Otway Gas Plant

Safety Case Summary

June 2019

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Background

The Otway Gas Plant is located at 305 Waarre Road, Port Campbell, Victoria. It is operated by Lattice Energy Limited, which is owned by Beach Energy Limited (Beach) and is a major contributor to Victoria's gas market.

The Otway Gas Plant is licensed as a Major Hazard Facility (MHF) in accordance with the Victorian Occupational Health and Safety (OH&S) Regulations and is required to have a Safety Case in place. The Safety Case is assessed by WorkSafe Victoria and provides the basis for the facility licensing decision. Safety of onsite personnel and the community is the first priority in operating the Otway Gas Plant.

This document presents a summary of the Otway Gas Plant Safety Case and is provided to the local community and municipal councils in accordance with the requirements of the *Victorian OH&S Regulations*.

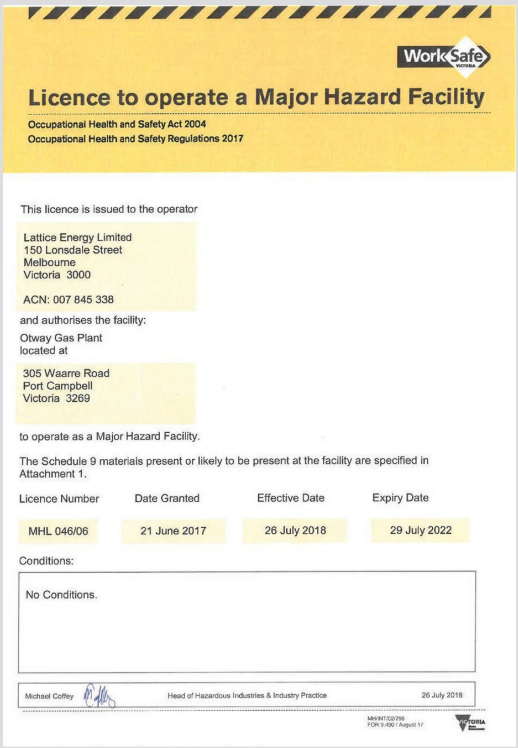
Otway Gas Plant Overview

In September 2007 the Otway Gas Plant commenced production of natural gas, condensate (a diesel-like oil) and Liquefied Petroleum Gas (LPG) from gas fields located in the offshore Otway Basin.

The gas plant processes raw gas by separating the hydrocarbon fluids into gas and liquid streams. Gas treatment units remove carbon dioxide (CO2), water, hydrogen sulphide (H2S), and impurities, and recover natural gas and hydrocarbon liquids. Liquid treatment units break up the hydrocarbon liquids into stabilised condensate, propane and butane. Liquids storage and tanker loading facilities are included on-site at the gas plant for all these products.

Beach Energy's overall Otway Gas Development includes:

- Otway Gas Plant
- Offshore production platform called Thylacine A
- A number of subsea wells and related infrastructure
- Subsea pipeline system from Thylacine A to the shore crossing within the Port Campbell Rifle Range
- Onshore pipeline system from the shore crossing to the Gas Plant
- Halladale, Black Watch and Speculant well site at Nirranda South, Victoria and associated pipeline back to Otway Gas Plant
- Natural gas export via the South East Australian Gas (SEA Gas) pipeline into the south eastern Australian gas market
- Road transport of condensate and LPG to third party markets



Licence to operate a Major Hazard Facility

Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017

This licence is issued to the operator

Lattice Energy Limited
150 Lonsdale Street
Melbourne
Victoria 3000

ACN: 007 845 338

and authorises the facility:

Otway Gas Plant
located at

305 Waarre Road
Port Campbell
Victoria 3269

to operate as a Major Hazard Facility.

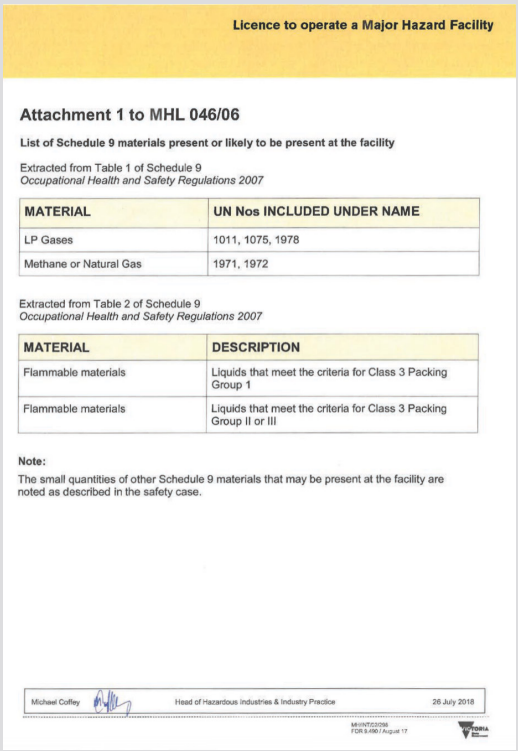
The Schedule 9 materials present or likely to be present at the facility are specified in Attachment 1.

Licence Number	Date Granted	Effective Date	Expiry Date
MHL 046/06	21 June 2017	26 July 2018	29 July 2022

Conditions:

No Conditions.

Michael Coffey — Head of Hazardous Industries & Industry Practice — 26 July 2018



Licence to operate a Major Hazard Facility

Attachment 1 to MHL 046/06

List of Schedule 9 materials present or likely to be present at the facility

Extracted from Table 1 of Schedule 9
Occupational Health and Safety Regulations 2007

MATERIAL	UN Nos INCLUDED UNDER NAME
LP Gases	1011, 1075, 1978
Methane or Natural Gas	1971, 1972

Extracted from Table 2 of Schedule 9
Occupational Health and Safety Regulations 2007

MATERIAL	DESCRIPTION
Flammable materials	Liquids that meet the criteria for Class 3 Packing Group I
Flammable materials	Liquids that meet the criteria for Class 3 Packing Group II or III

Note:
The small quantities of other Schedule 9 materials that may be present at the facility are noted as described in the safety case.

Michael Coffey — Head of Hazardous Industries & Industry Practice — 26 July 2018

Otway Gas Plant Safety Case

The Safety Case is a document that describes the facility, the associated hazards and risks, and the safety management system in place to control and manage these risks. The Safety Case is revised every 5 years in support of the renewal of the Major Hazard Facility Licence. The purpose of the Safety Case is to demonstrate that the facility complies with the relevant requirements of the *Victorian OH&S Regulations* including:

- Major incidents that may arise at the facility and the hazards that may lead to a major incident are identified and understood
- Control measures in place for preventing and mitigating a major incidents are adequate
- Safety management system provides an integrated and comprehensive system for managing all aspects of the control measures so that the risk of major incidents reduced to so far as reasonably practicable
- The Safety Case has been produced with extensive involvement and consultation with employees, management and external stakeholders such as Regulators and Emergency Services.

The Gas Plant Safety Case was recently revised and resubmitted to WorkSafe Victoria for assessment and facility re-licensing. The licence to operate a Major Hazard Facility was granted for the maximum term of 5 years and without any special licence conditions. A copy of the licence is included in this summary.

Major Incident Risks

The Otway Gas Plant has the potential for a major incident due to the quantities of LPG and natural gas present at the facility. A comprehensive and systematic hazard identification and safety assessment process has been conducted with extensive involvement of experienced and qualified technical personnel. The Major Incidents are low likelihood events with limited impact beyond the Otway Gas Plant site boundary.

These assessments enabled a detailed understanding of the hazards that may lead to major incidents, their nature, likelihood and consequences, the overall risk profile and that the control measures are adequate to reduce the risk so far as reasonably practicable.

In common with other gas plants in Victoria, potential major incidents at the Otway Gas Plant involve the loss of containment of dangerous goods that could result in fire or explosion and have the potential for serious injury or fatalities. All potential major incident scenarios have been reviewed and assessed in detail to ascertain the extent of the consequences and the risk of occurrence.

Gas Plant Major Incident

- Loss of containment from Slug Catcher section
- Loss of containment at Pig Receiver
- Loss of containment from Condensate Stabilisation section
- Loss of containment from Flash Gas Compression section
- Loss of containment from Gas Separation and Dehydration section
- Loss of containment from Low Temperature Separator
- Loss of containment from NGL Extraction section
- Loss of containment from NGL Fractionation section
- Loss of containment from Export Compression section
- Loss of containment of Spotleak 1005
- Loss of containment from Fuel Gas system
- Loss of containment from Flare and Drain system
- Loss of containment from LPG Storage facilities
- Loss of containment from Condensate Storage facilities
- Loss of containment of LPG during truck loading
- Loss of containment of Ethyl Mercaptan
- Loss of containment of Condensate during truck loading
- Loss of containment from Inlet Compression
- Loss of containment of Methanol
- Tank fire within Produced Water or Monoethylene Glycol Systems

Control Measures for Major Incident Risks

The Otway Gas Plant dedicated design is based on extensive gas plant design experience and the use of comprehensive sets of standards and codes that represent best practice in the oil and gas industry.

At each stage of the design, potential hazards were identified, and options to reduce and mitigate risks were assessed and agreed. The adopted improvements were targeted towards the major risk contributors resulting in a significant reduction in total plant risk.

Key Control Measures

- Pressure Safety Valves (PSVs)
- Safety Instrumented Systems
- Emergency Shut Down (ESD) System
- Fire and Gas Detection Systems
- Fire Water System
- Emergency Response Plan
- Permit to Work System
- Safe Operating Procedures
- Asset Integrity Management
- Management of Change Procedure
- Training and Competency

Safety Management System

The Health, Safety and Environment Management System (HSEMS) is integrated with all key aspects of the Safety Case to ensure it is a comprehensive system for managing the adopted control measures and to provide for the ongoing compliance with applicable regulations.

HSEMS Priorities

- Comprehensive training program for all employees
- Additional supervision and monitoring of potential high risk activities on site
- Hazard identification and risk assessment of all high- risk activities
- Timely development and review of operating procedures
- Progressive refinement of performance indicators for critical controls
- Audit of operational activities
- Liaison with the community and stakeholders through regular Otway Gas Plant Community Reference Group meetings

Community Notifications

In the event of an emergency at the Otway Gas Plant, the Emergency Response Plan will be immediately activated under the direction of the Emergency Response Team Leader. Safety of onsite personnel and the community is the first priority.

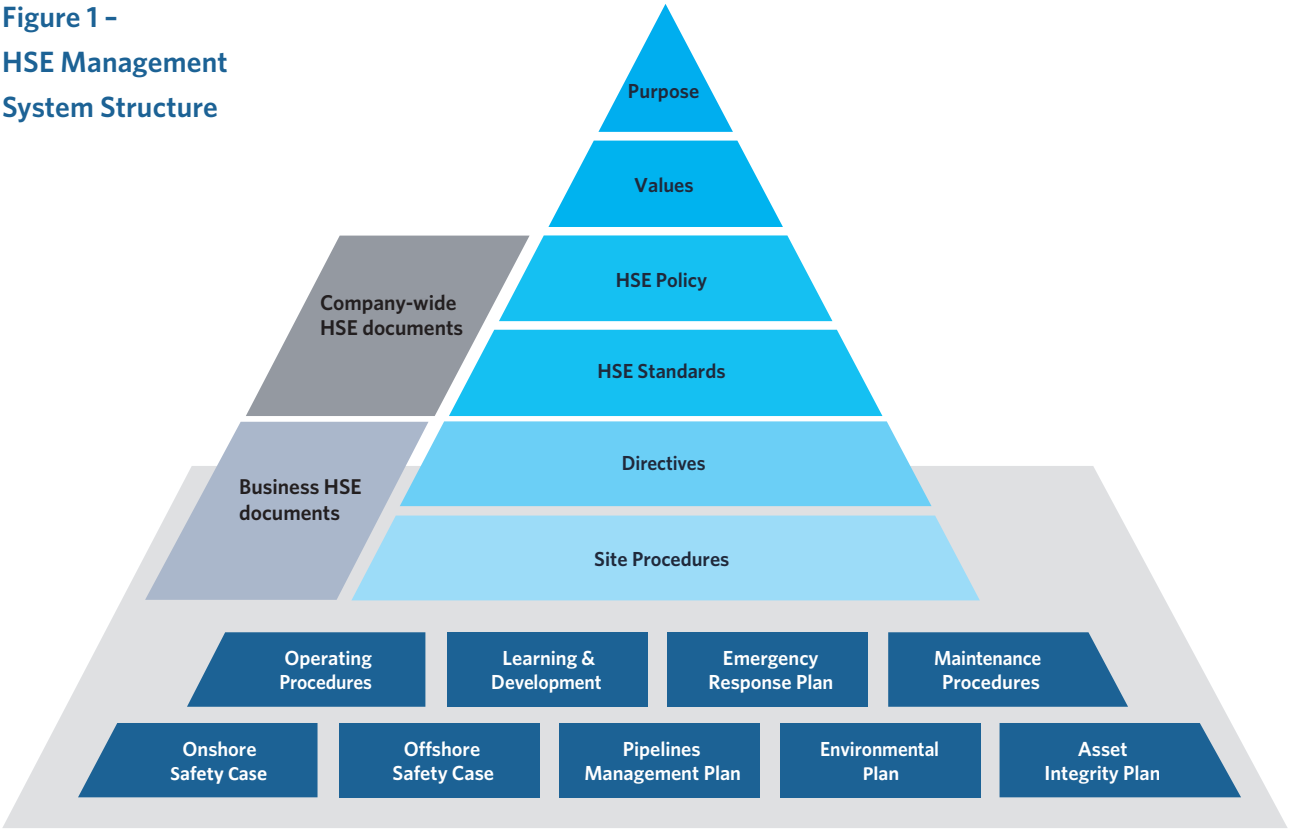
In the unlikely event that a major incident has an impact beyond the Otway Gas Plant site boundary, the relevant Emergency Service agency responsible for public safety would issue notifications and instructions for community members to follow.

In the event of a major incident within the Otway Gas Plant site, after the Emergency Response Team Leader has established safety of site personnel and incident control, a community notification will be issued to advise that an incident has occurred, followed by updates as relevant. This will be done via mobile phone short message service (SMS) to community members and other stakeholders who have subscribed to the service in advance. Replies with questions or relevant information can be made to the SMS and they will be answered when appropriate.

Any community member wishing to subscribe to the SMS service, or existing subscribers who wish to check or update their details, should contact the phone number or email address over the page.

The Emergency Response Plan for the facility is regularly tested through the conduct of emergency exercises and drills. This provides assurance of emergency preparedness should an incident occur at the Gas Plant. Emergency Services including the Victoria Police and CFA are active participants in the emergency exercises and have been consulted in the development of the Emergency Response Plan.

Figure 1 – HSE Management System Structure



More Information

For further information on the Otway Gas Plant, details of the Safety Case, or subscription to the SMS service, please contact:

Linda French

Community Relations Manager, Victoria

1800 797 011

community@beachenergy.com.au

beach

In January 2018, Beach Energy acquired Lattice Energy Limited (Lattice). Lattice is the licenced operator of the Otway Gas Plant.

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