Petroleum and geothermal energy safety information sheet

FAQs on regulatory requirements for managing safety associated with petroleum exploration drilling, development and production

Introduction

Onshore petroleum activities in Western Australia are required to operate under a safety case regime designed to protect the occupational safety and health of the workforce. The safety management system (SMS) must also describe how the operation's structural integrity will be maintained.

This information sheet, in the form of frequently asked questions (FAQs), aims to assist industry to understand some of the main safety requirements under the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010.

Note: This document is for guidance only and the definitive statutory requirements are contained in the Petroleum and Geothermal Energy Resources Act 1967 and associated regulations.

FAQs

Q. We have production operations under the *Petroleum and Geothermal Energy Resources Act 1967* but also have pipeline operations under the *Petroleum Pipelines Act 1967*. The associated regulations appear to be slightly different, with more in-depth documentation required for a pipelines operation compared to other operations. Why is this?

A. The variance in regulations allows for the introduction of geothermal activities into the *Petroleum and Geothermal Energy Resources Act 1967* as well as the existing drilling and production operations, whereas the *Petroleum Pipelines Act 1967* has a narrower, more stringent approach to cover high-pressure hydrocarbon transmission. This enables the SMS relating to safety and health to be suitably tailored for the activity and circumstance according to:

- the operation to be undertaken; and
- the potential for a major accident event according to the level of risk for the operation.

Q. Do all SMSs require the same level of detail? For example, when drilling for core samples relating to hydrocarbons or conducting a small survey, will I need to supply SMS documentation similar to that for large rigs drilling multiple deep wells for hydrocarbons, or large production facilities?

A. No. The operator is required to supply an SMS that complies with Division 2, regulation 5 of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010. Details of the SMS contents are expanded upon in Division 3, regulations 10 to 25.

The level of detail should be relative to the size, scope, complexity and level of risk associated with the operation to be undertaken. It would be considered impractical for an operator to submit the same level of documentation for an operation with few personnel and lasting a few days or weeks as that for an ongoing production facility or an exploration drilling programme for multiple wells.

Q. Are there any exemptions available from the requirement for a regulated SMS?

A. No. The highly volatile nature of hydrocarbons means there is the potential for multiple fatalities in any incident, so there are no exemptions available from the requirement for an SMS for petroleum activities.

Note: Exemptions available within the Petroleum and Geothermal Energy Resources Act 1967 relate to geothermal activities.

Q. What is a “validation”?

A. A validation may be carried out by an independent third party and can be an assessment, against appropriate standards and requirements, of the design, construction, installation, operation and maintenance of the operation as a whole or elements of an activity. The validation must establish a level of assurance acceptable to the Minister that:

- the subject of the validation process is fit for its intended purpose; and
- the operation includes measures that will protect the safety and health of persons engaged in the operation and other protected persons.

Note: References to the Minister throughout this information sheet should be taken to mean the delegated office (i.e. Executive Director or Director Petroleum Safety at Resources Safety).

The validation process may also include measuring and testing equipment and systems against standards and requirements. The validation must focus on:

- compliance with the SMS;
- fitness of purpose of design, plant and equipment; or
- both, if appropriate.

When requested or required, the validation must be of an independent third-party nature.

Note: For further information on validation, refer to Division 7, regulation 41 of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010.

Q. When might an operator be required to provide a validation?

A. A validation may be required:

- for proposed new facilities;
- for significant changes to existing facilities, including decommissioning; or
- when requested in writing by the Minister.

Validation is not required when an SMS renewal of acceptance is sought five years after acceptance of an SMS for a facility or operation, provided the facility or operation has not been significantly changed, modified or involved in a major accident event.

Q. What does a validation cover?

A. A validation will cover scope agreed upon between the operator and Minister through the terms of reference such as:

- hardware, structures and equipment; and
- associated standards and codes forming the validation criteria, which may affect the health and safety of persons involved in the operation or other protected persons.

Q. Will verification (e.g. hardware, structures) from an operator be counted as a validation?

A. No. Validation is determining what is required for safe operation of the facility. Verification is the process of confirming that the agreed set of structures, equipment and systems actually meet the specified standards.

Q. Can an operator compile the validation?

A. No. Validation is an independent review, carried out by a competent person, of the codes and standards used for design, construction and installation of an agreed set of structures, equipment and systems. It assures the Minister that the facility incorporates measures to protect the health and safety of people involved in the operation and other protected persons.

Q. Do license conditions apply?

A. As the schedules for both petroleum and geothermal operations also cover activities such as reservoir management, schedules will still be attached to a license as a condition. Over time, as they are renewed, licenses will be updated to reflect the introduction of the new regulations.

Note: Regulations in law take precedence over conditions stipulated on a licence.

Q. What is a "dangerous occurrence"?

A. Apart from the obvious dangers from fire or explosion, a dangerous occurrence includes anything that had the potential to cause death, serious injury or a period of incapacity from work for one or more days of a person engaged in the operation or other protected person. Examples include:

- near misses from falling objects;
- discovery of corrosion or defects that could rupture or leak; and
- damage, failure or defects in safety critical equipment.

Note: For further information on dangerous occurrences, refer to Part 3, regulation 42 of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010.

Q. The regulations relating to risk assessment only appear to cover a major accident event. Does this mean we do not have to consider anything less than a major accident event?

A. The intent of any risk assessment ought to be, firstly, to identify all hazards (both hydrocarbon and non-hydrocarbon), and then carry out the risk assessment to determine their level of risk and consequence (e.g. major accident event, lost time injury, medical treatment injury). The control or mitigation measures will then be determined. The outcome of this process is typically a hazard register identifying all hazards and their causes, risk levels, major accident events, control measures and links to the SMS.

However, as covered in regulation 11 of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010, only information relating to the potential major accident events need to be included in the documentation submitted to the safety regulator.

Q. What is a safety management system (SMS)?

A. An SMS is a documented system for managing the safety and health of people involved in the activities to be performed and other protected people such as visitors to an operation, facility or site location. An SMS commonly comprises two documents:

- a safety manual; and
- an emergency response plan.

When more than one party is involved, such as when an additional well is to be drilled either in or close to a production facility, a third document may be required. This is a bridging document addressing the interface between the safety manuals and emergency response plans of the parties involved (e.g. operator, drilling contractor) when two or more SMSs are in force at one location.

These documents should demonstrate, to a level commensurate with the project's scope and size, that the safety management and emergency response systems in place are appropriate to eliminate or reduce to as low as reasonably practicable (ALARP) the risk of an incident. They should show that:

- decision, command and communication arrangements are clear to all parties involved for normal operational activities and emergencies, and potential conflicts have been addressed;
- site-specific hazards will be managed; and
- potential incidents will have an appropriate, coordinated and efficient response from all parties.

Q. I have or am developing an SMS, including the emergency response plan, but these have not been submitted to the Minister for acceptance. May I commence activities on the work site before submission to the Minister, or while I am waiting for submission acceptance?

A. No. Under regulation 5 of the Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2010, it is an offence for a "person" to engage in activities without an accepted SMS in force for the operation. A fine can be applied per day from the time the offence was deemed to occur.

Note: "SMS in force" is defined as an SMS or revised SMS that has been accepted by the Minister.