

مركز أبوظبي للصحة المهنية  
ABU DHABI OCCUPATIONAL SAFETY AND HEALTH CENTER

اوشاد  
oshad

# Abu Dhabi Occupational Safety and Health System Framework

(OSHAD-SF)

Code of Practice

CoP 36.0 – Plant and Equipment

Version 3.0

July 2016

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



## Important Note:

(Document Republished for Continued Implementation  
under Abu Dhabi Public Health Center)

(إعادة نشر الوثيقة لاستمرار التطبيق بإشراف مركز أبوظبي للصحة العامة)



ADPHC\_AE



ADPHCAE



ADPHC.AE



ADPHC-AE

WWW.ADPHC.GOV.AE



+971 56 231 2171

## Table of Contents

1.	Introduction .....	3
2.	Training and Competency.....	4
3.	Requirements .....	6
3.1	Roles and Responsibilities .....	6
3.2	Planning and Assessment.....	7
3.3	Risk Management .....	7
3.4	Employee Information .....	8
3.5	Design and Manufacture .....	8
3.6	Inspection and Testing of Plant used to Lift People.....	8
3.7	Positioning Plant in the Workplace.....	9
3.8	Operation.....	9
3.9	Damaged Plant .....	10
3.10	Dismantled / Stored Plant .....	10
3.11	Designers of Plant and Equipment.....	10
3.12	Manufacturers of Plant and Equipment .....	12
3.13	Suppliers of Plant and Equipment .....	15
3.14	Erectors and Installers of Plant .....	17
3.16	Repairs and Modifications.....	18
3.17	Inspection and Auditing.....	19
4.	Record Keeping.....	21
5.	References.....	22
6.	Document Amendment Record .....	23

## 1. Introduction

- (a) This Code of Practice (CoP) applies to all employers within the Emirate of Abu Dhabi. This CoP is designed to incorporate requirements set by Abu Dhabi Occupational Safety and Health Center (OSHAD) and Sector Regulatory Authorities in the Emirate of Abu Dhabi.
- (b) This CoP establishes the requirements and standards so that the risks associated with the use of plant and equipment are assessed, that control measures are implemented in accordance with the hierarchy of controls and those control measures are implemented to prevent injury, illness and disease to persons who might be exposed to risks arising from those activities.
- (c) This CoP applies to the overall management of plant and equipment and to the obligations and requirements of designers, manufacturers, suppliers, erectors and installers, employers and employees.
- (d) This CoP also covers the requirements for maintenance, servicing, cleaning, repairs, modifications, inspection and auditing of plant, along with the keeping of records.
- (e) Plant / Equipment is a general term referring to machinery, equipment and appliances. Common types of plant found in many workplaces include:
  - (i) powered mobile plant, such as an excavator, forklift or bulldozer;
  - (ii) static or fixed plant / equipment / machinery such as a compressor, woodworking machine; steel press, appliance, pressure vessel, implement / tool, steel press;
  - (iii) plant that lifts people, such as a mobile elevating work platform (MEWP) or mast climber; and
  - (iv) a component of plant and a fitting, connection, accessory or adjunct to plant.

## 2. Training and Competency

- (a) Employers shall ensure that OSH training complies with the requirements of:
- (i) *OSHAD-SF – Element 5 – Training, Awareness and Competency;*
  - (ii) *OSHAD-SF – Mechanism 7.0 – OSH Professional Entity Registration; and*
  - (iii) *OSHAD-SF – Mechanism 8.0 – OSH Practitioner Registration.*
- (b) Employers shall ensure employees required to implement the requirements of this CoP are trained in the use of relevant plant and understand the risks associated with using the plant and the control measures put in place by the employer.
- (c) Employers are to ensure that employees and contractors are competent to use plant and equipment, and, where necessary, hold the required certificates of competence.
- (d) Training given shall be specific to the type and classification of the plant and equipment being operated and shall be internationally accepted, e.g. International Powered Access Federations' - Powered Access License or 'PAL' card or equivalent for the use of a Mobile Elevated Work Platform (MEWP).
- (e) Training for employees shall be competency-based and include:
- (i) purpose of the plant and equipment;
  - (ii) testing and inspections required;
  - (iii) installation, commissioning, operation, maintenance, cleaning, transport, storage, and dismantling information;
  - (iv) systems of work needed for the safe use of the plant;
  - (v) knowledge, training or skill needed for persons undertaking inspection and testing; and
  - (vi) emergency procedures.
- (f) Employees who are reasonably foreseeable to be exposed to plant risks and anyone supervising these employees shall be trained and provided with information and instruction on:
- (i) the nature of the hazards and risks associated with the plant and systems of work;
  - (ii) the need for, and correct use and maintenance of control measures;
  - (iii) operation of plant and the procedures for safe use of the plant;
  - (iv) the use, fit, testing, maintenance and storage of any personal protective equipment required;
  - (v) emergency procedures in case of a plant or equipment malfunction or other incident; and
  - (vi) the location of information relating to the safe use of the plant.

- (g) Employers shall maintain a record of the required training that contains the following information:
- (i) name and ID number;
  - (ii) Emirates ID number of the employee;
  - (iii) subject(s) of training;
  - (iv) dates(s) of training; and
  - (v) person(s) providing the training.

## 3. Requirements

### 3.1 Roles and Responsibilities

#### 3.1.1 Employers

- (a) Employers shall undertake their roles and responsibilities in accordance with the general requirements of *OSHAD-SF – Element 1 – Roles, Responsibilities and Self-Regulation* Section 3.2.5.
- (b) Employers shall undertake their specific roles and responsibilities in accordance with the following:
  - (i) undertake a risk assessment, in line with the requirements of *OSHAD-SF – Element 2 – Risk management* to identify the hazards, risk and required control measures;
  - (ii) provide information, training and supervision for employees;
  - (iii) use plant only for the purpose for which it was designed (unless a competent person has assessed that a proposed change in use does not present an environment, health and safety risk);
  - (iv) make sure safety features or warning devices are used as intended;
  - (v) provide appropriate guarding (or a safe system of work) if plant has moving parts and eliminating the risk of entanglement;
  - (vi) provide appropriate guarding if it is not reasonably practicable to eliminate the risk of parts or work pieces breaking or being ejected;
  - (vii) ensure that employees do not work between fixed and traversing parts of plant;
  - (viii) develop safe work systems to ensure people are not at risk from moving plant, or plant which could start to operate without warning;
  - (ix) make sure that no unauthorized interference or alteration of the plant may create risk;
  - (x) ensure that appropriate tests, checks and inspections are made of the plant; and
  - (xi) stop plant from being used if it becomes unsafe, until risks have been eliminated or reduced to as low as reasonably practicable level.

#### 3.1.2 Employees

- (a) Employees shall undertake their roles and responsibilities in accordance with the general requirements of *OSHAD-SF – Element 1 – Roles, Responsibilities and Self-Regulation* Section 3.2.7.
- (b) Employees shall undertake their specific roles and responsibilities in accordance with the following:
  - (i) following information provided by the employer regarding plant use;
  - (ii) observing safe work practices and operating procedures prescribed by the employer, including the observation of warning signs and isolation procedures; and
  - (iii) adhering to maintenance procedures advised by the employer and reporting service / repair requirements promptly.

- (c) Employees shall use PPE in accordance with the employers instructions when operating plant.
- (d) In the case of ride-on plant such as a forklift an employee shall wear the seatbelt provided in the vehicle.
- (e) Employees shall use plant in accordance with the employer's instructions in a safe manner by:
  - (i) taking reasonable care of themselves in accordance with safety instructions received;
  - (ii) taking reasonable care for other people's safety;
  - (iii) using environment, health and control measures, such as guarding; and
  - (iv) not interfering with, removing or rendering control measures ineffective, eg. by defacing safety signs, deactivating guarding.
- (f) Employees shall inform the employer, principal contractor or person in control of the workplace of any faults in the plant (eg. faulty control switches, missing guards).
- (g) Employees shall not misuse plant. They shall only:
  - (i) use plant for the purposes for which it was designed, e.g. to not exceed safe working loads on items of plant; and
  - (ii) take reasonable care of plant.

### 3.2 Planning and Assessment

- (a) Employers shall ensure the following:
  - (i) an assessment of the various risks is undertaken and systems of work are established which are safe to all parties involved or affected including the public;
  - (ii) that effective procedures and control measures are in place, which are implemented in order to manage activities safely and without risk to health;
  - (iii) that for the Building and Construction Sector the management of plant and equipment requirements are included in the Pre-Tender Safety and Health Plan; and
  - (iv) that associated safe systems of work, and site rules are included in the Safety and Health Construction Management Plan (OSH-CMP) in the case of the Building and Construction Sector.

### 3.3 Risk Management

- (a) Employers shall undertake the risk management process in relation to plant at the workplace to ensure the selection of appropriate control measures. Refer to *OSHAD-SF – Element 2 – Risk Management*. In addition employers shall:
  - (i) carefully observe the task being performed including short cuts and improvisations;
  - (ii) consider what occurs when things go wrong, not just when the procedures are correctly followed;
  - (iii) conduct a risk assessment following changed work methods; and
  - (iv) involve those who work with the plant in these activities.



### 3.4 Employee Information

- (a) Employers shall provide environment, health and safety information to employees which shall include:
- (i) purpose of the plant;
  - (ii) testing and inspections required;
  - (iii) installation, commissioning, operation, maintenance, cleaning, transport, storage, and dismantling information;
  - (iv) systems of work needed for the safe use of the plant;
  - (v) knowledge, training or skill needed for persons undertaking inspection and testing; and
  - (vi) emergency procedures.

### 3.5 Design and Manufacture

- (a) Prior to purchasing or obtaining plant, employers shall satisfy themselves that the design and construction of plant is appropriate for the intended use. The employer shall consult the information supplied by the designer and manufacturer to ensure that the plant suits the employers intended use. The information supplied by the designer, manufacturer or supplier shall outline any residual risks and provide information to the employer on eliminating or controlling these.
- (b) Where plant has been in service prior to purchase (eg. second hand) and information regarding safe use is not available, a competent person shall be responsible to:
- (i) develop this information; and
  - (ii) assess and provide guidance on updating to meet current safety standards.
- (c) Prior to purchasing or obtaining plant, employers shall take into account:
- (i) control devices such as start/stop switches shall satisfactorily perform their intended function;
  - (ii) guarding of moving components shall be used to minimize the risks associated with accessible hazards;
  - (iii) alarm systems shall be provided where appropriate. For instance, to warn people of an imminent start-up where moving plant may endanger any person when plant is started and there is not a clear view of the plant from the control panel or operator's station;
  - (iv) release of hazardous substances from plant shall be controlled to minimize risk; and
  - (v) noise and vibration levels shall not be a risk to hearing or health. If the noise and vibration levels are not controlled, or cannot be controlled at the source, serious consideration shall be given to ways of controlling the effects of noise and vibration.

### 3.6 Inspection and Testing of Plant used to Lift People

- (a) In the case of plant that is used to lift people such as a mobile elevated work platforms (MEWP) inspection and testing requirements employers shall adhere to the requirements described in as described in *OSHAD-SF – CoP 34.0 – Safe Use of Lifting Equipment and Lifting Equipment*.

### 3.7 Positioning Plant in the Workplace

- (a) Employers shall ensure a risk assessment is carried out to identify risks in locating or operating plant and the plant shall be positioned so that:
- (i) risks from hot plant (eg. friction, molten material, hot gases, etc) are controlled, for example, through restricted access, guarding or insulation;
  - (ii) ergonomically safe design of the plant and work area;
  - (iii) there is appropriate space (suggested 600 mm, the minimum width of a walkway) for safe access to the plant for operation, cleaning, maintenance, inspection and emergency evacuation;
  - (iv) it does not obstruct doorways and emergency exits;
  - (v) proximity to other plant does not have a negative effect on the operation of the plant or on work processes;
  - (vi) it rests on an appropriate foundation, for example, on a floor or other support that ensures the plant is stable and secure according to designer's or manufacturer's instructions;
  - (vii) emergency shut-down / off controls are easily accessible;
  - (viii) ventilation is appropriate to the nature and volume of emissions from the plant; and
  - (ix) employees and others are not exposed to noise levels greater than those stated in *OSHAD-SF – CoP 3.0 – Occupational Noise*.

### 3.8 Operation

- (a) Employer shall ensure that plant is used only where it is capable of performing safely within the design criteria and manufacturer's instructions. Where commissioning is applicable, the results of commissioning shall support this.
- (b) Plant shall be used in accordance with the manufacturer's specifications, that is:
- (i) design conditions;
  - (ii) design pressure;
  - (iii) design load;
  - (iv) production rate;
  - (v) control capabilities;
  - (vi) maintenance schedule; and
  - (vii) replacement period.
- (c) Employers shall consider and address the risks that may result from such things as:
- (i) operator fatigue;
  - (ii) the performance of routine (repetitive) tasks;
  - (iii) misuse of plant; and
  - (iv) local conditions and working procedures.

### 3.9 Damaged Plant

- (a) When plant has been damaged, the employer shall withdraw it from service until any risks to environment, health and safety have been assessed and controlled.

### 3.10 Dismantled / Stored Plant

- (a) Where plant is to be dismantled the employer shall ensure that:
  - (i) the plant is clearly identified as not in use;
  - (ii) the plant is dismantled safely; and
  - (iii) it is dismantled in accordance with the designer's and manufacturer's instructions by a competent person.
- (b) Where plant is to be placed in storage, the employer, shall:
  - (i) ensure relevant environment, health and safety information supplied by the designer or manufacturer is provided to the person who is to dismantle or store the plant; and
  - (ii) when preparing dismantling plans, develop control measures which prevent or minimize the risks of damage to plant during storage, for example, from corrosion as a result of exposure, residues of hazardous substances and deterioration of consumables.
- (c) Where plant is taken out of storage with the intention of resuming use, the plant shall be treated as 'new' plant with respect to risk management, erection, installation and commissioning.

### 3.11 Designers of Plant and Equipment

#### 3.11.1 Obligations

- (a) Designers includes anyone who designs plant, or who modifies the design of existing plant in a way that may change how the plant is used or affect the existing safety controls of the plant.
- (b) A designers of plant shall ensure that:
  - (i) the plant is designed to be safe and without risk to health when used appropriately; and
  - (ii) clear information about the way the plant shall be used safely shall be provided as part of the design process.

### 3.11.2 Risk Management

- (a) Designers shall undertake the risk management process to ensure control measures to prevent or minimise exposure to environment health and safety risks are in place and are appropriate for the plant being designed. Refer to *OSHAD-SF – Element 2 – Risk Management*.
- (b) Designers shall consider all the activities and operations that form part of the complete life cycle of the plant when developing control measures for the design of plant. This shall include the following as a minimum:
  - (i) manufacture;
  - (ii) transportation;
  - (iii) installation;
  - (iv) use;
  - (v) cleaning;
  - (vi) adjustment;
  - (vii) inspection;
  - (viii) maintenance and servicing;
  - (ix) repair or modification; and
  - (x) dismantling / disposal.

### 3.11.3 Standards

- (a) Plant shall be designed in accordance with engineering principles and standards applicable within the UAE.

### 3.11.4 Intended use and Reasonably Foreseeable Misuse

- (a) The designer shall, as far as reasonably practicable, anticipate operator error and modify the design to eliminate or reduce the risk. This shall be done in consultation with users to ensure that the range of requirements such as environment, conditions, loads and tasks to which the plant will be exposed will be considered.

### 3.11.5 Information about the Safe use of Plant

- (a) Designers have an obligation to provide information about the way plant is to be used, when giving the design to another employer that is to give effect to the design. For example, if plant is to be sited a certain distance from other plant, instructions in writing and in appropriate language, shall be provided to the manufacturer, erector, installer, supplier and end user.
- (b) Information may take the form of written text or visual information such as signs, symbols or diagrams. Where visual information is provided, it shall conform to the standards applicable within the UAE.
- (c) Information that shall be provided by the designer include but not be limited to:
  - (i) information relating to transport, handling and storage of plant;
  - (ii) information relating to commissioning, installing, inspecting and testing of plant;

- (iii) the comprehensive range of uses for which the plant is intended, including prohibited usages;
  - (iv) requirements for maintenance and repair;
  - (v) de-commissioning, dismantling and disposal of plant;
  - (vi) information for emergency situations;
  - (vii) the results or documentation of tests and examinations carried out on the plant and design;
  - (viii) any known residual risks, that is, those that cannot be eliminated or reduced by design and against which guarding is appropriately effective;
  - (ix) control measures, for example, personal protective equipment, that shall be used to further reduce the risks associated with plant;
  - (x) guidance, if required, on administrative control measures such as notices, signs and procedures; and
  - (xi) requirements for special tools required to use or maintain plant.
- (d) Information to manufacturers shall include but not be limited to:
- (i) specific conditions relating to the method of manufacture. Where a specific manufacturing method or material is nominated, the possibility of hazards associated with that specification shall be considered;
  - (ii) instructions regarding high risks which could arise from the manufacturing process itself;
  - (iii) instruction to the manufacturer for fitting or refitting plant parts and their location on the larger components of the plant or their housings where:
    1. the direction of movement shall be known in order to avoid a risk;
    2. associated errors which could be made in installation; and
    3. instruction where hot or cold parts or material may create a hazard.

### 3.12 Manufacturers of Plant and Equipment

#### 3.12.1 Obligations

- (a) Manufacturers of plant have an obligation to ensure that:
- (i) the plant is manufactured to be safe and without risk to health when used appropriately;
  - (ii) the plant, when manufactured, is tested and examined to ensure it has been manufactured to be safe and without risk to health when used appropriately; and
  - (iii) the plant, when supplied to another person or employer is accompanied by information about the way the plant shall be used to ensure environment, health and safety risks can be managed.
- (b) Manufacturers shall undertake risk management to ensure control measures to prevent or minimise exposure to environment, health and safety risks are in place and are appropriate for the plant being designed. Refer to *OSHAD-SF – Element 2 – Risk Management*.
- (c) If a manufacturer or any other person modifies the design of plant, that person assumes the additional obligations of a designer.

- (d) All modifications shall be approved by the original designer or a competent person, e.g. substitution of metals in a manufacturing process shall be approved by the original designer or a metallurgist.

### 3.12.2 Plant Construction

- (a) Manufacturers have obligations to ensure plant is constructed appropriately and that the designer's instructions are followed. It is good management practice for manufacturers and designers to consult, in order to confirm the areas each is responsible for.
- (b) Connected, fabricated or machined materials are reasonably foreseeable to be required in the construction of plant. Manufacturing processes require that design specifications are followed, eg. crane booms of a particular lifting capacity shall have the particular grade of steel specified.
- (c) The grade of steel or other metal used in the manufacture shall be clearly identified on the finished product.

### 3.12.3 Testing and Examination of Plant

- (a) A testing and examining system shall be implemented to ensure the plant was designed and manufactured to be safe when used appropriately.
- (b) Details of the testing and examination carried out shall be documented and made available. Typical testing may include but will not be limited to:
  - (i) electrical testing;
  - (ii) safety function testing;
  - (iii) temperature rise tests; and
  - (iv) abnormal condition tests.
- (c) Tests and examinations shall include:
  - (i) all critical components;
  - (ii) the suitability of selected components;
  - (iii) mechanical devices;
  - (iv) pneumatic devices;
  - (v) hydraulic devices;
  - (vi) sources of emissions eg. lasers;
  - (vii) guarding and interlocking arrangements;
  - (viii) structural integrity; and
  - (ix) material types and properties.
- (d) Records of tests and examinations shall be maintained and shall be made available by the supplier or manufacturer of the plant.
- (e) When carrying out testing and examination of plant consideration shall be given to:
  - (i) simulation of the normal range of operational capabilities;
  - (ii) testing of design features incorporated to ensure 'fail-safe' operation;

- (iii) measurement of imposed stresses on critical components to ensure maximum design stresses are not exceeded;
- (iv) testing of critical safety features such as over-speed and over-pressure devices under both normal and adverse operational conditions; and
- (v) development of overload testing procedures to ensure plant safety during foreseeable misuse conditions.

#### 3.12.4 Information about the Safe use of Plant

- (a) Manufacturers shall provide information about the way plant is to be used to ensure environment, health and safety risks can be managed. This shall include the information provided by the designer plus additional information on risks created in the manufacturing process.
- (b) Information may take the form of written text or visual information such as signs, symbols or diagrams. Where visual information is provided, it shall conform to the relevant standard.
- (c) Information that shall be provided shall include but not be limited to:
  - (i) information relating to transport, handling and storage of plant;
  - (ii) information relating to commissioning, installing, inspecting and testing of plant;
  - (iii) the comprehensive range of uses for which the plant is intended, including prohibited usages;
  - (iv) requirements for maintenance and repair;
  - (v) de-commissioning, dismantling and disposal of plant;
  - (vi) information for emergency situations;
  - (vii) effects of environmental conditions on the use of the plant;
  - (viii) the results or documentation of tests and examinations carried out on the plant and design;
  - (ix) any known residual risks, that is, those that cannot be eliminated or appropriately reduced by design and against which guarding is not totally effective;
  - (x) recommendations, if available, on administrative control measures;
  - (xi) requirements for special tools needed to use or maintain plant; and
  - (xii) the control measures, for example, personal protective equipment, that shall be used to further reduce the risks associated with plant.
- (d) Instructions shall be trialled to ensure the intent of the instructions is achieved and that carrying out the instructions does not pose a risk to environment, health and safety.

### 3.13 Suppliers of Plant and Equipment

#### 3.13.1 Obligation

- (a) Suppliers of new plant have an obligation:
  - (i) either:
    - 1. to examine and test the plant to ensure the plant is safe and without risk to health when used appropriately; or
    - 2. to ensure the manufacturer of the plant has given an assurance that the plant has been examined and tested to ensure it is safe and without risk to health when used appropriately; and
  - (ii) to ensure the plant is accompanied by information about the way the plant shall be used to ensure environment, health and safety risks can be managed.
- (b) Suppliers of used plant have an obligation:
  - (i) to examine and test the plant to ensure the plant is safe and without risk to health when used appropriately; and
  - (ii) to ensure the plant is accompanied by information about the way the plant shall be used to ensure environment, health and safety risks can be managed.

#### 3.13.2 Risk Management

- (a) Suppliers of plant shall undertake the risk management process to eliminate or minimise risks to environment, health and safety are applicable for the plant being supplied. Refer to *OSHAD-SF – Element 2 – Risk Management*.

#### 3.13.3 Supply of Plant

- (a) 'Supply' includes but is not restricted to the sale, leasing or hiring of plant. 'A person who supplies plant' is not restricted to a person whose usual business is supplying plant, but also applies to any person, including a manufacturer, importer or employer, who supplies an item of plant.

#### 3.13.4 Hire of Plant

- (a) Employer (a hirer) which hires out used plant to an end user has the same obligations as a supplier of plant. A hirer shall take all reasonable steps to ensure that the plant is safe and without risk to health when used appropriately.
- (b) Hirers shall ensure the plant is accompanied by information about the way the plant shall be used to ensure environment, health and safety risks can be managed.
- (c) Hirers of plant shall ensure the plant is inspected between hires and that any maintenance and repairs are carried out to minimise the risk to environment, health and safety.



### 3.13.5 Examining and Testing of Plant

- (a) Suppliers of plant has an obligation to ensure that the manufacturer of the plant has given an assurance that the plant has been examined and tested to ensure it is safe and without risk to environment, health and safety when used appropriately.
- (b) Suppliers of plant shall obtain documented evidence of examination and testing from the manufacturer along with appropriate information for safe operation and maintenance of the plant.
- (c) Employers shall ensure that all statutory testing requirements are identified and incorporated into a robust inspection program for the employer.

### 3.13.6 Provision of Appropriate Information

- (a) Suppliers of plant has an obligation to provide information about the way plant is to be used to ensure environment, health and safety risks can be managed.
- (b) Information may take the form of written text or visual information such as signs, symbols or diagrams. Where visual information is provided, it shall conform to the relevant standard.
- (c) Information shall include but not be limited to:
  - (i) information from designers and manufacturers relating to transport, handling and storage of plant;
  - (ii) information relating to commissioning, installing, inspecting and testing of plant;
  - (iii) the comprehensive range of uses for which the plant is intended, including prohibited usages;
  - (iv) requirements for maintenance and repair;
  - (v) de-commissioning, dismantling and disposal of plant;
  - (vi) information for emergency situations;
  - (vii) effects of environmental conditions on the use of the plant;
  - (viii) the results or documentation of tests and examinations carried out on the plant and design;
  - (ix) any known residual risks, that is, those that cannot be eliminated or appropriately reduced by design and against which guarding is not totally effective;
  - (x) guidance, if available, on administrative control measures;
  - (xi) requirements for special tools needed to use or maintain plant; and
  - (xii) the control measures, that shall be used to further reduce the risks associated with plant, including residual risks.
- (d) Instructions shall be trialled to ensure the intent of the instructions is achieved and that carrying out the instructions does not pose a risk to environment, health and safety.

### 3.14 Erectors and Installers of Plant

#### 3.14.1 Erector or Installer

- (a) Erector or installers of plant is any person who sets up, assembles, places in position and connects or otherwise makes plant ready for use.
- (b) Erection, installation and commissioning of plant shall be carried out by a competent person.

#### 3.14.2 Obligations

- (a) Erectors or installers of plant at a relevant place for the plant has an obligation to:
  - (i) abide by environment, health and safety rules set by the controller of the premises where the plant is being installed;
  - (ii) erect or install the plant in a way that is safe and without risk to health; and
  - (iii) ensure that nothing about the way the plant was erected or installed makes it unsafe and a risk to health when used appropriately.

#### 3.14.3 Risk Management

- (a) Erectors and installers shall include the designer's and manufacturer's instructions when undertaking the risk management process to ensure the control measures they choose eliminate or minimise the risk involved regarding the plant's erection, installation and use. Refer to *OSHAD-SF – Element 2 – Risk Management*.

### 3.15 Maintenance, Services and Cleaning

#### 3.15.1 General Requirements

- (a) Employers shall prepare and maintain a schedule of plant that is used at their premises or worksite.
- (b) Employers shall prepare a preventative maintenance schedule based on the plant manufacturers or suppliers maintenance manual or, in the absence of such specifications, in accordance with other proven and tested procedures. This schedule shall include arrangements for maintenance, servicing and cleaning.
- (c) Employers shall ensure that plant is isolated before maintenance, service or cleaning commences. Where plant is isolated and plant shutdown will result, any total or partial shutdown shall not allow a hazardous situation to be created. Where plant cannot be isolated, alternate means of preventing accidental operation shall be implemented. In these situations, work shall be conducted under controlled procedures to allow for maintenance, service and cleaning such as a permit to work in maintenance areas. *As per the requirements of OSHAD-SF – CoP 24.0 – Lock-out / Tag-out (Isolation)*.
- (d) Employers shall ensure that control measures are implemented which are effective;
  - (i) to prevent access to any dangerous part of machinery or to any rotating stock-bar; and/or
  - (ii) to stop the movement of any dangerous part of machinery or rotating stock-bar before any part of a person enters a danger zone; and/or

- (iii) the measures shall be in accordance with the requirements and principles of *OSHAD-SF- CoP 47.0 – Machine Guarding*.
- (e) Employers shall ensure that those employees engaged in maintaining, servicing or cleaning plant are competent and briefed in the safe system of work to be followed.
- (f) Employers shall ensure that risk assessments are prepared to deal with reactive or breakdown maintenance and the specific hazards that can arise from such operations.
- (g) Employers shall ensure where cleaning and maintenance of filtering equipment or dangerous contaminant producing plant is to be carried out, manufacturers' instructions or proven procedures shall be carefully followed.
- (h) Employers shall ensure that records of all maintenance carried out for plant are kept readily available for inspection for a period of not less than five years from the date of the maintenance, servicing or cleaning being carried out.

### **3.16 Repairs and Modifications**

#### **3.16.1 Repairs**

- (a) Employers shall ensure that before repairs commence, safety issues are considered, plant shall be isolated and repairs made:
  - (i) as recommended by the manufacturer or in documented procedures;
  - (ii) by a competent person; and
  - (iii) according to any relevant standards.

#### **3.16.2 Modifications**

- (a) Employers shall ensure prior to undertaking modifications that the modifier consults with the designer and manufacturer to ensure all relevant safety issues have been considered. Where the original designer and manufacturer cannot be contacted (older plant), the modifications shall be designed by a competent person.
- (b) Plant shall be modified:
  - (i) as recommended by the manufacturer or in documented procedures;
  - (ii) by a competent person; and
  - (iii) according to any relevant standards.
- (c) Before being returned to service, modified/altered plant shall:
  - (i) have control measures in place to prevent or minimize any risks created by the modification; and
  - (ii) be inspected and tested having regard to the modified design specifications and relevant standards.

### 3.17 Inspection and Auditing

#### 3.17.1 Inspection

- (a) Employers shall ensure a regular inspection program is developed and implemented for plant, as per the requirements of *OSHAD-SF – Element 8 – Audit and Inspection*. The program shall document:
- (i) standards against which plant shall be inspected;
  - (ii) the frequency of inspections;
  - (iii) critical safety instructions to be followed during inspection; and
  - (iv) the procedures for particular types of inspections including:
    1. periodic inspections;
    2. specific tests;
    3. repaired plant; and
    4. modified plant.
- (b) Employers shall ensure that all employees or contractors involved in undertaking inspections of plant are competent. In the case of contractors being used to inspect specialist plant the competency assessment shall be based on a letter of undertaking or maintenance agreement with the contracting entity.
- (c) Employers shall ensure that inspections are undertaken and independent from production or maintenance functions.

#### 3.17.2 Auditing

- (a) Employers shall ensure an audit program is developed and implemented to examine and verify from existing records kept, that the risk management processes have been conducted effectively and that all workplace environment, health and safety obligations are being met, as per the requirements of *OSHAD-SF – Element 8 – Audit and Inspection*.
- (b) An audit shall call upon all available information including but not limited to:
- (i) incident records and investigation reports;
  - (ii) past audit reports;
  - (iii) past plant inspection reports;
  - (iv) past maintenance and servicing reports;
  - (v) repair records;
  - (vi) training records and qualifications for supervisors and employees;
  - (vii) hiring and recruitment criteria for plant operators;
  - (viii) task analysis and procedures associated with plant;
  - (ix) inspection of plant;
  - (x) communication between line management and employees involved with the use of plant;
  - (xi) shutdown/emergency procedures;
  - (xii) procurement guidelines for new plant purchases;

- (xiii) participation from people with relevant expertise such as an ergonomist or an environment health and safety consultant; and
  - (xiv) the audit shall include discussions with employees regarding the implementation of control measures to ensure consultation.
- (c) The audit program may include:
- (i) a periodic review of control measures, involving people in the workplace who have accountabilities for environment, health and safety;
  - (ii) ensuring that all items of plant are regularly inspected and maintained;
  - (iii) if work practices are modified or new work practices introduced, or if plant is moved, reviewing the control measures to make sure they are still appropriate;
  - (iv) reviewing the control measures currently in place if new information is obtained about a previously unknown design or manufacturing fault, or an unidentified hazard found; and
  - (v) if an incident (injury, illness or 'near miss') involving plant occurs, reviewing the procedures in place, and making changes to prevent a recurrence.

## 4. Record Keeping

- (a) Employers shall maintain employee training records required by this CoP for in compliance with *OSHAD-SF – Element 9 – Compliance and Management Review*.
- (b) Employers shall make and keep for the operating life of the plant, records of any tests, maintenance, inspections, commissioning or alteration of plant relevant to controlling risks arising from the plant.
- (c) Records on items of plant shall include:
  - (i) the unique plant or equipment identification number;
  - (ii) plant design registration information;
  - (iii) final and approved design drawings and calculations;
  - (iv) relevant data from commissioning;
  - (v) compliance statements and/or test certificates;
  - (vi) manufacturer's specifications;
  - (vii) results of inspections, and tests on safety devices;
  - (viii) information on maintenance carried out;
  - (ix) information on major repairs carried out; and
  - (x) information on major modifications or ratings to original design.
- (d) Records on matters relating to plant shall include:
  - (i) results of risk assessments carried out on plant;
  - (ii) information, instruction, training given to employees about how to use plant and the risks associated with plant;
  - (iii) work practices used where plant is involved;
  - (iv) procedures for consulting with employees; and
  - (v) competencies of operators.

## 5. References

- *OSHAD-SF– Element 1 – ,Roles, Responsibilities and Self-Regulation*
- *OSHAD-SF– Element 2 – Risk Management*
- *OSHAD-SF– Element 8 – Audit and Inspection*
- *OSHAD-SF– Element 9 – Compliance and Management Review*
- *OSHAD-SF– CoP 3.0 – Occupational Noise*
- *OSHAD-SF– CoP 3.1 – Vibration*
- *OSHAD-SF– CoP 24.0 – Lock-out / Tag-out (Isolation)*
- *OSHAD-SF– CoP 34.0 – Safe Use of Lifting Equipment and Lifting Equipment*
- *OSHAD-SF– CoP 47.0 – Machine Guarding*

## 6. Document Amendment Record

Version	Revision Date	Description of Amendment	Page/s Affected
3.0	1 <sup>st</sup> July 2016	Change of Logo	All
		Change from AD EHS Center to OSHAD	throughout
		Change of document title: AD EHSMS RF to OSHAD-SF	Throughout
		Acknowledgements deleted	2/3
		Preface Deleted	4
		EHS changes to OSH	Throughout
		Clause 2(d) added	4



