



## CS ENERGY PROCEDURE FOR ASBESTOS MANAGEMENT PLAN CS-OHS-43

Responsible Officer: Group Manager Health, Safety, Security and Environment  
Responsible Executive: Executive General Manager Operations

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### DOCUMENT HISTORY

Key Changes	Prepared By	Checked By	Approved By	Date
Re-write of Procedure	B Johnson	F Welch	B Andrew	01/11/2008
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## 1 PURPOSE

The purpose of an Asbestos Management Plan (AMP) is to provide guidelines for persons with control of premises to comply with the asbestos management and removal Regulations and Codes, and prevent exposure to airborne asbestos fibres while Asbestos Containing Materials (ACM) remains in-situ at the workplace, or during asbestos removal activities

CS Energy's ultimate goal is to have an asbestos-free workplace. Considering this is a long-term goal, CS Energy intends to manage asbestos hazards, and schedule ACM removal based on prioritization and assessment of risk.

Where the evaluation process reveals a likelihood of exposure to asbestos fibres, all practicable steps will be taken to ensure that employees and others are not unnecessarily exposed and associated ACM are either effectively controlled or removed.

## 2 SCOPE

This Asbestos Management Plan applies to CS Energy locations where ACM are present, and all CS Energy employees, contractors, and visitors to site.

## 3 RESPONSIBILITIES AND ACCOUNTABILITIES

### 3.1 Group Manager Health, Safety, Security and Environment

- Approve AMP
- Ensure compliance with AMP.

### 3.2 Site Manager

- Ensure persons involved with asbestos work have attended asbestos training
- Inform the Site Asbestos Officer of any asbestos work and obtain Form S1817 prior to work commencing
- Ensure legislative requirements and appropriate procedures are complied with.
- Upon job completion ensure all products are labelled as "ASBESTOS FREE" or "CONTAINS ASBESTOS "
- Report immediately to supervisor any perceived asbestos risk
- Forward completed Form S1817 to Site Asbestos Officer at job completion.

### 3.3 Supervisory Personnel

- Ensure persons involved with asbestos work have attended asbestos training
- Inform the Site Asbestos Officer of any asbestos work and obtain Form S1817 prior to work commencing
- Ensure legislative requirements and appropriate procedures are complied with.
- Upon job completion ensure all products are labelled as "ASBESTOS FREE" or "CONTAINS ASBESTOS "
- Report immediately to supervisor any perceived asbestos risk

- Forward completed Form S1817 to Site Asbestos Officer at job completion.

### **3.4 Site Health and Safety (H&S) Coordinator**

- Identify and bring to the attention of appropriate employees any suspect material
- Ensure all contractors working on asbestos are aware of and meet the requirements of the AMP
- Review Asbestos Removal Control plan, safe work method statements (SWM) and other documents produced by the certificated removalists.
- Conduct inspections on all major asbestos removal works using Form S1872 Checklist for the Removal of Friable Asbestos.

### **3.5 Site Asbestos Officer**

- Implement recommendations made in the Annual Building and Plant Asbestos Materials And Products site inspection report
- Maintain and update the Building and Plant Asbestos Materials and Products Register
- Update the Asbestos Exposure Register
- Ensure a hard copy of the Building and Plant Asbestos Materials and Products Register is current, issued, available and accessible by anyone entering the site to perform work
- Ensure as a CS Energy Representative that a Form 65 Notification of Licensed Asbestos Removal Work is lodged with Workplace Health & Safety Queensland prior to the commencement of any licensed asbestos work.
- Ensure contractors, employers or others who propose to dismantle any part of a building or essential plant, carry out work involving a part of the building or essential plant are given relevant details from the register or a copy of the register
- Review Asbestos Removal Control Plan and other SWM statements documents produced by the licensed removalists.
- Ensure a copy of the register is given to the buyer of a building or essential plant
- Ensure where a person is exposed to asbestos the process outlined in personal exposure register is followed
- Ensure corporate and site procedures are implemented in accordance with national standards and legislative requirements.
- Manage asbestos works programs including providing the Form S1817 Registration of Asbestos Removal
- Ensure that the Forms S1817 and S0268 are completed correctly, recorded, entered into the registers and archived
- Provide primary point of contact for site related asbestos issues.
- Survey, identify and sample suspected asbestos containing materials.
- Provide training and awareness to site employees and contractors.

### **3.6 Contracts Administrator**

- Ensure that a WHS Plan and WMS (work method statement) are prepared by the holder of the Asbestos Removalist certificate

- Ensure adequate resources are allocated for asbestos work
- Ensure Site Asbestos Officer and Site H&S Coordinator is advised of any asbestos works.
- Ensure contractors and workers involved in asbestos work are advised of the CS Energy AMP and any associated procedures, the site Building and Plant Asbestos Materials and Products Register and Forms S1817 and S0268
- Ensure contractors JSEAs, work method statements and asbestos removal control plans are provided to the Site Asbestos Officer promptly, to enable review and approval
- Ensure all workers involved in asbestos removal works are trained
- Monitor contract requirements for all major asbestos removal projects to ensure compliance with CSE AMP, procedures, code of practice, national standards and legislative requirements.

### **3.7 Competent Person for Asbestos Removal Work**

- Develop, review and approve asbestos removal health and safety plans, work method statements and JSEAs
- Supervise and consult with workers on all asbestos removal works
- Ensure all workers involved in major and minor asbestos removal works are trained
- Ensure compliance with all legislative requirements on all asbestos removal projects
- Conduct inspections on asbestos removal works using Form S1872 - Checklist for the Removal of Friable Asbestos.
- Conduct asbestos removal work safety inspections regularly
- Update the Building and Plant Asbestos Materials and Products Register at the completion of the works.

### **3.8 Purchasing Officers**

- Ensure the procurement of new or replacement plant and or components prohibit asbestos containing materials.
- Ensure asbestos materials or products are not sold or given to others.

### **3.9 Chemist / Asbestos Sampler**

- Organise the collection of samples to be analysed for asbestos content
- Dispatch the samples for analysis to an appropriate facility
- Coordinate the provision of testing and obtaining any subsequent reports.

### **3.10 Contractors**

- Bring to the attention of the Contract Administrator of any suspected asbestos material
- Submit risk assessment and HSE plans when performing asbestos removal work
- Develop a site-specific asbestos removal control plan prior to performing the asbestos removal work
- Undergo site induction



- Refer to CS Energy's AMP and site Building and Plant Asbestos Materials and Products Register for guidance to identify, manage and remove asbestos
- Ensure no asbestos is removed or disturbed without prior notification to their contract administrator or the Site Asbestos Officer
- Inform the Site Asbestos Officer of any asbestos work and obtain Form S1817 prior to work commencing
- Ensure legislative requirements and appropriate procedures are complied with.
- Upon job completion ensure all products are labelled using the correct identification stickers
- Report immediately to supervisor any perceived asbestos risk
- Forward completed Form S1817 to Site Asbestos Officer at job completion.

### **3.11 Employees**

- Comply with the Site AMP and any associated procedures
- Attend and comply with associated AMP training
- Ensure no asbestos is removed without prior notification to their supervisor, contract administrator or Site Asbestos Officer
- Report asbestos related hazards to the Site Asbestos Officer or supervisor immediately
- Complete S0268 Asbestos Exposure Questionnaire following a possible exposure to asbestos.

## 4 ACTIONS

### 4.1 Legislative Requirements

CS Energy has obligations under *Work Health and Safety Regulations 2011* specifically related to both the onsite management of ACM and removal of ACM. As an owner of buildings, CS Energy must comply with the Asbestos Management Code – How to Manage and Control Asbestos in the Workplace Code of Practice 2011.

Where CS Energy employees or contractors perform asbestos removal work (licensed or otherwise) CS Energy also has an obligation to comply with the How to Safely Remove Asbestos Code of Practice 2011.

On 31 December 2003, Safework Australia declared a prohibition on all uses of chrysotile (white) asbestos, and the continuation of earlier prohibitions on the use of amosite (brown) and crocidolite (blue) asbestos. No new use of ACM or reuse/reinstallation of ACM is permissible under Regulation.

### 4.2 Airborne Asbestos Fibres Exposure Health Risks

#### **Asbestos is a carcinogen and the inhalation of asbestos fibres is known to cause mesothelioma, lung cancer and asbestosis.**

**Malignant mesothelioma** is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal.

Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer. The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness.

Mesothelioma was once rare, but its incidence is increasing throughout the industrial world as a result of past exposures to asbestos. Australia has the highest incidence rate in the world.

**Lung cancer** has been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage.

**Asbestosis** is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue, which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

Asbestos poses a risk to health by inhalation whenever asbestos fibres become airborne and people are exposed to these fibres.

Accordingly, exposure should be prevented. The National Exposure Standard (NES) of 0.1 fibres/mL should never be exceeded, and control measures are to be reassessed whenever air monitoring indicates the 'control level' of 0.01 fibres/mL has been reached. The How to Safely Remove Asbestos Code of Practice provides additional information on control levels for asbestos removal work.

ACM can release asbestos fibres into the air whenever they are disturbed, and especially during the following activities:

- any direct action on ACM, such as drilling, boring, cutting, filing, brushing, grinding, sanding, breaking, smashing or blowing with compressed air (Legislation prohibits most of these actions, and the relevant laws should be checked before performing any activity on ACM);
- the inspection or removal of ACM from workplaces (including vehicles, plant and equipment);





- the maintenance or servicing of materials from vehicles, plant, equipment or workplaces;
- the renovation or demolition of buildings containing ACM.

Non-friable ACM that has been subjected to extensive weathering or deterioration also has a higher potential to release asbestos fibres into the air.

## **5 PRINCIPLES OF ASBESTOS MANAGEMENT**

### **5.1 General Principles**

CS Energy's principles of asbestos management have been adapted from the How to Manage and Control Asbestos in the Workplace Code of Practice 2011. These principles are summarized below:

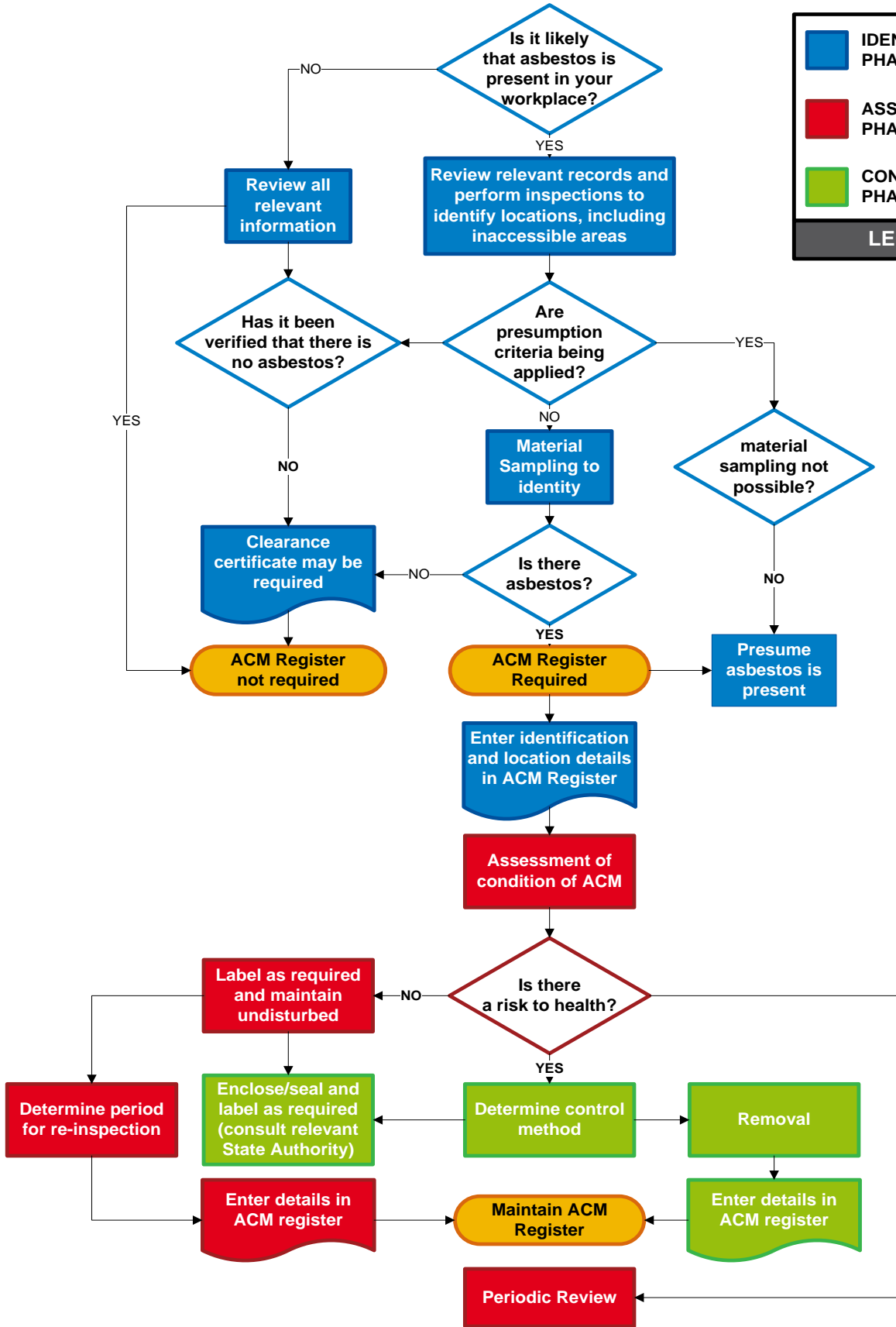
- CS Energy's ultimate goal is for all sites to be free of ACM.
- The removal of ACM during renovation, refurbishment and/or maintenance, will be a priority, (where practicable), in preference to other control measures such as enclosure, encapsulation or sealing.
- Reasonable steps will be taken to identify all possible locations of ACM. Where ACM is identified or presumed, the locations must be labelled and recorded in the Building and Plant Asbestos Materials and Products Register.
- A risk assessment must be conducted for all identified or presumed ACM
- Control measures will be established to prevent exposure to airborne asbestos fibres and will take into account the results of risk assessments conducted for the identified or presumed ACM
- If ACM is identified or presumed, workers will be consulted, involved and information provided during implementation of control measures
- Competent persons will be involved in the identification of ACM and conducting risk assessments.

All workers and contractors on premises where ACM are present, and all other persons who may be exposed to ACM, must be provided with full information on the occupational health and safety consequences of exposure to asbestos and appropriate control measures.

The provision of this information will be recorded on a CS Energy record of training attendance.



5.2 Flowchart: General Principles of this Asbestos Management Plan



### 5.3 Risk Assessment

The asbestos risk assessment process involves identifying, analysing, evaluating, controlling and monitoring sources of asbestos within buildings or other structures. The presence of asbestos within a building is considered a hazard, but the level of risk associated with the hazard is related to the presence of airborne fibres. The identification of asbestos within a building doesn't automatically necessitate its immediate removal. Asbestos that is in a stable matrix, or effectively encapsulated or sealed, and remains in a sound condition while left undisturbed, represents low risk to health.

A qualitative risk assessment is undertaken each time an asbestos survey of CS Energy buildings or structures is conducted. Each asbestos situation is allocated a high/ significant, medium or low risk rating. These ratings are defined as follows:

**Significant/High risk:** friable (unbonded) ACM that has deteriorated significantly. The material is readily accessible and prone to further disturbance, or unsealed friable asbestos material located in air conditioning systems.

**Moderate risk:** minor deterioration of the ACM is evident and/or the ACM is prone to mechanical disturbance due to routine building activity and/or maintenance.

**Low risk:** ACM shows no signs or very minor signs of damage/deterioration. Regular access to the ACM is unlikely to cause significant deterioration, if the material is adequately sealed.

If materials of unknown composition, or materials suspected of containing asbestos, are encountered on site, and are not documented in the existing asbestos register, such materials are to be sampled and treated as asbestos until sample analysis confirms otherwise. In the event that demolition or refurbishment works are to be carried out in areas previously not inspected for the presence of asbestos, such as inaccessible wall cavities or beneath floors, an inspection and risk assessment must be performed by an appropriately qualified person prior to the commencement of the planned demolition or refurbishment works.

The risk assessment of ACM is to be reviewed when:

- There is evidence that the risk assessment is no longer valid
- There is evidence that control methods are not effective
- A significant change is proposed for the workplace or work practices or procedures relevant to the risk assessment
- There is a change in condition of the ACM
- The ACM have been removed, enclosed or sealed.

Otherwise risk assessment reviews should be conducted every 5 years..

### 5.4 Controlling Asbestos Hazards

Control measures will be implemented based on the level of risk of exposure to asbestos containing materials at CS Energy sites. The control measures must be aimed at eliminating risk arising from ACM and prevent exposure to airborne asbestos fibres. After elimination, the methods adopted should follow the remaining levels within the hierarchy of controls. The following information should be used as a guide when determining the correct control method for effective ACM management.

- If the ACM is friable and not in a stable condition, and there is a risk to health, it must be removed by a licensed asbestos removalist as soon as practicable.

- If the ACM is friable but is in a stable condition and is accessible, consideration should be given to its removal. If removal is not immediately practicable, short-term control measures, such as sealing and enclosure, may be used until removal is possible.
- If the ACM is not friable and is in a good stable condition, minimizing disturbance and encapsulation may be appropriate controls.
- Any remaining ACM is to be clearly labelled, in accordance with How to Manage and Control Asbestos in the Workplace Code of Practice 2011, where possible, and regularly inspected to ensure it is not deteriorating or otherwise contributing to an unacceptable health risk.

ACM needs to be removed before demolition, partial demolition, renovation or refurbishment if it is likely to be disturbed by those works.

### **Elimination/Removal**

Removal is the preferred control option because it removes the hazard from the workplace. The removal process does pose an increased risk to personnel engaged in the removal.

Asbestos Removal work is to be performed by a licensed Asbestos Removalist, with the appropriate licence according to the type of ACM being removed. Asbestos removal work must be conducted in accordance with the How to Safely Remove Asbestos Code of Practice 2011.

### **Encapsulation/Sealing**

Encapsulation refers to the coating of the outer surface of the ACM by the application of some form of sealant compound that usually penetrates to the substrate and hardens the material. Sealing is the process of covering the surface of the material with a protective coating impervious to asbestos. Either of these options helps protect the asbestos from mechanical damage and is designed to reduce the risk of exposure by preventing the release of asbestos fibres into the airborne environment. This control method is not considered to be an acceptable alternative to repairing or removing severely damaged asbestos materials.

### **Enclosure/Isolation**

This method involves installing a barrier between the ACM and adjacent areas. This inhibits further mechanical damage to the asbestos and some friable products may be candidates for enclosure if removal is not an option. The type of barrier installed may include plywood or sheet metal constructed as boxing a cladding around the asbestos.

### **Safe Work Practices**

The Building and Plant Asbestos Containing Materials and Products Register for the site is available and must be consulted prior to commencing work, if that work could result in the generation of airborne asbestos fibres. If, after consultation with the register and conducting a risk assessment, it is determined that the type of work and the location of work to be performed would result in an unacceptable level of risk, other controls are required to be implemented.

### **Personal Protective Equipment (PPE)**

The PPE requirements for work involving ACM at CS Energy sites are to be based on the relevant risk assessment conducted by a suitably qualified person. Section 4.4 and Appendix B of the How to Safely Remove Asbestos Code of Practice 2011 must be consulted to determine the PPE needs, as well as AS/NZS 1715 and AS/NZS 1716 for specific respiratory protection requirements.

Protective clothing and equipment is to be worn at all times during work in the asbestos work area, prior to the final clearance inspection. Any PPE worn during asbestos disposal is to be treated as asbestos waste and disposed of in the approved waste bags. **The laundering of contaminated protective clothing in workers' homes is strictly prohibited.**

## 6 BUILDING AND PLANT ASBESTOS MATERIALS AND PRODUCTS REGISTER

Each site will establish and maintain a Building and Plant Asbestos Materials and Products Register, recording the specific location, condition and exposure risk of each asbestos area. The accuracy and currency of the Register will be confirmed and updated on an annual basis by conducting site inspections of each asbestos area, or areas where asbestos removal or damage has occurred.

The register is located at each site and is managed by the Site Asbestos Officer.

The register is to provide the following information on asbestos identified or presumed in the workplace, as well as items confirmed as asbestos-free:

1. Description of the building
2. Date of assessment and name of assessor
3. Register data input date
4. Location of ACM within the building
5. Form of material (tiles, gaskets, sheeting, etc)
6. Asbestos Type (based on analysis)
7. Present condition of material
8. Data source
9. Potential risk to occupants (low, medium or high)
10. Modifications to items
11. Responsible officer for modifications
12. Date of modification
13. Asbestos free items needed to be identified separately and the actual fibre type, determined through analysis, needs to be stipulated.

The Building and Plant Asbestos Materials and Products Register will be made available to all employees upon request and made clear by the competent person/team leader/supervisor to any maintenance personnel or contractor, prior to their commencing work on buildings or items of plant containing asbestos. The competent person/supervisor must advise workers of the register and if there is asbestos present, or if any other activity may cause exposure to the asbestos.

A simple, qualitative risk assessment is completed for each identified item. Each asbestos item identified is given a health risk rating (low, medium, or high), based on the location, asbestos form and type, and its present condition at the time of the site assessment. The annual asbestos inspection report will be completed by performing a visual assessment of the building or structure in question. The assessment and report is to be performed by a competent person experienced in identifying asbestos. Those areas not able to be accessed during the course of the site assessment are also to be documented.

Representative samples of materials suspected of containing asbestos are to be collected by competent persons, experienced in identifying asbestos, during the assessment. Analyses of these samples are to be performed in accordance with AS 4964 -2004 *Method for the qualitative identification of asbestos in bulk materials*. The method of identification used under this standard is polarized light microscopy (PLM) with dispersion staining. Scanning Electron Microscopy with Energy Dispersive X-Ray Analysis (SEM/EDA) will confirm difficult samples. AS 4964 details a particular analytical scheme which expresses results in the following way:

- No asbestos detected (N.A.D.) asbestos not evident by stereomicroscope and two slides prepared for "trace" PLM both have <5 asbestos fibres - roughly equivalent to <0.1g/kg.

- Trace asbestos (with type of asbestos indicated) when the two slides contain  $\geq 5$  and  $< 20$  fibres unequivocally identified asbestos fibres, or  $\geq 5$  and  $< 100$  fibres identified as asbestos but not unequivocally identified as to asbestos type.
- Asbestos detected when asbestos fibres visible by stereomicroscope and unequivocally identified by PLM as the nominated asbestos type.

Materials and products on CS Energy sites that could potentially contain asbestos include, but are not limited to:

- Thermal insulation (e.g. lagging, blankets or fire-door packing)
- Gland packing, gaskets, or expansion joints
- Brakes / clutches
- Galbestos sheeting
- “Fibro” boards and pipes (e.g. ac-sheeting in building products)
- Fireproof textiles products (e.g. high-temperature rated gloves, blankets etc).

## 7 MANAGING IN SITU ASBESTOS

The management of in situ asbestos is important to ensure ACMs are not damaged or deteriorate to such an extent that CS Energy employees, external contractors, or visitors are unnecessarily exposed to airborne asbestos fibres.

### 7.1 Asbestos Identification

Products suspected of containing asbestos and requiring identification are to be referred to the Site Asbestos Officer who will arrange for the site Chemist/Asbestos sampler to coordinate laboratory analysis by a:

- appropriately qualified person,
- external asbestos analysis consultant, or
- National Association of Testing Authorities (NATA) accredited facility.

Only trained persons are to remove samples suspected of containing asbestos. The sample is to be provided in a sealed plastic bag and labelled with the following:

- Date
- Contact name
- Location of sample (detailed description of plant area and/or equipment where sample collected from)
- Description of product type and application (e.g. insulation blocks, lagging, fibreboard, gasket, pipe etc)
- Where practical a photograph and label should be used to identify the sample location, for future reference.
- Asbestos Sample Identification Form S1914 is to be completed and attached to the sample bag.
- Samples size should, where practical be a minimum of 100 grams or the size of a matchbox.

## **WHEN IN DOUBT TREAT THE PRODUCT AS ASBESTOS CONTAINING MATERIAL UNTIL IDENTIFIED AS OTHERWISE.**

The results of all samples analysed for asbestos identification will be recorded on the Building and Plant Asbestos Materials and Products Register.

### **7.2 Asbestos Monitoring**

Monitoring shall be undertaken on sites where asbestos materials are present to determine asbestos fibre concentrations. Monitoring is to occur before, during and after planned asbestos removal work in accordance with the asbestos removal control plan.

Each site shall undertake air and dust sample monitoring at strategic points - adjacent to areas with asbestos materials or products present - at twelve monthly intervals. Test results are to be assessed and actions taken to reduce the fibre concentration in the atmosphere or dust to control levels – less than 0.01 fibres/mL. The test results are to be forwarded to the site Asbestos Officer and put on the Building and Plant Asbestos Materials and Products Register.

Monitoring must be undertaken and work needs to stop and controls re-assessed for the asbestos removal area, if the asbestos fibre concentration exceeds 0.02 fibres/mL.

### **7.3 Asbestos Material Labelling and Signage**

A labelling system (stickers or metal badges for hot areas) is established and must be maintained on site to enable the visual and legible identification of **ALL** asbestos materials recorded on the site Building and Plant Asbestos Materials and Products Register.

The labels are fixed to the plant/pipe/area (maximum distance of 1.5 meters apart) and are to be maintained in-situ at all times.

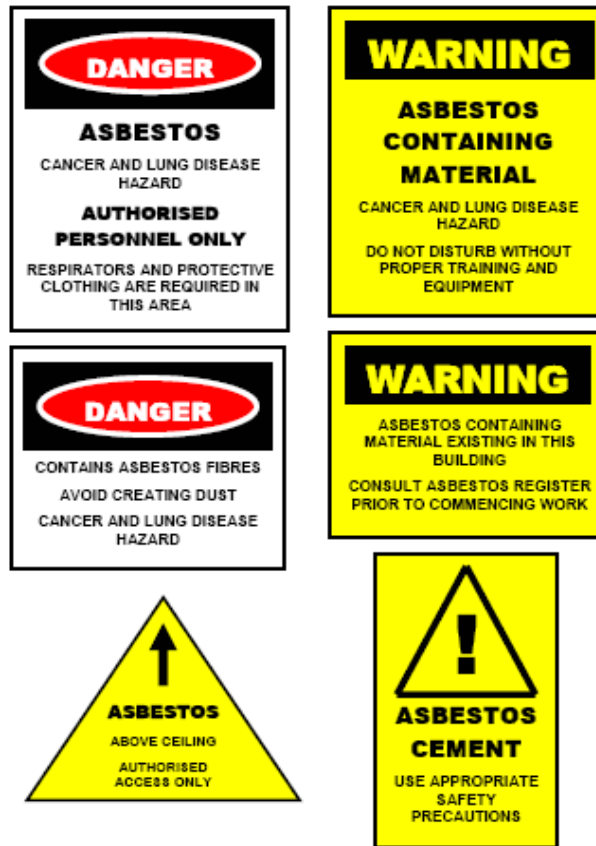
The labels used must comply with AS 1319 *Safety Signs for the Occupational Environment*, and a competent person is to determine their required location. The labels are to be affixed in a secure manner and checked annually to ensure they are not damaged, missing, obscured or faded.

If a risk assessment suggests an ACM might be disturbed or persons might be exposed and it is not practical to label the ACM (e.g. ceiling panels, furnaces or a friable ACM such as lagging) a prominent warning sign, specifying the ACM, is to be posted in the immediate vicinity. If floor tiles have been identified as containing asbestos, an appropriate warning sign, displayed on an adjacent wall might read, "WARNING FLOOR TILES CONTAIN ASBESTOS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT."

Warning signs should be placed at the main entrance to the work areas where asbestos is present. This will ensure that asbestos is not unknowingly disturbed without the correct precautions being taken.

Signs are to be displayed at the entry to the site and at site reception areas stating there is an asbestos building and plant materials and product register and when and where a person may inspect the register and the contact details for the Site Asbestos Officer.

All waste products will be packaged and labelled as asbestos at the point of removal. Materials or products that are not labelled, but could potentially contain asbestos, are to be treated as asbestos until tested and confirmed otherwise.



## 7.4 Record Keeping

All CS Energy sites shall maintain a complete record of all activities and work permits relating to asbestos works, which have been undertaken at the individual sites. The records that are to be kept include:

- Copies of all asbestos survey reports, including updates and amendments
- Copies of all permit to work documents
- Site induction records pertaining to the information disseminated to contractors prior to conducting work onsite
- Induction records pertaining to the information disseminated to employees regarding the presence of asbestos onsite
- Records of any removal or other asbestos related works onsite
- Clearance certificates indicating areas are safe to reoccupy after asbestos removal works
- Asbestos fibre air monitoring results
- All versions of the Building and Plant Asbestos Containing Materials and Products Register
- Records dealing with Regulated and Trackable Waste and landfill disposal documentation.

Re-inspections of all ACM remaining on site are to be conducted by a suitably qualified person only. The re-inspection process will involve a visual assessment of the materials to determine if there has been any deterioration since the last inspection and, if so, what course of action should be taken i.e. temporary encapsulation, isolation or immediate removal. The re-inspections are to be conducted every



5 years, or if an event likely to affect the condition/status of ACM occurs in the intervening period (e.g. adverse weather, major removals/modifications) – after that event.

Once the re-inspection has been completed, the Building and Plant Asbestos Containing Materials and Products Register are to be updated accordingly by the Site Asbestos Officer.

In legal compliance with records retention and disposal, all documentation in relation to the presence of asbestos, the removal and disposal of asbestos or staff exposure to asbestos must be retained for 100 years after the finalisation of the documentation or closure of the associated file. Records regarding the training of staff in relation to asbestos must be retained as per personnel files (80 years from date of birth or 7 years from date of separation, whichever is later).

## **8 SAFE WORK PRACTICES**

Maintenance tasks that may involve ACM at CS Energy sites are to be addressed under controlled conditions, to prevent and minimize the risk of exposure of the maintenance personnel or any other person to airborne asbestos fibres. The How to Manage and Control Asbestos in the Workplace Code of Practice 2011 details procedures to be adopted for certain maintenance tasks. These are:

- Drilling of asbestos containing materials
- Sealing, painting, coating and cleaning asbestos cement products
- Cleaning leaf litter from the gutters of asbestos cement roofs
- Replacing cabling in asbestos cement conduits or boxes
- Working on electrical mounting boards (switchboards) containing asbestos.

### **8.1 Tools and Equipment**

Tools and equipment to be used for asbestos removal work are required to generate a minimum amount of airborne fibres during use. High-speed abrasive power or pneumatic tools such as angle grinders, sanders, saws, and high-speed drills **MUST NEVER** be used. Hand tools only are permitted at the end of the removal work all tools are to be either:

- Decontaminated (i.e. fully dismantled and cleaned under controlled conditions)
- Placed in a sealed container and used only for asbestos removal work
- Disposed of as asbestos waste

### **8.2 Prohibited Practices**

Work practices that are prohibited include:

- Work practices in the vicinity of asbestos materials that may disturb or, damage the material, cladding, enclosure, sealant or containment barrier;
- Workers using a high pressure water process to clean an asbestos product or to clean up debris from an asbestos product;
- Workers using compressed air to clean an asbestos product or a surface where debris from an asbestos product is present

## 9 ASBESTOS REMOVAL

### 9.1 General

A detailed site specific Asbestos Removal Control Plan is to be developed by the asbestos removalist prior to commencing the asbestos removal work. This document must be provided to the Site Asbestos Officer before work commences. The Asbestos Removalist is also required to prepare a work method statement / job safety and environment analysis specific to the proposed removal job. The document must detail the way the work is to be performed, the specific control measures to be used, how they will be implemented and how their effectiveness is to be monitored and reviewed.

The removal of ACM will require an asbestos removal work area set up appropriate to the level of risk outlined in the risk assessment to ensure that the workplace exposure limits are not breached. Asbestos warning tape and warning signs are to be displayed.

Asbestos Removalists are to be appropriately licensed in accordance with the Workplace Health and Safety legislation. These specify that:

An **“A Class”** asbestos removal license, also known as Asbestos Removal Business Certificate, be acquired for the removal of friable asbestos containing material but the license also covers the removal of bonded asbestos material of 10m<sup>2</sup> or more.

A **“B Class”** asbestos removal license is acquired for work to remove 10sqm or more of bonded asbestos material. This license DOES NOT permit its holder to remove friable asbestos.

Asbestos Removalists must also have a current Workers Compensation Insurance Professional Indemnity and Public Liability Policies.

### 9.2 Removal Procedures

Work Procedures (depending on the type of ACM being removed, whether it is bonded or friable), are to ensure that exposure to airborne asbestos fibres is minimized and remain under the control levels and exposure standards.

The How to Safely Remove Asbestos Code of Practice 2011 details procedures to be strictly followed when any of the following materials are removed:

- Asbestos-Cement Products
- Vinyl Floor Tiles and Sheet Vinyl containing asbestos
- Asbestos backed vinyl and millboard from beneath a vinyl floor
- Asbestos gaskets and ropes from plant and equipment
- Asbestos switchboards or meter boards
- Asbestos mastics and bitumen
- Removal and cleaning of ceiling tiles
- Asbestos friction products

CS Energy will only approve the removal of asbestos from hot metal or machinery in emergency situations. The removal of friable ACM from hot metal presents one of the worst conditions for removal due to airborne asbestos fibres being able to readily spread on convection currents in the air. All removal work (except emergencies) needs to be adequately scheduled and planned around outages, with sufficient time being allowed for metal/machinery to cool down before work begins.

Removal is also to include a program of air monitoring and reporting of the results and documents to the Site Asbestos Officer.

### 9.3 Asbestos Removal Control Plan

The asbestos removalist is to develop a site-specific control plan before commencing any asbestos removal work. The asbestos removal control plan is to include specifications and/or drawings addressing at least all of the items, which are relevant to the particular removal job. Additional information should be included for each individual removal job as necessary. The asbestos removal control plan is to be provided to the Site Asbestos Officer for review and consent. Table 1 details information to be included in the asbestos removal control plan for buildings, structures, plant and equipment.

<b>TABLE 1 - COMPONENTS OF THE ASBESTOS REMOVAL CONTROL PLAN</b>	
<b>1. Identification</b>	<ul style="list-style-type: none"> <li>• Details of the ACM to be removed (e.g. the location(s), whether it is friable or non-friable, type, condition and the quantity to be removed)</li> </ul>
<b>2. Preparation</b>	<ul style="list-style-type: none"> <li>• Consultation</li> <li>• Assigned responsibilities for the removal</li> <li>• Program of commencement and completion dates</li> <li>• Emergency Plans</li> <li>• Asbestos removal boundaries, including the type and extent of isolation required and the location of any signs and barriers.</li> <li>• Control of electrical and lighting installations</li> <li>• Personal protective equipment (PPE) to be used, including respiratory protective equipment (RPE)</li> <li>• Details of air monitoring program</li> <li>• Waste storage and disposal program.</li> </ul>
<b>3. Removal</b>	<ul style="list-style-type: none"> <li>• Methods for removing the ACM (wet or dry methods)</li> <li>• Asbestos removal equipment (spray equipment, asbestos vacuum cleaners, cutting tools, etc).</li> <li>• Details on required enclosures, including details on their size, shape structure, etc, smoke testing enclosures, and the location of negative pressure exhaust units.</li> <li>• Details on temporary buildings required by the asbestos removalist (e.g. decontamination units), including details on water, lighting and power requirements, negative air pressure exhaust units and the locations of decontamination units.</li> <li>• Other control measures to be used to contain asbestos within the asbestos work area.</li> </ul>
<b>4. Decontamination</b>	<ul style="list-style-type: none"> <li>• Detailed procedures for workplace decontamination, the decontamination of tools and equipment, personal decontamination and the decontamination of non-disposable PPE and RPE.</li> </ul>
<b>5. Waste Disposal</b>	<ul style="list-style-type: none"> <li>• Methods of disposing of asbestos wastes, including details on the disposal of: <ul style="list-style-type: none"> <li>- disposable protective clothing and equipment, and</li> <li>- the structure(s) used to enclose the removal area.</li> </ul> </li> </ul>
<b>6. Air Monitoring</b>	<ul style="list-style-type: none"> <li>• Location, types and methods, for monitoring airborne fibres and dusts.</li> <li>• Ways of communicating monitoring results to workers</li> </ul>



TABLE 1 - COMPONENTS OF THE ASBESTOS REMOVAL CONTROL PLAN	
7. Training	<ul style="list-style-type: none"> <li>• Training that reflects the specific types of asbestos work to be undertaken.</li> <li>• Keeping written records of inductions and asbestos awareness training.</li> </ul>
8. Health Surveillance	<ul style="list-style-type: none"> <li>• Details on any exposures to asbestos by workers.</li> <li>• Details on all asbestos workers health records</li> </ul>

**9.4 Communications**

The removal of ACM on site requires certain people to be informed of the processes involved. This communication will ensure those involved and impacted upon will have a better understanding of the process.

**Small Asbestos Removal Job (Class B Licensed Work)**

A job that may require only a few items, that is small in size, low in risk, and in a location that has minimal or no disruption to occupants of the building/plant area, to be removed. This information will be based on the risk assessment of the job. It will have, visible asbestos warning barricading.

1. The Site Asbestos Officer is to inform the person in charge of the area and other associated workers of the removal of asbestos from the building/plant area prior to the asbestos removal work commencing (e.g.: via safety toolbox talks).
2. Information given is to include size, location, risk, removal dates, removal method and any other special precautions.
3. An inspection of the work is to be conducted by the competent person and/or the Site Asbestos Officer using the Form S1913 Checklist for the Removal of Bonded Asbestos Containing Materials.

The Site Asbestos Officer must keep a record of the communications given and the checklists.

**Major Asbestos Removal Job (Class A Licensed Work)**

A job that requires more than a few items or large areas of ACM to be removed. It may be of moderate/significant or high risk, is in a location that will cause disruption to the building/plant area occupants during the removal process and is to include visible asbestos warning barricading and signage.

1. The Site Asbestos Officer is to conduct a meeting with the Site Management Team and the Workplace Health and Safety Committee. Topics discussed are to include relevant details of the job:
  - the asbestos removal control plan,
  - areas/locations affected,
  - times and dates of removal,
  - safety precautions,
  - risk of the materials being removed,
  - areas that will be closed during the removal, and
  - risks and health effects of exposure to asbestos.
2. This meeting is to be held well in advance of the actual asbestos removal so that the Site Manager, Superintendents and Supervisors can then have a team meeting to disseminate the information.

3. Regular inspections of the asbestos removal work are to be conducted by the competent person and/or the Site Asbestos Officer using the Form S1872 Checklist for the Removal of Friable Asbestos.

A record of the topics discussed as well as of those in attendance is to be kept and copies of the checklists are also to be kept.

## 9.5 Removal Program

The removal of ACM at CS Energy sites will be based on the following guidelines in order of priority:

1. Removal of any friable ACM as identified on the register and any other friable situation as identified
2. Removal of any ACM involved in any refurbishment job, overhaul or forced outage
3. Removal of any ACM impacted upon during any maintenance or service work
4. Removal of any medium risk items as identified on the register
5. Removal of any low risk item as identified on the register.

## 9.6 Air Monitoring

Air monitoring is to be performed wherever ACM are being removed, to ensure the control measures are effective.

The competent person for the asbestos removal control plan is to determine all air monitoring requirements. The monitoring program will address:

- The location, rate and frequency of sampling;
- Whether is necessary to monitor air quality in areas adjacent to, above and below the asbestos work area, taking account of the potential exposures of occupants of these areas: and
- Whether additional routine air sampling is warranted in (for example) nearby high occupancy areas.

A documented air-monitoring program is to be developed. The air-monitoring program is to include requirements for clearance monitoring. An air-monitoring program is recommended for the removal of non-friable ACM, as it is good occupational hygiene practice. The air monitoring is to be performed in accordance with the *Safe Work Australia Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [(NOHSC: 3003 (2005))].

Asbestos removal work must not commence until the air monitoring has commenced.

If an enclosure is used, air monitoring is to occur:

- Prior to any work (background monitoring);
- At least daily at the boundary of the asbestos work area;
- As part of preliminary clearance monitoring, following a satisfactory visual inspection;
- During dismantling of the enclosure, and
- As part of the final clearance inspection.

If an enclosure and a decontamination unit are used, air quality must be monitored at the following locations:

- The clean side of the de contamination unit;
- The change area;
- The lunch room (where applicable)



- The laundry; and
- The surroundings of the asbestos work area including in the vicinity of the negative are exhaust (where possible).

*Note: air monitoring of the exhaust from the extraction unit is a specialised task. The membrane filter method (MFM) is unsuitable, because the results obtained do not always truly reflect actual fibre concentrations in the exhaust air, and air monitoring devices should not be positioned at the exit point of a negative pressure exhaust air unit, because this can lead to unwarranted confidence in the filter's integrity.*

The results of all air monitoring are to be provided to all relevant parties as soon as possible.

### 9.7 Control Levels for Monitoring Airborne Asbestos Fibres

“Control levels” are airborne asbestos fibre concentrations, which, if exceeded, indicate there is a need to review current control measures or take other action. These control levels are occupational hygiene “best practice” and are not health-based standards (they are below the concentration set in the NES for asbestos).

The control levels shown in the table below are to be used to determine the effectiveness of control measures:

Control Level (airborne asbestos fibres / mL)	Control / Action
<0.01	Continue with control measures
≥0.01	Review control measures
≥0.02	Stop removal work and find the cause

### 9.8 Decontamination

The type of decontamination required will depend on the type of asbestos (i.e. friable or non friable), the work methods used and the removal area site conditions.

## 10 WASTE REMOVAL AND DISPOSAL

### 10.1 Waste Removal and Containment

Asbestos waste, including contaminated PPE and cleaning materials (e.g. cleaning rags and plastic sheeting used to cover surfaces in the asbestos work area) are to be removed and disposed of into bags.

Loose asbestos waste is not to be allowed to accumulate within the asbestos work area. It must be collected and disposed of in asbestos waste bags and/or in a solid, sealable asbestos waste container, such as a bin or drum, if storage is required.

Controlled wetting of asbestos waste is to be done to reduce the possibility of dust emissions during the bagging or other containment of the waste.

If asbestos waste cannot be disposed of immediately (e.g. because of volume requirements for disposal), it is to be stored in a solid waste drum, bin or container or skip and sealed and secured upon the completion of each day's work so that unauthorized access is prevented.

**Waste Bags:** asbestos waste is to be collected in heavy-duty 200 µm (minimum thickness) polythene bags that are no more than 1,200 mm long and 900 mm wide. The bags are to be labelled with an

appropriate warning, clearly stating that they contain asbestos and that dust creation and inhalation should be avoided.

An example of a warning statement, which might be used, is:

**CAUTION – ASBESTOS. DO NOT DAMAGE OR OPEN BAG. DO NOT INHALE DUST. CANCER AND LUNG DISEASE HAZARD.**

Only previously unused bags are to be used, and bags marked for asbestos waste are not to be used for any other purpose. Hard and sharp asbestos waste requires preliminary sealing or a protective covering before it is placed in the waste bags, to minimize the risk of damage to the bags.

In order to further minimize the risk of a bag tearing or splitting, and also to assist in manual handling, asbestos waste bags are not to be filled more than half full and excess air should be gently evacuated from the waste bag, in a manner that does not cause the release of dust. Consistent with good manual handling practices, the weight of the bags should also not exceed 16kg.

The bags are to be twisted tightly, folded over and the neck secured in the folded position with adhesive tape or any other effective method. The external surface of each bag is to be cleaned to remove any adhering dust before the bag is removed from the asbestos work area. All asbestos waste is to be double bagged outside the work area immediately following the decontamination process.

**Waste drums and bins:** all drums or bins used for the storage and disposal of asbestos waste must be in a good condition, with lids and rims in good working order, and free of hazardous residues.

The drums or bins must be lined with plastic (minimum 200 µm thickness), and labels warning of the asbestos waste are to be placed on the top and side of each drum or bin, with the words, 'Danger: asbestos. Do not break seal' or a similar warning.

If the drum or bin is to be re-used, the asbestos waste must be packed and sealed so that when the drum or bin is emptied there is no residual asbestos contamination.

Where possible, the drums or bins should be placed in the asbestos work area before work on ACM begins and should remain there until the clearance inspection has been completed. At the completion of the maintenance or service work the drums or bins should have their rims sealed and their outer surfaces wet wiped and inspected as part of the clearance procedure before they are removed from the asbestos work area.

If it is not possible to locate the drums or bins inside the asbestos work area, they should be located as close to the work area as possible. Drums or bins should not be moved manually once they have been filled. Trolleys or drum lifters should be used. Bins and hoppers, used to contain the bagged asbestos waste, need to be kept in an area where they are unaffected by weather conditions (e.g. filling with rain water).

**Waste skips or Storage Containers:** if it is not feasible to use asbestos waste bags, drums or bins, because of the volume or size of the asbestos wastes, a well-maintained waste skip, vehicle tray or similar container may be used.

The ACM must be sealed in double-lined, heavy-duty plastic sheeting or double bagged before they are placed in the skip. However, non-friable asbestos waste may be placed directly into a skip or vehicle tray that has been double lined with heavy-duty plastic sheeting (200µm minimum thickness), provided it is kept damp to minimize the generation of airborne asbestos fibres.

Once the skip is full, its contents are to be completely sealed with the plastic sheeting.

If a skip or container is to be used for storing the asbestos waste its contents must be able to be secured (e.g. using a lockable lid) and placarding provided on the exterior of the container identifying the contents.

## 10.2 Onsite Waste Transportation

The routes used for removing waste from the asbestos work area are to be designated in the Asbestos Removal Control Plan before the commencement of each removal. A competent person, following discussions with the asbestos removalist, should determine the methods used to transport wastes through a building. In occupied buildings, all movements of waste bags should occur outside normal working hours.

Once the waste bags have been removed from the asbestos work area, they are to be either:

- be placed in a solid waste drum, bin or skip; or
- be removed from the site by an approved and licensed carrier.

Waste bags should not be stored at the asbestos removal site if they are not placed in an asbestos waste drum, bin or skip. Drums or bins used to store asbestos waste should be stored in a secure location when they are not in use.

## 10.3 Offsite Waste Transportation

ACM is both a Regulated and Trackable Waste under the *Environmental Protection (waste management) Regulation 2000* (Schedules 1 & 7). Waste tracking documentation must be completed with appropriate copies being retained for CS Energy's records and forwarded to the Department of Environment & Heritage Protection.

Transport and final disposal of asbestos waste material shall be carried out by a competent person who carries certification as a transporter of hazardous materials in asbestos waste and in a manner that will prevent the liberation of asbestos dust to the atmosphere.

All asbestos waste material shall be buried at an approved landfill site and in a manner approved by the local and state authorities. Prior to payment of invoices CS Energy must receive copies of waste disposal receipts, as provided by the approved landfills.

All details of offsite disposal are to be included in the asbestos removal control plan.

Building materials are to be re-used or recycled unless they have undergone full successful decontamination. If this can't be achieved then the building materials are to be treated as asbestos waste and disposed of accordingly.

All waste disposals shall be recorded (date, quantity, disposal contract etc) in an appropriate register (e.g. within the sites waste management plans for disposal of regulated wastes).

Where any buildings or essential plant are disposed of (offered for sale or lease, dismantled or demolished) and contain asbestos materials or products, the new owner/buyer is to be given a copy of the asbestos report and register relevant to the building or item of plant.

## 11 PROJECT SUPERVISION

During any large asbestos removal jobs or the removal of any high-risk ACM, the Site Asbestos Officer is to maintain a presence at the removal site, and liaise with the appointed asbestos removal contractor, to ensure that the removal process runs according to both the CS Energy Asbestos Management Plan, and/or the asbestos removal control plan developed by the removal contractor.

It might also be decided that an appropriately qualified occupational hygienist, with experience in asbestos abatement works, shall be engaged for the duration of the removal project, depending on the size of the removal job and level of risk associated with it





## 12 CLEARANCE INSPECTIONS

Clearance to re-occupy an asbestos work area is determined by a thorough clearance inspection conducted by a competent person. All of the barriers, warning barricade tape and warning signs are to remain in place until the clearance certificate to re-occupy has been granted.

A clearance certificate is to be provided to CS Energy by the asbestos removal contractor at the completion of the work and monitoring.

The need for clearance monitoring will be assessed as part of asbestos removal control plan and for undertaking any maintenance work involving ACM. It will be undertaken by a competent person, independent of the person conducting the asbestos work, after cleaning has been completed and the area dried.

Air samples are to be taken in the asbestos work area. For jobs involving an enclosed area, this is to be done within the enclosed area, following the completion of the work but prior to the removal of the enclosure and again after the removal of the enclosure.

The removal, cleaning and clearance work will not be considered completed until an airborne fibre level of less than 0.01 fibres/mL has been achieved, as determined by the clearance monitoring.

### **Settled Dust Sampling**

This sampling only provides an indication of cleanliness following disturbances of ACM and should not be used as an indicator of risk to health. Any settled dust sampling criteria are to be developed by discussion with the Site Asbestos Officer and a competent person undertaking a visual inspection of the area.

## 13 EMERGENCY RESPONSE PROCEDURES

### 13.1 Evacuation Event

An emergency associated with the potential for exposure to airborne asbestos fibres within a building or across the power station site may necessitate the need to evacuate. Site procedures for evacuation are to be conveyed to contractors and employees during the site induction. The risks associated with any asbestos removal work should be assessed and include contingencies in the case of an emergency.

Decontamination procedures can be temporarily waived in the event of an emergency requiring evacuation. This is to be based on an informal risk assessment conducted at the time.

Persons involved in asbestos removal must evacuate to the evacuation assembly point but remain downwind to ensure any fibres remaining on clothes, as a result of not decontaminating completely, do not enter the breathing space of others.

Upon arrival at the evacuation point, emergency wardens and health and safety personnel are to be notified of the status of the asbestos removal work and the assessed level of risk associated, as well as the assessed level of risk associated with asbestos removalists not undergoing the complete decontamination process

Events likely to require evacuation during asbestos removal work include but are not limited to:

- Fire evacuation
- Chemical spill and contamination
- Gas leak/contaminated atmosphere

## 13.2 Spills

Where suspected spills or damage have occurred to asbestos material, lagging, sealants, covers etc. the following is to be implemented:

- The site emergency contact number is to be used to report the location of the potential contamination as well as following the requirements of the CS Energy Incident Management Procedure CS-IM-1,
- Asbestos trained workers are to respond (wearing suitable respiratory protection, gloves and disposable coveralls), assess the risks associated with the spill and secure the affected area, plant or equipment using asbestos warning tape and signs,
- Ensure any exhaust extraction, air conditioning systems, fans, wind sources are controlled to prevent further spread of the contamination,
- The areas below and adjacent or above are secured and barricaded with asbestos warning tape to prevent materials dropping or passing into those areas – (attention is to be paid to ledges, tops of ducts / pipes, cracks in the floor, folds in the cladding, crevices and material in the grid mesh flooring),
- Use surface soaking sprays to wet down the material and obtain a bagged sample of the suspect material, or
- Use plastic sheeting and adhesive tape to seal or encapsulate the affected area or plant,
- Use materials such as plastic drop sheets, bunding material and or suitable adsorbent material to contain the water spray and run off,
- Clean up the affected areas using suitable tools (soft brushes, mops, dust pans etc.) and if necessary vacuum using HEPA filters,
- Apply sealant or repairs to the damaged areas to prevent further contamination,
- Inspect the work to ensure all suspect materials have been removed,
- All contaminated articles and clothing are to be bagged in suitable asbestos disposal bags and be disposed off as asbestos waste,
- Set up an air monitor in the work area to monitor airborne fibre concentrations and secure the work area until the results are obtained,
- Send the sample off for testing and determine if it contains asbestos
- Undertake further asbestos removal work to make the area safe using a safe work method statement and an asbestos removalist,
- Provide details of the material sample results and monitoring results to the workers involved who may have been exposed,
- Undertake medical assessments of the workers involved who may have been exposed and provide copies of the assessments to the workers.
- Have the workers who were potentially exposed to uncontrolled asbestos fibres complete a Form S0268 – Asbestos Exposure Questionnaire
- Maintain records of the incident reporting, investigation and health assessments with the Asbestos Exposure Register.



## 14 AWARENESS TRAINING

### 14.1 Asbestos Removalists

Persons carrying out asbestos removal work are to be trained so they can carry out this work safely and without risk to their own health or the health of others. This training must reflect the specific type of asbestos work to be undertaken.

Asbestos Removalists are to keep written records of all training provided to their asbestos removal workers and these records should be requested before awarding the contract for any site removal work.

### 14.2 Site Employees

Any CS Energy employees and others who may come into contact with ACM on a CS Energy site, either directly or indirectly, must be provided with adequate information and training.

Depending on the circumstances the asbestos awareness training may include:

- the purpose of the training;
- the health risks of asbestos;
- the types, uses and likely occurrence of ACM in buildings, plant and/or equipment at the specific CS Energy site;
- the trainees' roles and responsibilities under the CS Energy asbestos management plan;
- where each site-specific register of ACM is located and how it can be accessed;
- the timetable for removal of ACM from the particular CS Energy site;
- the processes and procedures to be followed to prevent exposure, including exposure from any accidental release of asbestos dust into the workplace;
- where applicable, the correct use of maintenance and control measures, protective equipment and work methods to minimize the risks from asbestos, limit the exposure of workers and limit the spread of asbestos fibres outside any asbestos work area;
- the NES and control levels for asbestos; and
- the purpose of any air monitoring or health surveillance that may occur.

## 15 ASBESTOS EXPOSURE REGISTER

CS Energy will maintain an asbestos exposure register that records persons that have been exposed, have potentially been exposed or have worked in close proximity to asbestos materials.

Workers are to complete Form S0268 Asbestos Exposure Questionnaire and give a copy to the Site Asbestos Officer who will update the site register accordingly. A copy of the Form S0268 is to be kept by the worker and their employer.

## 16 HEALTH SURVEILLANCE

Health surveillance is an important part of the monitoring of exposure to hazardous substances, including asbestos, to ensure the health and safety of people in workplaces.

One of its main purposes is to ensure that control measures are effective and provide an opportunity to reinforce specific preventative measure and safe work practices.

CS Energy will ensure any asbestos workers are provided with medical documentation associated with an annual medical health surveillance. The assessment will be conducted in accordance with the *Guidelines for Health Surveillance* (NOHSC: 7039:1995) by registered medical practitioners. Medical records are to be held with the workers personnel file and be protected by the relevant procedures for Privacy and Confidentiality.

## 17 DEFINITIONS

Term	Definition
<b>Air Monitoring</b>	Airborne asbestos fibre sampling to assist in assessing exposures and the effectiveness of control measures. Air monitoring includes exposure monitoring, control monitoring and clearance monitoring.  <i>Note: Air monitoring is to be undertaken in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)].</i>
<b>Airborne Asbestos Fibres</b>	Any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable asbestos fibres (those fibres less than 3 µm wide, more than 5 µm long and with a length to width ratio of more than 3 to 1) are counted. <i>Note: Airborne asbestos fibres are generated by the mechanical disintegration of Asbestos-Containing Materials (ACM) and subsequent dispersion of the fibres into the air from activities such as mining and the use, removal and disposal of asbestos and ACM. Airborne dust has the potential to contain respirable asbestos fibres.</i>
<b>Asbestos</b>	The fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos), tremolite, or any mixture containing one or more of the mineral silicates belonging to the serpentine and amphibole groups.
<b>Asbestos Cement (AC)</b>	Products consisting of sand aggregate and cement reinforced with asbestos fibres (e.g. asbestos cement pipes and flat or corrugated asbestos cement sheets).
<b>Asbestos-Containing Material (ACM)</b>	Any material, object, product or debris that contains asbestos.  <i>Note: Information for determining if a material contains asbestos is provided in [NOHSC: 2018 (2005)] Appendix A - Examples of Asbestos-Containing Materials.</i>
<b>Asbestos Management Code The</b>	Safe Work Australia's How to Manage and Control Asbestos in the Workplace Code of Practice 2011.
<b>Asbestos Removalist</b>	A competent and licensed person who performs asbestos removal work.  <i>Note: An asbestos removal licence is required in Queensland for the removal of any quantity of friable ACM. Queensland also requires a licence for the removal of 10m<sup>2</sup> or more of bonded asbestos</i>
<b>Asbestos Removal Code The</b>	How to Safely Remove Asbestos Code of Practice 2011.
<b>Asbestos Waste</b>	All removed ACM and disposable items used during the asbestos work, such as plastic sheeting used to cover surfaces in the asbestos work area, disposable coveralls, disposable respirators, and rags used for cleaning
<b>Asbestos Work Area</b>	The immediate area in which work on ACM is taking place. The boundaries of the asbestos work area must be determined by a risk assessment.  <i>Note: The asbestos work area includes the boundaries of an enclosure or barriers set up to warn or restrict access to the area where the asbestos work is being undertaken</i>

Term	Definition
<b>Bonded Asbestos Material</b>	Any material that contains asbestos in a bonded matrix. It may consist of Portland cement or various resins/binders, and it cannot be crushed by hand when dry. Asbestos cement (AC) products and electrical meter boards in good condition are examples of bonded asbestos material.
<b>Clearance Inspection</b>	An inspection, carried out by a licensed asbestos assessor, to verify that an asbestos work area is safe to be returned to normal use after work involving the disturbance of ACM has taken place. A clearance inspection must include a visual inspection, and may also include clearance monitoring and/or settled dust sampling. A clearance inspection must be completed for all licensed asbestos removal work.  <i>Note: A clearance inspection should only be carried out when the asbestos work area is dry. Until 31 December 2014 a clearance inspection for Class B removal work may also be performed by a competent person.</i>
<b>Clearance Monitoring</b>	Air monitoring using static or positional samples to measure the level of airborne asbestos fibres in an area following work on ACM. An area is 'cleared' when the level of airborne asbestos fibres is measured as being below 0.01 fibres/mL.  <i>Note: Static or positional samples are taken at fixed locations which are usually between one and two meters above floor level</i>
<b>Competent Person (asbestos removal)</b>	A person who has received specific training for asbestos removal from a Registered Training Organization (RTO) as well as sufficient knowledge, experience and skill and is working under the direction of a Licensed Asbestos Removalist. The person must be directly engaged with the work and supervise the asbestos removal.  <i>Note: A license may be required for some of the tasks described in this document as requiring a competent person.</i>
<b>Control Level</b>	The airborne concentration of a particular substance, which, if exceeded, indicates a need to implement a control, action or other requirement. Control levels are generally set at no more than half the National Exposure Standard (NES) for the substance. Control levels are occupational hygiene 'best practice', and are not health-based standards.  <i>Note: The first Control Level for Asbestos is set at 0.01 fibres/mL of air.</i>
<b>Control Monitoring</b>	Air monitoring, using static or positional to measure the level of airborne asbestos fibres in an area during work on ACM. Control monitoring is designed to assist in assessing the effectiveness of control measures. Its results are not representative of actual occupational exposures, and should not be used for that purpose.  <i>Note: Static or positional samples are taken at fixed locations which are usually between one and two meters above floor level.</i>
<b>Exposure Monitoring</b>	Air monitoring to determine a person's likely exposure to a hazardous substance. Exposure monitoring is designed to reliably estimate the person's exposure, so that it may be compared with the NES.  <i>Note: Exposure monitoring includes airborne asbestos fibre sampling, analysis, estimation of time-weighted average exposure and interpretation. Samples are taken within the breathing zone and are usually obtained by fastening the filter holder to the worker's jacket lapel.</i>

Term	Definition
<b>Friable (Asbestos)</b>	Asbestos-containing material which, when dry, is or may become crumbled, pulverized or reduced to powder by hand pressure.  <i>Note: This may include ACM that have been subjected to conditions that leave them in a state where they meet the above definition, such as weathering, physical damage, water damage etc.</i>
<b>Hazard</b>	Any matter, thing, process or practice that may cause death, injury, illness or disease.
<b>In situ</b>	Fixed or installed in its original position, not having been moved.
<b>Licensed Asbestos Removal Work</b>	Removal of bonded asbestos exceeding 10m <sup>2</sup> or removal of any amount of friable asbestos.
<b>National Exposure Standard (NES)</b>	An airborne concentration of a particular substance, within the worker's breathing zone, which according to current knowledge, should not cause adverse health effects or undue discomfort to nearly all workers. NES are established, from time to time, by Safe Work Australia and are published on the HSIS website.  <i>Note: The NES for all forms of asbestos is 0.1 fibres/mL of air, measured using the Membrane Filter Method (MFM)</i>
<b>Personal Protective Equipment (PPE)</b>	Equipment and clothing that is used or worn by an individual person to protect them against, or minimise their exposure to, workplace risks. It includes items such as facemasks and respirators, coveralls, goggles, helmets, gloves and footwear, (refer to Appendix B – "Respiratory Protective Equipment" in the How to Safely Remove Asbestos Code of Practice 2011.
<b>Respirable Asbestos Fibre</b>	A fibre of asbestos small enough to penetrate into the gas exchange regions of the lungs.
<b>Risk</b>	The likelihood of a hazard causing harm to a person.  <i>Note: In this document, risk relates to illness or disease arising from exposure to airborne asbestos fibres</i>

## 18 REFERENCES

Reference No	Reference Title	Author
	How to Safely Remove Asbestos Code of Practice 2011	
	How to Manage and Control Asbestos in the Workplace Code of Practice 2011	
	AS 1319 – Safety Signs for the Occupational Environment	Standards Aust
	AS 4260 – High Efficiency Particulate Air (HEPA) Filters – Classification, Construction and Performance	Standards Aust
	AS 1716 – Respiratory Protective Devices	Standards Aust
	Workplace Health and Safety Act 2011	Qld Govt
	Work Health and Safety Regulations 2011	Qld Govt
<a href="#">"B/D/11/36163"</a>	Form - S1913 - Asbestos Removal Control Checklist	CS Energy
<a href="#">"B/D/11/36165"</a>	Form - S1914 - Asbestos Sample Identification	CS Energy
<a href="#">"B/D/11/36215"</a>	Form - S0268 - Asbestos Exposure Questionnaire	CS Energy
<a href="#">"B/D/11/36148"</a>	Form - S1817 - Registration of Asbestos Removal	CS Energy
<a href="#">"B/D/12/15452"</a>	Form - S1872 - Checklist for Removal of Friable Asbestos	CS Energy