

# PORT NOTICE

## Vessel Hot Work

### PN/016

**OPS-LEG-16**

**General Manager, Operations**

## PREFACE

This Port Notice is issued pursuant to Section 57 of the *Ports Management Act 2015 (NT)*.

## SCOPE

This Port Notice applies to vessels at the following locations at which Hot Work may be conducted:

- East Arm Wharf (EAW);
- Fort Hill Wharf (FHW); and
- All Darwin Designated Anchorages.

This Port Notice does not apply to hot work conducted on any of the above wharves. The aim of this Port Notice is to:

- outline the process for applying for a Vessel Hot Work permit or authorisation; and
- outline the relevant control measures and precautions to be considered for hot work at those locations above.

## DEFINITIONS

Term	Definition
<b>Agent</b>	Defined as the person or organisation responsible for the administrative details of a vessel during its visit to the Port of Darwin.
<b>Approving Officer</b>	The Darwin Port Duty Port Landside Officer or port service worker within their assigned workplace.
<b>Competent Person</b>	A person who, through a combination of training, education and experience can correctly and safely perform a task or function assigned to them.
<b>Confined Space</b>	An enclosed or partially enclosed space which is not intended or designed primarily for human occupancy.
<b>Darwin Designated Anchorages</b>	Defined on nautical charts published, and updated from time to time, by the Australian Hydrographic Service or as promulgated by the Port Management Officer.
<b>EAW</b>	East Arm Wharf.
<b>Fire Watch</b>	A Competent Person who is solely tasked with monitoring for an outbreak of fire; monitoring the Risk of Fire; providing first aid response to a fire; and being at the site of hot work for the duration of the work.
<b>FHW</b>	Fort Hill Wharf.
<b>Hot Work</b>	Defined as any operations or work where grinding, welding and thermal or oxygen cutting or heating and other related heat-producing or spark-producing operations are conducted and heat or sparks are produced, including but not limited to welding, gas cutting or heating where there is an increased Risk of Fire or explosion.
<b>Hot Work Supervisor</b>	The person in control of, and who is responsible for, the safe conduct of the Hot Work.
<b>Job Safety Environmental Analysis (JSEA)</b>	A formal methodology that steps out the tasks in the job and determines the risk associated with each step. If the risk in a particular step can be reduced, then measures must be adopted and recorded to reduce the risk to a lower level.
<b>Lower Explosive Limit (LEL)</b>	In relation to a flammable contaminant, the concentration of the contaminant in air below which the propagation of a flame does not occur on contact with an ignition source.
<b>Risk of Fire</b>	Defined as a situation where the Hot Work poses a risk of ignition to material, debris or flammable gas or flammable vapour within the works area or immediately surrounding the works area.

**DIRECTION****RESPONSIBILITY**

A vessel's Agent is responsible for advising the vessel Master that this Port Notice is in effect and providing the Master with the appropriate documents and assistance to ensure compliance.

Where a vessel does not employ an Agent the responsibility to comply with this Port Notice rests with the Master.

The Master holds full responsibility for his vessel and has overall responsibility for the identification of hazards, that adequate controls and precautions are put in place and that the work is conducted safely.

DP is the operator of the facilities and:

- has knowledge of dangerous, or potentially dangerous activities or undertakings within the facility; and
- provides a system by which mutually incompatible operations can be identified and conflicts resolved.

The Hot Work Supervisor is appointed by the Master and must be responsible for ensuring that:

- The risks and hazards in the area and immediate area have been identified;
- A means of managing the risks and hazards is in place;
- Equipment used is suitable for the task, in good working order and complies with section 4 of AS 1674.1-1997 Safety in Welding and Allied Processes;
- The equipment is located so that in the event of malfunction a fire or explosion hazard is not created;
- There is no inherent hazard due to the nature of the item on which the Hot Work is to be performed; and
- That a Hot Work permit has been completed truthfully and in full, submitted and approval gained prior to commencement of Hot Work.

**MANDATORY MINIMUM CONTROL MEASURES AND PRECAUTIONS**

The Hot Work Supervisor must ensure all mandatory control measures are in place prior to submitting the Hot Work Permit. AS 1674.1 gives guidance on the required safety control measures and precautions. The minimum requirements are listed below:

- A Fire Watch is appointed;
- Sufficient firefighting equipment, appropriate to the risk, type, likelihood and consequence of fire;
- Minimum separation distances specified below (Section 8) are complied with;
- Where work is to take place in a Confined Space, the vessel's Confined Space Entry Permit as below must be submitted with the Hot Work Permit;
- Safe access to and from the work area is ensured;
- Regular checks of the atmosphere surrounding the area of work up to the safety distance boundary; and
- All adjacent and surrounding compartments must be checked to ensure that their contents are protected from any heat transfer (radiated heat) through a bulkhead, deck head, deck or tank top.

## MINIMUM SEPARATION DISTANCES

Hot Work cannot take place if the following materials are stored or the following cargo operations are taking place:

- Dangerous Goods of Class 1 (regardless of division) at; Fort Hill Wharf
- Within two times the separation distance of Dangerous Goods of Class 1 (Table 4.2 AS 3846) (regardless of division) on East Arm Wharf;
- Within 25 metres of a ship loading or discharging bulk flammable liquids;
- Within 25 meters of a vessel bunkering; or
- Within 15metres of an unprotected or unshielded source of combustible materials (other than bulk fuel).

## INCOMPATIBLE OPERATIONS

The following cannot take place on the vessel or within the separation distances when Hot Work is being conducted:

- Bunkering; or
- Cargo operations involving Dangerous Goods.

## WEATHER CONDITIONS

If Hot Work is to take place on a vessel's upper or exposed deck, then the Hot Work Supervisor must assess the prevailing and predicted weather conditions and the Risk of Fire. Conditions such as high winds may require additional measures such as guards, shields and greater firefighting measures. All additional measures must be noted on the Hot Work Permit. The Hot Work Supervisor must ensure that adequate measures are present to prevent a fire. An assessment of the wharf and surrounding areas is to be made and appropriate precautions put in place.

## HOT WORK IN A CONFINED SPACE

Where Hot Work is conducted in a Confined Space on a vessel it must be managed within the requirements of the vessel's Safety Management System for all vessels regulated under ISM Code.

Where the vessel is not covered under ISM Code, AS 2865 provides guidance on the conduct of Hot Work in a Confined Space.

## JOB SAFETY ENVIRONMENTAL ANALYSIS (JSEA) OR EQUIVALENT RISK BASED ANALYSIS

A JSEA is required for all work conducted at a Darwin Port workplace where Hot Work and Hot Work in a Confined Space is going to take place.

## PROTECTIVE GUARDS AND SHIELDS

Protective guards and shields must be made of a suitable fire-resistant material, be stable, of ample size and arranged to prevent sparks, slag and hot metal particles from rolling beneath them or penetrating openings.

## FIRE WATCH

A person performing a Fire Watch must not perform any other tasks or functions and must be alert and vigilant through their period of duty. The Fire Watch must be briefed of the hazards associated with the Hot Work and be provided with the correct PPE. The Fire Watch must be competent in the use of the supplied firefighting

appliances and, where possible, check surrounding compartments for radiated or transferred heat. Where this is not possible an additional Fire Watch must be considered for adjacent compartments.

## **CHECKS AND PRECAUTIONS PRIOR TO COMMENCEMENT OF HOT WORK**

The Hot Work Supervisor and responsible parties must, prior to the commencement of Hot Work, check the following precautions:

- Identify and control fire hazards (including the presence of flammable or combustible liquids, gases, vapours, dusts, fibres or substances) within the required separation distance;
- Consider relevant hazards that may exist outside the area above but in close proximity to the works site;
- Consider the possibility of changing circumstances during the progress of the Hot Work and whether they may render the area unsafe for the work to continue;
- Properly ventilate the Hot Work area;
- Suitably locate the equipment, including emergency firefighting equipment;
- Isolate the area where Hot Work is to be performed;
- Provide a safe entry to and exit from the Hot Work area;
- Test for the presence of any flammable gas or flammable vapour, in accordance with the guidance below and AS 1674.1, in the work area and the area immediately surrounding the work area. Specific attention should be paid to any pipe, drum, tank, vessel or piece of equipment adjacent to or within the work area or involved with in Hot Work;
- Ensure the concentration of any flammable gas or flammable vapour, as determined by the testing required by an item above is less than 5 percent of its Lower Explosive Limit; and
- A Hot Work permit has been completed and authorised including the 'Hot Work Supervisor' section and this has been returned to Darwin Port.

## **ATMOSPHERIC MONITORING AND TESTING**

The following requirements for atmospheric testing must be followed:

- The gas detector must comply with AS 2275.1 and AS 2275.2;
- The operator must be familiar with operating the gas detector, aware of its limitations and maintenance;
- The testing must continue until every potential source has been tested;
- The testing must take place immediately prior to commencement of work. That is within 30 minutes prior to commencing Hot Work; and
- Testing shall be conducted at regular intervals whilst Hot Work is being conducted.

## **DURATION OF A HOT WORK PERMIT**

A Hot Work permit shall be issued for a period of the work and should not normally exceed 12 hours unless the Approving Officer has authorised otherwise.

The Approving Officer will then determine the appropriateness of the duration the permit is valid for through consultation with the ship and movement of other vessels or work within the area. It is the responsibility of the Master to ensure that the necessary checks and precautions are in place for each shift. Each Hot Work Supervisor is responsible for ensuring the necessary checks, control measures and conditions annotated on the form are adhered to.

## HOT WORK HAZARDS AND RISKS AT EAW

East Arm Wharf is a multi-user multi-purpose facility that presents unique risk to with respect to the conduct of Hot Work. The work environment at EAW is highly dynamic and needs to be monitored closely for changes to the risks and hazards identified. This is complicated by a high number of vehicle movements, the presence of dangerous goods, bunkering operations, bulk flammable liquid transfers, livestock, stevedores and construction activities.

Bunker lines are under the wharf deck and bunker points are located along the wharf at intervals of approximately 50 metres. Each bunker point has a metal plate over the top of it.

Where Hot Work has been approved for a vessel berthed at EAW, the Hot Work Supervisor is to contact Harbour Control on VHF Ch. 10 or 08 8919 0821 prior to commencing, and on completion of, Hot Work.

## HOT WORK HAZARDS AND RISKS AT FHW

The work environment at FHW is more static than at EAW. There is a bulk fuel container used to bunker the pilot vessel on the wharf adjacent to the pilot boat landing. Fuel is delivered to other vessels using tanker trucks.

## HOT WORK PERMITS

The *Vessel Hot Work Permit form* is available from the Darwin Port website on the Policy, Procedures and Forms page.

## APPLYING FOR A HOT WORK PERMIT

When applying for a Hot Work permit, the Hot Work Supervisor must describe the work in sufficient detail that the Authorising Officer can assess the risks and hazards and confirm that the control measures are adequate for the work. The minimum information is to be provided is;

- The location (i.e., the wharf or anchorage) of Hot Work
- The name of the vessel
- The location on the vessel
- Intended start and finish time and date
- The type of Hot Work being conducted
- Equipment being used
- The control measures in place (or to be used)
- The type and number of firefighting appliances immediately available
- The name and contact number of the Hot Work Supervisor

This *Vessel Hot Work Permit Form* should be submitted a minimum of one working day prior to commencing work to [cargo@darwinport.com.au](mailto:cargo@darwinport.com.au) and [harbourcontrol@darwinport.com.au](mailto:harbourcontrol@darwinport.com.au)

If you are having difficulty accessing the permit form online, please contact DP at the email addresses above or on 0408 465 063 - 24/7.

**Work shall not commence until approval has been granted.**

## COMPLETION OF WORK

The immediate area around the work zone must be checked for smouldering embers or hot spots and they must be cooled or extinguished, and the area kept under continuous surveillance for a minimum of 30 minutes.

## SITE CHECKS BY AN APPROVING OFFICER OR PORT EMPLOYEE

An Approving Officer may check the site prior to commencement, during Hot Work or after the completion of Hot Work. An authorised Port employee may inspect the site at any stage during Hot Work and must be provided with a copy of the Hot Work permit.

Where the control measures annotated on the form are not in place or the control measure are deemed inadequate by the Approving Officer or authorised port employee, Hot Work must cease until the requirements are met and a new Hot Work permit raised by the Hot Work Supervisor.

At any time, an Approving Officer or Port employee can request that work cease immediately.

## ACTIONS IN THE EVENT OF A FIRE

Where the Hot Work results in a fire that requires the use of a portable or fixed firefighting appliance, Hot Work must stop and not resume until authorised. The Hot Work Supervisor must inform Darwin Harbour Control on VHF Ch.10 as soon as practicable and no further Hot Work can take place until the cause of the fire is established, additional control measures are put in place to remove the Risk of Fire and the JSEA, or equivalent risk-based documentation has been reviewed.

The Approving Officer or specially authorised delegate must approve the permit.

The Hot Work Supervisor shall submit an Incident Report Form.

## REVIEW STATEMENT

This Port Notice will be reviewed biennially by the Port Management Officer.

## REFERENCES

- *Ports Management Act 2015 (NT)*
- *Work Health and Safety (National Uniform Legislation) Act 2011 (NT)*
- International Safety Guide for Oil Tankers and Terminals
- AS 3846-2005 The handling and transport of Dangerous Cargoes in Port Areas
- AS 1674.1:2007 Safety in welding and allied processes Part 1: Fire Precautions
- AS 1674.2:2007 Safety in welding and allied processes Part 2: Electrical
- AS 2865: 1995 Safe Working in a Confined Space
- AS 2275.1-1979 Combustible Gas Detection Instruments for Use in Explosive Atmospheres - General Requirements for Explosion Protection of Electrical Apparatus and Systems
- AS 2275.2-1979 Combustible Gas Detection Instruments for Use in Explosive Atmospheres - Performance Requirements



**DARREN LAMBOURN**

**Port Operator**

**Darwin Port**

**30 September 2021**