

ULTRAVIOLET RADIATION PROTECTION

1. PURPOSE

The purpose of this SOP is to implement procedures for minimising the risk associated with exposure to ultraviolet radiation (UVR) **which causes cancer**. Control measures detailed in this SOP are to apply during the peak UVR period between September and April.

2. APPROVAL

Managing Director

3. INTRODUCTION

Australia has one of the highest rates of skin cancer in the world and **two in three** Australians will be diagnosed with skin cancer in their lifetime (Cancer Council). Construction workers have a higher risk of skin cancer than many other workers due to long periods exposed to UV radiation from direct sunlight and UV rays reflected from nearby surfaces such as concrete. UVR is the single largest contributor to the development of skin cancer and other serious and potentially permanent disorders. See Appendix A for images of the main types of skin cancers.

East Gippsland Water (EGW) has an obligation to provide a safe and healthy work environment, which includes providing adequate protection from the hazards that EGW employees may be subject to when working in an outdoor environment. UVR is one such hazard. Excessive exposure to UVR may result in long term skin damage (including skin cancer) and eye damage. Workers should also seek skin checks as part of their regular consultation with their general practitioner.

This SOP is based on a risk assessment of generic depot field operations in accordance with Cancer Council of Victoria, SunSmart and Worksafe guidelines. A Worksafe UV protection self-assessment checklist can be found Doc/19/51526*.

4. DEFINITIONS

Eye protection is any screen or glasses type device, which meets Australian/New Zealand Standards AS/NZS 1067 (Standard for sunglasses/sunglass lenses) and AS/NZS 1337 (Standard for safety glasses and goggles) if necessary.

SPF means Sun Protection Factor.

Sun protective clothing is any clothing that provides entire covering of the upper and lower body including limbs and whose fabric complies with AS/ANZ 4399:1996.

Sunscreen is any SPF rated chemical product designed for skin protection.

Ultraviolet radiation (UVR) is a component of the electromagnetic radiation (EMR) spectrum emitted by the sun. It is composed of wavelengths from 200 – 400 nanometres (nm).

UVA is UVR of wavelengths between 315 to 400 nm – more recently recognised as a factor in causing skin cancer, but not readily recognisable via sunburn.

UVB is UVR of wavelengths between 280 to 315 nm – most readily recognised as causing identifiable reddening (sunburn) and skin damage leading to skin cancer.

UPF means ultraviolet protection factor.

5. PROCEDURE

The daily SunSmart UV Alert is linked to the EGW Intranet and shows predicted UV levels for four regions best representing EGW field operations. These are:

Illustration	Location	Illustration	Location
Bairnsdale	Bairnsdale/Lakes Entrance	Orbost	Orbost
Merimbula	apply to Mallacoota	Mount Hotham	Apply to Omeo/Dinner Plain

The daily UV Alert should be read at the first opportunity every morning by a dedicated person who can report the level and at risk work hours for the day.

UV Index Levels indicate the level of risk of skin damage and developing skin cancer. According to SunSmart (Cancer Council of Victoria), descriptors are as follows:

Index	Descriptor / Risk
0-3	Low - generally no protection required unless in alpine regions, outside for extended periods or near highly reflective surfaces such as snow and water.
3-6	Moderate
6-8	High – ensure that sun protection is applied (see sections 5.1 and 5.3)
8-11	Very High
11+	Extreme

The higher level indexes are not dependent on temperature or clear sky and can occur on cool, overcast days. The picture below depicts that a moderate index will occur at Orbost. Planning the work day using a combination of controls can then occur.



Time when sun protection is needed

Maximum UV level forecast

The following control measures are to be implemented at all East Gippsland Water worksites according to the conditions and work performed including Slip (shirt), Slop (sunscreen), Slap (hat), Seek (shade), Slide on (glasses):

- 5.1 **Engineering Controls.** Employees working outdoors are encouraged to maximise the use of the shade provided by trees, buildings and other structures. Where there is limited access to natural shade, the use of fixed or portable shade structures will be considered and implemented where practicable.
- 5.2 **Administrative Controls.** Works Superintendents are to give consideration to the reorganisation of planned outdoor work programs to reduce UVR exposure including:
 - rescheduling work hours to enable workers to start earlier during September – April
 - providing opportunities for employees to undertake alternative shaded tasks when UVR is most intense
 - rotating workers regularly between shaded areas and outdoor/exposed locations
- 5.3 **Personal Protective Clothing and Equipment**
 - 5.3.1 **Protective Clothing.** The selection of protective clothing will take into account both the need to block out the sun and the need to reduce the effects of heat will be provided. Uniforms provided to employees will have, as a minimum, wrist length sleeves and long pants. Shirts will be lightweight, loose fitting and have a collar. Fabric will be a close weave and be a minimum of UPF 30 (refer AS/NZS 4399:1996). Other hazards such as fire resistance will be considered and shall if necessary take priority over the UV hazard providing that UVR minimum standards are met.
 - 5.3.2 **Hats.** Hats appropriate to the work situation are to be worn. Hats will be made of close-weave material and have a brim of at least 7.5 cm or be legionnaire style. Brim attachments and neck flaps will be provided where hard hats are worn. In circumstances where the wearing of a broad brimmed hat causes difficulties due to their size, sunscreen and other protective measures should be used instead.

5.3.3 Eye Protection. Close fitting sunglasses complying with AS1067:2016 will be provided. Where safety glasses are required, these will also comply with AS1337.

5.3.4 Sunscreen. Sunscreen does not offer complete protection against the sun and should always be used in conjunction with other protection such as protective clothing. Broad spectrum and water-resistant sunscreen with a sun protection factor (SPF) of 30+ and rated for UVA and UVB will be provided. Use-by dates are to be regularly checked to ensure sunscreen in use is not out of date. Sunscreen will be provided to all employees and be placed in easily accessible locations within the workplace. Employees will be instructed on correct application and use. For optimum effect, sunscreen is to be generously applied to all areas of exposed skin at least twenty minutes before going outside and reapplied at least every two hours. Lip balm containing SPF 30+ will also be provided.

5.4 Education and Training.

Employees, including managers and other persons responsible for organising outdoor work will receive training in the dangers of UVR and measures to minimise the risk of exposure. All new employees will be made aware of the UVR protection program as part of their induction. The objectives of the training include:

- increasing the awareness of the harmful effects of UVR
- the promotion and correct use of control measures
- the provision of information on how to check for skin cancer

5.5 Medical Examination. Outdoor staff will receive a cursory check for possible skin cancer and other UVR exposure related skin conditions during their two yearly medical examinations to allow early detection and treatment. All staff are encouraged to either perform self checks or seek medical advice regarding skin checks three monthly.

5.6 Heat Stress.

5.6.1 Medical Conditions:

- heat stroke - a condition that requires immediate first aid and medical attention
- fainting
- heat exhaustion
- heat cramps
- rashes
- heat fatigue
- worsening of pre-existing illnesses and conditions

Signs and symptoms can include nausea, dizziness or weakness, clumsiness, collapse and convulsions can also be the result of heat illness.

Employees with these signs or symptoms need to rest in a cool, well-ventilated area and drink cool fluids. If the ill health does not reduce quickly, seek immediate medical attention.

5.6.2 Preventing Heat Illness.

5.6.2.1 Use Engineering Controls:

- increase air movement using fans and air conditioners or coolers to reduce air temperature
- install shade cloth to reduce radiant heat from the sun
- install shields or barriers to reduce radiant heat from sources such as furnaces
- remove heated air or steam from hot processes using local exhaust ventilation
- locate hot processes away from people
- insulate/enclose hot processes or plant

5.6.2.2 Reduce Workload:

- reschedule work so the hot tasks are performed during the cooler part of the day
- wear light clothing that still provides adequate protection
- reduce the time spent doing hot tasks (eg job rotation)
- arrange for more employees to do the job
- provide extra rest breaks in a cool area
- use mechanical aids to reduce physical exertion.

5.6.2.3 Further Controls:

- keep people away from hot processes
- allow employees to acclimatise
- cool drinking water near the work site. During hot weather, employees should be encouraged to drink a cup of water (about 200 mls) every 15 to 20 minutes
- staying hydrated throughout year is part of being healthy and alert
- The use of Electrolytes
- personal protective equipment (PPE) such as reflective aprons and face shields for reducing exposure to radiant heat. Outdoor workers should be provided with protection against ultraviolet exposure, such as wide brim hat, loose fitting, collared shirt and long pants, sunglasses and sunscreen.

- information, instruction and training on recognising heat-related illness and on first aid. adequate supervision of employees
- first aid facilities and access to medical help

5.7 Responsibilities

5.7.1 Supervisors. Supervisors are to:

- manage work programs in order to limit UVR exposure during September – April.
- supervise outdoor workers to ensure compliance with the requirements of this SOP.
- regularly monitor employee compliance with UVR control strategies and report on difficulties experienced.
- ensure injury reporting procedures are followed when an incident of sunburn or excessive sun exposure occurs in the workplace.
- practice UVR control measures when working outdoors.
-

5.7.2 **Employees.** Employees undertaking outdoor work are to cooperate with all measures introduced to minimise the risk associated with exposure to UVR, including wearing personal protective clothing and equipment as supplied.

6. REFERENCES

- Occupational Health and Safety Act 2004
- SunSmart – Protecting workers from ultraviolet radiation in sunlight – Cancer Council of Victoria
- WorkSafe Victoria guidance material
 - Working in Heat (July 2012)
 - Sun protection for outdoor workers (Aug 2016)
- Health & Safety Handbook. Portner Press. Refer HSE Library / H&S Team.
- AS/NZS 4399:1996 - Sun Protective Clothing
- AS/NZS 1067:2003 - Sunglasses and Fashion Spectacles
- AS/NZS 1337:2011-12 - Eye Protectors for Industrial Applications
- EGW SOP 049 - Uniforms and Personal Protective Clothing and Equipment

7. RISK MANAGEMENT

This SOP forms an integral part of East Gippsland Water's Risk Management Program.

8. REVIEW

This SOP will be reviewed every three years.

Main Types of Skin Cancers

Melanoma



Very dangerous and can be fatal. A spot, unusual freckle or mole that changes colour, size and thickness over months. Colours range from dark brown, black, red, blue, black or a combination. Can appear on body parts protected from the sun.

Basal Cell Carcinoma (BCC)



Most common type: a small round or flattened lump, red, pale or pearly in colour. May have blood vessels over the surface.

Squamous Cell Carcinoma (SCC)



Less common than BCCs but more dangerous. Can spread and usually red scaly areas that bleed, turn into ulcers and has the appearance of a sore that does not heal.

Nodular melanoma



Raised, firm and dome shaped pimple-sized melanoma that is red, pink, brown or black. Develops quickly and spreads to other parts of the body.

Sun Spots

Usually rough dry, firm spots. These are not skin cancers but show the skin has had an overdose of ultra violet light and on rare occasions can turn into cancers.