



TARONG ENERGY CORPORATION LIMITED

BUSINESS PROCEDURE FOR

HOT WORK AND IGNITION SOURCES IN HAZARDOUS AREAS

OHS - PROC - 109

Contents

1.0 Purpose.....	2
2.0 Scope.....	2
3.0 Actions	2
3.1 Hot Work	2
3.2 Ignition sources in hazardous areas	2
3.3 Operation of Cranes and Hoists in Hazardous Areas	3
4.0 Responsibilities	3
Hot Work Officer:	3
Firewatch:	4
Supervisor:.....	4
5.0 Definitions	5
Firewatch:	5
Hazardous Area:	5
Hot Work:	5
Hot Work Authorisation:	5
Hot Work Officer:	6
Ignition Source:.....	6
Supervisor:.....	6
6.0 Reference Documentation	6
7.0 Revision History	6

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Page: 1 of 7

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1.0 Purpose

To detail the responsibilities and actions required to:

- Safely carry out hot work, (Grinding, Welding, Thermal or Oxygen Cutting or Heating, and other related heat producing or spark producing operations), performed outside any site designated workshops (e.g. TPS – Hot Work bays in the Fuel Plant Workshop, Station workshop and Units workshop).
- Ensure that where potential ignition sources are required to be introduced into zoned hazardous areas that the risk is effectively managed.
- Provide a process for the operation on non-certified cranes and hoist in a zoned hazardous areas.

2.0 Scope

This procedure shall apply to all personnel who carry out hot work and introduce ignition sources into zoned hazardous areas at Tarong Energy Corporation workplaces.

3.0 Actions

3.1 Hot Work

Prior to any hot work being performed outside an approved Welding Workshop, the person wishing to carry out the hot work, (Hot Work Officer), must request and be issued with, a Tarong Energy Hot Work Authorisation, (Form No. T-1044), by their Supervisor.

The Hot Work Precautions Checklist must be completed by the Hot Work Officer, in conjunction with the Supervisor and the designated Fire watch. All precautions and requirements must be complied with by all parties, before, during and after hot work has been completed.

The Hot Work Authorisation must be kept at the site of the hot work whilst work is in progress, and must be produced at the request of any person.

On completion of hot work, the Supervisor shall forward the original to Tarong Energy Occupational Health and Safety Section, for review and filing. If required for future reference, the supervisor should retain a copy.

3.2 Ignition sources in hazardous areas

Where any ignition source is required to be introduced into a zoned hazardous area the above requirements apply in relation to the completion of a hot work authorisation and checklist.

In addition to these requirements, in areas zoned as hazardous area for gases, an air quality test for flammable gases/vapours must be performed prior to introducing the ignition source or conducting hot work. A risk assessment via the Job Safety Environment Analysis (JSEA) will determine the intervals between tests or if continuous monitoring is required.

In addition to these requirements, in areas zoned as hazardous areas for dust, an inspection of the area must be performed prior to introducing the ignition source or conducting hot work and any dust build up must be removed as per the requirements of this procedure prior to commencement of work. A risk assessment via the Job Safety Environment Analysis (JSEA) will determine if any other precautions are required.

NOTE: Where equipment is required to be cleaned, consideration shall be give for the exclusion of moisture from the electrical equipment; direct hosing of electrical equipment is to be avoided.

3.3 Operation of Cranes and Hoists in Hazardous Areas

Where a non-certified crane or hoist is to be operated in a zoned hazardous area the above requirements apply in relation to the completion of a hot work authorisation and checklist and a risk assessment via a standard Job Safety Analysis (JSEA).

The following process shall be adopted when operating a crane or hoist in a zoned hazardous area.

- (a) All cranes and hoists shall be isolated at the Crane Main Isolator unless in use.
- (b) Complete the requirements of sections 3.1 and 3.2 of this procedure. A standard JSEA is available for the operation of cranes and hoists in a zoned hazardous area.
- (c) Crane or hoist can be de-isolated and operated once the above requirements are meet.
- (d) When the lifting task is complete the crane or hoist is to be parked and re-isolated at the Crane Main Isolator.

All cranes and hoists located in a zoned hazardous area shall have a label attached adjacent to the Crane Main Isolator directing persons to only operate the crane as per this procedure.

NOTE: All maintenance activities on cranes and hoists requiring isolation of the crane / hoist will require the issue of a PTW.

4.0 Responsibilities

Hot Work Officer:

- (a) Plan the scope of the hot work and take action to prevent the possibility of hazardous conditions.
- (b) Ensure that the planned work cannot be carried out by another means, (e.g. mechanical fixing), or in an approved welding workshop.
- (c) Request the issue of a Hot Work Authorisation from the Supervisor.

- (d) Complete the Hot Work Precautions Checklist, in conjunction with the Supervisor and the designated Firewatch.
- (e) For hot work being performed in an operating plant area, on or around site buildings etc, notify the Operations representative for the area (e.g. Unit 2 Boiler Hot Work – See Panel operator on Unit 2). Inform the Operator of the scope of the intended hot work, location and expected duration. The Operator shall discuss any specific conditions that exist, provide advice regarding the proposed hot work given their knowledge of the plant and advise the status of any fire protection in the area.
- (f) Sign On and comply with the precautions and requirements of the Hot Work Authorisation.
- (g) Sign Off and transfer the Hot Work Authorisation to the Firewatch, on completion of the Hot Work.
- (h) Notify completion of the hot work to the Operations representative contacted as per item (e).

Firewatch:

- (a) Complete the Hot Work Precautions Checklist, in conjunction with the Hot Work Officer and the Supervisor.
- (b) Sign On and comply with the precautions and requirements of the Hot Work Authorisation.
- (c) Ensure appropriate fire extinguishing equipment is available for immediate use, and be suitably trained in its use.
- (d) Be familiar with the method of raising a fire alarm at Tarong Energy Corporation workplaces.
- (e) Watch for fires or additional fire hazards in all exposed areas during the hot work and immediately extinguish any fire if safe to do so, and / or raise the fire alarm.
- (f) Maintain Firewatch inspections of the hot work area after completion of the hot work, to detect and extinguish smouldering fires. **The duration and frequency of these inspections will be designated by question 6 of the Hot Work Precautions Checklist.**
- (g) Sign Off and return the Hot Work Authorisation to the Supervisor on completion of the Firewatch inspections.
- (h) (If not already completed by the Hot Work Officer) - notify completion of the hot work to the Operations representative who was contacted prior to hot work commencing.

Supervisor:

- (a) Complete the Hot Work Precautions Checklist, in conjunction with the Hot Work Officer and the Firewatch.

- (b) Evaluate the requirement for hot work to be conducted or the introduction of an ignition source into a zoned hazardous area and as a priority, assess the practicability of relocating the task to an approved workshop or utilising an alternative work method not involving hot work/introduction of an ignition source.
- (c) Sign On and issue the Hot Work Authorisation when all required precautions have been implemented.
- (d) Sign Off and accept return of the Hot Work Authorisation when all hot work and Firewatch inspections have been completed in compliance with the Hot Work Precautions Checklist.
- (e) Retain a copy of the Hot Work Authorisation and forward the original to the Occupational Health and Safety Section, for review and recording.

5.0 Definitions

Firewatch:

A Firewatch is a person who assists the Hot Work Officer, and is charged with maintaining a watch for fires or additional fire hazards in all exposed areas before, during and after the Hot Work.

Hazardous Area:

An area in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions.
E.g. presence of flammable liquids, vapours or gases, combustible liquids, dusts or fibres, or other flammable or explosive substances.

Hazardous areas have been identified and classified for all TEC plant, drawings of the relevant zoning of areas is available in the Hazardous Area Verification Dossier (HAVD) which is located in TRIM.

Hot Work:

Hot Work is any grinding, welding, thermal or oxygen cutting or heating, and other related heat producing or spark producing operations.

Hot Work Authorisation:

The Hot Work Authorisation, (Form No. T-1044), is a formal record of the actions and precautions that must be complied with by the Supervisor, Hot Work Officer and Firewatch, before, during, and after, Hot Work.

The Hot Work Authorisation must be held by the Hot Work Officer whilst hot work is being performed.

The Hot Work Authorisation does not lessen or replace the requirements of Tarong Energy Corporation's formal "Permit to Work" (P.T.W.) Policy and Procedures, but instead shall be used in conjunction with the "Permit to Work" where it applies.

Hot Work Officer:

A Hot Work Officer is a person who is authorised to carry out “Hot Work” at a Tarong Energy Corporation workplace.

Ignition Source:

A source of energy sufficient to ignite a flammable atmosphere.
Includes: naked flames, smoking, exposed incandescent material, electrical welding arcs and electrical or mechanical equipment not certified for use in the particular hazardous area zone.

Supervisor:

A Supervisor is a person who supervises the work of personnel performing work at Tarong Energy Corporation workplaces.

6.0 Reference Documentation

- 6.1 Tarong Energy Hot Work and Ignition Sources in Hazardous Areas Authorisation. (Form No. T-1044)
- 6.2 Tarong Energy Corporate Permit to Work Manual. (CORP-PTW-01)
- 6.3 Australian Standard A.S. 1674.1. - Safety in welding and allied processes, Part 1: Fire precautions.
- 6.4 Australian Standard A.S. 1596 – LP Gas – Storage and handling.
- 6.5 Australian Standard A.S. 1940 – The storage and handling of flammable and combustible liquids.
- 6.6 Australian Standard A.S. 2430 – Classification of hazardous areas, Part 1: Explosive gas atmospheres, Part 2: Combustible dusts, Part 3: Specific occupancies.
- 6.7 Australian Standard A.S. 2444 – Portable fire extinguishers and fire blankets – Selection and location.
- 6.8 Australian Standard A.S. 2865 – Safe working in a confined space.
- 6.9 Australian Standard A.S. 4332 – The storage and handling of gases in cylinders.
- 6.10 WTIA Welding Technology Institute of Australia, Technical Note 7: Health and safety in welding.
- 6.11 Tarong Energy Hazardous Area Verification Dossier (TPS-HAVD)

7.0 Revision History

Rev. No.	Rev. Date	Revision Description	Author	Approv. By
0	14.03.2001	Procedure Issued	M. Emslie	C. Burke
1	18.03.2002	Procedure revised as per audit T-AUD01-38	M. Emslie	C. Burke
2	19.01.2004	Procedure updated to include references	L. Tellam	C. Burke

		about extension of Hot Work fire watch to 4 hours.		
3	05.01.2005	Procedure updated to reflect amendments to HOT WORK AUTHORISATION (Form No. T-1044). Procedure amended to remove the flowchart from this procedure, and instead direct users to follow the steps in Form No. T-1044.	M. Emslie	C. Burke
4	22.03.2007	Procedure reviewed to include management of ignition sources being introduced into hazardous areas. Previous Number was CORP-SAF-04, which is now OHS-PROC-109	M. Joy	J. Judge
5	11.06.2009	Procedure reviewed to include the operation of cranes and hoists in zoned hazardous areas	P. Marshall	M. Joy