

Business Procedure

Hot Work

Document Number – OHS-PROC-128

This document applies to the following sites:

All Sites	<input type="checkbox"/>		
Rockhampton Office	<input type="checkbox"/>	Brisbane Office	<input type="checkbox"/>
Barron Gorge Hydro PS	<input checked="" type="checkbox"/>	Kareeya Hydro PS	<input checked="" type="checkbox"/>
Koombooloomba Hydro PS	<input checked="" type="checkbox"/>	Swanbank PS	<input checked="" type="checkbox"/>
Wivenhoe Small Hydro PS	<input type="checkbox"/>	Stanwell PS	<input checked="" type="checkbox"/>
		Tarong Site	<input checked="" type="checkbox"/>
		Mica Creek PS	<input checked="" type="checkbox"/>
		Mackay Gas Turbine	<input checked="" type="checkbox"/>
		Meandu Mine	<input type="checkbox"/>

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WRITTEN BY: ENDORSED/CHECKED BY: APPROVED BY: DATE:
 NAME: J.Paull NAME: M.Joy NAME: T.Hooper

1.0 Purpose

This Business Procedure defines Stanwell's minimum mandatory requirements for performing hot work in Stanwell workplaces.

Hot work includes any activity that:

- produces a flame, heat source, fire or spark which may increase the risk of fire or explosion; or
- introduces a non-certified ignition source into a classified hazardous area.

Examples of the above include:

- welding, grinding, heating, thermal, friction or oxygen cutting;
- taking / using communication devices, combustion engines, torches, battery or mains powered tools in to a hazardous areas;
- maintenance of plant that could create an explosive gas atmosphere; and
- activities creating a large explosive dust cloud.

Hot work does not include the use of tools (such as drills, saws etc.), in an area that is not a classified hazardous area.

2.0 Scope

This Business Procedure applies throughout Stanwell, all its sites and all activities under Stanwell's control. It applies to all Stanwell employees and contractors, including visitors to Stanwell workplaces.

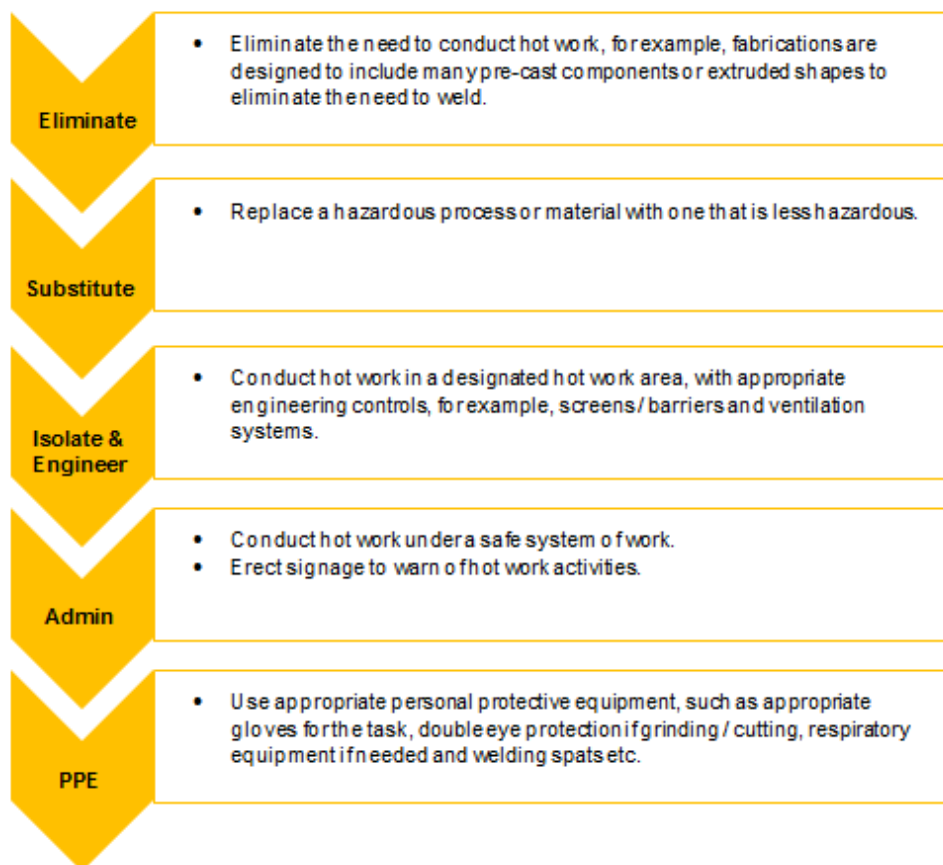
3.0 Actions

3.1 Safe Systems of Work Requirements

Where eliminating the need to perform hot work is not practicable, hot work techniques that minimise the potential for harm, for example, undertaking hot work in a designated hot work area, must be selected.

It must be ensured that:

- all hot work is planned;
- all equipment used for hot work is suitable and inspected;
- personnel involved in hot work are trained and competent; and
- hot work is risk assessed to identify potential hazards and make sure suitable risk control measures are in place.



Hot work risks must be controlled through the application of the hierarchy of controls to achieve the highest level of protection that is reasonably practicable in the circumstances.

Hot work must be controlled under the Safe System of Work if the hot work is undertaken outside of a designated hot work area.

3.1.1 Emergency response

It must be ensured that an emergency response plan is in place to deal with hot work related incidents, such as:

- fire and explosion;
- exposure to hazardous chemicals; and
- electric shock (e.g. welding in wet environments).

3.1.2 Work Method Statement

Personnel must develop a work method statement (WMS) for hot work undertaken outside a designated hot work area.

As a minimum, the WMS must assess the risks associated with:

- all items in **Appendix B Hot Work Hazards**;
- all hazards within 15m of the work area; and
- simultaneous operations / work activities, where applicable.

For specific details regarding WMSs, refer to **Business Procedure: HS Hazard Management**.

3.2 Designated Hot Work Areas

Hot work areas must be designated in each workplace. These areas must be suitable to undertake hot work tasks safely and:

- not be located in an area that will create a risk of fire or explosion, for example, near a flammable or combustible goods storage area;
- have adequate demarcation and signage in place;
- have adequate lighting;
- be regularly monitored to make sure flammable materials are correctly stored;
- be free from water and damp conditions (for electrical safety);
- have adequate natural or mechanical ventilation;
- be contained using adequate screens and barriers; and
- must contain adequate fire and emergency provisions such as fire extinguishers and fire detection systems.

3.3 Work Environment Requirements

3.3.1 Housekeeping Requirements

It must be ensured that adequate controls are implemented to protect nearby workers from the hazards associated with the hot work activity, for example:

- blinds or shielding, barricades or doors to prevent personnel coming into contact with hot work hazards such as flashes and noise; and
- screens and mats to prevent sparks escaping.

3.3.2 Energy Sources

It must be ensured that all potentially hazardous energy sources have been removed or isolated from the area where hot work is being undertaken, for example:

- compressed air systems and tyres;
- hydraulic systems;
- fuel systems;
- batteries; and
- flammable and combustible materials.

3.3.3 Ventilation

It must be ensured that areas where hot work is performed has adequate ventilation to allow heat, fumes and other atmospheric contaminants to dissipate from the work area.

The choice of ventilation system must take into account

- the amount and type of fumes and contaminant produced;
- the proximity and location of the hot work process relative to the ventilation system;
- the level of ventilation, natural or mechanical, this will also depend on screens and partitions which may restrict cross-flow at the work area; and
- the proximity of the welder's breathing zone to the fume source.

It must be ensured that adequate control measures are implemented where hot work is undertaken in a Hazardous Area or within a Confined Space, refer to [Business Procedure: Confined Space](#) and [Business Procedure: Hazardous Areas](#).

3.4 Plant and Equipment Requirements

3.4.1 Cylinder Requirements

Requirements for safe storage and handling of gas cylinders include:

- maintain and regularly check cylinders, regulators, hoses and pipes to cylinders to make sure that there are not leaks, dents, cuts or burn marks;
- store cylinders in an upright position to make sure the safety device functions correctly;
- secure cylinders to prevent dislodgement;
- transport cylinders with appropriate equipment such as trolleys or gas cages;
- keep the cylinder valve closed when the cylinder is not being used;
- keep all sources of heat and ignition away from gas cylinders, even if the cylinders do not contain flammable material; and
- store cylinders outdoors or in a very well ventilated areas.

Permanent cylinder storage areas are to be maintained in accordance with legislation and relevant Australian Standards and such that:

- where applicable, lighting in the area is to be certified in accordance with *AS 2380.1:1989 Electrical equipment for explosive atmospheres – Explosion protection techniques*;
- cylinders are kept away from heat and ignition sources and combustible materials, vegetation at a distance of not less than three (3) metres;
- adequate ventilation is provided; ventilation should be adequate to maintain exposure levels to any gases in the store below recommended exposure standards and lower explosive limits and to maintain safe oxygen levels;
- cylinders are adequately segregated;
- warning signs to prohibit smoking and exclude other sources of ignition and signage restricting entry, for further information refer to *Business Procedure: Barricading and Signage*; and
- adequate placarding is erected.

For further information on how to manage cylinders, refer to *Business Procedure: Hazardous Chemicals*.

3.4.2 Equipment Requirements

It must be ensured that all hot work equipment is used, maintained and inspected in accordance with the requirements of the legislation and relevant Australian Standards.

3.4.3 Personal Protection Equipment Requirements

It must be ensured that any person conducting hot work uses appropriate personal protective equipment (PPE) that meets all the Australian Standard requirements. This may include gloves, double eye protection if performing grinding or cutting task, respiratory protection, welding spats, jackets etc.

3.5 Safe Work Practice Requirements

3.5.1 Radiation

Adequate control measures must be implemented to protect workers from exposure to heat / arc radiation. It must be ensured that non-flammable screens and partitions are used for hot work activities and adequate PPE is used.

3.5.2 Airborne Contaminants

It must be ensured that workers are not exposed to a substance or mixture in an airborne concentration that exceeds the relevant exposure standard.

It must be ensured that risks associated with the use of hazardous chemicals during hot work are identified and managed in accordance with **Business Procedure: Hazardous Chemicals**.

Air monitoring to determine the airborne concentration of a substance or mixture to which an exposure standard applies, must be carried out, if:

- there is uncertainty on reasonable grounds whether or not the airborne concentration of the substance or mixture at the workplace exceeds the relevant exposure standard; and/or
- monitoring is required to determine whether there is a risk to health.

3.5.3 Fire and Explosion

It must be ensured that the work area is inspected (including the surrounding area) after hot work has been completed to make sure that no smouldering materials remain.

A designated Fire Watch must be used where identified as a control in the hot work risk assessment. Generally, 30 minutes is appropriate as the fire watch period, post work completion. Also consider whether post work checks are required at certain intervals (e.g. perform a check every 30 mins after work completed), for up to four hours. This is especially important for work around fuel handling systems and cable ways.

All hot work areas must contain adequate ready-to-use fire fighting equipment as identified as a control in the hot work risk assessment.

3.6 Training and Competency Requirements

It must be ensured that all personnel involved in hot work activities are trained and competent as per Stanwell's requirements.

4.0 References (Including Information Services)

Source	Reference
Legislation	<ul style="list-style-type: none"> • Welding Processes Model Code of Practice
Australian Standards	<ul style="list-style-type: none"> • AS 1674 (series) Safety in welding and allied processes • AS 1335:1995 Hose and hose assemblies for welding, cutting and allied processes • AS 1851:2012 Routine service of fire protection systems and equipment • AS 2380.1:1989 Electrical equipment for explosive atmospheres – Explosion protection techniques • AS 2444:2001 Portable fire extinguishers and fire blankets • AS 3000:2007 Electrical installations • AS 4289:1995 Oxygen and acetylene gas reticulation systems
Business Standard	<ul style="list-style-type: none"> • Document Control and Records Management • Training and Competency
Business Procedures	<ul style="list-style-type: none"> • Barricading and Signage • Confined Space • Emergency Response Framework Procedure • Hazardous Areas • Hazardous Chemicals • HS Hazard Management • Safe System of Work
Stay Safe	<ul style="list-style-type: none"> • Hot Work
Tools	<ul style="list-style-type: none"> • Nil

5.0 Definitions

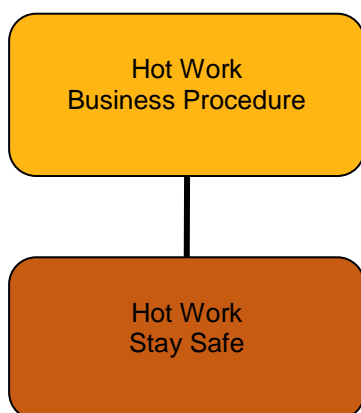
Term	Meaning
Competent Person	A person who through a combination of training, education and experience has acquired knowledge and skills enabling that person to perform correctly a specified task.
Designated Hot Work Area	An area in which typical hot work tasks (such as welding, grinding, cutting, etc.) may be undertaken safely and with confidence that: <ul style="list-style-type: none"> adequate fire response controls are easily accessible in the area; flammable or combustible fuels / items are well clear of the hot work task (consider a 15m area around the hot work task); there is adequate ventilation, lighting, space and work surfaces to easily perform the hot work tasks without additional hazards being created; and there is adequate shielding, floor / catch protection and PPE in the location to ensure the safety of those performing hot work tasks and those in close vicinity to the tasks.
Hazardous Area	An area in which an explosive atmosphere may be present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of potential ignition sources.
Hot Work	An activity that: <ul style="list-style-type: none"> produces a flame, fire, or spark which may increase the risk of fire or explosion; or introduces an ignition source into a classified hazardous area.

6.0 Revision History

Rev. No.	Rev. Date	Revision Description	Author	Endorse/Check	Approved. By
0	14.08.14	Procedure created to reflect corporate wide process	J.Paull	T.Hooper	I.Gilbar

7.0 Appendices

Appendix A Hot Work Document Flowchart



Appendix B Hot Work Hazards

Hazard	Potential Harm
Radiation	Ultra violet, welding arc flashes, infrared, electromagnetic radiation, lasers can cause burns, cancer and blindness.
Compressed and liquefied gas, compressed air	Asphyxiation, fire and explosion hazards arising from gas leaks, hearing damage from sudden release of compressed air.
Electricity	Potential ignition source. Exposure to live electrical wires can cause electrical shock and burns.
Fire and explosion	Burns.
Hazardous chemicals	Chemicals such as acids, pickling and passivation chemicals can cause burns, solvents and heavy metals can cause respiratory illnesses, cancers and dermatitis.
Airborne contaminants	Fumes, mists, dust, vapour and gases may be toxic, asphyxiant, and cause respiratory illnesses, metal fume fever.
Extreme temperatures	Exposure to hot objects and hot environment can cause burns, heat stroke, and fatigue.