PILBARA PORTS AUTHORITY

HEAT MANAGEMENT PROCEDURE

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1. OBJECTIVE

The objective of this procedure is to outline the responsibilities and processes to minimise the risk of harm to personnel as a result of exposure to heat and ultraviolet radiation.

2. SCOPE

This procedure applies to:

- a person conducting a business or undertaking (PCBU), and all workers working for a PCBU, for or on behalf of PPA on a PPA site or PPA controlled works;
- a visitor or director who is on a PPA site or PPA controlled works;
- a vendor's worker my work under their own company's heat management procedures if formally agreed. See Section 6;
- PPA tenants are required to meet the intent of this procedure, by putting systems in place to manage risks associated with exposure to heat and ultraviolet radiation.

3. DEFINITIONS

TERM	DEFINITION
Escort	An inducted person who is responsible for a visitor or a director whilst they are on a PPA site.
Heat related illness	Heat-related illness is a spectrum of disorders due to prolonged or intense environmental exposure to heat. It includes conditions such as heat cramps, fainting, convulsion, heat fatigue, rashes, and heat exhaustion as well as the more severe condition known as heat stroke.
PPA Controlled Works	Works that are under the control of PPA. Whether the worker is working under the control of PPA will need to be decided on a case by case basis. To give some guidance of works that would be considered as PPA controlled works are: • contractor travelling between PPA ports where that travel is part of the works required by PPA; • contractor working on a PPA owned residential property; • transport driver moving product where the driver is under the supervision of PPA or a PPA contractor. Examples of works that are not under the control of PPA are: • truck driver delivering goods to PPA from a warehouse where the driver is not under the supervision of PPA or its contractor; • vendor travelling from their place of accommodation to a PPA site; • worker doing activities not related to work (person going offsite for lunch, for an appointment, undertaking personal studies).
PPA Site	Port Land, Seabed, and waters as gazetted under the Port Authorities Act 1999.

4. RESPONSIBILITIES

ROLE	RESPONSIBILITIES
Contract Owners and delegated Contract Coordinators	Ensure compliance with this procedure as per Vendor Management Procedure expectations for the engagement method selected.
Directors and Visitors	Comply with all reasonable instructions given by your escort.
Escort	Escort Directors and or visitors and communicate requirements of this procedure to visitors and directors and check their understanding
Line Managers and Task Supervisors	Personnel under their control are aware of, understand and comply with the requirements of this procedure.
Workers	Comply with the requirements of this procedure.

5. HAZARD AND RISK ASSESSMENT

When there is potential for exposure to heat and/or ultraviolet radiation, prior to the execution of any work, a risk assessment shall be carried out in accordance with the Hazard Management Procedure. The risk assessment should consider, as a minimum, an assessment of the risk factors and controls outlined in this procedure.

In addition to this procedure, the Safe Work Australia Guidance material publication: Managing the risks of working in heat (Oct 2021) and the Safe Work Australia fact sheet: Solar ultraviolet radiation (Jan 2022) provides further guidance and should be considered when conducting a risk assessment of works where heat related illness is a possibility.

5.1 Heat Related Illness

The human body needs to maintain a body temperature of approximately 37 degrees Celsius. If the body has to work too hard to keep cool or starts to overheat, a worker can suffer from heat-related illnesses including dehydration, heat rash, heat cramps, heat exhaustion, heat stroke and worsening of existing medical conditions. Signs and symptoms and initial response actions for the main heat related illnesses are presented in Table 1. Any person with existing medical condition, or who has disclosed anything which indicates they may be more susceptible to heat related illness, such as heart disease, diabetes, kidney disease, those taking medications, pregnancy, has suffered previous heat related illness, or those who are on fluid-restricted diets, which make them more susceptible to heat related illnesses, or are returning to duty where a Fly-In-Fly-Out arrangement is in place, must notify their line manager so appropriate control actions can be considered.

Table 1: Heat Related Illnesses

SYMPTOMS	RESPONSE ACTIONS
Dehydration: From increased sweating if workers aren't drinking enough water. Mild to moderate dehydration makes the heart work faster and leads to reduced fluid available for sweating.	
• Dizziness and tiredness • Irritability • Mild to severe thirst • Reduced or dark urine output • Loss of appetite • Dry lips and tongue • Slowed mental function and lowered performance	• Notify your line manager • Drink water • Avoid caffeinated and carbonated drinks and salt tablets • Move somewhere cool, ideally air-conditioned • If possible, use a spray bottle with water to cool yourself down • If you start to feel unwell, contact your line manager again and if you are on site, attend or call site first aiders (PPA Security Gatehouse). If you are off-site, then seek medical attention
Heat Cramps: Usually affects people who sweat a lot during strenuous activity (e.g. sport or gardening). The sweating causes the body to lose salt and water. The low salt levels in the muscles may be the cause of heat cramps however they can also be a symptom of heat exhaustion.	
• Muscle pains • Muscle spasms	• Notify your line manager and if onsite attend or call site first aiders (PPA Security Gatehouse). If you are off site then seek medical attention • Stop all activity and lie in a cool space, legs slightly raised • Drink water • Have a cool shower, bath or sponge bath • Massage your limbs to ease spasms, apply cool packs • Do not return to strenuous activity for a few hours after the cramps subside (exertion may lead to heat exhaustion/heat stroke)
Heat Exhaustion: The body's response to an excessive loss of water and salt contained in sweat. If heat exhaustion is not treated, it can turn into heat stroke.	
• Heavy sweating (cool and moist skin) • Pale skin • Fast and weak pulse rate • Shallow and fast breathing • Muscle weakness or cramps • Tiredness and dizziness • Headache • Nausea or vomiting • Fainting	• Notify your line manager and if onsite attend or call site first aiders (PPA Security Gatehouse). If you are off site then seek medical attention • Move to a cool place, ideally air-conditioned and lie down • Remove excess clothing • Take small sips of cool fluids • Take a cool shower, bath or sponge bath • Put cool packs under armpits, on the groin, or on the back of the neck to reduce body heat • If symptoms worsen or if there is no improvement, notify your line manager and seek urgent medical attention (call an ambulance if necessary)
Heat Stroke: Is a life-threatening emergency and occurs when the body temperature rises above 40.5°C and cannot cool itself. Immediate first aid is very important. Aim to lower body temperature as quickly as possible.	

SYMPTOMS	RESPONSE ACTIONS
• Sudden rise in body temperature • Red, hot and dry skin (sweating has stopped) • Dry swollen tongue • Rapid pulse • Rapid shallow breathing • Intense thirst • Headache • Nausea or vomiting • Dizziness or confusion • Poor coordination or slurred speech • Aggressive or bizarre behaviour • Loss of consciousness, seizures or coma	• Immediately call 000 and ask for an ambulance • Initiate PPA site emergency response (call VTS) and organise first aiders to attend until an ambulance arrives • Get the person into the shade, lay them down, and keep them as still as possible • Give small sips of cool fluids if conscious and able to drink • Bring their temperature down using any method available (sponging with cool water, cool shower, spraying with cool water from a garden hose, or soaking clothes with cool water) • Put cool packs under armpits, on the groin, or on the back of the neck to reduce body heat • Do not give aspirin or paracetamol; they do not help and may be harmful • If unconscious, lay the person on their side (recovery position) and check they can breathe properly • Perform CPR if needed

5.1.1 Risk Factors

The key risk factors to consider are:

- air temperature;
- humidity (high humidity limits the evaporation of sweat – a key cooling mechanism for the body);
- radiant heat (from the sun or other sources such as conducting hot work);
- air movement and wind speed;
- workload (intensity and duration of the work);
- location of the work area;
- availability of drinking water and shaded area where worker can take breaks;
- physical fitness of the worker, including acclimatisation and any pre-existing conditions such as obesity, heart/circulatory diseases, skin diseases or use of certain medicines that can affect the body's ability to manage heat (e.g., diuretics, antidepressants and anticholinergics);
- hydration status, which may be impacted by the consumption of caffeine or alcohol;
- clothing, including PPE that may restrict air flow across the skin and hinder evaporation of sweat.

5.1.2 Controls

There are many control measures that assist in reducing the risk of heat related illness. In many cases, it will be appropriate to use a combination of approaches. It is important to review control measures to ensure that they

are working as planned and that they do not introduce new uncontrolled risks. Controls may include but are not limited to:

- Increase air velocity for indoor workers by using natural cross-ventilation from windows and doors or mobile or ceiling fans. These increase both evaporation of sweat and convective heat loss, and may significantly improve thermal comfort at air temperatures as high as 40°C.
- Operate effective general and local exhaust ventilation and air conditioning.
- Avoid non-essential sources of hot ventilation (e.g., air conditioner outlets adjacent to working areas).
- Install a shield between workers and a source of radiant heat, such as curtains on windows or other insulating barrier, enclose the heat source, or move the heat source away from workers.
- Provide cooled drinking water as close as possible to the work site.
- Arrange shade for outdoor workers where practicable.
- Provide a cool rest area with air flow in which workers can take their meal breaks and tea breaks.
- Modify the work schedule or shift times so that outdoor and physiologically demanding work is done in the early morning or late afternoon, when it is generally cooler, and the sun's radiation is less intense than during the middle of the day.
- Allow workers to self-regulate their pace of work. This may involve working continuously at less than full capacity, and/ or working for short periods followed by rest pauses in a cool area.
- Workers continually monitoring themselves and their colleagues for signs of heat related illness.
- Workers should be encouraged to present to work in a well hydrated state and take frequent small drinks throughout each shift to replace fluid lost through sweating.
- Fluids such as tea, coffee, alcohol and some soft drinks are diuretics – they cause the body to excrete more water in urine. These should NOT be used to replenish fluid lost due to heat.
- Use PPE that reduces exposure to ultraviolet radiation and heat (e.g., reflective masks or aprons, large brimmed hat, sunscreen).
- New workers, visiting workers from lower temperature regions or those returning from periods away from hot environments should be given the opportunity to acclimatise before being expected to undertake work in very hot conditions at full capacity.

5.2 Ultraviolet Radiation Burns

Ultraviolet (UV) radiation burns occurs when the skin or eyes are exposed to UV radiation from being out in the sun or from activities such as welding. The symptoms include:

- reddening and inflammation of the skin;
- blistering and peeling of the skin in severe cases;
- bloodshot or watery eyes;
- light sensitivity or blurred vision;
- the feeling of having something in your eye.

5.2.1 Risk Factors

The key risk factors to consider are:

- strength of UV rays, including time of day, season of the year, cloud cover and reflection off surfaces such as concrete, metal and water;
- the length of time the skin or eyes is exposed;
- radiant heat (from the sun or other sources such as welding).

5.2.2 Controls

There are many control measures that assist in reducing the risk of burns from ultraviolet radiation exposure. In many cases, it will be appropriate to use a combination of approaches. It is important to review control measures to ensure that they are working as planned and that they do not introduce new uncontrolled risks. Controls may include but are not limited to:

- Use PPE that reduces exposure to ultraviolet radiation (e.g. welding shield, large brimmed hat, sunscreen, sunglasses, neck gaiter).
- Arrange shade for outdoor workers where practicable.
- Modify the work schedule or shift times so that outdoor work is done in the early morning or late afternoon, when it is generally cooler and the sun's radiation is less intense than during the middle of the day.
- Designing out risks to workers from reflection off materials.

6. VENDORS

All Vendors are subject to the same conditions and expectations as PPA workers and must adhere to this Heat Management Procedure, unless otherwise stated and agreed upon during the commercial process.

7. PROVISION OF INFORMATION, TRAINIING AND INSTRUCTION

All workers exposed to heat related hazards detailed in this procedure are to be provided with information, training and instruction on the heat related illness risks and controls.

8. REFERENCES

Hazard Management Procedure

Safe Work Australia guidance material, October 2021: Managing the risks of working in heat.

Safe Work Australia fact sheet, Jan 2022: Solar ultraviolet radiation

Vendor Management Procedure

9. PROCESS OWNER

The Director Health and Safety is responsible for the procedure.