



Petroleum and geothermal energy safety information sheet

Overview of management of safety regulations for petroleum and geothermal energy resources

Introduction

The Petroleum Safety Branch of Resources Safety administers the safety and structural integrity provisions of the onshore pipeline, petroleum and geothermal legislation, and provides specialised safety and risk management advice to the Department of Mines and Petroleum as part of its approval processes. Functions include:

- Occupational safety and health regulatory services
- Safety case technical assessment, review and approval
- Safety management system assessment, review and approval
- Specialist advice, compliance auditing and investigations, and
- Promoting safety and health outcomes, including education and information

This information sheet aims to assist in interpretation of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010 (the Regulations), which support the *Petroleum and Geothermal Energy Resources Act 1967* (PAGERA), and their implications for the exploration, drilling, recovery and production in the petroleum and geothermal energy sectors.

Separate information sheets are available covering the implications for industry of the regulations for occupational safety and health and management of safety for pipeline operations.

Scope of the Regulations

Part 1 – Preliminary [rr. 1-3]

- This Part provides reference information including the allowable citation, commencement date and definitions of terms used.

Part 2 – Safety management systems [rr. 4-41]

- ***Division 1 – Terms used [r. 4]***

Additional definitions are provided for terms used in this part of the Regulations, including major accident event and safety management system (SMS).

- ***Division 2 – Duties as to safety management systems [rr. 5-9]***

An SMS in force (i.e. accepted by the Minister or delegate) is now a legislative requirement, rather than being part of a condition of a permit or licence.

It also covers penalties associated with SMS non-compliance, maintaining appropriate records and the ability of the Minister to determine whether or not a petroleum or geothermal operation requires an SMS.

- ***Division 3 – Contents of safety management systems [rr. 10-26]***

The *general provisions subdivision* describes what is required for an SMS under regulation. More guidance is provided about the contents of an SMS than was previously provided in a permit or licence.

For an SMS to cover a petroleum or geothermal operation or operations, it must include the following.

- Facility description – a description of the operation.

- An acknowledgement of the OSH duties that various persons have under the Act and a detailed explanation of how an operator not only meets those obligations but also how it ensures that all other involved persons meet their obligations.
- A detailed explanation of how compliance with the SMS is to be measured and managed and how the system will be reviewed.
- Risk assessment – a detailed description of the risk assessment for the operation that provides evidence of the assessments and relevant studies undertaken. All hazards (both hydrocarbon and non-hydrocarbon) should be identified and their associated level of risks determined. The assessment should focus on identifying those hazards associated with major accident events (i.e. those accidents with the potential to cause multiple fatalities) and how the risks are being managed to ALARP (as low as reasonably practical).
- Ongoing management of safety – a detailed description of the operation that provides evidence for the management of safety to ensure the ongoing identification of hazards, the assessment and control of those hazards, and the application of the ALARP concept.
- Systems for inspecting, testing and maintaining plant and equipment, and adequate and appropriate communication.

The SMS needs to contain measures identified for proper implementation and improvement. SMSs submitted for construction activities need to include as much information about the operational facility as is practicable at the time.

The *safety measures subdivision* includes the minimum requirements of matters to be covered in the SMS. These are the aspects of safety management that, regardless of whether they were identified in risk assessments, are considered important to good management of a petroleum or geothermal operation. They are listed below.

- The standards, whether Australian or otherwise, applicable to the operation(s) and plant.
- The office or position(s) of those responsible and in charge of the operation(s) and emergency control, and the chain of responsibility in the case of an emergency. Continuity needs to be considered together with procedures to ensure adequate training, appropriate skills and experience.
- A description of how the operator is ensuring that personnel are appropriately trained and have adequate competency for the range of tasks involved, including non-routine tasks and the actions required to respond to an emergency.
- An appropriate safe performance of work system covering the operation(s). It must be properly documented, identify responsibilities and competences, and contain measures to ensure safety is not compromised.
- Personnel involvement in the development of the SMS is important, as those expected to implement the SMS need to have “buy-in” to the process. Whether being developed for the first time, or undergoing a revision, it is requirement for those persons engaged in the operation(s) to be involved in the development of the SMS. Effective consultation with, and participation by, the workforce is the aim. The intended result is for members of the workforce to arrive at informed opinions about the risks and hazards to which they may be exposed. Regardless of how workforce involvement is achieved, it must be documented.
- The structures, equipment, machinery, electrical systems and control instrumentation must be kept in good condition, properly maintained and fit for purpose for normal operational mode and as required in an emergency situation.
- The method for securing, supplying and monitoring the use of drugs that have a therapeutic use, and managing the use of controlled substances and intoxicants, as defined in the Regulations.
- The specific safety requirements for drilling operations, including activity and location restrictions and measures for well shutdown.

The *emergencies subdivision* requires specific matters be considered in the preparation for emergencies, ranging from design and initial studies to ongoing emergency exercises, training, competence of personnel and maintenance.

The emergency system should cover detection, control, petroleum or geothermal isolation or shutdown, emergency preparedness, communication and control systems, as well as the emergency response plan.

The *record keeping subdivision* specifies the recording keeping requirements associated with SMSs, reviews, audits, accidents and dangerous occurrences. Provisions are made for when records need to be created, who they are to be available to and their secure storage. A minimum retention time of five years applies to each of the documents.

- **Division 4 – Submission and acceptance of SMSs [rr. 27-31]**
Division 5 – Revision of SMSs [rr. 32-38]
Division 6 – Withdrawal of acceptance of an SMS [rr. 39-40]

These divisions specify the terms, conditions and provisions in regards to the submission of new and revised SMSs. The Regulations include trigger points for a revision, new schedules, obligations on the Minister and right-of-reply provisions for the operator.

Scheduled times for communication regarding the request for further information and the acceptability of an SMS is new for petroleum and geothermal activities in Western Australia. The overall time frames for a response on an SMS are 90 days for a new submission and 30 days for a revision. The Minister's response will be:

- an acceptance;
- a conditional acceptance;
- a rejection; or
- a statement that more time is needed for the review, including a date for the decision to be made in the future.

Should more information be required within these review periods, the Minister may request information from the operator and provide a time of no less than 30 days for a new SMS and ten days for a revised SMS for that information to be provided to the Minister.

Provided the operator supplies all the information requested within the specified period, that information is considered to have been included as part of the original submission and thus the Minister remains obliged to provide comment within 90 days or 30 days from the original submission of the new or revised SMS, respectively.

Note: The same provisions apply to an SMS for construction activities as for operational activities.

The Minister has the power to withdraw an acceptance in writing if the grounds for doing so accord with the Regulations. There is a requirement to give 30 days' notice of the intention to allow an operator to take such action as may be necessary to rectify the situation, and this must be taken into account before the final decision is made.

An operator also has the right to request a review of the decision to withdraw an acceptance if dissatisfied with the decision.

- **Division 7 – Validation [r. 41]**

This division allows the Minister to request, in writing, an independent validation of a proposed or current petroleum or geothermal operation. A validation may cover design, construction and installation aspects, and is:

- undertaken by an independent suitably qualified and competent person; and
- reported in writing in relation to matters proposed by the operator and accepted by the Minister.

The validation must focus on compliance with the SMS, fitness for purpose of design, plant and equipment, or both, as appropriate.

The operator is obliged to demonstrate to the Minister that the person(s) undertaking validation work has the necessary competence, ability and access to data required for the validation, and was able to arrive at an independent opinion on the matter.

Part 3 – Accidents and dangerous occurrences arising from operations [rr. 42-46]

- This Part clarifies those events for which an operator needs to notify Resources Safety, provide detailed reporting, and allow inspection as required.
- The PAGERA identifies reportable events as:
 - an accident where a person is seriously injured or killed, incapacitated for one or more days; or
 - a dangerous occurrence.

The Regulations expand on the concept of “dangerous occurrence” to include events that resulted in, or could have potentially resulted in:

- a fire or explosion;
- an uncontrolled release of hydrocarbon or geothermal fluid or vapour;
- damage to safety critical equipment;
- enacting the emergency response plan;

An accident also includes the contraction of a disease.

- Operators are obliged to notify Resources Safety as soon as possible once they are aware that there has been an accident or dangerous occurrence. The notification may be written or verbal, and needs to include all information that the operator has at the time on the accident or dangerous occurrence.
- Accidents and dangerous occurrences need to be formally reported shortly after notification. Three days are allowed for reporting after notification, although an extension may be allowed if required.
- Accident and incident sites are not to be interfered with or disturbed until permitted by Resources Safety.

Part 4 – Miscellaneous [r. 47]

- This Part allows for the provision of an agent for the operator and contact information on all submissions and applications. There is also an obligation to keep the Minister informed of any changes to the agent and contact information.

Part 5 – Transitional provisions [rr. 48-50]

- This Part defines the status of existing SMSs and SMSs submitted but not approved prior to the commencement day.
- Existing SMSs will remain in force but must comply with the Regulations before the end of their existing review date unless there is:
 - a need for an earlier review due to a significant change in the risk profile of the activity; or
 - a significant dangerous occurrence.

Introduction of penalties for non-compliance

- Under section 121 (continuing offences) of the PAGERA, the penalties applicable to the breaches listed below are considered to be incurred daily until the breach is rectified.

Note: The law considers a person to be either a natural person or an incorporated company as per the Interpretations Act 1984, therefore breaches of the Regulations that result from corporate system failure may also incur such penalties.

- Breaches involving petroleum or geothermal operations and the SMS:
 - undertaking a petroleum or geothermal operation not covered by an SMS accepted by the Minister;

- continuing a petroleum or geothermal operation where a new risk to safety or health, or a significant increase to an existing risk, occurs and is not provided for in the accepted SMS; and
- for a person, not complying with the requirements of the accepted SMS.
- Breach involving record keeping:
 - not keeping all documents in the manner set out in the SMS.
- Breach involving interfering with accident sites:
 - after an accident resulting in a fatality, serious injury, the incapacity of a person for more than a day, a dangerous occurrence or the potential for any of these to occur, interfering with the accident site before it has been inspected by Resources Safety.

Note: There are defences against prosecution for this breach such as rescuing a sick, injured or endangered person, retrieving or attempting to retrieve the body of a dead person, and maintaining the safety of the operation at the accident site.