mud cleaners, degassers)
- trip tanks
- mud/gas separators.

Include line drawings of the (HP/LP) mud system as well as a description of mud/well monitoring systems. Also include any additional components preventing loss of containment/spillage (e.g. valve lockout/tagout, spades, blanks).

Blow out preventer (BOP) system

Include a description of the BOP and diverter arrangements and capabilities with details of ratings of the:

- BOP
- BOP control system
- choke manifold
- BOP-stack drawing.

The description should also include a statement that the BOP and its control system are designed to *API Std 53 Well Control Equipment Systems for Drilling Wells*. The wellhead system and tree or equivalent should be in accordance with *API Specification 6A Specification for Wellhead and Tree Equipment*.

Where applicable, also include details of arrangements for managed pressure drilling systems and any arrangements for high pressure high temperature (HPHT) systems.

3.2.7 Plant and utilities

Power generation and distribution

Describe the power generation and distribution systems for drilling and emergency operation. This should include:

- description and ratings of the main power generation arrangements and power assignment arrangements (e.g. draw-works, mud pumps)
- details of the main power distribution protective systems
- details of emergency generators including rating and endurance at the rated and anticipated emergency load, start-up arrangements, equipment powered from emergency system and load shedding arrangements
- include line diagrams of the main and emergency power arrangements.

Fuel/lube oil system

Describe the fuel/lube oil storage tanks and transfer arrangements including details of safety and shut-off devices fitted to the system. Identify components preventing loss of containment/spillage (e.g. valve lockout/tagout, banded hose storage areas, hose inspection).

Drill rig air system

Describe the drill rig air compressors, both primary and emergency, storage and distribution systems and any related safety devices. Include details of the health and safety critical equipment/systems fed by the drill rig air system.

Heating, ventilation and air conditioning systems

Describe the minimum requirements for the drill rig/site/location systems which are necessary to prevent flammable and toxic gases accumulating in enclosed spaces, prevent smoke and gas ingress into working spaces and maintain air quality and temperature in any living and working spaces provided.

This should include details of arrangements of any installed systems which are:

- necessary to ensure adequate ventilation of enclosed workplaces, including local extraction fumes, dust
- necessary to maintain air quality and temperature in accommodation/camp site where provided
- for filtering to ensure air quality
- for cleaning and disinfection of air ducts.

Drain, effluent and waste systems

The safety case for the drill rig should include general details for these requirements with specific requirements being included in any subsequent bridging documents (drilling plans) put in place between the drilling contractor and the host facility safety case.

Provide a description of the drainage system to deal with accumulation of fluids at the drill rig and the mud handling areas. Also include a camp site if this is applicable. Include arrangements for handling or discharge of cuttings and also the handling, segregation and storage of other waste, including hazardous waste.

Communications

Describe the communication systems available for both normal and emergency communications. Include details of both the main and back-up systems for communication within the drill rig (e.g. alarms, signals, telephones, drill crew communication systems (voice-to-voice, mast-floor intercom)). Also include details of the arrangements for communication with remote support locations and emergency services.

Emergency lighting

Describe the emergency lighting arrangements including how they are powered, the area of coverage and the duration.

Lifting equipment and material handling

Describe the material handling arrangements and capabilities and how they may affect the health and safety management at the drill rig. These areas should be cross referenced with the SMS Sections 3.3.20 and 3.3.21 for safe operating procedures and materials handling.

Include details, with ratings where applicable of the BOP trolley lift capacity, pipe handling equipment, BOP crane, utility and man-rider winches and any other material handling equipment at the drill rig.

Storing and handling of explosives/flammables and other hazardous substances

Include a description of the storage facilities at the drill rig for the storage and handling of explosives, flammable materials and other hazardous materials. Cross reference to the SMS (Section 3.3.21).

Include details as applicable, of optimum safe locations of the explosive storage facility, the radioactive materials, flammables and other hazardous substances. Describe the fire detection and protection systems required in these areas.

3.2.8 Design, control systems, structural integrity and safety critical elements

WHS PAGEO Regulations r. 39(2)

Adequacy of design, construction, installation, modification or maintenance

The operation description should contain details of the design safety philosophy, control systems and structural integrity management applicable to the facility that will enable ongoing safe operations.

This description should be customised to the drill rig and include details of how provision is made for:

- inventory isolation and pressure relief in the event of an emergency
- gaining access for servicing and maintenance of machinery and other equipment
- maintaining structural integrity of the drill rig
- implementation of technical and other control measures identified as a result of the FSA.

Note: The following wording is an indication only and should not be considered as a standard inclusion in the safety case.

Indication of content detail for control systems and structural integrity management

- Instrumentation and control systems – describe the instrumentation and control systems installed on the operation to safeguard operations and workers in the event of equipment failure. What alarms would be activated and how these systems would operate to isolate inventory.
- Functional safety systems – describe any functional safety system in place for the operation. This should include the equipment which is managed by functional safety systems and what action would be initiated if the system shuts in equipment.
- Emergency shut down facilities – include a description of the emergency shut down facilities installed and details of what occurrences would trigger the operation of these shut down facilities. This needs to include details of well emergency shutdown equipment and possibly reference to the well management plan as a safety critical element (SCE) for this purpose.
- Inventory isolation – describe how inventory isolation would be activated in the various parts of the facility and pipeline.
- Pressure relief and blowdown systems – describe what pressure relief and blowdown systems are present on the operation, their location and functionality.
- Redundancy of safety systems – indicate what redundancies of safety systems are installed on the operation and how they would be brought on line as and when required.

Evidence that the plant and equipment installed are fit for purpose in normal operating conditions, and in an emergency, must be provided by reference to the design standards, functional testing, maintenance and testing regime. Details of the requirements for maintenance, inspection and testing and integrity of plant and equipment are included in Sections 3.3.22, 3.3.23, 3.3.24.

The operation description should include cross-references to the relevant MAE, SCEs and performance standards within the FSA and SMS sections of the safety case as appropriate.

3.2.9 Fire and explosion protection

Hazardous area classifications

Include details of the standards used to identify hazardous area classification and the rating of the hazardous areas in relation to use of installed explosion proof and intrinsically safe equipment and the location of temporary equipment. Identify the procedures that will be used to assess the suitability and use of temporary (third party) equipment.

Include a drawing showing the location of the designated hazardous areas.

Detection Systems

Describe the fire detection systems in place including details of sensor types and locations, indicator panel location and executive actions automatically initiated on detection. Include details of maintenance and testing of the detection systems.

Provide details of the operator's minimum location specific requirements for fixed and portable oxygen, hydrocarbon and hydrogen sulphide detection systems/instruments. Include details of the location of gas detection heads, indicator panel locations, actions initiated automatically on detection of hydrocarbon and/or hydrogen sulphide. Describe the maintenance, testing and calibration of these systems.

Emergency shut down systems

Describe the emergency shut down philosophy for the drill rig including the location and details of the manually activated shut down arrangements. Provide details of the shutdown hierarchy arrangements and definitions of the different levels of shutdown and the equipment effected at each level, including cause and effect diagrams.

Active and passive fire protection

Include details of both the active and passive fire protection systems that are available on the drill rig including:

- description and drawings of the active firefighting systems including fire pump capacities and locations, protection systems installed and other fixed systems such as Argon or CO₂
- description of passive fire protection systems including drawing depicting the location and rating of the drill rig fire resistant structure, details of any structural fire protection for load bearing structures and details of unprotected non-load bearing structures which have a role in controlling fires.

Include details of any health and safety critical equipment/systems that have passive fire protection and ensure these are included in the relevant performance standards controlling major accident events identified through the drilling contractor's risk management process.

3.2.10 Emergency systems

Describe the minimum emergency systems that are required to be provided in the event of a major incident which results in the evacuation of the drill rig site. Include drawings showing the main routes of access/egress to the appointed muster points and confirmation that these routes are equipped with suitable main and emergency lighting.

The details included in the operation description should be cross-referenced with the emergency response details included in the emergency response section system and the FSA (Section 3.5).

3.2.11 Accommodation/camp site

The operator should include a general overview in the safety case of the minimum requirements for the accommodation/camp site facilities for those working on the drill rig. Location specific details should be included in the bridging documentation developed for individual sites.

The description included in the safety case should include:

- details of the office accommodation on location
- accommodation facilities provided for workers
- the minimum location specific requirements for safety equipment in accommodation/camp site facilities where provided (e.g. fire extinguishers)
- the minimum location specific requirements for the health of rig workers in the accommodation facilities.

For more information, refer to the *Code of practice: Mentally healthy workplaces for fly-in fly-out (FIFO) workers in the resources and construction sectors*.

3.2.12 Well testing

Description of the well testing set up and lay outs should be included in the safety case. This description should include the interfaces between the third party well testing equipment and the drill rig detection and protection systems.

3.2.13 Other third party equipment

The safety case should include details regarding the arrangements for locating third party equipment on the drill rig.

Include arrangements for:

- reviewing the status/condition of third party equipment prior to installation including wireline units, cement units, cuttings handling equipment, mud logging units and H2S equipment
- any other third party equipment that may be installed on the drill rig
- checking interfaces between the third party equipment and the existing drill rig systems.

3.2.14 Major accident events, safety critical elements and performance standards

The operation description should include details of the MAEs identified for the facility. This area should then define each safety critical element in place to mitigate the risks associated with these MAEs SFAIRP.

Cross-reference the areas of the safety case that cover those controls and the relevant performance standards developed for each SCE.

For more information, refer to the *Guide: Identification of major accident events, control measures and performance standards*.

The operation description section should be cross-referenced to the SMS and FSA where appropriate.

3.2.15 Provision of drawings

Details of key drawings can be referenced throughout the operations description as required within areas relating to control systems, processes and layouts, or include a copy of the drawing to demonstrate the functionality of a system.

For details of the full drawing register it may be relevant to insert a paragraph advising that a drawing register is maintained for the facility, how the drawings for the facilities are managed and that they are available to stakeholders and workers from a specific intranet area. This should also note that only the latest version of the drawings are accessible.

3.3 Safety management system

WHS Act s. 19

Primary duty of care

WHS Act ss. 20-26A

Further duties of persons conducting business or undertakings

WHS Act ss. 27-29

Duty of officers, works and other persons

WHS PAGEO Regulations r. 32(4)

Safety management system

3.3.1 General requirements

The SMS description must define the system in sufficient detail to demonstrate the SMS satisfies the regulatory requirements. It is not the intention of the WHS PAGEO Regulations that the entire SMS to be included in the safety case.

It is expected that the detailed description will provide sufficient information to demonstrate that the SMS is comprehensive and integrated, using examples where appropriate.

The SMS should also cover the work health and safety requirements included in the WHS Act covering:

- primary duty of care
- persons conducting business or undertakings
- duty of officers, workers and other persons.

3.3.2 Policy and leadership

The SMS description should include an overarching statement relating to the policy and leadership of the operator and reference a current health and safety policy which should also be included as an appendix to the safety case.

3.3.3 Compliance with safety case

WHS PAGEO Regulations r. 29
Compliance with safety case

The SMS description must include a statement to the effect that all workers who engage in an operation do so in accordance with the safety case in force for the operation. This should be supported by a statement that these details are included in a mandatory health and safety induction and training required to be completed by all workers.

3.3.4 Implementation and improvement of safety management system

WHS PAGEO Regulations r. 33
Implementation and improvement of safety management system

The SMS must include a description and provide details of:

- the operator's SMS and how it is implemented across the organisation
- any certification over the system (AS/NZS ISO 9001 *Quality management systems – Requirements*, AS/NZS ISO 14001 *Environmental management systems* and AS/NZS ISO 45001 *Occupational health and safety management systems*)
- how the documentation is made available to all workers as and when required
- the system in place for continual and systematic identification of deficiencies in the SMS
- the continual improvement of the SMS.

Sections 3.3.17 Management of Change, Section 3.3.32 Safety management system audits and Section 3.3.33 Review and continual improvement can assist with completion of this requirement.

3.3.5 Standards to be applied

WHS PAGEO Regulations r. 34
Standards to be applied

A list of all Australian and international standards that have been applied, or will be applied in relation to the operation covered by the safety case is required to be included in the SMS. As indicated in Section 3.3.6 this list must be monitored for any changes in the relevant standards and include details of how changes are managed and put through the management of change process.

3.3.6 Sources of information

The operator needs to identify how they maintain regulatory compliance management for the SMS. This should cover an overview of the various areas:

- monitoring for changes in legislation
- monitoring for changes to any of the Australian or international standards used in the operation of the facility
- monitoring relevant chemical database websites for changes in safety data sheet (SDS) content for chemicals used on the facility.

This requirement should be monitored by ongoing internal audits to ensure that only current information is available.

3.3.7 Command structure

WHS PAGEO Regulations r. 35
Command structure

The SMS description must specify the command structure in place for the drill rig and in particular those positions which may from time to time occupy the role of operator's representative.

This can be done using organisation charts with position titles rather than individual names to maintain the currency of the chart in the event of staff changes. Include details of key health and safety responsibilities for identified management positions, as well as references to internal documentation providing details of accountability and responsibility.

Details of the persons holding office and the overall command structure should be available at all times and readily accessible by any person at the relevant drill rig.

Also include details of how the offices or positions are continuously held whilst the relevant drill rig is in operation; i.e. who fills the role if the nominated officer is not available.

For more information, refer to the *Guide: Nomination of an operator*.

3.3.8 Competence of workers

WHS PAGEO Regulations r. 36
Competence of workers

In order to ensure the recruitment of suitably qualified workers, the operator should describe the process for worker selection and who is responsible for this process. Include referenced documents covering the operator's recruitment process, training and competency reviews.

Include reference to the need for industrial certificates and high risk work licences to be held by workers required to perform these tasks and how these are monitored to ensure they are current.

The operator must have a process for mandatory inductions of all workers and the requirement for all workers to comply with the safety case.

This SMS section should describe the process for ongoing training requirements for workers covering how these requirements are identified, reviewed and managed. Include requirements for specialist training for certain roles and responsibilities, and how changes in training requirements are managed when workers move to new positions.

A reference list of the operator's internal procedures and processes should be included and, where possible, hyperlinked.

For more information, refer to the *Guide: Human factors fundamentals for petroleum and major hazard facility operators*.

3.3.9 Involvement of workers and communication

WHS PAGEO Regulations r. 38
Involvement of workers

The SMS needs to outline how the operator maintains effective participation and consultative mechanisms that demonstrate the consultation with, and participation of, workers in the development or revision of the safety case, so that workers may reach an informed opinion about the risks and hazards to which they may be exposed at the facility.

Detail methods of communication including pre-start and toolbox meetings, minutes and notice boards. Any relevant internal documents covering these activities should be listed as referenced documents under this section.

For more information, refer to the *Guides: Involvement of workers* and *Human factors fundamentals for petroleum and major hazard facility operators*.

3.3.10 Resources

The SMS should include details of how the operator manages resources for the effective and safe operation of the drill rig. This may include reference to annual work program reviews and budgets. List referenced internal documents to support this requirement.

Detail how the operator may use contractors and subcontractor, management of those contractors, and verification that contractors' workers are competent in the tasks they are required to perform. Include details of contractor management which ensures interfaces between the drilling operator and their contractors are identified and agreed upon and that arrangements are in place for monitoring and auditing contractor performance.

3.3.11 Managing risks to health and safety

WHS PAGEO Regulations rr. 106-112
Managing risks to health and safety

The SMS should demonstrate the key methods of hazard identification and risk management. It should be robust and fully detail the characteristics of the risk management system in place including:

- identification of hazards
- management of risks to health and safety
- hierarchy of control measures
- maintenance of control measures
- review of control measures.

Note: the following wording is an indication only and should not be considered as a standard inclusion in the SMS.

Indication of content detail for hazard identification

The operator will systematically manage all potential risks to health and safety over the life of the drill rig and operations. This will involve a process of hazard identification, risk assessment and determination of control measures SFAIRP.

As outlined in the FSA of this safety case a number of risk assessment processes including HAZIDs, HAZOPs and quantitative risk assessments contribute to the hazard identification and risk management. The operator conducts regular operational risk reviews, which result in an update of the drill rig hazard register, MAEs and performance standards. To meet this objective, the operator:

- developed, implemented and maintains a hazard identification and risk assessment process which results in a prioritised corrective action register
- ensures the hierarchy of controls are used to minimise and manage risks, namely:
 - elimination of hazard at source
 - substitution of materials/process
 - enclosure/isolation of materials/process
 - engineering methods
 - work practices
 - administrative control
 - training/education
 - personal protective equipment
- involves and trains all workers in the hazard identification and risk assessment process so that day-to-day hazards are identified and control measures are determined and implemented
- demonstrates that the risk of high or significant hazards is reduced SFAIRP.

It is expected that there will be numerous internal operator documents that will relate to the hazard identification and risk assessment. The document number and title of the document should be listed, with the option to hyperlink, as reference documents under the relevant section.

Following the hazard identification, an assessment of the risk must be completed. The safety case should include details of the risk assessment methodology used and reference the operator's internal documents where relevant.

Note: The following wording is an indication only and should not be considered as a standard inclusion in the SMS.

Indication of content detail for assessment of risk

Where a hazard is identified, the risk of injury or harm to a person, damage, loss or activity interruption at the drill rig is assessed.

In assessing the level of risk the following process is carried out:

- identification of all injury, disease or organisational loss potential and consequence
- determination of the actual risk taking into consideration the realistic frequency of potential occurrence, the duration of the event and the loss severity or consequence
- prioritisation of control requirements for identified risks.
- matters that are considered include:
 - type of hazard
 - size and layout of the workplace
 - frequency potential of the hazard
 - consequence of injury, damage or loss likely to occur as a result of being exposed to a hazard
 - number of workers, including shift-workers and where they are located (e.g. remote or isolated areas)
 - systems of communication for workers in isolated or remote locations to enable contact for assistance
 - information available on safety data sheets (SDS) or product sheets relating to first aid measures
 - validation that the right risks were assessed
 - verifying that the risks were mitigated effectively and minimised SFAIRP.

Hazards associated with specific tasks are assessed using experienced workers. Each identified hazard is assessed against a risk matrix to obtain a risk ranking. Upon identification that additional control measures need to be implemented to reduce the risk SFAIRP, actions are raised and entered into a database that monitors the progress of work completed so that the additional controls can be implemented against the risk. Once implemented, the control measures are monitored for effectiveness on a regular basis through auditing of operations.

For further information, refer to the *Guides: Hazard identification; Demonstration of risk reduction so far as is reasonably practicable (SFAIRP); Human factors fundamentals for petroleum and major hazard facility operators* and the *Interpretive guideline: How to determine what is reasonably practicable to meet a health and safety duty*.

3.3.12 Health and safety performance targets

WHS PAGEO Regulations r. 32(4)(i)

Leading indicators and lagging indicators for health and safety performance

This section should cover objectives and plans for satisfying health and safety performance targets as well as legislative compliance and quality system management. Provide evidence with statistical data demonstrating how these requirements and responsibilities for all aspects of health and safety and management will be met.

The data should include details of positive performance indicators (PPIs) as well as other key performance indicators (KPIs) covering data on lag statistics and describe how the indicators were selected.

These performance targets may relate to high level strategic plans developed by the operator and reviewed periodically. A five year strategic plan should be reviewed annually to identify achievement of the targets set in the plan, identify new targets and objectives to be set for the forthcoming period and address areas where objectives, plans and performance indicators have not been achieved.

For more information, refer to the *Guide: Health and safety leading and lagging performance indicators*.

3.3.13 Records management and document control

WHS PAGEO Regulations r. 50

Arrangements for records

The SMS should describe the records management and document control for all records and documents developed in the course of operating the facility. The regulations require the operator to comply with their safety case document control and record management system.

It should also address the arrangements for records, including security. A concise overview of the methods used should be included in the SMS with reference to the operator's internal processes and procedures for management of these key elements. It should include details of development, review and authorisation of procedures and that records are retained in accordance with an approved retention schedule.

The section should also include details of the address where documents are located and that they are readily available to workers as and when required.

For more information, refer to the *Guide: Records management including document control*.

3.3.14 Design, construction and commissioning

WHS PAGEO Regulations r. 39

Adequacy of design, construction, installation, modification or maintenance

Management of design of the drill rig should be covered in this area and briefly outline the design development, resources and responsibility. It should cover the design review and internal validation during the course of the design development, and the interface between fabricators and operations workers to ensure adequacy of design for fabrication and maintenance purposes. This section should reference key engineering, design, validation and review processes.

The overall design basis documentation for a drill rig must include the requirements set out in the regulations and should be included in this section of the SMS with document number and title. These details should be cross referenced in the appropriate sections of the Operation Description of the safety case.

Details of how commissioning will be achieved for the new construction must be summarised in the SMS and include details of any pre-commissioning requirements. All appropriate records required for the manufacturer's data records (MDR) should be collected into a separate area which can then be passed to operations on handover of the new drill rig and easily accessed by an independent validator of the project.

Commissioning will include an overview of the stages implemented during commissioning, the commissioning plan and details of all commissioning procedures and processes to be employed. The completed and signed commissioning documents shall be retained using the appropriate records management and document control procedures.

3.3.15 Simultaneous operations and bridging documents

The registered operators for the drilling contractor and the facility operations must manage activities that may introduce hazards into the workplace, or affect existing hazards. In order to achieve these requirements bridging documents must be developed that will become an annexe to the in force safety cases for both the drilling operation and the client facility.

It will also be necessary to ensure that both the in force safety cases are updated to reference the bridging document and a summary of the relevant SIMOPS. The bridging document will be subject to the same document control and records management requirements applicable to the safety cases.

Bridging documents must demonstrate that suitable arrangements between the drilling contractor and the client are in place to ensure all drilling and well control operations will be carried out safely and effectively and with minimum impact on human health and safety and the environment.

SIMOPS will also require a demonstration that any changes to risk profiles caused by SIMOPS will be identified, assessed and reduced to a level of risk tolerable to the drilling contractor and the client.

For more information, refer to the *Guide: Bridging documents and simultaneous operations (SIMOPS)*.

3.3.16 Validation

WHS PAGEO Regulations r. 67

Validation of proposed operations and proposed significant changes

The safety case must include details of any validation the regulator may require the operator to provide:

- upon finalisation of design and prior to construction of a drill rig
- upon completion of construction and prior to commissioning and operation of a drill rig
- on any significant change to the operations of a drill rig.

A validation is a statement in writing by an independent person (the validator), in relation to design and construction of the drill rig. The regulations provide for the operator and the regulator to agree on the scope of the validation for a proposed drill rig or significant changes to an existing drill rig. Prior to the commencement of validation, the operator must prepare a scope of validation to be accepted by the regulator before any instructions are given to the nominated validator.

The scope of validation needs to be appropriate for the activities that will take place for the proposed operation or significant change to an operation and should include details of the proposed validator. The scope of validation should contain evidence of the selection criteria for the validator, their competence and experience in all aspects that are to be validated and their independence.

It is expected that the operator will liaise with the regulator in a timely manner enabling the scope of validation to be agreed, the validation conducted and a report completed and submitted to the regulator to allow acceptance of the safety case. Agreement on the scope of validation may require multiple meetings and discussions to resolve any differences in expectations, especially in the case of more complex operations.

If the operator and regulator cannot reach agreement on the scope of the validation then the operator is unable to complete the validation and submit the safety case or safety case revision.

The scope of validation should not just be simply a list of identified safety critical elements of the operation to be validated but should contain additional information for the benefit of the regulator and also the proposed validator, examples are shown below.

- An overview of the proposed new operation or significant change to an existing operation (for example decommissioning would be classed as a significant change to an operation) should be a high level overview with consideration being given to the inclusion of a drawing of the layout to aid the regulator and the proposed validator.
- A description of the process used for the identification of the items for validation should be included in the scope.
- Details of the relevant codes and standards should be identified for each safety critical element. The link between the selected item and the code or standard to be applied should be clearly stated in the scope of validation and each code and standard should be correctly identified by title, reference number and application the version or revision. The operator should include instructions in the scope of validation to the validator to confirm, as part of the validation process, that the codes and standards selected are appropriate for the safety critical systems being validated.

- Relevant safety studies, analysis reports and safety documents that are available should be referenced in the scope of validation and linked to the safety critical elements identified.
- The scope of validation should include a clearly defined deliverable.

Prior to nomination of a validator, the operator who has provided the material for validation must satisfy the regulator that each person who is proposed to undertake the validation has the necessary competence, ability and access to data to arrive at an independent opinion on the matter being validated.

The completed validation must establish that the design, construction and installation of a proposed drill rig as well as any proposed significant change to the operation incorporates measures that will protect the health and safety of persons at or in the vicinity of the drill rig and are consistent with the FSA of the operation.

A copy of the validation statement must be submitted to the regulator by the operator upon receipt from the validator.

For more information, refer to the *Guide: Validation requirements*.

3.3.17 Management of change

The SMS should include a section detailing the management of change processes in place for the facility, operations or its management. This section should include an overview of all areas of the operations and facility that may be impacted, such as changes to:

- legislation
- procedures and processes
- standards
- design of the facility
- operating parameters
- components.

The management of change section of the SMS should outline the methodology for the communication of any changes put in place by any of the above examples and any other areas of change not listed. The SMS must also outline the requirements used to effect the change, its authorisation and implementation, as well as risk assessment of any possible effects the change may have on other areas of the facility.

The management of change system could also contain provision for the suspension of the safety case. The suspension of a safety case may be utilised when a drilling operation becomes inactive for an extended period of time which could impact on the levy calculations for the operation. An operator may make an application in writing to the regulator for a suspension of the safety case, detailing the reasons for the application and anticipated duration. If the request to suspend the safety case is granted by the regulator, the operator will need to notify the regulator immediately the drilling operations are re-commenced at which time the suspension will cease and levy calculations will be re-activated. See Section 4.10 Suspension of a safety case for further details.

The relevant internal documents covering any aspect of change on the drill rig should be listed and referenced in this section.

For more information, refer to the *Guide: Management of change*.

3.3.18 Deployment of drill rig to petroleum sites

The deployment of the drill rig to new petroleum activities should have a process for managing the changes that may be required for the success of this deployment. The drill rig operator needs to be able to assure themselves, the site operator or licensee as well as the regulator that:

- the in force safety case is appropriate for the forthcoming activity
- the rig and associated equipment physically conforms with the in force safety case
- the controlling organisation, the people, processes, systems, data, quality assurances and management of change processes comply with the in force safety case
- there is evidence in place to support the above requirements.

Where there is a safety case in force for the site operations these requirements should be covered in a bridging document between the site operation facility safety case and the drill rig safety case. See Section 3.3.15 for simultaneous operations and bridging documents.

3.3.19 Purchasing and control of materials and services

The operation description covers plant and equipment installed at a facility. However, under the SMS the operator should have in place purchasing procedures and processes for procurement of goods and services for the operation. The procedures for procurement should contain a requirement for assessment of fit for purpose requirements of any products being purchased and that contractors and subcontractor have suitable processes in place to ensure their products or services meet the health and safety criteria for the operations. The operator should have in place a list of approved suppliers who have been assessed as meeting these requirements.

The SMS should outline the non-compliance procedure for identifying and checking incoming goods that do not meet the requirement of the purchase order raised. For example, demonstrating if goods are returned to the supplier or managed in some other way through the purchasing process.

Relevant procedures and processes that manage procurement should be listed as referenced documents.

3.3.20 Permit to work system and safe operating procedures

WHS PAGEO Regulations r. 37

Permit to work system

The SMS must include a section on the permit to work system (PTWS) in place and other safe operating procedures for the facility.

The overview of the PTWS should include details of:

- the types/classes of permit to work including hot work and confined space
- who is responsible for generating the permits to work
- who controls the permits to work and how many permits are open, ensuring that workgroups are aware of other open permits in their area of work and that work does not adversely impact other open permits to work
- how long the permits remain in force. Is it for a job taking more than one day or one shift? Is the permit to work closed out at the end of that period or carried over until completion of the job?

Reference to the operator's PTWS must be included in this section, but the full procedure should not be reproduced within the SMS.

Other safe operating procedures which should also be included in this section of the SMS as appropriate, covering:

- mobilisation and demobilisation of the drill rig
- welding and other hot work
- cold work including isolation/tagging/lock-out system
- lifting operations and material handling
- electrical work including electrical isolation
- entry into and working in a confined space
- signposting and hazard identification
- waste fuel, lubricants and hazardous chemicals
- naturally occurring radioactive materials
- non-destructive testing with radioactive substances
- a general overview of documentation of work practices for routine, semi-routine and non-routine work instructions and operations procedures
- movement and control of light vehicles and mobile plant.

The operator should reference their internal documents to limit inclusion of too much detail for each of these activities.

3.3.21 Materials handling and storage

The operator should have in place a process and procedures for managing materials handling and storage. It should cover:

- handling and storage of equipment
- packaging and preservation of materials where required
- delivery of equipment
- stock take of spare parts and consumables
- loss, damage or deterioration of goods.

This section may also include the requirement that workers who operate lifting equipment such as cranes and hoists are trained and the process to verify their competency and ensure a process is in place for the monitoring and maintenance of high risk certification.

This section should include evidence that registers are maintained. For example, for all slings, chains and other equipment used for manual handling, and that the equipment is tagged with load weighting and checked regularly by trained workers to identify any repairs or maintenance that may be required.

3.3.22 Maintenance and repair

This area describes the operator's maintenance management system that is in place to ensure the integrity and reliability of the operations. The maintenance management system should include a list of all plant and equipment located at the facility and the scheduled maintenance requirements applicable under the facility work program.

The maintenance management system should be able to create the required work orders to complete maintenance and repair work and should be supported by various work procedures and work instructions. The operator must ensure that operations workers familiar with the requirement of the machinery and equipment are involved in the development and review of these work program documents.

3.3.23 Inspection, testing and monitoring

This SMS section describes the operator's management of inspection, testing and monitoring of machine, plant and equipment especially those elements that have been classified as safety critical elements (SCEs). The section should detail how the maintenance management system satisfactorily manages SCEs by ensuring they are regularly inspected and tested to monitor their application in the event of an emergency.

This section should also include the operator's general inspection, testing and monitoring, and provide an overview of the facility's scheduled and unscheduled requirements.

Requirements for inspections when drill rigs move inter-state were very prescriptive under previous legislation. Under the WHS PAGEO legislation operators should ensure that regular inspections are carried out by qualified, competent and independent persons to demonstrate that risks associated with the operation of the drill rig and associated equipment have been reviewed and assessed SFAIRP. The report from these inspections can then be held by the operator and presented to the various titleholders as the rig is moved between sites to meet health and safety requirements.

Description of the operator's process to determine the frequency of the inspection, testing and monitoring should be included in this section. This process should include periodic reviews to ensure that the inspection schedule is still viable, taking into account the age of the equipment and machinery being checked, and whether or not the schedule should be adjusted to either increase or reduce the frequency based on the age, status and condition of the equipment.

This section should reference the operator's maintenance management system and their planning and scheduling documentation and facility work programs.

3.3.24 Integrity management

The operator should describe the integrity management plan linked with the maintenance management system to provide an ongoing review of the management and monitoring of the integrity of the facility. This should also demonstrate how the machinery and equipment is deemed to be fit for purpose to perform on a day to day basis and also during an emergency if so required.

This section should include details of the periodic review of the integrity management plan, actions to be taken as a result of the various survey studies that may have been conducted on the facility and other activities that consider the condition of the facility.

Include details of review and highlight areas of the facility where machinery and equipment may be aging and require additional management, including increased testing and inspection, forecasting of possible parts replacement or major overhauls.

This section should reference the integrity management plan document number and full title.

3.3.25 Performance standards for safety critical elements

WHS PAGEO Regulations r. 32(4)(l)
Performance standards

The operator must describe the process and methodology for the development of performance standards for each of the SCEs that have been listed as controls for the MAEs identified in the FSA.

Cross-reference the performance standards to the relevant MAE and the sections of the operation description and FSA that relate to this requirement. Reference should be made to the relevant procedure covering the development of the performance standards, who is responsible for the development and approval of the performance standards and the system in place for the review and verification that the identified requirements under these standards are still viable.

For more information, refer to the *Guide: Identification of major accident events, control measures and performance standards*.

3.3.26 Incident/hazard reporting and investigation

This section should outline the operator's system for incident and hazard reporting and investigation and summarise the system with reference to the internal procedures and processes used.

Details should be included of the management of incidents/near miss occurrences which are considered to be notifiable occurrences and incidents under the Act and the WHS PAGEO Regulations. (Section 3.3.27).

All workers including supervisors, health and safety representatives and managers involved in incident and hazard investigation and reporting should be trained and competent in this area.

The overview of the system should also include reference to communication of the investigation results to workers and the corrective actions generated to prevent a recurrence of the incident.

For more information, refer to the *Interpretive guideline: Incident notification*.

3.3.27 Notifiable occurrences and incidents

WHS Act Part 3 – Incident notification

WHS Act s. 35

What is a notifiable incident

WHS Act s. 36

What is a serious injury or illness

WHS Act s. 37

What is a dangerous incident

WHS PAGEO Regulations r. 99

Meaning of notifiable occurrence

WHS PAGEO Regulations r. 100

Duty to notify of notifiable occurrences

WHS PAGEO Regulations r. 101

Incident notification: prescribed serious illnesses

WHS PAGEO Regulations r. 105

Dangerous incident [Act s.37]

The operator's processes and procedures for notifiable incident and dangerous incident reporting must include the requirement for operators to report notifiable occurrences to the regulator. The procedures should include a process that defines what constitutes a notifiable occurrence and details the steps to be followed by operators to notify the regulator within the required time frames.

Operators must ensure that the requirements are covered in their internal procedures and that all workers involved in the management of incident and hazard reporting are fully conversant and trained in these requirements.

The procedures should detail as a minimum:

- what is considered a serious injury or illness
- what is considered a dangerous incident
- what is considered a dangerous occurrence that threatens the health and safety of workers
- management of psychosocial hazards such as stress, fatigue, burnout, bullying, violence and aggression and discrimination
- how to manage the incidents or occurrences internally
- the requirements that must be followed by the operator when notifying the regulator.

WHS Act s. 39

Duty to preserve incident sites

The operator must also ensure that the incident site is preserved until such time as an inspector arrives on site or any earlier time that an inspector directs.

For more information, refer to the *Interpretive guideline: Incident notification*.

3.3.28 Workplace environment – managing risks to health and safety

WHS PAGEO Regulations r. 108

Duty to identify hazards

WHS PAGEO Regulations r. 109

Managing risks to health and safety

WHS PAGEO Regulations r. 110

Hierarchy of control measures

WHS PAGEO Regulations r. 111

Maintenance of control measures

WHS PAGEO Regulations r. 112

Review of control measures

WHS PAGEO Regulations r. 113

Person must leave a facility when required to do so

This section should describe the processes in place required under WHS PAGEO Regulations manage risks relating to work health and safety to ensure a healthy and safe working environment at the drill rig by maintaining:

- high standards of housekeeping, cleanliness and hygiene
- monitoring of exposure to vibration, fumes and odours
- limited exposure to hazardous substances
- the operator's smoking policy.

The process required for identification of hazards, managing the risks associated with the hazard, identification and maintenance of the control measures is covered in detail in Section 3.3.11.

Include details of when an operator (or operator's representative) may require a person to leave a facility.

For more information refer to the *Interpretive guideline: How to determine what is reasonably practicable to meet a health and safety duty*.

3.3.28.1 Fatigue management

WHS PAGEO Regulations r. 114
Avoiding fatigue

Procedures for fatigue management and maximum hours to be worked under normal conditions must be in place for the drill rig.

An operator of a facility must not allow or require a worker to work for a period or duration that could reasonably be expected to have an adverse effect on the health or safety of the worker or other persons at or in the vicinity of the drill rig. This requirement applies to a single continuous period or multiple successive continuous periods.

3.3.28.2 Managing risk of hearing loss from noise

WHS PAGEO Regulations r. 116
Meaning of exposure standard for noise

WHS PAGEO Regulations r. 117
Managing risk of hearing loss from noise

WHS PAGEO Regulations r. 118
Audiometric testing

The operator must ensure, so far as is reasonably practicable, that the noise a worker is exposed to at a workplace does not exceed the exposure standard for noise.

The operator must ensure that there is a process in place for audiometric testing for workers who are frequently required to use personal protective equipment to protect from the risk of hearing loss associated with noise that exceeds the exposure standard for noise. Where this is the case workers should undergo audiometric testing within three months of commencing work and then at least every two years to monitor any hearing loss.

3.3.29 Managing the risk to health from psychosocial hazards

Psychosocial hazards at work are aspects at work and work situations which may cause psychological harm (whether or not it may also cause physical harm). 'Health' is defined in the WHS Act as physical and psychological health. Psychosocial hazards can stem from:

- the way the tasks or job are designed, organised, managed and supervised
- tasks or jobs where there are inherent psychosocial hazards and risks
- the equipment, working environment or requirements to undertake duties in physically hazardous environments
- social factors at work, workplace relationships and social interactions.

The operator must have systems in place for preventing and managing psychosocial hazards such as stress, fatigue, burnout, bullying, harassment, violence and aggression, discrimination and misconduct.

For more information refer to the *Psychosocial hazards in the workplace*, *Mentally healthy workplaces for fly-in fly-out workers in the construction and resources sector* and *Workplace behaviour codes of practice*.

3.3.30 Health monitoring systems

Include details of the operator's health monitoring procedures and processes in place for workers, and detail any pre-employment health assessments and subsequent health surveillance programs.

These assessments and health surveillance reports should include details of the audiometric testing requirements outlined in Section 3.3.28.2

Include details of the medical and health assistance available on the drill rig.

It is part of the registered operator's duties to ensure that there are detailed records maintained of health assessments and surveillances provided to workers.

3.3.31 Drugs and intoxicants

WHS PAGEO Regulations r. 42

Drugs and intoxicants

WHS PAGEO Regulations r. 115

Possession or control of drugs or intoxicants

A person engaged in a drilling operation must not have possession or control of a controlled substance or an intoxicant.

The drilling contractor must ensure that there is a method in place preventing the use of controlled substances or intoxicants at any petroleum or geothermal energy operations. The operator must include details of the policy with regards to medication being taken by a worker engaged in the operation including who is responsible for this medication, the need for the operator to ensure a worker notifies their immediate supervisor when they are taking medication which may impact their performance at work.

The operator should include details of any tolerance level of drugs and alcohol that has been determined for the operations and how this is monitored and managed. The operator should have an alcohol and other drugs policy in place that sets out clearly how to address health and safety risks arising from workers impaired by alcohol and drugs. The policy should reflect the health and safety needs of the particular operation.

If the operator has a separate policy covering fitness for work and drug and alcohol this should be referenced and a copy of the policy included as an appendix to the SMS.

3.3.32 Safety management system audits

WHS PAGEO Regulations r. 32(4)(l)

Provide for a system of auditing the effectiveness of the safety management system

WHS PAGEO Regulations r. 33

Implementation and improvement of safety management system

This is a key element of the SMS and operators should have an audit system in place that is clear, objective and evidence-based to show outsiders that the operator conforms to the SMS. It is one of the main focus areas for inspectors.

The operator must demonstrate that they have ensured the implementation of the SMS and that there is a continual and systematic identification of deficiencies in, and improvement of, the system as required in the regulations. Therefore, the operator's audit of the SMS requirements should measure its effectiveness, and identify ways to improve it, and any deficiencies that need rectifying.

This section should detail the audit process, including the existence of an audit plan outlining the methodology by which the operator will conduct internal or external audits. This requirement should include details of auditor independence requirements for the areas being audited and the qualifications of the auditor.

Details of the management of non-compliance areas identified during the audit, how actions are generated to address the non-compliance and the monitoring of the actions through to effective closure should also be included.

For more information, refer to the *Guide: Audits, review and continual improvement*.

3.3.33 Review and continual improvement

WHS PAGEO Regulations r. 33

Implementation and improvement of safety management system

The operator should include details of systems and processes that will be reviewed, how and when the review will take place and the results.

The results of the review should be documented and be formally communicated to management to provide continual improvement to the SMS. These actions may be through identification of new objectives and targets, ongoing audits and the closeout of actions generated from audit reports and incident investigations.

The areas of audit and review/continual improvement are important elements of the safety case and should focus on:

- ensuring compliance
- identification and management of continual improvement.

These areas of the safety case should be robust, comprehensive and continuous. As a guide to assist development of the safety case, operators should take into account that the regulator will be inspecting against the safety case to ensure compliance and improvement. A principal means of achieving this will be to ask the operator how they ensure they are doing what they said they would do in the safety case. It is important that details contained within the safety case are comprehensive and concise.

Operators should ensure that they have a process in place to regularly verify that their audit and review/continual improvement requirements are managed effectively. Where inspection findings identify issues with the operator's systems, questions will be raised as to why these issues were not already identified and corrected by the operator's audits, review and continual improvement requirements.

For more information, refer to the *Guide: Audits, review and continual improvement*.

3.4 Formal safety assessment (FSA)

WHS PAGEO Regulations r. 32(3)
Formal safety assessment

The FSA description must summarise the risk assessments undertaken in sufficient detail to provide evidence that the requirements have been addressed. This section of the safety case should therefore include a comprehensive summary of the assessments, analyses and results that have been documented as part of the FSA.

It is expected that the detailed description should provide sufficient information to demonstrate that the FSA has identified all MAEs, systematically assessed the associated hazards and implemented adequate control measures to reduce the risks to SFAIRP.

3.4.1 Purpose

The FSA description must include a brief overview of the purpose to identify as broad a range of risks as possible using appropriate hazard identification techniques and risk assessment methodologies.

3.4.2 Scope

The scope should reference the operation covered by the FSA and the types of risks covered in the assessment process including loss of integrity on the operation, including wells, work activities in connection with operation and work environment.

3.4.3 Objective

The FSA description must include a summary of the objectives.

Note: The following wording is an indication only and should not be considered as a standard inclusion in the SMS.

Indication of content detail for objective section of FSA

The objectives of the risk assessment processes comprising the FSA are to:

- identify all potential threats to the integrity of the drilling operation
- identify all potential hazards associated with the operation
- document existing risk controls for the identified hazards
- estimate intrinsic and current (residual) risk levels for the identified hazards
- establish a risk profile for the integrity of the operation and for the critical tasks involved in the maintenance of the operations and use this for the subsequent development of risk control strategies/safety plans
- conduct an assessment on the potential for any major accident event as “an event connected with a facility, including a natural event, having the potential to cause multiple fatalities of persons at or in the vicinity of the facility”
- demonstrate that the processes adopted for the operation have reduced the level for risk SFAIRP.

The objective of the FSA is to demonstrate that:

- the operator has in place a risk tolerability criteria against which all risks have been assessed and reduced SFAIRP. Details of the procedures and processes in place to achieve tolerability should be included as a reference
- all major hazards have been identified, and those that pose particular risk to the workers and/or the operation have been assessed
- the control, mitigation and recovery measures that have been or will be put in place to manage the risks are adequate and effective
- the risks have been reduced to a level that is tolerable.

The consequences of the risks considered include the:

- impact on fitness for purpose of the operation
- impact on the health of workers
- potential for worker injury or fatality.

3.4.4 Methodology

WHS PAGEO Regulations r. 32(3)(e)

Demonstrate that methodologies in FSA are appropriate and adequate

This section should describe the safety case FSA methodology, including:

- risk assessment process – this should cover the approach taken to accurately identify all hazards and risks relating to the operation, its maintenance, the types of assessment employed (e.g. qualitative, semi-quantitative, quantitative or facility integrity assessments) and the associated controls to reduce the level of risk SFAIRP.

- participation in the FSA process – outline the participants identified to attend risk assessments based on their level of experience, competence and involvement in the operations. This should include a broad range of worker participation to ensure adequate levels of consultation and communication which is an essential part of the risk management process.
- workshop facilitation – provide an overview of who facilitates the risk assessment workshops and their selection based on industry experience and competency.
- risk analysis and evaluation – include details of the analysis and evaluation process undertaken, including reference to the risk matrix used, a copy of which should be included as an appendix to the safety case.

3.4.5 Major accident events (MAE)

WHS PAGEO Regulations r. 32(3)(a)(b)
Potential major accident events

The FSA must include the likelihood and consequences of a major accident event (MAE). This section should list the identified MAEs for the operations and include details of the intrinsic risk levels, the controls that have been applied, the residual risk levels are reduced SFAIRP.

This section of the FSA should be cross-referenced to the section in the operation description and SMS covering the performance standards developed for each of the safety critical elements identified as controls for the MAEs.

For more information, refer to the *Guide: Identification of major accident events, control measures and performance standards*.

3.4.6 Safety critical elements and bowtie diagrams

WHS PAGEO Regulations r. 32(3)(c)
Identify safety critical elements

The FSA description must summarise all of the technical and other control measures that the operator has identified to prevent, detect, control and mitigate MAEs. Each of these control measures is considered an SCE. Include a summary of the SCEs and a link to their performance standards (summarised in the operation description).

Consideration should be given to inclusion of a reference to any well management plans that have been developed and accepted by the regulator as these plans will include safety measures installed for the wells, acting as a mitigating control for identified MAEs on any of the wells within the operations.

The functional SMS developed in relation to the safety instrumented systems installed on the operations should be referenced as a mitigating control identifying the shutdown and redundancy equipment installed in the operations.

Bowtie diagrams displaying each MAE with the associated preventive and mitigating controls in place is the preferred method to assist in summarising the associated SCEs. Inclusion of the bowtie diagrams is usually attached as an appendix to the FSA.

3.4.7 Demonstration of risk reduction so far as is reasonably practicable

WHS PAGEO Regulations r. 32(3)(d)

Demonstrate risks are minimised so far as is reasonably practicable

The FSA must demonstrate that the operator has reduced the risks associated with identified MAEs to SFAIRP.

This should include a detailed description of the necessary prevention, detection, control and mitigation measures implemented. Where relevant, include a technical argument as to why it is not reasonably practicable to implement further control and mitigation measures.

For more information, refer to the *Guide: Demonstration of risk reduction so far as is reasonably practicable (SFAIRP)*.

3.4.8 Summary of risk assessment studies

The FSA should include a summary of each of the consultations completed as part of the FSA methodology.

Each summary should include:

- the title and type of the risk assessment consultation conducted on the operations
- details of the facilitator
- the location and date of the consultation
- the results of the consultation including details of the number of actions raised and any MAEs identified
- details of the risk assessment report (document number and title) and that it is available for review by the regulator upon request.

During a five yearly review the FSA should be reviewed and updated to reflect:

- any risk assessments conducted since the last five yearly review
- update of previous risk assessments as to current status of any actions that were still outstanding when first entered into the FSA
- update of the HAZOP conducted.

For more information, refer to the *Guides: Hazard identification and risk assessment and management including operational risk assessment*.

3.5 Emergency response

Under the WHS PAGEO Regulations, the emergency response requirements are documented in a separate section of the safety case, rather than being included as part of the SMS. The following Sections of this Guide cover the information that should be included in the section on emergency response.

WHS PAGEO Regulations r. 32(1)(d)

Emergency response plan

3.5.1 Emergency preparedness

WHS PAGEO Regulations r. 40

Medical and pharmaceutical supplies and services

WHS PAGEO Regulations r. 46

Emergency preparedness

The safety case for an operation must include a description and the implementation of the ERP.

The ERP must describe the response to the emergency risks that the operator has identified in their FSA and should also include a list of possible scenarios that could result in its implementation.

The operator should demonstrate that all requirements listed in the WHS PAGEO Regulations are included in the ERP:

- emergency response roles and responsibilities have been documented within the ERP and there is a description of the chain of command for emergencies
- emergency response training is conducted for all workers
- emergency response drills and exercises are scheduled, conducted and reports generated on the results
- emergency response equipment is readily available and fit-for-purpose, a schedule for inspection and testing of emergency equipment is in force, there is a suitable redundancy of equipment for backup purposes in the event of equipment failure.

The operator should list all internal referenced documents where critical information is contained.

This section of the SMS should cross-reference sections of the operation description and FSA, where appropriate.

For more information, refer to the *Guide: Emergency response planning*.

3.5.2 Emergency analyses

WHS PAGEO Regulations r. 43

Emergency analyses

The operator must include details of:

- the evacuation, escape and rescue analysis (EERA)
- the fire and explosion risk analysis (FERA)

that have been conducted for the facility.

3.5.3 Evacuation, escape and rescue analysis (EERA)

WHS PAGEO Regulations r. 52
Evacuation, escape and rescue analysis

The operator must conduct an EERA before submitting the safety case for review and acceptance by the regulator.

The safety case must include a detailed description of the drill rig's EERA for the operation and should be summarised providing details included in the EERA as set out in the WHS PAGEO Regulations.

- identify the types of emergency that could arise at each relevant operation
- consider a range of routes for evacuation and escape of persons at each relevant operation in the event of an emergency
- consider alternative routes for evacuation and escape if a primary route is not freely passable
- consider different possible procedures for managing evacuation, escape and rescue in the event of an emergency
- consider a range of means of, and equipment for, evacuation, escape and rescue in the event of an emergency
- identify technical and other control measures necessary to minimise the risks associated with emergencies so far as is reasonably practicable.

Reference the document number and title of the EERA as well as specific operator internal documents and any Australian or international standards utilised for the analysis. If requested, the operator must provide the regulator with a full copy of the EERA.

This section should cross-reference any other areas in the operations description or FSA referring to the EERA within emergency response.

3.5.4 Fire and explosion risk analysis (FERA)

WHS PAGEO Regulations r. 53
Fire and explosion risk analysis

The operator must conduct a FERA before submitting the safety case for review and acceptance by the regulator.

The safety case must include a detailed description of the FERA for the facility which should be summarised taking into account the requirements as set out in the WHS PAGEO Regulations, namely:

- identify the types of fire and explosion that can occur at each relevant operation
- consider a range of measures for detecting those fires and explosions in the event that they do occur
- consider a range of measures for eliminating those potential fires and explosions, or for otherwise reducing the risk arising from fires and explosions

- consider the incorporation into each relevant operation of both automatic and manual systems for detection, control and extinguishment of:
 - outbreaks of fire
 - leaks or escapes of petroleum
- consider a range of means of isolating and safely storing hazardous substances, such as fuel, explosives and chemicals, that are used or stored at each relevant operation
- consider the EERA, to the extent that it relates to fires and explosions
- identify, as a result of the considerations, the technical and other control measures necessary to minimise the risks associated with fires and explosions so far as is reasonably practicable
- the conclusion reached during the FERA and any additional control measures that were identified that have been or need to be put in place on the operation.

Reference should be included to the document number and title of the FERA conducted which will have full details of the items listed above as well as specific operator internal documents and any Australian or international standards used for the analysis.

The operator must make the FERA available to the regulator upon request.

Cross-reference to any other area of the operation description or FSA referring to the FERA.

3.5.5 Emergency communication systems

WHS PAGEO Regulations r. 44
Emergency communications systems

The safety case must include details of the communications systems in place and that in the event of an emergency these are adequate for communication both within the drilling operations and the client facility.

Demonstrate that the communications in place are adequate to handle any likely emergency relating to the facility and the operations requirements of the facility.

3.5.6 Emergency control systems

WHS PAGEO Regulations r. 45
Control systems

Control systems for a facility must be included in the safety case and include details of control systems in place for the operation in the event of an emergency covering:

- back-up power supply
- lighting
- alarm systems
- ballast control
- emergency shut-down systems.

4 Submission and assessment of the safety case

4.1 Overview of submission process

This section outlines the process for submission and acceptance of the safety case including submission, decision points, acceptance or rejection, revision and suspension. Figure 1 provides an overview of the steps in the submission process, while Figure 2 depicts the timelines for the submission of new and revised safety cases.

4.2 Safety case to be submitted to regulator

WHS PAGEO Regulations r. 51
Safety case to be submitted to regulator

WHS PAGEO Regulations r. 67
Validation

The regulator may delegate their powers to receive and accept an operator's safety case submission to the Chief Inspector Petroleum Safety.

Acceptance of a safety case means that the regulator considers that it demonstrates the operator's commitment to operate the relevant facilities in a manner that satisfies their legislative duties and/or other legislative requirements. It does not mean:

- it is safe to follow the safety case irrespective of the circumstances around the activity that may indicate further risk assessment is necessary
- the regulator indemnifies the operator for any incident or liability or breach of the legislation.

The safety case is the operator's document that reflects the commitment to comply with the legislation. The operator remains responsible for all risks.

Prior to submitting a safety case for assessment, the operator needs to liaise with the regulator on any requirements for validation. Where validation is required, it is important that the scope of the validation is agreed between the operator and the regulator prior to instructions being given to a third party validator (Section 3.3.16).

An operator cannot submit a safety case for review and acceptance by the regulator without conducting an EERA and a FERA. Details of these analyses must be summarised in the safety case to be submitted.

The submission of a safety case must also include the ERP for the relevant facility.

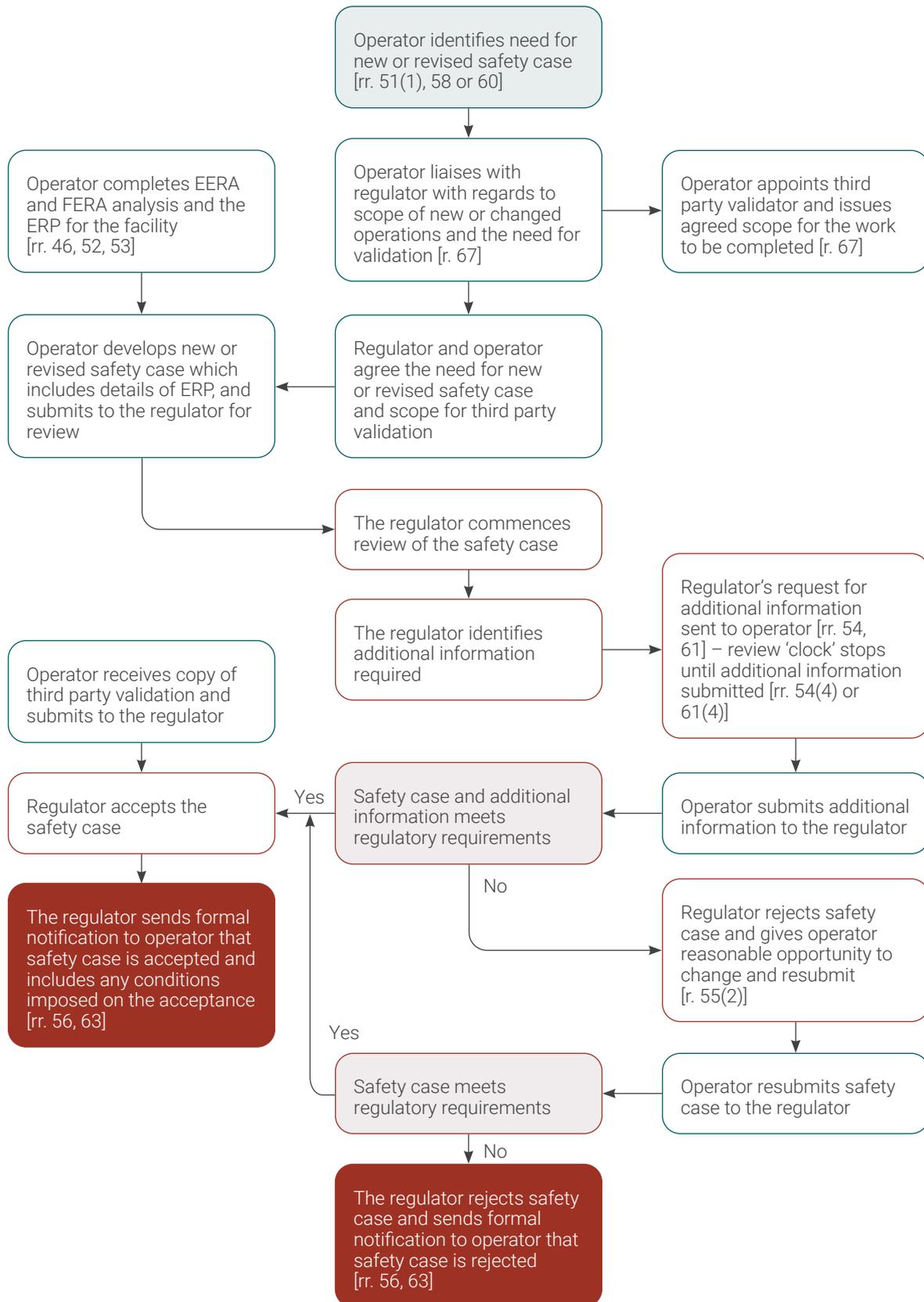


Figure 1 PAGEO safety case submission flow chart

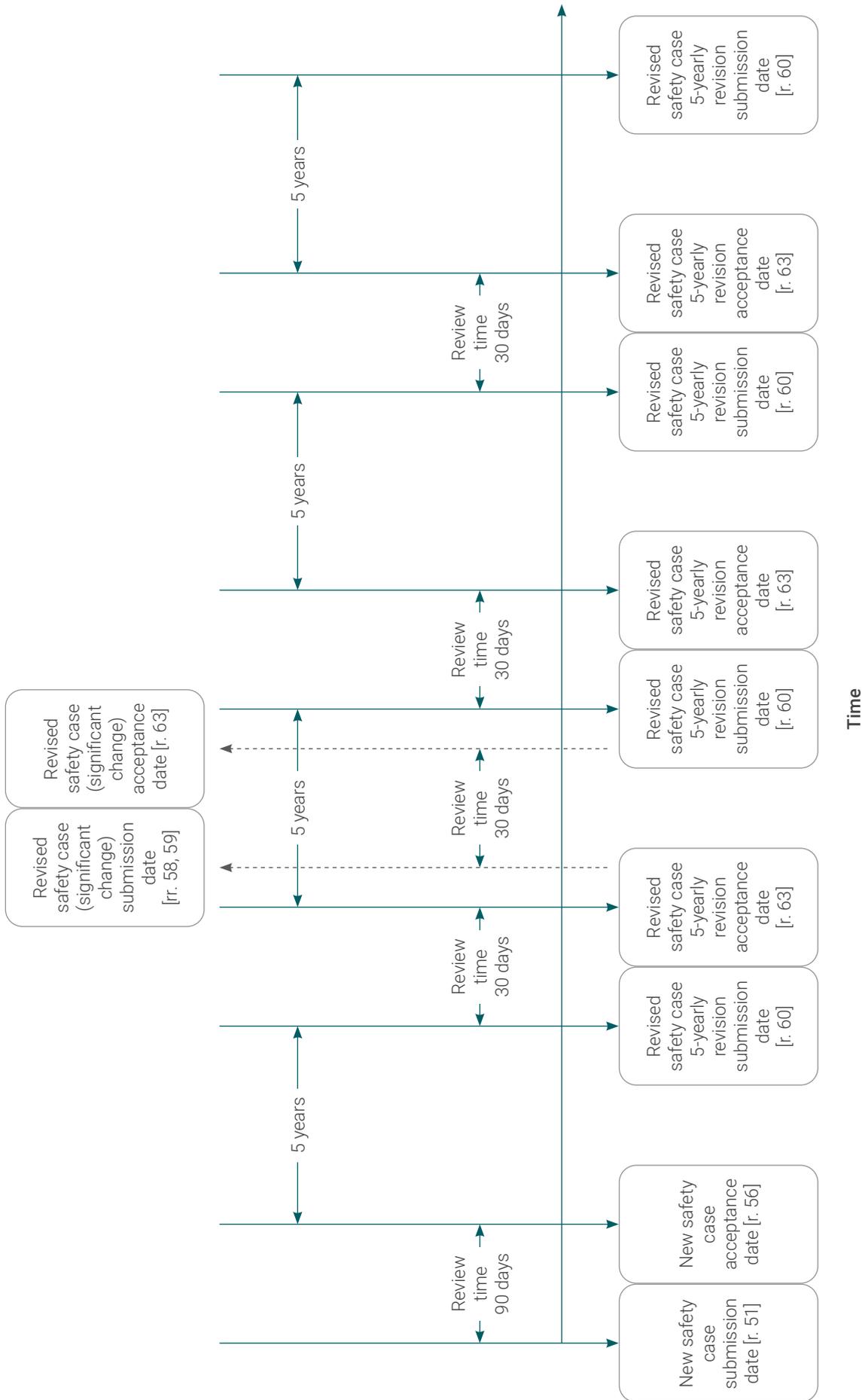


Figure 2 New and revised safety case submission timelines

4.3 Request for additional information

WHS PAGEO Regulations r. 54
Regulator may request more information

WHS PAGEO Regulations r. 61
Regulator may request more information

The regulator may request more information in relation to the safety case submitted for review and acceptance.

Requests for any additional information must be made in writing by the regulator and specify a period of not less than 30 days within which time the information must be provided. The additional information provided by the operator becomes part of the safety case that was initially submitted for review and acceptance.

Operators should note that if additional information is requested the 90 day time limit for the regulator's notice of the decision is suspended until the operator provides the requested information. For example, if the regulator sends a request for additional information 20 days after the operator's initial safety case submission then the count on the remaining 70 days of the assessment period will recommence after the regulator has received the required information. The same will apply to a revised safety case time limit of 30 days.

4.4 Acceptance or rejection of a safety case

WHS PAGEO Regulations r. 55
Acceptance or rejection of safety case

The regulator must accept a safety case if satisfied it is compliant with the regulation requirements and, if required, the requested validation has been provided. The regulator may impose conditions on the acceptance regarding the facility operations.

The regulator must reject the safety case if, firstly, the operator has had reasonable opportunity to change and resubmit the safety case, and secondly, the regulator is not satisfied the resubmitted safety case complies with the WHS PAGEO Regulations requirements. If the regulator rejects the safety case, they must provide reasons for the decision to reject the document.

4.5 Notice of decision on safety case

WHS PAGEO Regulations r. 56
Notice of decision on safety case

The regulator must provide the operator with written notice of, and reasons for, their decision on a safety case submitted within 90 days after receiving the safety case.

The regulator must notify the operator in writing if they are unable to provide a decision to the operator within 90 days and provide the operator with a proposed timetable for their consideration of the safety case.

If the submitted safety case covers more than one prescribed activity, then the regulator may partially accept the safety case. For example, if a safety case is submitted for two activities, the regulator may accept the safety case for activity one and reject it for activity two. The regulator may also impose conditions on the acceptance.

4.6 Revision of a safety case

WHS PAGEO Regulations r. 58
Revision because of change of circumstances or operations

WHS PAGEO Regulations r. 59
Revision on regulator's request

The WHS PAGEO Regulations prescribe the circumstances that trigger the revision of a safety case.

An operator must update the safety case in force as soon as practicable after identifying a change of circumstances or operations as outlined in the WHS PAGEO Regulations. If the operator is required to submit a revised safety case because there is a proposed significant change to, or decommissioning of, a relevant facility, the operator must not submit the revised safety case until the operator and the regulator have agreed on the scope of any validation that may be required to be provided in regard to the proposed changes. If the regulator agrees, the operator may submit a revised safety case in the form of part of the safety case in force for the operation.

This is the arrangement for a bridging document or addendum. The bridging document or addendum submitted to the regulator is actually a revision of part of the "main" safety case for the drill rig. The bridging or addendum document must be submitted under regulation 58.

It is usually the intention of the regulator that only the aspects of the safety case that have been revised due to the change in circumstances or operations or that the regulator has requested will be assessed in the submission, there is no intention to re-assess the entire safety case as if it were a new document.

The regulator may request that the operator engaging in operations for which a safety case is in force to submit a revised safety case. The request by the regulator must be in writing and provide details of the matters to be revised, the time in which the operator must complete the revision, and the regulator's reasons for the request.

On receipt of the revision notice the operator may submit an opinion in writing within 21 days (or longer at the regulator's discretion) why the revision is unnecessary, and/or to vary the date or terms proposed by the regulator. The operator must provide reasons for their opinion.

The regulator must provide written notice of, and reasons for, their decision on the operator's submission within 28 days. The operator must revise their safety case in accordance with the revision notice as originally received or as varied by the regulator.

4.7 Revision after five years

WHS PAGEO Regulations r. 60
Revision after 5 years

The operator must revise and resubmit their safety case every five years after the initial acceptance regardless of any other revisions and acceptances because of facility or operational modifications and/or at the regulator's request.

It is the intention of the regulator to assess five-yearly revisions in their entirety, as if they were new safety cases, as opposed to revisions due to a change in circumstances or operations or at the regulator's request.

Operators should have in place a process to track this five-yearly requirement as there will be no reminders sent from the regulator.

Figure 2 depicts the required intervals for five-yearly submissions regardless of the number of times the safety case may have been updated to reflect significant changes to operations.

The regulator must provide the operator with written notice of their decision on their revised safety case submission within 30 days.

The regulator must notify the operator in writing if they are unable to make a decision within the 30 days, and provide a proposed timetable for the consideration of the revised safety case.

4.8 Rejection of a revised safety case

WHS PAGEO Regulations r. 64

Effect of rejection of revised safety case

WHS PAGEO Regulations r. 165

Which decisions under the regulations are reviewable

If the decision of the regulator is to reject a revised safety case, then the safety case in force immediately before the revised safety case was submitted remains in force subject to the WHS PAGEO Regulations as if the revised safety case had not been submitted.

The operator may review a decision of the regulator in the event that the safety case or revised safety case is rejected.

4.9 Withdrawal of acceptance of a safety case

WHS PAGEO Regulations r. 65

Grounds for withdrawal of acceptance

WHS PAGEO Regulations r. 66

Notice before withdrawal of acceptance

The regulator may, by written notice to an operator, withdraw acceptance of the safety case for an operation on any of the following grounds:

- the operator has not complied with:
 - the WHS Act, or
 - a notice issued by an inspector under the WHS Act Part 10, or
 - WHS PAGEO regulations rr. 65 and 66
- the regulator has rejected a revised safety case.

The written notice of withdrawal of acceptance is given to the operator and any other persons the regulator thinks fit. The notice must contain a statement as to the reasons for the decision.

Before withdrawing the acceptance of a safety case for an operation, the regulator must give the operator at least 30 days' notice in writing of the regulator's intention to withdraw the acceptance. The regulator must specify in the notice a date on or before which the operator (or other person to whom a copy of the notice has been given) may submit to the regulator, in writing, any matters that the regulator should take into account when deciding whether to withdraw the acceptance.

The regulator must take into account any actions taken by the operator or other persons to correct the non-compliances referred to in the notice to withdraw and any proposed actions to prevent any further non-compliance.

In the event that the regulator proceeds with the withdrawal of acceptance of a safety case, the operator is unable to undertake any work on the facility or operations covered by the relevant safety case until such time as a revised safety case has been submitted and accepted by the regulator.

4.10 Suspension of a safety case

WHS PAGEO Regulations r. 119

Application for suspension

WHS PAGEO Regulations r. 120

Form of application

WHS PAGEO Regulations r. 121

Regulator may seek further information

WHS PAGEO Regulations r. 122

Grant or refusal of suspension

WHS PAGEO Regulations r. 123

Notice of decision on application

WHS PAGEO Regulations r. 125

Duration of suspension

An operator can apply to the regulator for the suspension of a safety case in force.

Suspension allows the operator to “switch on and off” their safety case during periods of inactivity without having to withdraw the safety case at the start of the period and resubmit a new safety case at the recommencement of operations. It also allows the regulator to pause surveillance activities as well as adjust the charging of the safety levy under the Petroleum and Geothermal Energy Safety Levies Regulations 2022.

It is essential to understand that if a safety case is suspended, no operations within the scope of the suspended safety case can be conducted. Further, a safety case cannot be partially suspended (e.g. certain details within the safety case cannot be suspended while the remainder remains active). The operation cannot resume until the suspension is revoked and the safety case is reactivated.

Operators should note that a drill rig in care and maintenance does not equate to the drill rig being inactive. For the facility to be classed as inactive, there must not be any petroleum related activities taking place at all on the facility. Accurate classification of the facility as active or inactive is critical for the correct application of the safety case and operators should have a system in place within their SMS to accurately record the changes between active and inactive. See Section 3.3.17 Management of change for suggestions on how this could be managed.

Suspension should only be considered temporary and last for short periods.

The application for suspension must be made in writing and set out the particular date the operator wants to suspend the safety case and how long the period of suspension is likely to last. The WHS PAGEO Regulations require that the operator sets out the reasons why they want the safety case suspended. It is important that the operator can justify why there will be no activity and how the operator will ensure that no activity takes place during the period of suspension. The operator should also provide a detailed explanation of how the drill rig itself, as well as the people, processes, data, etc. used with the facility will be recovered when back from the period of suspension to an appropriate state ready to allow safe operations. (Section 4.9.1)

The regulator may request further information from the operator to support the application for suspension. Once all information is received the regulator must make a decision within 30 days after receipt of the application, this may be extended by up to 14 days subject to agreement with the applicant. The regulator is taken to have refused to grant a suspension if no decision is made within the relevant period or within the extended period.

The notice of the decision on the application must be given by the regulator in writing within 7 days of making the decision. In the event that the regulator decides to refuse the application for suspension, the written notice must include the reasons for that decision.

4.10.1 Revocation of suspension of the safety case

WHS PAGEO Regulations r. 124
Revocation of suspension

When activities are expected to resume on the drill rig, the operator should make an application in writing to regulator requesting the revocation of the suspension of the safety case stating the dates on which activities are likely to recommence. The regulator may, by written notice, revoke the suspension of the safety case if the regulator is:

- satisfied the applicant will be carrying out operations on and from a particular day, or
- otherwise satisfied that it is appropriate to do so in the circumstances of the particular case.

The revocation has effect on and from the day specified in the revocation notice.

A suspension granted under the WHS PAGEO Regulations remains in effect on and from the day specified in the suspension notice until it is revoked.

Prior to the recommencement of activities, the operator will be required to advise the regulator that:

- the in force safety case is appropriate for the forthcoming activity
- the rig and associated equipment physically conforms with the in force safety case
- the controlling organisation, the people, processes, systems, data, quality assurances and management of change processes comply with the in force safety case
- there is evidence in place to support that the above requirements are proven to be true
- the date on which activities are scheduled to recommence.

These requirements should be included in the operator's management of change process which is used to monitor the active and inactive status of the drill rig (Section 3.3.17).

4.11 Consent to undertaken activities in a manner different from safety case requirements

WHS PAGEO Regulations r. 57

Consent to undertake activities in manner different from safety case requirements

The regulator may consent in writing to the operator undertaking operations in a manner that is different to the requirements described in the safety case in force, if the regulator is satisfied that the proposed manner of the activity will not result in, or be likely to result in, a significant new or increased risk to safety and health at the facility.

The consent may be given subject to the terms and conditions specified by the regulator in the written consent.

This is very unusual and would only occur in unforeseen emergency situations. It would usually be preferable to revise the safety case.

Appendix 1 Relevant legislation

Current

Petroleum and Geothermal Energy Resources Act 1967

Petroleum and Geothermal Energy Safety Levies Act 2011

Petroleum and Geothermal Energy Safety Levies Regulations 2022

Petroleum (Submerged Lands) Act 1982

Petroleum Pipelines Act 1969

Work Health and Safety Act 2020

Work Health and Safety (General) Regulations 2022

Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022

Repealed

Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010

Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 2007

Petroleum (Submerged Lands) (Pipelines) Regulations 2007

Petroleum (Submerged Lands) (Diving Safety) Regulations 2007

Petroleum Pipelines (Management of Safety of Pipeline Operations) Regulations 2010

Appendix 2 Glossary and acronyms

The following terms are defined for the purposes of this Code.

Key terms	Meaning
BOP	Blow out preventer
Competent person	Competent person is defined as a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.
Controlled substance	Means a drug listed in Schedule 8 of the Customs (Prohibited Exports) Regulations 1958 or Schedule 4 of the Customs (Prohibited Imports) Regulations 1956.
EERA	Evacuation, escape and rescue analysis
ERP	Emergency response plan
Facility	<p>Geothermal energy facility – a place at which geothermal energy operations are carried out and includes any fixture, fitting, plant or structure at the place</p> <p>Petroleum facility – a place at which petroleum operations are carried out and includes any fixture, fitting, plant or structure at the place</p> <p>Mobile facility – includes an onshore drilling rig</p>
FERA	Fire and explosion risk analysis
FSA	Formal safety assessment
Geothermal energy operation	<p>Means an operation to:</p> <ul style="list-style-type: none"> • explore for geothermal energy resources • drill for geothermal energy resources • recover geothermal energy, or • any other kind of operation that is prescribed by the regulations to be a geothermal energy operation for the purpose of this definition <p>and carry on of such operations and the execution of such works as are necessary for that purpose.</p>
HAZAN	Hazard analysis
HAZID	Hazard identification study
HAZOP	Hazard and operability study
HSR	Health and safety representative. A worker who has been elected by their work group under the WHS Act to represent them on health and safety matters.
Inspector	WorkSafe Petroleum Safety Inspector
Intoxicant	A beverage or other substance for human consumption that contains alcohol; but does not include a substance for medical or pharmaceutical use.
KPI	Key performance indicators

Key terms	Meaning
LOC	Loss of containment
LOPA	Layers of protection analysis
MAE	Major accident events – an event connected with a facility, including a natural event, having the potential to cause multiple fatalities of persons engaged at or in the vicinity of the facility.
MDR	Manufacturer’s data record
Operator	A person who has, or will have, the day-to-day management and control of operations at a facility and is registered as the operator of the facility under r. 22(3).
Performance standard	A standard established by the operator defining the performance required for a safety critical element typically defining the functionality, availability, reliability, survivability and interdependency of the safety critical element.
Person conducting a business or undertaking (PCBU)	A PCBU is an umbrella concept capturing all types of working arrangements or relationships. A PCBU includes a company, unincorporated body or association and sole trader or self-employed person. Individuals who are in a partnership that is conducting a business will individually and collectively be a PCBU. A reference to a PCBU includes reference to operator of a facility.
Petroleum operation	Means an activity that is carried out in an area in respect of which a petroleum title is in force, or that is carried out in an adjacent area, for the purpose of any of the following: <ul style="list-style-type: none"> • exploring for petroleum • drilling or servicing a well for petroleum • extracting or recovering petroleum • injecting petroleum into a natural underground reservoir • processing petroleum • handling or storing petroleum the piped conveyance or offloading of petroleum.
PPI	Positive performance indicators
PTWS	PTWS permit to work system – a documented procedure that authorises certain people to carry out specific work with within a specified time frame.
QRA	Quantitative risk assessment
Safety case	Documented provisions related to the health and safety of people at or in the vicinity of a facility, including identification of hazards and assessment of risks; control measures to eliminate or manage hazards and risks; monitoring, audit review and continual improvement.
Safety critical element (SCE)	Any item of equipment, system, process, procedure or other control measure the failure of which can contribute to an MAE.

Key terms	Meaning
SDS	Safety data sheet
SFAIRP	So far as is reasonably practicable
SIMOPS	Simultaneous operations
SME	Subject matter expert
SMS	Safety management system
Validation	A statement in writing by an independent person in respect of the design, construction and installation of a facility, that complies with r. 67.
WHS Act	<i>Work Health and Safety Act 2020</i>
WHS PAGEO Regulations	Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022
Worker	Any person who carries out work for a person conducting a business or undertaking, including work as an employee, contractor or subcontractor (or their employee), self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' or a volunteer.

Appendix 3 Compliance checklist

Compliance checklist for onshore drilling safety cases

Note: this checklist may be used as a self-assessment tool by drilling operators to verify that their safety case document has addressed all the required elements of the legislation.

Regulation	Guide section	Topic	DSMS section	Page #
Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022				
Part 2 – Petroleum and geothermal energy operations				
Division 1 – Operators, Division 2 – Operator’s representative				
r. 20	1	Facility to have an operator		
r. 21	1	Duties of an operator		
Division 4 Safety Cases				
Subdivision 2 – Duties as to safety cases				
r. 27	1	Safety case required for operations		
r. 28	1	New or increased risks		
r. 29	2.11, 3.3.3	Compliance with safety case		
r. 30	2.11, 3.3.1	Persons to comply to safety case		
r. 31	2.10	Maintaining records for safety case		
Subdivision 3 – Contents of safety cases				
r. 32(1)(a-d)	3.1.1	Operation description, formal safety assessment, safety management system and emergency response plan		
r. 32(2)(a-j)	3.2.1	Drill rig overview		
	3.2.2	Drill rig layout		
	3.2.3	Major modifications and upgrades		
	3.2.4	Drill rig moves including rigging up/down		
	3.2.5	Primary structure		
	3.2.6	Drilling, completion and well control		
	3.2.7	Plant and utilities		
	3.2.8	Design, control systems, structural integrity and safety critical items		
	3.2.9	Fire and explosion protection		
	3.2.10	Emergency systems		
	3.2.11	Accommodation/camp site		
	3.2.12	Well testing		
	3.2.13	Other third party equipment		
	3.2.14	Major accident events, safety critical elements and performance standards		
3.2.15	Provision of drawings			

Regulation	Guide section	Topic	DSMS section	Page #
Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022				
r. 32(3)(a)	3.4.1, 3.4.2, 3.4.3	Purpose, scope and objective of FSA		
r. 32(3)(b)	3.4.5	Major accident events		
r. 32(3)(c)	3.4.6	Safety critical elements and bowtie diagrams		
r. 32(3)(d)	3.4.7	Demonstration of SFAIRP		
r. 32(2)(e)	3.4.4	Methodology		
	3.4.8	Summary of risk assessment studies		
r. 32(4)(a)	3.3.1	General requirements		
r. 32(4)(b)	3.3.2	Policy and leadership		
r. 32(4)(c)	3.3.20	Permit to work system for safe performance of various activities		
r. 32(4)(d)	3.3.11	Managing risks to health and safety		
r. 32(4)(e)	3.3.26	Incident/hazard reporting and investigation		
r. 32(4)(f)	3.3.11	Managing risks to health and safety		
r. 32(4)(g)	3.3.22	Maintenance and repair		
	3.3.23	Inspection, testing and monitoring		
	3.3.24	Integrity management		
r. 32(4)(j)	3.3.12	Health and safety performance standards		
	3.3.6	Sources of information		
	3.3.10	Resources		
	3.3.15	Simultaneous operations and bridging documents		
	3.3.17	Management of change		
	3.3.18	Deployment of drill rig to petroleum sites		
	3.3.19	Purchasing and control of materials and services		
	3.3.21	Materials handling and storage		
	3.3.26	Incident/hazard reporting and investigation		
3.3.30	Health monitoring systems			
r. 32(4)(k)	3.3.25	Performance standards for safety critical elements		
r. 33(a)	3.3.4	Implementation and improvement of safety management system		
rr. 32(4)(l), 33(b)	3.3.32	Safety management system audits		
r. 33(c)	3.3.33	Review and continual improvement		

Regulation	Guide section	Topic	DSMS section	Page #
Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022				
r. 34	3.3.5	Standards to be applied		
r. 35	3.3.7	Command structure		
r. 36	3.3.8	Competence of workers		
r. 37	3.3.20	Permit to work system for safe performance of various activities		
r. 38	2.7, 3.3.9	Involvement of workers		
r. 39	3.3.14	Adequacy of design, construction, installation, modification or maintenance		
r. 40	3.3.31	Medical and pharmaceutical supplies and services		
r. 41	3.3.22	Machinery and equipment		
r. 41(1)	3.3.22	Maintenance and repair		
r. 41(2)	3.3.23	Inspection, testing and monitoring		
	3.3.24	Integrity management		
r. 42	3.3.31	Drugs and intoxicants		
r. 43	3.5.2	Emergency analyses		
r. 44	3.5.5	Emergency communications systems		
r. 45	3.5.6	Control systems		
r. 46	3.5.1	Emergency preparedness		
r. 49	2.11.1	Access to safety case		
Subdivision 4 – Record keeping				
r. 50	3.3.13	Arrangement for records		
Subdivision 5 – Submission and acceptance of safety cases				
r.51	4.2	Safety case to be submitted to regulator		
r.52	3.5.3	Evacuation, escape and rescue analysis		
r. 53	3.5.4	Fire and explosion risk analysis		
Subdivision 8 – Validation				
r. 67	3.3.16	Validation of proposed operations and proposed significant changes to operations		
Part 4 – Notifications and Reporting				
Division 2 – Notifications				
r. 100	3.3.27	Duty to notify of notifiable occurrences		

Regulation	Guide section	Topic	DSMS section	Page #
Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022				
Part 5 – General				
Division 1 – Miscellaneous				
r. 101	3.3.27	Incident notification: prescribed serious illness		
r. 105	3.3.27	Dangerous incident [Act s. 37]		
Division 2 – Managing risks to health and safety				
r. 108	3.3.11	Duty to identify hazards		
r. 109	3.3.11	Managing risks to health and safety		
	3.3.29	Managing the risk to health from psychosocial hazards		
r. 110	3.3.11	Hierarchy of control measures		
r. 111	3.3.11	Maintenance of control measures		
r. 112	3.3.11	Review of control measures		
Division 3 – Matters relating to work health and safety				
Subdivision 1 - General				
r. 113	3.3.28	Person must leave a facility when required to do so		
r. 114	3.3.28.1	Avoiding fatigue		
r.115	3.3.31	Possession or control of drugs or intoxicants		
Subdivision 2 – Noise				
r. 116	3.3.28.2	Meaning of exposure standard for noise		
r. 117	3.3.28.2	Managing risk of hearing loss from noise		
r. 118	3.3.28.2	Audiometric testing		
Work Health and Safety Act 2020				
Part 3 – Incident notification				
s. 38	3.3.27	Duty to notify of notifiable incidents		
s. 39	3.3.27	Duty to preserve incident sites		

Appendix 4 Further information

Petroleum safety guidance

Interpretive guidelines

- *Development and submission of a diving safety management system*
- *Development and submission of a safety case*
- *Development and submission of an onshore facility safety case – drilling operations*

Guides

- *Audits, review and continual improvement*
- *Bridging documents and simultaneous operations (SIMOPS)*
- *Dangerous goods and hazardous chemicals in petroleum, pipeline and geothermal energy operations*
- *Decommissioning and management of ageing assets*
- *Demonstration of risk reduction so far as is reasonably practicable (SFAIRP)*
- *Diving start-up notices*
- *Emergency response planning*
- *Facility design case*
- *Hazard identification*
- *Health and safety leading and lagging performance indicators*
- *Human factors fundamentals for petroleum and major hazard facility operators*
- *Human factors self-assessment guide and tool for safety management systems at petroleum and major hazard facility operations*
- *Identification of major accident events, control measures and performance standards*
- *Inspections – Land-based drilling rigs*
- *Involvement of workers*
- *Management of change*
- *Nomination of an operator*
- *Records management including document control*
- *Risk assessment and management including operational risk assessment*
- *Validation requirements*

Codes of practice

- [*Mentally healthy workplaces for fly-in fly-out workers in the construction and resources sector*](#)
- [*Psychosocial hazards in the workplace*](#)
- [*Workplace behaviour*](#)

See the WorkSafe website for approved [codes of practice](#) on a range of related topics such as *Managing the risks of hazardous chemicals in the workplace*, *Confined spaces*, *Managing the risk of falls at workplaces*, *Managing risks of plant in the workplace* and *Managing the work environment and facilities*.

Other resources

WorkSafe WA

- [*Overview of Western Australia's Work Health and Safety Act 2020: Guide*](#)
- [*Discriminatory, coercive and misleading conduct: Interpretive guideline*](#)
- [*How to determine what is reasonably practicable to meet a health and safety duty: Interpretive guideline*](#)
- [*The health and safety duty of an officer: Interpretive guideline*](#)
- [*The meaning of 'person conducting a business or undertaking' \(PCBU\): Interpretive guideline*](#)

Other

- IADC International Association of Drilling Contractors *Onshore drilling guidance notes*
<https://iadc.org/health-safety-environment/#hse-case-guidelines>

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