

# Natural Gas Supply Emergencies

A guide for converting complex gas installations



This Guide is a resource and reference document and is for general information only.

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## Introduction

It is the responsibility of network operators to ensure that Natural Gas supplies are safe and reliable. A gas supply emergency is rare but may occur due to unforeseen or unexpected events such as:

- damage to, or failure of, natural gas supply networks
- failure of part of the natural gas national transmission network
- insufficient supplies to meet natural gas demand
- unsafe composition of natural gas.

During a prolonged natural gas supply emergency large gas consumers may be forced to make decisions regarding their operations and may elect to convert to an alternate fuel source. Gas-fitters and large natural gas consumers should consult this Information Sheet before any gas-fitting work is undertaken.

## Definitions

For the purposes of this Information Sheet the following definitions apply:

<b>Accepted</b>	means accepted or conditionally accepted by the Director in accordance with Section 54 of the Act.
<b>Act</b>	means the <i>Gas Safety Act 2019</i>
<b>Authorised Officer</b>	a person appointed under Part 5 of the Act as an authorised officer by the Director
<b>Commissioning</b>	means the process, following fabrication and installation, of – <ul style="list-style-type: none"><li>• testing and placing a gas installation or gas storage system into safe operation in compliance with the applicable Standards, Codes or Determinations, and</li><li>• energising the gas installation or gas storage system with gas during the testing</li></ul>
<b>Certification</b>	means certification by a competent licensed person or a person approved by the Director of Gas Safety
<b>Director</b>	a person appointed as the Director of Gas Safety or a person acting with Delegations
<b>Load shed</b>	means the reduction or curtailment of natural gas supply to consumers
<b>Relevant Standards</b>	means Codes or Standards determined by the Director to be relevant (Appendix A)
<b>Gas Safety Officer</b>	a person appointed under Part 4 of the Act as a gas safety officer by a gas licensee

## **Relevant legislation**

- *Gas Safety Act 2019*
- *Gas Safety Regulations 2021*

## **Notification of natural gas supply emergencies**

Natural Gas is retailed to gas consumers via gas transmission pipelines and gas distribution networks. In the event of a gas supply emergency, the gas consumer will receive notification from their gas retailer or gas infrastructure operator (gas licensee). Details about the emergency will be provided, which may include a need for the gas consumer to shed or curtail the use of their natural gas supply. A gas consumer must comply if the direction is given to shed or curtail the use of the natural gas supply.

The gas licensee will only require load shedding by consumers in an emergency, as a strategy to maintain the supply and safety of the transmission pipeline and/or distribution networks. A planned load-shedding schedule will be implemented in accordance with gas licensee emergency response plans, and under the State Special Plan for Electricity, Gas and Liquid Fuel Supply Disruptions/Emergencies.

Gas safety officers may visit a consumer's premises during a time of emergency to determine if the load shedding requirements of the gas licensee are being adhered to.

## **Safety of the gas installation**

If a direction has been given to curtail the use of natural gas, the gas consumer will need to identify any safety risks that may arise from turning off, or reducing, gas supply to the consumer gas installation. Gas appliances will need to be shut down in accordance with manufacturer's instructions or standard operating procedures. If any gas-fitting work – including purging – is required to be undertaken on the gas installation, then the work shall be conducted by an appropriately qualified licensed gas-fitter.

The gas installation owner is responsible for ensuring that any Safety Management System for the safe operation of their gas installation reflects the operational conditions caused by gas curtailment.

## **Emergency modifications to gas installations**

Any alteration to a complex gas installation must be accepted by the Director before the installation is commissioned. A licensed Type A gas-fitter shall notify an Authorised Officer at the Gas Standards and Safety Unit of Consumer, Building and Occupational Services prior to altering a gas installation.

The notification shall include a description of the alteration and be faxed or emailed to the Gas Standards and Safety Authorised Officer who will assess the gas-fitting work. A copy of a Gas Fitting Notice must accompany the description. Authorised Officers may request additional information if they are not satisfied with the information in the proposal.

If the Authorised Officer is satisfied with the information provided, the alteration may be accepted. The Gas Fitting Notice will be endorsed by the Authorised Officer and provided to the gas-fitter. Once the gas-fitter has received the gas-fitting notice the gas-fitting work can be commissioned. The gas-fitter shall advise the Authorised Officer of the intention to commission the gas-fitting alteration.

The Authorised Officer may elect to inspect the modification. Once commissioned, the gas-fitter shall certify that the gas-fitting work meets the requirements of the Act and is compliant with the relevant technical standards. A copy of the certification shall be provided to the installation owner, the Director and the gas distributor or supplier if the appliance is being converted to another gas type.

For more information, see Information Sheet CONSTRUCTION AND APPROVAL STANDARDS FOR 'STAND BY' GAS SYSTEMS ON NATURAL GAS INSTALLATIONS

## **Emergency appliance conversions**

Type A appliances must be converted in accordance with manufacturer's instructions and procedures. Only appliances suitable for the intended gas type should be converted and used. Type A appliances must be certified for the intended gas type by an external authority approved by the Director. Details of Type A appliances to be converted – with the description of the gas work – should be provided to the Authorised Officer with the gas-fitter's application for acceptance.

Type B appliances are complex gas installations. These appliances are independently certified for use after undergoing rigorous assessments and approval processes. Approved Type B appliances cannot be modified unless accepted by the Director. An appliance that has not been approved as a Type B appliance will require a full application to be submitted to the Director for acceptance. An appropriately qualified licensed Type B gas-fitter should notify an Authorised Officer of the intention to modify an approved appliance during a gas supply emergency. The gas-fitter must provide details of the modification in accordance with the manufacturer's instructions. Where there are no manufacturer's instructions the gas-fitter shall undertake an assessment of the appliance's suitability for modification to another fuel supply.

The assessment may need to include a Hazard and Operability Assessment (HAZOP) or Risk Assessment in accordance with AS3814. Information supporting the modification can be mailed, faxed or emailed to an Authorised Officer for assessment. The information should include a copy of a gas-fitting notice. The Authorised Officer may request further information to support the acceptance of the modification. If the modification is accepted, the Authorised Officer will provide the gas-fitter with an endorsed copy of the gas-fitting notice, and the modification can be commissioned. The gas-fitter shall notify the Authorised Officer prior to commissioning the modification. The Authorised Officer may elect to inspect the modification. Once commissioned, the gas-fitter must certify that the gas-fitting work meets the requirements of the Act and is compliant with the relevant technical Standards. A copy of the certification must be provided to the installation owner, the Director and the gas distributor or supplier. A copy of the as-commissioned settings shall be retained with the appliance and provided to the Director with the certification.

## **Returning to normal operating conditions**

The gas-fitter shall notify an Authorised Officer of the intention to return to normal operating conditions. The gas-fitting work shall comply with the requirements of the Act and the relevant Standards. The gas-fitter will need to exercise care in ensuring that the gas installations are purged in accordance with the relevant Standards prior to returning to normal operating conditions.

Once commissioned, the gas-fitter should certify that the gas-fitting work meets the requirements of the Act and is compliant with the original acceptance and relevant Standards. A copy of the certification shall be provided to the installation owner, the Director and the gas distributor or supplier.

## **Preparing for emergency conversion**

Gas consumers may need to factor the possibility of load shedding into their contingency plans.

The best form of protection will require some preparation. If it is decided that strategies will be adopted to protect your organisation from load shedding, then you should take steps to prepare for the conversion of gas installations before an event.

The Director can conditionally accept the modification of complex gas installation and appliances for 'stand by' conversion purposes.

## **Gas storage system and dangerous substances**

Whilst WorkSafe Tasmania does not license or approve facilities to handle dangerous substances; the Occupier has an obligation to notify WorkSafe Tasmania if prescribed quantities of dangerous substances are stored.

## Appendix A

### Relevant Standards determined by the Director of Gas Safety for gas installations

National Standards	Standard No:	Descriptive title:
SAI Global (Standards Australia)	<b>AS (&amp; AS/NZS)</b>	
	1210	Pressure vessels
	1375	Industrial fuel fired appliances
	1345	Identification of the contents of pipes, conduits and ducts
	1432	Copper tubes for plumbing, gas-fitting and drainage applications
	1477	PVC pipes and fittings for pressure applications
	1596	Storage and handling of LP gas
	1722	Pipe threads of whitworth form – sealing pipe threads
	1869	Hose and hose assemblies for liquefied petroleum gases (LP Gas), natural gas and town gas
	2129	Flanges for pipes valves and fittings
	2239	Galvanic (sacrificial) Anodes for cathodic protection
	2648.1	Underground marking tape – non detectible tape
	2700	Colour standard for general purposes
	2832	Guide to the cathodic protection of metals, pipes, cables and ducts
	2885	Pipelines – Gas and liquid petroleum
	3000	Wiring rules
	3814	Industrial and commercial gas-fired appliances
	3873	Pressure equipment – Operation and maintenance
	4041	Pressure piping
	4129	Fittings for polyethylene pipes for pressure applications
	4130	Polyethylene (PE) pipes for pressure applications
	4617	Manual shut off gas valves
	4623	Jointing compounds and materials for use in gas pipe joints
	4629	Automatic shut off valves and vent valves
	4631	Limited flexibility connectors for gas
	4645	Gas Distribution networks
	4799	Installation of underground utility services and pipelines within railway boundaries
	5601	Gas installations
31000	Risk management	
6993 parts 1, 2 and 3	Plastic pipes for gas reticulation – Unplasticised PVC (UPVC) – Pipes	
	60079	Explosive atmospheres

<b>International Standards – USA</b>	<b>Standard No:</b>	<b>Descriptive title</b>
American National Standards Institute	<b>ANSI</b>	
	B1.20.1	Pipe threads, general purpose (Inch)
	B16.5	Pipe flanges and flanged fittings
	B16.9	Factory made wrought steel butt-welding flanges
	B16.11	Forged fittings, socket-welding and threaded
ASTM International	A106	Specification for seamless carbon steel pipe for high temperature services
	A269	Standard specification for seamless and welded austenitic stainless steel for general service
	D2513	Standard specification for thermoplastic gas pressure pipe, tubing and fittings

<b>International Standards - UK</b>	<b>Standard No:</b>	<b>Descriptive title</b>
Institute of Gas Engineers and Managers	IGEM (Also known as IGE)	
	TD/3	Steel and PE pipeline for gas distribution
	TD/13	Pressure regulating installations for transmission and distribution systems
	IGEM/TSP/14/201	Purging operations for fuel gases in transmission, distribution and storage.
	IGE/GL/9	Guidance for large gas consumers in dealing with Natural Gas supply emergencies.
	IGE/UP/1	Strength/tightness testing and direct purging