

GUIDE FOR MANAGING RISKS INVOLVING HERITAGE PLANT

MARCH 2013



safe work australia

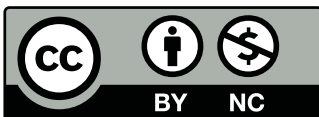


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1. INTRODUCTION

1.1 Who should use this Guide?

This Guide provides practical guidance about managing health and safety risks for people who carry out activities involving heritage plant. These activities include using, operating, restoring, maintaining, modifying, servicing, repairing or housing heritage plant. You may become involved in these activities by offering advice, assisting with repairs or maintenance, by designing aspects of the heritage plant for reproduction or by reproducing items. You may also become involved in these activities by restoring heritage plant for display in a museum, park or at an agricultural show or offering rides and demonstrating how they work.

This guide should be read and used together with the *Work Health and Safety Act* (the WHS Act), the *Work Health and Safety Regulations* (the WHS Regulations) and other codes of practice like the Code of practice: *How to Manage Health and Safety Risks* and Code of practice: *Managing Risks associated with Plant at the Workplace*.

1.2 What is heritage plant?

Heritage plant includes machinery, equipment, appliances, implements or tools which form part of Australia's industrial heritage. To be considered of heritage value the heritage plant will be at least 30 years old and no longer in productive service in industry. Certain replicas may be considered heritage plant.

Hand-held plant relying exclusively on manual power for its operation is not covered by the WHS regulations.

Plant manufactured to an original heritage plant design is also considered heritage plant where it is not placed in regular productive service.

Examples of heritage plant include:

- land-based steam traction or stationary engines and similar plant which operate under pressure
- stationary oil engines
- wheeled or tracked self-propelled tractors
- water craft, whether steam driven or powered by an internal combustion engine
- load shifting and earthmoving equipment
- belt-driven agricultural or industrial equipment
- railway locomotives and rolling stock not covered under rail laws.

A **heritage boiler** is a boiler manufactured before 1952 and used for a historical purpose or activity, including an activity ancillary to a historical activity.

The year 1952 is when AS CB1-1952: *The design, construction, inspection and operation of boilers and unfired pressure vessels; and their appurtenances (known as the SAA Boiler Code)* commenced and boiler designs started to be regulated.

Heritage plant does not include:

- plant regulated solely under rail, road and traffic, or maritime legislation
- miniature and scale models.

Further definitions of key terms used in this Guide are listed in Appendix A.

1.3 Who has health and safety duties in relation to heritage plant?

People who carry out activities involving heritage plant as part of their business or undertaking, at a public event where Schedule 1 to the WHS Act has been enacted or people who have the capacity to influence the health and safety of others have duties under the WHS laws. The WHS laws refer to these people as a *person who conducts a business or undertaking with management or control of plant*, including heritage plant.

A person who conducts a business or undertaking that carries out activities involving heritage plant should:

- consider what is known, or ought reasonably be known, about the identified hazards and risks to health and safety
- eliminate the risks, or if this is not reasonably practicable, minimise them so far as is reasonably practicable, and
- pass on the necessary information you have to ensure others involved in the process, or with the heritage plant later on in the future, can carry out their activities safely.

The WHS laws do not apply to volunteer associations. A volunteer association is a group of volunteers, working together for one or more community purposes, that has no employees. See the Volunteer Resource Kit on the Safe Work Australia website for more information about volunteers and their duties.

Table 1 Duties in relation to heritage plant

| Who | Duties | Provisions |
|---|--|--------------|
| A person who conducts a business or undertaking | Ensure, so far as is reasonably practicable, workers, including volunteers, and other people are not exposed to health and safety risks arising from the business or undertaking. This duty requires the person to manage health and safety risks by eliminating them so far as is reasonably practicable, and if this is not reasonably practicable, by minimising those risks so far as is reasonably practicable. This includes for risks arising from activities involving heritage plant. | WHS Act s 19 |

| Who | Duties | Provisions |
|--|---|---|
| A person who conducts a business or undertaking | There are more specific requirements to manage risks under the WHS Regulations, including those associated with noise, manual tasks, electrical risks and asbestos. | WHS Regulations Chapters 3, 4 and 5 |
| A person who conducts a business or undertaking with management or control of plant | Manage risks to health and safety associated with heritage plant and other risks, including: <ul style="list-style-type: none"> ■ proper use of plant ■ design and item registration for certain types of plant ■ changes to plant ■ plant not in use ■ information, instruction and training ■ guarding, operator controls, emergency stop controls and warning devices. | WHS Regulations ss 203-226 |
| A volunteer association which carries out activities involving heritage plant | None – the meaning of a <i>person conducting a business or undertaking</i> excludes a volunteer association that does not employ anyone. | WHS Act s 5 |
| A person who carries out activities involving heritage plant as a personal or recreational activity, excluding public events | None – the WHS laws only apply to these activities if Schedule 1 to the WHS Act is enacted. You should contact your regulator for information. | WHS Act s 5 and Schedule 1 in your jurisdiction |
| A person who carries out activities involving heritage plant at public events | Some jurisdictions extend work health safety laws to cover high risk plant that may affect public safety, even if the plant is not situated, operated or used at a workplace or when carrying out work. The duties of a person conducting a business or undertaking apply. | WHS Act Schedule 1 in your jurisdiction |
| Designers, manufactures, importers, suppliers or installers of plant, substances or structures | Ensure, so far as is reasonably practicable, the plant, substance or structure they design, manufacture, import or supply is without risks to health and safety. This duty includes carrying out testing and analysis as well as providing specific information about the plant, substance or structure. | WHS Act s 22-26 |

| Who | Duties | Provisions |
|---|---|--------------|
| Officers such as company directors | Exercise due diligence to ensure the business or undertaking complies with the WHS Act and Regulations. This includes taking reasonable steps to ensure the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks from activities involving heritage plant. | WHS Act s 27 |
| Workers | Take reasonable care for their own health and safety and to not adversely affect other people's health and safety. Workers must co-operate with reasonable policies or procedures relating to health and safety at the workplace and comply, so far as they are reasonably able, with reasonable instructions. If personal protective equipment is provided by the business or undertaking, the worker must so far as they are reasonably able, use or wear it in accordance with the information, instruction and training provided. | WHS Act s 28 |
| Other persons at the workplace, like visitors | Take reasonable care for their own health and safety and must take reasonable care not to adversely affect other people's health and safety. They must comply, so far as they are reasonably able, with reasonable instructions given by the person conducting the business or undertaking to allow that person to comply with the WHS Act. | WHS Act s 29 |

CO-OPERATION AND CO-ORDINATION WITH OTHER DUTY HOLDERS

There may be many people or businesses involved in carrying out activities involving heritage plant throughout the lifecycle of the heritage plant. A person can have more than one duty and more than one person can have the same duty at the same time. The extent of their duties depends on their ability to influence and control various aspects of heritage plant safety. Therefore, it is important that these duty holders consult each other about the risks from carrying out activities involving different types of heritage plant and work together in a co-operative and co-ordinated way to control the risks, for example controlling public safety at an agricultural show.

Further guidance on consultation requirements is available in the Code of practice: *Work Health and Safety Consultation, Co-operation and Co-ordination*.

1.4 How can heritage plant associations help?

Heritage plant associations often hold useful knowledge and information about heritage plant not available to the general community.

These associations may be able to provide heritage plant services for their members like training and assessment services, plant inspections and help with plant registration, if required. These services may provide members and others with the information they need about how to operate the heritage plant safely to meet their health and safety duties. For example:

- information about risk management systems
- information about safe systems of work and specific risk control measures for activities carried out on or for heritage plant
- training and assessment requirements for people involved in activities involving heritage plant
- registration and licensing requirements for operating heritage plant
- record keeping requirements.

Heritage plant associations may document this information as a service to their members. Examples include guidance procedures to conduct rallies and compliance manuals to operate special items like steam plant.

2. THE RISK MANAGEMENT PROCESS

Heritage plant was made in a time and to standards different to today when operators were expected to avoid hazards. This is no longer acceptable as laws require people who carry out activities involving heritage plant to pro-actively manage health and safety risks from the design stage throughout the lifecycle of the plant to the end user.

Good safety outcomes do not happen by chance or guesswork. To make sure none of your activities are likely to harm people, it is important to understand what could go wrong and what the consequences could be.

You should manage the risks associated with heritage plant by following a systematic process including:

- identifying hazards - find out what could cause harm
- assessing risks - understand the nature of the harm that could be caused by the hazard, how serious the harm could be and the likelihood of it happening
- controlling risks - implement the most effective control measure that is reasonably practicable in the circumstances
- reviewing control measures to ensure they are working as planned.

Further guidance on managing the risks of heritage plant is in the:

- Code of practice: *How to Manage Work Health and Safety Risks*. This code of practice provides practical guidance on the risk management process.
- Code of practice: *Managing Risks of Plant in the Workplace*. This code of practice provides practical guidance on installing, commissioning, using, decommissioning and dismantling plant.

2.1 Identifying the hazards

Heritage plant may have the potential to cause harm a number of ways. It is important you identify hazards associated with the heritage plant and understand the level of risk so you can make the right decisions to eliminate or minimise the risks, so far as is reasonably practicable.

Hazards can be identified by:

- inspecting the heritage plant and work processes
- talking to and consulting with people involved with the heritage plant, e.g. workers and contractors are usually aware of what can go wrong and why based on their experience with the heritage plant
- getting advice from experts from heritage plant associations, government bodies and engineering professionals
- reviewing relevant information, like injury and incident records, to identify where and how injuries have occurred.

2.2 Assessing the risks

A risk assessment involves considering what could happen if someone is exposed to a hazard and the likelihood of it happening. For example, a high risk may result if the blade of a saw is unguarded as there is a high chance of a person coming into contact with the blade and being severely injured. A risk assessment can help you determine:

- how severe a risk is
- whether existing control measures are effective
- what action you should take to control the risk
- how urgently the action needs to be taken.

You should assess the risks by gathering information from a range of sources to help you work out the likelihood and potential consequences of each hazard. The information you use may be similar to the information you used when identifying the hazards.

Many hazards and their associated risks are well known and have well established and accepted control measures. In these situations, the second step to formally assess the risk is unnecessary. If, after identifying a hazard, you already know the risk and how to control it effectively, you may simply implement the controls.

2.3 Controlling the risks

Some control measures are more effective than others. Control measures can be ranked from the highest level of protection and reliability to the lowest. This ranking is known as the *hierarchy of control*. You must work through this hierarchy to choose the control that most effectively eliminates or, where that is not reasonably practicable, minimises the risk in the circumstances.

ELIMINATING THE RISKS

This means removing the hazard or hazardous practice. This is the most effective control measure and should always be considered before anything else. For example, eliminate risks by having heritage plant on static display with moving parts restrained so spectators may still access the heritage plant and observe its parts closely without risk to health and safety.

If eliminating the risk is not reasonably practicable, you must consider using substitution, isolation or engineering controls, or a combination of these control measures, to minimise the risk.

MINIMISING THE RISK

Substitution

Minimise the risk by substituting or replacing a hazard or hazardous work practice with a safer one. For example, replace a solid guard which people may try to take off or look behind with a translucent one so people can see the plant operating but are still protected from being hit by a moving or hot part of the plant.

It may not be possible to completely substitute the heritage plant because of its heritage value. Whether you choose to use this type of control measure depends on what is reasonably practicable in the circumstances. You may be able to use other measures to control the risks to provide the same level of safety.

Isolation

Minimise the risk by isolating or separating the hazard or hazardous work practice from people. For example, put up barriers like fences around heritage plant to keep people a safe distance away from moving or hot parts.

Engineering Controls

Engineering controls are physical control measures to minimise risk, for example use an arrestor to limit how far sparks come out of a boiler funnel which minimises the risk of causing a fire.

Some engineering controls may reduce the heritage value of the heritage plant. Whether you choose to use this type of control measure depends on what is reasonably practicable in the circumstances. You may be able to use other measures to control the risks to provide the same level of safety.

If a risk then remains, the duty holder must minimise the remaining risk, so far as is reasonably practicable, by using:

Administrative controls

Administrative controls should only be considered when other higher order control measures are not reasonably practicable, or to increase protection from the hazard. These are work methods or procedures that are designed to minimise the exposure to a hazard. Examples include installing a tag-out system so workers are aware the heritage plant is isolated from its power source and cannot be used while maintenance or cleaning work is being done, providing training and supervision, using warning signs or arranging work to minimise the time spent near noisy machinery.

Any remaining risk must be minimised, as far as is reasonably practicable, by providing and ensuring the use of:

Personal protective equipment (PPE)

PPE includes clothing and equipment designed to be worn or used by a person to protect their health and safety. It is the lowest order control measure in the hierarchy of controls and relies on a person's behaviour and the proper fit and use of the PPE and does nothing to change the hazard itself. PPE should also only be considered when other higher order control measures are not reasonably practicable or to increase protection from the hazard. It requires thorough training and a high level of supervision to ensure compliance and effectiveness. Examples of PPE include using safety eyewear where there is a risk of being hit by fragments or steam in the eyes, sun protection including long sleeves and pants if in the sun, hearing protection for noisy plant, safety helmets, cut-resistant leg protection and reflective, high-visibility clothing when moving or directing moving plant.

COMBINING CONTROL MEASURES

In most cases, a combination of the controls measures will provide the best solution to minimise the risk to the lowest level reasonably practicable. For example, using guards (engineering), a keep out sign (administrative) and a fence (isolation) to minimise, so far as is reasonably practicable, the risk of people entering the work area and being hit by steam or moving parts. You should check your chosen control measures do not introduce new hazards.

2.4 Reviewing control measures

Once implemented control measures must be reviewed and, if necessary, revised to make sure they work as planned and that no new hazards are introduced by the control measures. Controls can be checked by using the same methods as in the initial hazard identification. Common ways to check controls are effective include inspecting the heritage plant and area it is being used or stored, consulting others who carry out activities involving heritage plant, testing and analysing records and data.

When deciding how often to carry out a review, you should consider the level of risk. Plant that presents high or frequent risks may need more frequent review, and the type of plant involved. There may be particular stages in the life of the plant where a review is needed more often.

Heritage plant associations often hold useful knowledge and information about heritage plant which is not available in the general community and may be able to assist you with controlling risks to health and safety from your heritage plant.

3. CONTROLLING RISKS

3.1 What are the main risks associated with heritage plant?

Heritage plant is designed and manufactured to historical standards which are often different from those used today. Some heritage plant is largely unchanged from the time of manufacture, particularly where the heritage plant has been specifically maintained for its historical value.

It may not be possible, for example to permanently cover open gears or automate a boiler, without destroying the heritage value of the heritage plant. It is possible however to implement other control measures to protect heritage plant operators and the public. For example, using rigid transparent guards made from materials like acrylic or polycarbonate can stop open gears being accessed.

The heritage plant may have been made using asbestos or asbestos containing material, lead paint or lead products. Removing and disposing of those materials must be done in accordance with Chapters 7 and 8 of the WHS Regulations.

Heritage plant can cause severe injuries or death, including:

- limbs amputated by unguarded moving parts
- being crushed by moving heritage plant e.g. where they do not have adequate warning devices
- fractures from falling off the heritage plant
- electrocution or electric shock and burns from heritage plant which is not protected or isolated
- burns or scalds from contact with heritage boilers or exposure to flames or hot fluids
- slips, trips and falls
- manual handling injuries.

3.2 Installing and commissioning heritage plant

An installer of heritage plant should check:

- heritage plant is erected and installed in accordance with the instructions of a competent person, including ensuring specialised tools, jigs and appliances are used to minimise the risk of injury, so far as is reasonably practicable
- entry points to and exit points from heritage plant meets relevant standards
- heritage plant is stable when being installed
- the interaction of heritage plant with people, work processes and other plant have been taken into account
- environmental factors affecting installation and use e.g. wet conditions have been taken into account
- electrical installations associated with heritage plant comply with AS 3000, also known as the Australian and New Zealand Wiring Rules, as far as it is relevant.

The installer should tell the person with management or control of the heritage plant about new risks identified during installation of the heritage plant.

POSITIONING HERITAGE PLANT

Heritage plant should be positioned so:

- heat risks from the plant, like friction, molten material and hot gases are minimised, so far as is reasonably practicable, by restricting access, using guards and insulating the hot plant or parts
- there is enough space for safe entry to the heritage plant to operate, clean, maintain, inspect and evacuate it in an emergency
- it does not obstruct doorways and emergency exits
- it rests on a suitable foundation where required, e.g. on a floor or other support so the heritage plant is stable and secure
- ventilation is adequate to extract the type and amount of emissions from the heritage plant
- workers, volunteers and others are not exposed to noise levels greater than those stated in the exposure standard for noise.

3.3 Information, training, instruction and supervision

Before heritage plant is used you must provide people who will use the heritage plant with information, training, instruction or supervision necessary to protect them from risks arising from using it.

INFORMATION AND INSTRUCTION

You must also provide information and instructions on the types of hazards and risks the heritage plant may pose to the person when they are carrying out these activities associated with heritage plant:

- installing
- commissioning
- testing
- maintaining
- repairing
- decommissioning
- dismantling
- disposing.

This information may be supported by safe work procedures with instructions on:

- how to safely inspect, use, clean, maintain and repair heritage plant where applicable
- specific conditions and prohibitions relating to using heritage plant e.g. licensing and registrations
- known residual risks, e.g. those that cannot be eliminated by design and against which guarding is not totally effective
- the control measures to be used to minimise the risks from heritage plant and how to use the controls safely, for example guards
- how to access information on heritage plant, e.g. manufacturer's instructions or instructions prepared by a competent person

- instruction in the appropriate work methods including how to use PPE correctly
- inspection and maintenance programs
- special tools needed to use or maintain the heritage plant
- traffic rules, rights of way, clearances and exclusion zones for mobile plant
- emergency procedures.

Emergency instructions relating to heritage plant should be clearly displayed on or near it.

TRAINING

The amount of detail and extent of training needed depends on the:

- hazards associated with the heritage plant
- degree of risk
- complexity of the work procedures.

Training may be provided in-house or formally through a registered training organisation. People who operate heritage plant should be adequately supervised during training so they do not put themselves or others at risk.

Because training requirements are often highly specialised, formal training courses may not always be available so you should find suitable alternatives.

Training programs should be practical and hands-on and take into account the particular needs of users for example literacy levels, work experience and specific skills necessary to use the heritage plant safely. Training should be reviewed regularly, for example annually and each time there is a change in hazard information, work practices or risk control measures.

Records should be kept of training to help comply with your obligations.

HERITAGE BOILER COMPETENCIES

Competency requirements for heritage boiler operation are set out in Appendix C. People seeking to deliver formal training and assessment arrangements intended to certify people as competent heritage boiler operators should check these competency requirements are incorporated into what they deliver.

3.4 Using heritage plant

Operating manuals and instructional material provided by the manufacturer to operate and maintain the heritage plant may be out-of-date, as they no longer reflect best practice and may not deal with current operating considerations for heritage plant. For example, de-rating of a boiler to a lower operating pressure may be necessary.

If operating manuals and instructional materials are no longer available, or relevant then replace them with documents prepared by a competent person.

You should also consider and address risks arising from:

- whether the operator is fit for work e.g. is the person fatigued?
- carrying out routine or repetitive tasks
- local conditions and working procedures.

HIGH RISK WORK LICENCES

Certain types of plant, like forklift trucks and some types of cranes, require the operator to have a high risk work licence before they can operate the plant, see Chapter 4.

PUBLIC SAFETY CONSIDERATIONS

You must ensure heritage plant under your control is operated safely at public events. Safety control measures should include:

- checking whether a licence is required to operate the heritage plant and having only appropriately licensed people operate the heritage plant
- ensuring systems are in place for the safe operation of heritage plant including having only competent and authorised people operate the heritage plant
- ensuring the heritage plant is only operated if it is in a safe working condition
- complying with lawful directions given by the owner, event safety officers or other similar people with authority or control
- restricting access to the heritage plant to authorised people only
- maintaining inspection, maintenance and repair records for the heritage plant
- maintaining registration requirements if applicable
- informing the owner of the following:
 - faults or issues with the heritage plant needing to be fixed
 - incidents involving injury to workers, volunteers, operators or members of the public, or where emergency services, the police or the regulator have attended
 - breach of work health and safety procedures relating to operating the heritage plant.

3.5 Making changes to heritage plant

If you intend to change the design of the heritage plant, the way the heritage plant is used or a system of work associated with the heritage plant, you should carry out the risk management process again.

Before making changes to heritage plant you should consult with the designer and manufacturer to ensure all safety issues have been considered. If the original designer or manufacturer cannot be contacted, which is more likely for heritage plant, the changes should be carried out by a competent person in accordance with the relevant technical standards. Where you make changes to the heritage plant you take on the obligations of a designer and manufacturer.

3.6 Maintaining, inspecting and testing

Heritage plant must be maintained, inspected and if necessary tested by a competent person in accordance with manufacturer's recommendations. If these are not available, in accordance with the recommendations of a competent person, for example this could be a member of a heritage plant association. Inspecting and testing should be done at least once a year.

A regular maintenance and inspection system can assist to identify:

- deficiencies in heritage plant or the equipment from use, e.g. wear and tear, corrosion and damaged parts
- adverse effects from changes in processes or materials
- inadequate control measures.

Heritage plant should be isolated before maintenance or cleaning starts. You should check that shutdown, whether total or partial, does not create new hazards. Isolated or disengaged heritage plant should:

- not create a risk for people operating other plant
- have guards in place where a risk of injury is identified
- not obstruct entry or exit.

A process should be put in place to communicate effectively with other people near the plant so they know when the heritage plant will be restarted after shut down so risks from the restart can be eliminated or minimised, so far as is reasonably practicable.

Where heritage plant cannot be isolated, methods to prevent accidental operation must be implemented. The work should be carried out under controlled procedures to allow for maintenance and cleaning without risk to the health and safety of the person carrying out the work.

INSPECTING HERITAGE PLANT

An inspection plan should be developed and include:

- an up-to-date register of the items of heritage plant requiring regular inspection and maintenance to track what needs to be done
- allocated responsibilities for people dealing with inspections
- standards against which heritage plant should be inspected
- how often to inspect the heritage plant
- safety instructions to be followed during inspection
- the procedures for particular types of inspections including:
 - periodic inspections specific tests
 - repaired or modified heritage plant
- reporting variations from normal operation, dangerous occurrences or trends.

Control measures should be implemented to eliminate or minimise, so far as is reasonable practicable, risks from heritage plant inspection, for example ensuring heritage plant is switched off or isolated from the energy source to avoid accidental re-energising of dangerous parts.

Mandatory record-keeping requirements apply to registered plant, see Chapter 4.

REMOVING SAFEGUARDS TO ENABLE CLEANING

Heritage plant should be safeguarded while cleaning. If during cleaning, safeguards have to be removed, the heritage plant should not be able to operate, or a way to stop accidental operation should be implemented.

Guards removed for cleaning must be replaced correctly to stop access to the hazardous part of the heritage plant before it is returned to use.

3.7 Storing heritage plant

Heritage plant not in use must be stored so it does not create a risk to people nearby. Where heritage plant is to be stored you should:

- check relevant health and safety information is given to the person who is dismantling and storing the heritage plant
- implement control measures to eliminate or, if not reasonably practicable, minimise the risks of damage to heritage plant during storage, e.g. corrosion from exposure to residues of hazardous chemicals and deterioration of consumables.

Before heritage plant is used after an extended period of storage, the heritage plant should be re-commissioned by carrying out the same level of testing and inspection when it was first commissioned.

Powered mobile heritage plant may present a risk to health or safety if measures are not taken to stop the plant moving on its own, for example, rolling down a sloping surface, or to stop unauthorised operation.

4. REGISTRATION AND LICENSING

PLANT DESIGN AND ITEM REGISTRATION

Some plant must be design and item registered. Heritage plant is not excluded from these requirements with the exception of heritage boilers, which do not need to be design registered but must item registered.

Design registration requirements may be difficult to meet because designs of heritage plant:

- may not have been recorded, are not available or reproducible
- may include inadequate details
- are based on out-dated technical standards.

Exemptions from design registration may be sought from the regulator.

If your heritage plant is registered extra record keeping requirements apply.

The person conducting the business or undertaking or person conducting the business or undertaking with management or control of the heritage plant, whichever applies, must keep a record of tests, inspections, maintenance, commissioning, decommissioning, dismantling and alterations of the heritage plant for the period of its use or until control of the plant is relinquished.

These records must be passed on to a person who buys or takes control of the heritage plant.

HIGH RISK WORK LICENSING

People who operate heritage plant may need a high risk work licence to operate it. The types of heritage plant which require a licensed operator are listed in Schedule 4 to the WHS Regulations. An example is operating a forty year old 100 tonne crawler crane.

Operators of heritage boilers are not required to hold a high risk work licence.

If you are unsure about whether you have registration or licensing obligations you should contact the regulator for more information.

VEHICLE REGISTRATION REQUIREMENTS

Vehicle registration requirements may also apply if mobile heritage plant is used on public roads, for example under full, conditional or heritage registration. For more information contact your local roads authority.

APPENDIX A - DEFINITIONS

Competent person is a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.

- For plant *design verification*, the person must have the skills, qualifications, competence and experience to verify the design.
- For *inspection of registered mobile cranes, tower cranes and amusement devices* the person must:
 - have the skills qualifications, competence and experience to inspect the plant
 - be registered under a law that provides for the registration of professional engineers, or
 - be determined by the regulator to be a competent person.

Heritage boiler means a boiler manufactured before 1952 used for a historical purpose or activity, including an activity ancillary to a historical activity. An *historical activity* is a historical display, parade, demonstration or re-enactment. An *activity ancillary* to a *historical activity* is restoring, maintaining, modifying, servicing, repairing or housing a boiler used, or to be used, for a historical activity.

Plant means machinery, equipment, appliance, container, implement and tool, and includes any component or anything fitted or connected to any of those things. Plant includes items as diverse as lifts, cranes, computers, machinery, conveyors, forklifts, power tools and amusement devices. Hand-held plant relying exclusively on manual power for its operation is not covered by the WHS Regulations.

Powered mobile heritage plant means heritage plant provided with some form of self-propulsion ordinarily under the direct control of an operator.

APPENDIX B - OTHER RELEVANT INFORMATION

The following list of published technical standards provides guidance only and compliance with them does not guarantee compliance with the WHS Act and Regulations in all instances. This list is not exhaustive.

For many items of heritage plant there is no relevant published technical standard, or where they may have existed in the past, the current versions are the result of reviews which have brought them into line with contemporary practices. However, owners and operators of heritage plant may find the technical standards listed here to be a useful source of information on the control of plant related risks.

As a duty holder you may wish to consider other technical standards for design or when selecting risk control measures.

AUSTRALIAN/NEW ZEALAND STANDARDS

| Number | Title |
|------------------|--|
| AS CB1-1952 | <i>The design, construction, inspection and operation of boilers and unfired pressure vessels; and their appurtenances (known as the SAA Boiler Code)</i> |
| AS 1112 | <i>Guards for agricultural power take-off drives</i> |
| AS/NZS 1200: | <i>Pressure Equipment</i> |
| AS 1210 | <i>Pressure Vessels</i> |
| AS 1212 | <i>Agricultural tractor power take-offs</i> |
| AS 1271 | <i>Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels</i> |
| AS 1318 | <i>The use of colour for the marking of physical hazards and the identification of certain equipment in industry (known as the SAA Industrial Safety Colours Code)</i> |
| AS 1319 | <i>Safety signs for the occupational environment</i> |
| AS 1375 | <i>Industrial fuel-fired appliances (known as the SAA Industrial Fuel - Fired Appliances Code)</i> |
| AS 1418 (Series) | <i>: Cranes, hoists and winches</i> |
| AS 1548 | <i>Steel plates for pressure equipment</i> |
| AS 1636 | <i>Agricultural wheeled tractors - Roll-over protective structures (ROPS) criteria and tests</i> |
| AS 1710 | <i>Non-destructive testing - Ultrasonic testing of carbon and low alloy steel plate - Test methods and quality classification</i> |
| AS 1732 | <i>Fusible plugs for boilers</i> |
| AS 1796 | <i>Certification of welders and welding supervisors</i> |
| AS 2062 | <i>Non-destructive testing - Penetrant testing of products and components</i> |

APPENDIX B - OTHER RELEVANT INFORMATION

| Number | Title |
|------------------|--|
| AS 2153 | <i>Guarding of agricultural tractors and machinery</i> |
| AS 2550 (Series) | <i>Cranes, hoists and winches - Safe use - General requirements</i> |
| AS 2951.3 | <i>Tractors</i> |
| AS 2593 | <i>Boilers - Safety management and supervision systems</i> |
| AS 2601 | <i>The demolition of structures</i> |
| AS/NZS 3000 | <i>Electrical installations (known as the Australian/New Zealand Wiring Rules)</i> |
| AS/NZS 3100: | <i>Approval and test specification - General requirements for electrical equipment</i> |
| AS/NZS 3190: | <i>Approval and test specification - Residual current devices (current operated earth leakage devices)</i> |
| AS/NZS 3760: | <i>In-service safety inspection and testing of electrical equipment</i> |
| AS/NZS 3788: | <i>Pressure equipment - In-service inspection</i> |
| AS 3873: | <i>Pressure equipment - Operation and maintenance</i> |
| AS 3920: | <i>Assurance of product quality</i> |
| AS 3920.1: | <i>Pressure equipment manufacture</i> |
| AS/NZS 3992: | <i>Pressure equipment - Welding and brazing qualification</i> |
| AS 4037: | <i>Pressure equipment - Examination and testing</i> |
| AS 4041: | <i>Pressure piping</i> |
| AS 4343: | <i>Pressure equipment - Hazard levels</i> |
| AS 4458: | <i>Pressure equipment - Manufacture</i> |
| AS 4481: | <i>Pressure equipment - Competencies of inspectors</i> |
| AS 4942: | <i>Pressure equipment - Glossary of terms</i> |
| SAE J167: | <i>Overhead protection for agricultural tractors - Test procedures and performance requirements</i> |

APPENDIX C - HERITAGE BOILER COMPETENCIES

The following competency elements and performance criteria for operating a heritage boiler should be included in the training and assessment process.

Each item of heritage steam plant should have an operating manual prepared by a competent person.

| Element | Performance criteria |
|--|---|
| 1. Prepare the boiler for operation | 1.1 Health and safety hazards / maintenance requirements are identified and reported to appropriate personnel 1.2 The boiler is purged according to operating manual 1.3 Fuel sources are confirmed and available 1.4 Pre-operational checks are conducted to confirm operational status of boiler and related equipment |
| 2. Start and monitor boiler operation | 2.1 The boiler is started and brought on line safely according to operation manual and specifications 2.2 Plant is operated within limits of specifications to meet operational requirements 2.3 Equipment is monitored to confirm operating condition 2.4 Water quality is tested and adjusted as required 2.5 The workplace is maintained to provide safe working environment |
| 3. Analyse and respond to abnormal performance | 3.1 Operating data and plant operating conditions are analysed to identify causes of abnormal performance 3.2 Corrective action is taken in accordance with operating manual in response to Hazards, out-of-specification test results and plant performance 3.3 Emergency procedures are implemented as required according to operation manual |
| 4. Handover boiler operations | 4.1 Operational records are maintained in accordance with statutory requirements and workplace procedures 4.2 Handover is carried out according to operation manual 4.3 Boiler operators are aware of boiler status and related equipment at completion of handover |
| 5. Carry out an operational shutdown | 5.1 The boiler is shut down according to operation manual 5.2 Maintenance requirements are identified and reported according to reporting procedures |

APPENDIX C - HERITAGE BOILER COMPETENCIES

| Element | Performance criteria |
|---|--|
| 6. Shutdown the boiler and prepare for an internal inspection | 6.1 The boiler is shut down according to operation manual 6.2 The boiler is cleaned internally and externally according to operation manual 6.3 Valves and fittings are removed in preparation for maintenance |
| 7. Store boiler in shutdown mode | 7.1 The boiler is stored in the appropriate storage mode according to operation manual |
| 8. Record information | 8.1 Operational information is recorded according to requirements |



