



CORPORATE PROCEDURE

HOT WORK

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HOT WORK

1. PURPOSE

This *procedure* sets out the requirements for the conduct of *hot work* in *hot work high risk areas*.

2. SCOPE

This *procedure* covers the conduct of *hot work* in *hot work high risk areas* by all *employees*.

3. REFERENCES

Power and Water	Access to Apparatus Rules
Australian Standard 1674	Safety in welding and allied processes
Australian Standard 4360	Risk management
Workplace Health & Safety Act 2011	
Workplace Health and Safety Regulations 2010	

4. ROLES AND RESPONSIBILITIES

4.1 General Managers

4.1.1 General Managers *shall* ensure that:

- (a) all *hot work high risk areas* within premises under their control are identified and a schedule of *hot work high risk areas* is maintained;
- (b) appropriate emergency response is planned, established and rehearsed; and
- (c) audits of the application of this *procedure* is periodically conducted.

4.2 Coordinator/Team Leader/Project Managers

4.2.1 Coordinators/Team Leaders/Project Managers *shall* ensure:

- (a) *employees* are authorised to receive *access authorities* for *hot work*; and
- (b) *employees* carrying out *hot work* comply with this *procedure*.

4.3 Employees

4.3.1 *Employees shall* ensure:

- (a) an *access authority* for *hot work* is issued before carrying out *hot work* in *hot work high risk areas*; and
- (b) they comply with this *procedure* when carrying out *hot work* in a *hot work high risk area*.

5. DEFINITIONS

- 5.1 **Access authority** - means any form of authorisation, which permits access to work on or test *apparatus*.
- 5.2 **Atmospheric monitoring** - means the continuous measurement of oxygen concentration or airborne contaminants over an uninterrupted period of time.
- 5.3 **Atmospheric testing** - means the measurement of oxygen concentration or airborne contaminants that is not continuous.
- 5.4 **Approved** - means having appropriate organisation endorsement in writing.

- 5.5 **Authorised person** - means a *competent* person with technical knowledge or sufficient experience who has been *approved* to act on behalf of Power and Water to perform the duty concerned.
- 5.6 **Competent** - means having the skill, knowledge and attributes a person needs to complete a task.
- 5.7 **Controller** - means the *approved* person responsible for control and/or operation of *apparatus, confined spaces* and *hot work high risk areas* within premises owned, controlled or operated by Power and Water.
- 5.8 **Employee** - means a person employed by Power and Water, a *contractor* or *subcontractor*, and a person employed by a *contractor* or *subcontractor*, who carries out work for Power and Water.
- 5.9 **Hot work** - means any process involving grinding, welding, thermal or oxygen cutting or heating and other related heat producing or spark producing operations.
- 5.10 **Hot work control measures** - means the documented risk control measures to be implemented for *hot work* to be carried out.
- 5.11 **Hot work high risk area** - means an area in which flammable liquids, vapours or gases, combustible liquids, dusts, fibres of other flammable or explosive substances are present and may represent a risk to personnel and *apparatus* during the conduct of *hot work*.
- 5.12 **Procedure** - means the documentation of a systematic series of actions (or activities) directed to achieve a desired result.
- 5.13 **Safety observer** - means a *competent* person assigned the solitary duty of observing and/or monitoring the safety of persons in potentially hazards situations and providing warnings, where necessary.
- 5.14 **Shall** - means mandatory.
- 5.15 **Should** - means a recommendation.

6. RECORDS

Clause	Description	Duration
8.1.2	<i>Hot work high risk areas</i> schedule	Constantly maintained
8.2.4	<i>Hot work</i> risk assessments and control measures	Retained for five years from the date of preparation.
8.3.1 (f)	<i>Access authorities</i> for <i>hot work</i>	Retained for one month after the cancellation of the <i>access authority</i> for <i>hot work</i> .
8.3.2	<i>Atmospheric testing</i> and <i>atmospheric monitoring</i> instruments	Constantly maintained

7. ATTACHMENTS

Nil

8. PROCEDURES

8.1 *Hot work high risk areas*

8.1.1 Identifying *hot work high risk areas*

All areas within Power and Water premises in which flammable liquids, vapours or gases, combustible liquids, dusts, fibres of other flammable or explosive substances are present, or may be present, and may represent a risk to personnel, *apparatus* and plant during the conduct of *hot work shall* be identified and assessed.

8.1.2 *Hot work high risk area* schedule

The location and description of all *hot work high risk areas shall* be recorded in a schedule.

8.2 *Hot work hazard identification and risk assessment*

8.2.1 Risk assessment

- (a) When *hot work* is to be undertaken the hazards associated with the *hot work shall* be identified and assessed before *hot work* commences.
- (b) A *competent person shall* assess the risks and prescribe control measures for *hot work* in a *hot work high risk area*.
- (c) The identification of hazards and the risk assessment and control measures associated with the *hot work shall* be carried out in consultation with the persons required to carry out the *hot work*. An assessment of the risks *should* take into account controls that may already be in place and the effectiveness of these controls.

8.2.2 Risk assessment review

A risk assessment *shall* be reviewed whenever there are changed circumstances, which may include:

- (a) installation or modification of plant;
- (b) a change in operating conditions;
- (c) a change in the atmosphere or working environment; or
- (d) a change in working arrangements or *procedures*.

8.2.3 Review of risk control measures

The *hot work control measures shall* state the duration of its validity, and *shall* be reviewed whenever it becomes evident that the duration of the *hot work* will involve one of the following:

- (a) a significant break in *hot work* continuity;
- (b) a change of the person in receipt of the *access authority*, or
- (c) a significant change in the work environment or atmospheric risks.

8.2.4 Risk assessment and control records

Records of risk assessments and control measures for *hot work shall* be retained for five years from the date of preparation.

8.3 Conduct of *hot work* in *hot work high risk areas*

8.3.1 Principles for *hot work*

- (a) *Hot work* in a *hot work high risk area shall* be under an *access authority*.
- (b) An *access authority* for *hot work shall* not be issued unless it is accompanied by *hot work control measures* documentation.
- (c) A person *shall* be authorised to issue an *access authority* for *hot work* in a *hot work high risk area*.
- (d) A person *shall* be authorised to receive an *access authority* for *hot work* in a *hot work high risk area*.
- (e) A person *shall* be authorised to sign on an *access authority* for *hot work* in a *hot work high risk area*.
- (f) When an *access authority* for *hot work* is cancelled it *shall* be retained for a period of one (1) month.
- (g) *Atmospheric testing* or *atmospheric monitoring shall* be conducted in a manner consistent with the hazards identified in the risk assessment and the associated *hot work control measures*.
- (h) All equipment used for *hot work shall* be used in accordance with the manufacturer's recommendations and maintained in proper working order.
- (i) Any electrical equipment and electrical appliances used during the *hot work should* be intrinsically safe.
- (j) Flash back arresters *shall* be fitted on gas cutting equipment.
- (k) Welders working in a *hot work high risk area shall* not work alone and *shall* be provided with assistance as necessary.

8.3.2 *Atmospheric testing* and *atmospheric monitoring*

- (a) *Atmospheric testing* and *atmospheric monitoring* instruments *shall* be used and maintained in accordance with manufacturer's recommendations.
- (b) Records of maintenance and calibration of *atmospheric testing* and *atmospheric monitoring* instruments *shall* be maintained.
- (c) *Atmospheric testing* and *atmospheric monitoring shall* be conducted in accordance with the *hot work control measures*.
- (d) The results of the *atmospheric testing* and/or *atmospheric monitoring shall* be recorded on *hot work control measures* documentation.
- (e) *Atmospheric testing* for the presence of any flammable gas or vapours *shall* take place before the commencement of *hot work* but no longer than 2 hours before. This includes continuous *atmospheric monitoring* of all potential sources.
- (f) The concentration of any flammable gas or vapours *shall* not be more than 5% of its *lower explosion limit*.
- (g) *Atmospheric testing* and *atmospheric monitoring* instruments *shall* have current calibration, which *shall* be displayed on the instrument. The instrument type,

serial number and date of calibration due *shall* be recorded on the *hot work control measures*.

- (h) A person who is *competent* in the use of the *atmospheric testing and atmospheric monitoring* instruments *shall* carry out the *atmospheric testing* and/or *atmospheric monitoring*.

8.3.3 *Safety observer*

- (a) Where the risk assessment identifies the need, a *safety observer shall* be assigned for the duration of the *hot work* and *shall*:
 - (i) sign on the *hot work control measures* form;
 - (ii) carry out a thorough inspection of the *hot work high risk area* prior to the commencement of the *hot work* and for at least thirty (30) minutes after the completion of the *hot work*;
 - (iii) be *competent* in the selection and use of fire fighting equipment;
 - (iv) observe and continuously monitor the safety of persons in the *hot work high risk area* and provide warnings and, where necessary, advise of the need for the *hot work* to cease; and
 - (v) where it is necessary for them to leave the *hot work* area, they inform the person in receipt of the *access authority* for *hot work* and not leave the *hot work* area until the *hot work* has ceased or another *safety observer* is assigned.

8.3.4 Request for *hot work*

- (a) A request for access to conduct *hot work* in a *hot work high risk area shall* be submitted to the *controller*.
- (b) All *hot work* in a *hot work high risk area shall* be conducted in accordance with the Access to Apparatus Rules and this *procedure*.

8.3.5 Preparation of *apparatus* for the issue of an *access authority* for *hot work*

- (a) The preparation of *apparatus* for the conduct of *hot work shall* be carried out in accordance with the Access to Apparatus Rules.
- (b) Any pipe work, tanks, valves or associated equipment that may carry flammable vapours, gases or liquids in the *hot work* area *shall* be isolated (double valve isolation *should* be applied if available).
- (c) Venting points *shall* be opened to the atmosphere to avoid trapped pressure explosion when working on closed loop pipe work.
- (d) Pipes, containers and enclosures *shall* be sufficiently purged before any *hot work* is carried out.
- (e) Fixed fire suppression systems requiring isolation *shall* be documented on the *access authority*.

8.3.6 Issue and cancellation of *access authority* for *hot work*

- (a) *The authorised person* issuing or cancelling an *access authority* for *hot work* in a *hot work high risk area shall*:
 - (i) comply with the requirements for the issue of an *access authority* under the Access to Apparatus Rules;

- (ii) ensure the *access authority* is not issued unless accompanied by completed *hot work control measures* documentation; and
- (iii) ensure, when cancelling the *access authority*, that any fixed fire suppression systems that have been isolated have been restored to operating status and any portable fire fighting equipment has been returned to its usual storage area in an operational condition.

8.3.7 Receipt of an *access authority* for *hot work* in a *hot work high risk area*

- (a) The *authorised person* receiving an *access authority* for *hot work* shall ensure:
 - (i) the immediate area of where the *hot work* is to be conducted, including above and below the work area, is made safe from a risk of fire or explosion from the *hot work*;
 - (ii) the area in which the *hot work* is to be conducted is properly ventilated and has safe access and egress;
 - (iii) combustible material that cannot be removed from the work area is covered with a non flammable cover and any flammable liquid spills or oily surfaces within the work area is cleaned and covered with sand;
 - (iv) sewers, drain or pits are to be covered with wet sandbags, to prevent any vapours from escaping and sewers and drains fitted with p-traps *shall* have the baffle below water level;
 - (v) *atmospheric testing* and *atmospheric monitoring* is carried out consistent with the requirements of the *hot work control measures* documentation;
 - (vi) compliance with the requirements of the *access authority* and the *hot work control measures* documentation. The *hot work control measures* documentation *shall* state the period of its validity;
 - (vii) where the risk assessment identifies, a safety observer is present;
 - (viii) the persons involved in the *hot work* are to be advised of, understand and comply with the requirements of the *access authority* and *hot work control measures* documentation and any other associated documentation;
 - (ix) the *hot work control measures* are revalidated whenever there is:
 - a change of the person in receipt of the *access authority*; or
 - a break in the continuity of the work during which period there has been, or is likely to be, a change in the risks that may affect the health and safety of persons conducting the *hot work*; or
 - a resumption of work following suspension of the *access authority* for *hot work*;
 - (x) emergency response and first aid provisions, as determined in the risk assessment, are planned and established prior to the commencement of the *hot work*;
 - (xi) appropriate fire fighting equipment is available at the work area;
 - (xii) on completion of the *hot work*, a thorough inspection of the job site and surrounds is to be carried out to ensure it is safe and free of any smouldering remains; and
 - (xiii) any portable fire fighting equipment is returned to its usual storage area in an operational condition.

8.3.8 Work under an *access authority* for *hot work*

- (a) Persons required to sign on an *access authority* for *hot work* shall comply with the requirements of the *access authority* and the *hot work control measures* documentation.