CS ENERGY PROCEDURE FOR

MANAGEMENT OF LEAD PAINT

CS-OHS-18

Contents

RESPONSIBLE OFFICER: Corporate H&S Co-ordinator

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1. Purpose

This procedure defines the requirements for the management of lead-containing paint on CS Energy sites. Management of lead-containing paint is necessary as exposure to lead, which can be absorbed through the skin, can cause lead poisoning, which effects the body in numerous ways. These effects may include nausea, severe abdominal pain, paralysis of limb function, reduction in brain function and kidney damage.

This procedure covers new and existing applications of lead paint, the identification of lead paint, selection of an appropriate maintenance strategy, risk assessment, protection of workers, emissions monitoring, containment and waste disposal. This procedure may also be suitable for the management of other hazardous coatings such as zinc-chromate and other chromate-based paints.

2. Scope

This procedure shall apply throughout CS Energy.

3. Actions

All surface preparation, lead paint removal and application of protective coatings shall be supervised by a person:

- holding a Painting Contractor Certification Program Class 5 (PCCP Certification Guide Draft); or
- having training and experience to that level of competency.

3.1 New Applications

Where the application of lead-based paint is considered necessary, approval must be given by the Site Manager on the recommendation of a suitably qualified person eg. Materials Scientist. New applications must be documented in the lead paint register. A management strategy for the plant / structure must also be recorded in the lead paint register.

3.2 Existing Lead Paint Applications

3.2.1 Assessment of the Presence of Lead

Before selecting a maintenance strategy and whether specific methods of paint removal and control will be required, an approved assessor shall ascertain if lead-containing paint is present on all or part of the plant / structure.

When the presence of lead is found to be unevenly distributed and the lead-containing sections cannot be isolated for special control, then the entire structure shall be assessed as containing lead.

3.2.2 Coating Management Strategy

A suitably qualified person shall assess the condition of the existing coatings and recommend a suitable management strategy for the plant / structure. In considering the management strategy to be used, the following shall be considered:

- size and location of plant / structure;
- condition of existing paint;
- coating removal method;
- class of preparation required for proposed coating and its service;
- the future management plan for the plant / structure;
- type and quantity of emissions generated; and
- use of contractors.

The management strategy shall be documented in the Lead Paint Register.

3.2.3 Risk Assessment

A risk assessment of the potential impact of lead-containing dust or paint chips on the health of the workers performing paint removal, adjacent workers, containment and debris collection and the surrounding environment shall be conducted:

- prior to maintenance of the plant/structure;
- within 4 weeks of the job being introduced; and
- for a lead-risk job within one year of the last assessment.

If the job is assessed to be a lead-risk job (Appendix A) then:

- a plan for minimising risk to health and the environment must be developed and implemented;
- a monitoring program (health and atmosphere) must be developed and implemented; and
- the Chief Executive, Division Workplace Health & Safety must be notified within 28 days of the assessment.

Risk assessment records must contain:

- the date when the assessment was done;
- results of all testing and atmospheric monitoring;
- whether the job is assessed to be a lead-risk job; and
- the name of the person/s conducting the assessment.

If the job is assessed to be a lead-risk job the records must be kept for 30 years form the day they were made and should also include:

- the lead product involved;
- control measures in place when the assessment was done and to be implemented; and
- monitoring programs to be implemented.

If the risk assessment shows that a job is not a lead-risk job the risk assessment records must be kept for 5 years from the day the records were made. Consideration should be given to ensuring the job does not become a lead-risk job.

All records shall be kept in the Lead Paint Register.

3.2.5 Emissions Monitoring

Monitoring of emissions shall be performed to ensure adequate controls are in place to protect workers and the environment.

- Air quality monitoring must be carried out for the duration of a lead-risk job and the records kept for 30 years. (see AS 4361.1 for further details)

Additional testing may be required to monitor possible:

- soil contamination; and
- contamination of surface and groundwaters.

These monitoring records shall be kept for a minimum of 3 years on completion of the job.

3.2.6 Containment Systems

The containment system shall depend on the type and nature of the emission. (Appendices B, C and D)

All abrasive blasting and lead-based paint waste must be fully contained. Prohibited materials shall not be used for abrasive blasting. (Appendix E)

3.2.7 Waste Management

As lead anti-corrosive pigments are slightly soluble in water, all waste shall be collected, handled and disposed of in a manner which minimises releases to the air, water and soil, by implementing the following procedures:

- all waste must be contained and removed before it becomes airborne, washed away into drains and waterways or causes land contamination;
- all spent abrasive and paint dust must be collected and stored securely under cover at the end of each day's abrasive cleaning operations;
- all spent abrasive and paint dust must be disposed of at a licensed waste disposal facility;
- stormwater must be prevented from entering areas where it may become contaminated;
- uncontaminated stormwater must be diverted away from all work and storage areas containing spent abrasive and dusts; and
- all work areas must be covered to prevent contamination of stormwater.

3.3 Lead Paint Register

A Lead Paint Register shall be maintained for new applications of lead paint and existing plant / structures. The Register shall contain the following information as applicable:

- description of the location of the plant / structure;
- paint type;
- date of application;
- date of inspection;
- method of identification;
- condition of paint;
- names of persons conducting testing;
- history of methods of coating removal;
- history of environmental monitoring;
- management strategy; and
- risk assessments.

A Material Safety Data Sheet (MSDS) must be kept in the register and shall be made available to workers.

Removal of lead paint is on the specific approval of the Site Manager pursuant to the Lead Register's management plan for that structure / plant.

3.4 Worker Protection

All workers who are exposed to waste or the lead-containing paint being removed and others working in the vicinity shall be provided with adequate control measures to reduce exposure to below the Exposure Standard.

Records of all workers undertaking lead-risk jobs must be kept and should include the person's name, sex and type of work undertaken.

3.4.1 Training

All persons who are exposed to or have the potential to be exposed to lead at or above the Exposure Standard shall be advised of the specific hazards associated with the work and the protective measures which can be taken.

Training shall take place at least annually.

Training shall include:

- complete familiarisation with the requirements of this procedure and site procedures;
- the statutory requirements;
- control measures being used to minimise the risks;
- the purpose, proper selection, fitting, use, maintenance and limitations of respirators and other PPE;
- the specific nature of the work which could result in exposure to lead above the exposure standard;
- information concerning the potential adverse health risks and toxic effects associated with overexposure; and
- health / medical surveillance programs;

Training records shall be kept for at least seven years from the date of last entry and shall include:

- date of training;
- training content;
- trainer; and
- trainees.

3.4.2 Regulated Area

A regulated area shall be designated, outside of which airborne concentrations of lead shall not exceed the Exposure Standard. The regulated area shall be identified by suitable visual and physical means eg. signs, barricades.

All persons working in the regulated area must be informed of the prohibition of smoking and consumption of food or drink in the regulated area.

3.4.1.2 Signs

- Signs shall be placed at the boundary of the regulated area and be clearly visible.
- Signs shall inform persons in the area of the presence of potentially hazardous levels of lead and where required PPE to be used.

3.4.3 Personal Protective Equipment (PPE)

Respirators

- Respirators shall be used whenever there is a risk of lead concentrations exceeding the Exposure Standard or when an employee requests a respirator.
- Respirators shall be in accordance with AS 1715 and AS 1716.

Protective Clothing

- Protective clothing shall be provided by CS Energy and shall not be removed from the work site by the employee.
- Employees shall place discarded protective clothing into appropriately labelled receptacles.
- CS Energy shall be responsible for the disposal of protective clothing.

3.4.4 Hygiene Facilities

- Separate storage facilities for work and street clothing shall be provided to prevent cross contamination.
- All workers exposed to lead above the Exposure Standard must shower before leaving work and must not wear contaminated clothing off site.
- Handwashing facilities must be provided for workers and no worker shall smoke or consume food or drink in the regulated area.

Contaminated clothing must be removed before entering eating areas and exposed areas of the worker (eg. hands, face) must be washed.

3.4.5 Health Assessment

Health surveillance of workers starting in a lead-risk job, must be carried out by a medical doctor:

- before the worker starts the lead-risk job; and
- within 3 months of the worker commencing the lead-risk job; and
- after 3 months but within 6 months of the worker commencing the lead-risk job.

Health surveillance of workers working in a lead-risk job, must be carried out by a medical doctor:

- within 1 month after the risk assessment shows the job to be a lead-risk job and/or
- within 7 days if a worker or supervisor considers the worker has been exposed to an excessive level of lead.

3.4.5.1 Medical Records

All health assessment information shall be kept for 30 years and remain confidential. Recommendations excluding confidential medical information may be provided to management.

4. Responsibilities

Site Manager

- Ensure legislative requirements are met.
- Ensure a plan for minimising the risk to health and the environment is implemented.
- Ensure appropriate training requirements are met.
- Ensure records are kept.

Health Service

- Provide health surveillance for workers.
- Maintain medical records.

Employee

- Participate in health surveillance as required by law.
- Notify supervisor if they have a medical condition which may be affected by exposure to lead.
- Notify supervisor if pregnant or breast feeding.

5. Definitions

Approved Assessor - a certified coatings inspector who is capable of undertaking assessments of the presence of lead paints and is approved by the Site Manager to perform such work eg. Materials Scientist.

Exposure Standard - the airborne concentration of lead in the worker's breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearby workers. AS 4361.1 recommendations are 150 $\mu g/m^3$ for an 8 hour time weighted average of exposure for any workday.

Health Surveillance - the monitoring of the health of a person exposed to lead by medical examination and biological monitoring.

Lead-containing paint - paint containing lead or lead compounds in excess of 1.0 percent (w/w) of the dried film.

Lead-risk job - a job in which a person may be exposed to lead and a person's blood level does or may reasonably be expected to equal or exceed; for a female with a reproductive capacity - 20 μg / dL , for a female who is pregnant or breastfeeding - 15 μg / dL , and for anyone else - 30 μg / dL .

MSDS - material safety data sheet.

Painting Contractor Certification Programme Class 5 - code of good quality practice and technical capability for protective coating contractors involved in the factory or on-site undertaking of surface preparation, coating removal and the application of protective coatings (lead and hazardous substances) to steel structures.

PPE - personal protective equipment.

Waste - debris generated from the removal of paint which may include paint chips, spent abrasives, dirt, dust and water.

6. Reference Documentation

6.1 Regulations and Codes

Queensland
Workplace Health & Safety Act, Regulations, Lead Compliance Standard 1995
Environmental Protection Act 1994
Draft Compliance Guide for Abrasive Blasting and Surface Coating (prepared by the Queensland Department of Environment)

Australian Standards

AS 1715	1994	Selection, use and maintenance of respiratory protective devices
AS 1716	1994	Respiratory Protective Devices
AS 4361.1	1995	Guide to lead paint management Part 1: Industrial applications
AS 4361.2	Draft	Guide to lead paint management Part 2: Residential and Commercial Buildings.

NOHSC

1003	Exposure Standards for atmospheric contaminants in the occupational environment

6.2 CS Energy Documents

CS-OHS-16 OH&S Risk Management

6.3 Other

PCCP Certification Guide - Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint - Industrial Applications.

6.4 Appendices

Appendix A	Possible lead-risk jobs
Appendix B	Level of emission potential category associated with method of paint removal
Appendix C	Project specific emission control level
Appendix D	Emission control containment criteria for paint removal methods
Appendix E	Materials prohibited for use in abrasive blasting

6.5 Attachments

None

APPENDIX A

POSSIBLE LEAD-RISK JOBS

- Removal of lead paint from surfaces by dry sanding, heat or grit blasting
- Handling of lead compounds causing lead dust or fumes eg. from dry lead pigments
- Spray painting with lead paint (>1% lead by dry weight)
- Dry machine grinding, discing, buffing or cutting of lead
- Demolition involving oxy-cutting of structural steel primed with lead paint

APPENDIX B

LEVEL OF EMISSION POTENTIAL CATEGORY ASSOCIATED WITH METHOD OF REMOVING COATING

(to be used with Appendix D)

Removal Method	Emission potential			
	Category 1 Very High	Category 2 High	Category 3 Moderate	Category 4 Low
Blast Cleaning	Expendable abrasives Recyclable abrasives	Wet abrasive Sodium bicarbonate	Vacuum Abrasive sponge	
Centrifuge wheel cleaning				Wheel abrader
Chemical stripping			Paint stripper	
Hand tool cleaning				Wire brush Hand tools
Power tool cleaning			Without attachments	With vacuum attachments
Water jetting		With abrasives Without abrasives High pressure		

AS 4361.1 1995 p51

APPENDIX C

PROJECT SPECIFIC EMISSION CONTROL LEVEL

(to be used with Appendix D)

		RISK TO ADJACENT WORKERS					
		Nil	Low	High	Nil	Low	High
PUBLIC	High	A	A	A	A	A	A
HEALTH	Mod	B	B	A	A	A	A
RISK	Low	C	C	A	B	B	A
	Nil	C	C	A	B	B	A
		LOW			HIGH		
		ENVIRONMENTAL IMPACT					

AS 4361.1 1995 p15

Emission control Level A provides the greatest control over emissions, Level B provides a lower level of control and Level C provides the least level of control. Level C should be used only in remote locations or for small-scale tasks where risk to the environment and workers from lead paint emissions are low.

APPENDIX D

EMISSION CONTROL CONTAINMENT CRITERIA FOR PAINT REMOVAL METHODS

Emission category (Appendix B)	Emission Control Level[1] (Appendix C)	Containment Material [2]	Containment Joints	Containment Entryway	Ventilation System	Negative Pressure	Exhaust Filtration
1 Very high emissions potential	A	Impermeable [5]	Fully sealed	Airlock or resealable	Mechanical	Required	Required
	B	Permeable [5] or impermeable	Partially sealed	Overlapping	Natural	Not required	Not required
	C [3]	Note 3	N/A	N/A	Natural	Not required	Not required
2 High emissions potential	A	Impermeable [5]	Fully sealed	Resealable or overlapping	Mechanical	Required	Required
	B	Permeable [5] or impermeable	Partially sealed	Overlapping	Natural	Not required	Not required
	C [3]	Note 3	N/A	N/A	Natural	Not required	Not required
3 Moderate emissions potential	A	Impermeable [5]	Fully sealed	Resealable or overlapping	Mechanical	Required	Required
	B	Permeable [5] or impermeable	Partially sealed	Overlapping or open seam	Natural	Not required	Not required
	C [3]	Note 3	N/A	N/A	Natural	Not required	Not required
4 Low emissions potential	A [4]	N/A	N/A	N/A	Natural	Not required	Not required
	B [4]	N/A	N/A	N/A	Natural	Not required	Not required
	C [3]	Note 3	N/A	N/A	Natural	Not required	Not required

AS 4361.1 1995 p45

1 Emission control Level A provides the greatest control over emissions, Level B provides a lower level of control and Level C provides the least level of control. Level C should be used only in remote locations or for small-scale tasks where risk to the environment and workers from lead paint emissions are low.

2. Ground covers should be impermeable, and of sufficient strength to withstand the impact and weight of the abrasive and equipment that might be used for cleaning or reclamation. Ground covers may also extend beyond the containment boundary in order to capture waste which may escape. The containment materials should be resistant to chemicals and water.

3. Impermeable ground covers and free hanging tarpaulins to control accidental releases or spills are sufficient for Level C controls.

4. Where vacuum-shrouded tools (Emission Category 4) are used efficiently, the containment levels in Note 3 may be used for Level A and Level B.

5. Permeability addresses both air and water and ground covers should be water impermeable and of sufficient strength to enable waste to be collected.

N/A not applicable

APPENDIX E

MATERIALS PROHIBITED FOR USE IN ABRASIVE BLASTING

The following materials must not be used in abrasive blasting:

a) for dry abrasive blasting -
- material containing more than 2% crystalline silicon dioxide; or
- recycled material not treated to remove respirable dust; or
- material likely to harm a person's upper respiratory tract.

b) for wet abrasive blasting -
- an inhibitor containing chromate, nitrate or nitrite.

c) material containing more than 2% of any of the following substances -
- antimony
- arsenic
- beryllium
- cadmium
- chromium
- cobalt
- lead
- nickel
- tin

d) material containing a radioactive substance.