



Hot Work Procedure

Brief description

This Procedure provides a systematic approach to identifying understanding and controlling the risks associated with Hot Work.

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1 Terms and definitions

In this Procedure:

“Fire Watcher” means a person who is trained and competent in the use of fire protection systems at the job site for that work.

“Hot Work” means Hot Work is any process involving grinding, welding, brazing, oxy cutting, heat treatment or any other similar process that generates heat or continuous streams of sparks which may increase the risk of fire or explosion.

“Permit Inspector” means a person with the appropriate knowledge of the task and experience in Hot Work to be able to identify potential fire / explosion risk on the job site. Usually, the Permit Inspector will be a person performing the work, but it could be the GPC Representative or Supervisor.

Terms that are capitalised and not otherwise defined in this Procedure are defined in the GPC Corporate Glossary Instruction (as listed in Appendix 1 – Related documents).

2 Introduction

2.1 Purpose

The purpose of this Procedure is to provide a systematic approach to identifying and controlling the risks associated with Hot Work. This Procedure defines the minimum requirements for performing Hot Work on GPC sites.

2.2 Scope

This Procedure outlines the requirements for all personnel conducting Hot Work at GPC. Contractors and port users may apply their own procedures if they meet the minimum requirements of this Procedure and they are approved by their GPC Representative.

2.3 Objectives

This Procedure aims to ensure that:

- (a) a systematic process is applied where Hot Work is conducted so as to provide a safe working environment;
- (b) there is continual maintenance of a safe working environment by minimising hazards associated with Hot Work; and
- (c) GPC meets its obligations to its Employees, Workers, Contractors and the general community by carrying out its operations safely.

3 Hot Work

3.1 What is Hot Work?

Hot Work is any process involving grinding, welding, brazing, oxy cutting, heat treatment or any other similar process that generates heat or continuous streams of sparks which may increase the risk of fire or explosion.

Fire and explosion can result in catastrophic consequences, causing serious injuries or death of Workers and others, as well as significant damage to property.

Examples of Hot Work include:

- (a) welding or brazing;
- (b) grinding;
- (c) friction cutting using metal cutting equipment, flame cutting or oxygen cutting (including thermal lance); or
- (d) maintenance of plant that could create an explosive atmosphere.

3.2 Hot Work Permits

A Hot Work Permit is required for all Hot Work undertaken in the following locations:

- near combustible materials or substances;
- in close proximity to, on or above a conveyor system;
- in a reclaim pit or tunnel;
- in or near a fuel bay, fuel storage tanks and fuel piping systems;
- in electrical substations, termination rooms, motor control centres and above or in the vicinity of cable trays;
- on electrical equipment;
- in close proximity to coal stockpiles;
- on a ship loader;
- in a confined space;
- on enclosed steel work;
- on sealed piping or vessels;
- on a sewer system;
- in the warehouse and all buildings and offices;
- within a 25m radius of a building; and/or
- whenever a risk assessment identifies a need for a Hot Work Permit to minimise the risk of fire or explosion as a result of Hot Work.

A Hot Work Permit must be accompanied by a Job Safety Analysis or a Safe Work Instruction to support the permit requirements.

(a) Exceptions for Hot Work Permits

A Hot Work Permit is not required when Hot Work is undertaken in a workshop in a designated area for Hot Work or when the Hot Work is conducted in the open on an un-grassed or hardstand area that is not within a 25m radius of a building (subject to risk assessment).

3.3 Planning for Hot Work

Before preparing a Hot Work Permit, the Planner/Supervisor/GPC Representative should consider alternative methods to avoid the need to perform Hot Work.

Where eliminating the need to perform Hot Work is not practicable, Hot Work techniques that minimise the potential for harm should be considered.

When Hot Work is required, the Planner/Supervisor/GPC Representative prepares the Hot Work Permit by completing Part A of the Permit for the workgroup.

3.4 Validity of Hot Work Permits

A Hot Work Permit is only valid for the duration specified in Part A of the Hot Work Permit up to a maximum of seven calendar days.

To remain valid, the job site must be re-inspected every 12 hours if on continuous rotating shift, or prior to resuming Hot Work if not continuous shift, and the Permit revalidated by the Permit Inspector.

3.5 Site inspections before Hot Work commences

Before Hot Work commences, the site must be inspected by the Permit Inspector for potential fire hazards and risk control methods required and may include gas monitoring by a competent person. The site inspection should consider the scope of work identified in Part A and:

- Identifying and protecting all essential services that could be damaged by the Hot Work;
- Identifying the presence of combustible materials or ignition sources and removal or protection for them;
- Identifying the need for purging of tanks, vessels or piping systems to prevent accumulation of gas in sealed pipes and vessels;
- Identify sections of enclosed steel work that require relief holes to be made to relieve a natural build-up of pressure and gasses.
- Isolation of any heat or smoke detection systems, including Inergen systems, that may be inadvertently activated by the Hot Work;
- Barricading or installing welding screens at the work area to warn/protect others of the Hot Work hazards (e.g.: ultraviolet radiation, fugitive sparks, slag etc.);
- Additional ventilation or extraction systems to remove heat, fume and other atmospheric contaminants that could harm the health of the workers (both immediate work group and surrounding work groups) or increase the risk of fire or explosion;
- Additional personal protective equipment (PPE) to protect the Worker from exposure to heat sources (e.g.: gloves, jacket, spats, shields etc.) or atmospheric contaminants (e.g.: respiratory protection) generated from the work activity;
- Identifying other work groups that may be exposed to hazards due to simultaneous operations or performing work in the nearby vicinity and ensuring appropriate communication of potential hazards or consideration of additional controls;
- Availability of operational fire suppression equipment suitable for the type and size of fire that may reasonably be expected to occur;

- The need for a Fire Watcher to be present and maintain continuous watch over the area while the Hot Work is in progress; and
- The need for a Fire Watcher to return to inspect the site after work is complete.

Identified hazards, controls and gas monitoring results (when required) must be recorded on the Hot Work Permit in Part B. The Permit Inspector must sign this section to acknowledge the identified hazards are adequately controlled for prior to work commencing.

(a) Continuing Hot Work

Where Hot Work is being continued beyond the maximum validity of seven calendar days, a new Hot Work Permit must be issued on the eighth day.

(b) Specific controls for Hot Work in reclaim pits and tunnels

Hot Work in reclaim pits and tunnels must have the fire sprinklers in service (not isolated) and adequate ventilation for the duration of the Hot Work. If the Hot Work requires that the fire sprinklers need to be isolated, then the Site Services Supervisor must be informed.

(c) Specific controls for Hot Work over stockpiles

Hot Work over stockpiles must have controls to prevent the contamination of the stockpile below by catching all off-cuts and the like.

(d) Specific controls for Hot Work in confined spaces

Hot Work in confined spaces must consider the possibility of the Hot Work reducing the oxygen concentration within the space and that the Hot Work may release airborne contaminants. Hot Work in a confined space must not start without both a valid Hot Work Permit and a Confined Space Entry Permit.

(e) Provision of a Fire Watcher

The need for a Fire Watcher is to be identified and recorded on the Hot Work Permit.

A Fire Watcher is required when Hot Work is conducted in a reclaim pit or tunnel, near/on/above a conveyor system, over a stockpile, within 15m of any other source of flammable or combustible material or when fire suppression equipment is not available.

Fire watching does not consist of periodic checks, but is a continuous and thorough inspection and presence in the area and its vicinity by the Fire Watcher, with special attention being given to any changing conditions that might affect the safety of the work.

3.6 During Hot Work

The Hot Work Permit must be held on the job site at all times while Hot Work is being undertaken and each person conducting Hot Work should be familiar with the precautions specified in the Permit.

Inspection of any Hot Work areas may be conducted at any time by any person to ensure that the housekeeping of the areas is being maintained to an appropriate standard and that the conditions of the Permit are being adhered to.

When a Fire Watcher is required, they must:

- be alert for any fire outbreak or hazard;

- inspect adjoining compartments, if heat transfer is possible;
- if a fire develops, they must alert those in the area of the presence of a fire and suppress the fire if able to do so. If unable to suppress the fire, the Fire Watcher must alert others to evacuate the area and raise the alarm;
- not allow Hot Work to proceed outside the area specified on the Hot Work Permit;
- immediately stop the work and withdraw the Hot Work Permit, if a hazardous condition is observed;
- monitor changes in wind direction;
- be aware of the need to use eye protection, to protect eyes against flashes where Hot Work involves arc welding, cutting or arc gouging;
- not leave the job site unless properly relieved by another authorised Fire Watcher; and
- In the event of the concentration of flammable gas and flammable vapour in the test area exceeding 5% of the lower explosive limit (LEL), the Hot Work must cease and the Hot Work Permit must be suspended until the source of the flammable gas/vapour is identified and its concentration is reduced.

3.7 Site inspection on completion of Hot Work

On completion of Hot Work, the Fire Watcher must remain on the job site for the specified period (minimum 30 minutes) after Hot Work is completed to ensure no fire risk remains. At this time, a thorough inspection of the site shall be carried out by the Fire Watcher to ensure the site is no longer a fire risk. The Fire Watcher must sign the Hot Work Permit to acknowledge that the site is clear at the time of vacating the area.

3.8 Incident reporting

All un-intended fires and/or activation of a fire suppression system or fire alarm must be recorded in SAI360 and investigated in accordance with the Incident Investigation and Management Procedure.

3.9 Training

Fire Watchers must be trained and competent in the use of the fire suppression equipment identified on the Hot Work Permit.

All workers performing Hot Work activities within confined spaces or at heights must hold all associated nationally recognised qualifications and GPC competencies.

3.10 Record keeping

On completion of the job, the Hot Work Permit is to be returned to the Supervisor for filing. Permits must be kept for the current and previous month.

4 Roles and responsibilities

To assist GPC Representatives to better understand their responsibilities, key responsibilities and accountabilities are summarised below:

Role	Responsibilities
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Planner / Supervisor / GPC Representative	<ul style="list-style-type: none"> • Prepare the Hot Work Permit by completing scoping section in Part A. • Acknowledge that Part B has identified all associated hazards have been adequately controlled. • Consider alternative methods to avoid the need to do Hot Work.
Permit Inspector	<ul style="list-style-type: none"> • Inspect the work area and consider the scope defined by the Planner/Supervisor/GPC Representative/Contract Supervisor to identify atmospheric, fire or explosion hazards and required controls and complete Part B of the Permit. • Identify the need for a Fire Watcher on the Permit. • Re-inspect the job site, as required, to re-validate the Permit.
Fire Watcher	<ul style="list-style-type: none"> • Maintain a continuous watch over Hot Work for the duration and remains on the job site for the specified period (minimum 30 minutes) after Hot Work is completed to ensure no fire risk remains. See also 3.6 During Hot Work.
Site Services Supervisor	<ul style="list-style-type: none"> • Isolate fire sprinklers as required.
Employees, Workers and Contractors	<ul style="list-style-type: none"> • Take reasonable care for their own health and safety when performing Hot Work and ensure their actions do not adversely affect the health and safety of other persons. • Comply with this Procedure when performing Hot Work.

5 Appendices

5.1 Appendix 1 – Related documents

(a) Legislation and regulation

Key relevant legislation and regulation, as amended from time to time, includes but is not limited to:

Type	Legislation/regulation
State Acts	<i>Work Health and Safety Act 2011 (Qld)</i> <i>Work Health and Safety Regulations 2011 (Qld)</i>
Other	Welding processes Code of Practice

Type	Legislation/regulation
	AS1940:2017 – <i>The Storage and handling of flammable and combustible liquids</i>
	AS2865:2009 – <i>Confined Spaces</i>
	AS1674.1:1997 – <i>Safety in welding and allied processes – Fire Precautions</i>

(b) Gladstone Ports Corporation documents

The following documents relate to this Procedure:

Type	Document number and title
Tier 1: Policy	#365624 Safety Policy
Tier 2: Standard/Strategy	#854303 Safety Management Framework Standard #995910 Contractors and Port Users Safety, Environment and Security Standard
Tier 3: Specification/ Procedure/Plan	#1095082 Smoking at GPC Procedure #1293169 Safe Work in Confined Spaces Procedure
Tier 4: Instruction/Form/ Template/Checklist	#1407031 Confined Space Entry Permit #154108 Hot Work Permit Form #1621179 GPC Corporate Glossary Instruction
Other	N/A

5.2 Appendix 2 – Revision history

Revision date	Revision description	Author	Endorsed by	Approved by
10/11/2017	3 yearly review of Procedure and update to new template.	Tony Young, Safety Manager	Rowen Winsor, People Community and Sustainability General Manager	Tony Young, Safety Manager
04/08/2020	Legal review by HSF (minor formatting changes)	Tony Young, Safety Manager	Rowen Winsor, People Community	Tony Young, Safety Manager

Revision date	Revision description	Author	Endorsed by	Approved by
	accepted). No material change to context or intent.		and Sustainability General Manager	
06/02/2023	Update to section 3.2 to align JSA/SWI requirements with Safety Risk Management Procedure.	Kirsty Iszlaub, Safety and Training Specialist – Systems	Tony Young, Safety and Training Manager	Richard Haward, EGM Safety & ESG
08/09/2023	Currency review. Incorporation of lessons learnt from Resources Safety & Health Queensland.	Kirsty Iszlaub, Safety & Environment Systems Lead	Tony Young, Safety Manager	Richard Haward, EGM Safety & ESG