



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT4207B Plan and coordinate heat plant operations

Release: 1

FPICOT4207B Plan and coordinate heat plant operations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to plan the operation of a heat plant and coordinate heat plant operating procedures and the startup, shutdown and storing of the heat plant

General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication

This unit replaces FPICOT4207A Plan and coordinate heat plant operations

Application of the Unit

Application of the unit

The unit involves planning and coordinating heat plant operations in a variety of work settings, including saw mills, wood chip mills, veneer mills, board/plywood mills and timber treatment plants

The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability skills This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan heat plant operation	1.1. Applicable occupational health and safety (OHS), environmental, legislative and organisational requirements relevant to planning and coordinating heat plant operations are identified and followed 1.2. Recent heat plant performance is assessed for unusual signs of performance 1.3. Heat plant startup, operation and shutdown are planned in line with site requirements 1.4. Operation orders and schedules are set and communicated to personnel 1.5. Generation levels are calculated and communicated to operators 1.6. Communication with others is established and maintained in line with OHS requirements
2. Coordinate heat plant startup and operation	2.1. Pre-operational safety and pre-startup checks and procedures are checked with operators 2.2. Heat plant startup is monitored for correct running conditions and is signed on 2.3. Continued operation of heat plant and its condition are routinely checked with operating personnel 2.4. Problematic heat plant operations are diagnosed, with adjustments calculated and communicated to operators 2.5. Heat plant chemicals are checked for correct labelling in line with statutory and environmental requirements 2.6. Emergency shutdown procedures are followed in case of a fire 2.7. Fuel efficiency recordings, calculations, operating log, heat plant operation and equipment faults are recorded and reported 2.8. Assistance is provided to personnel with the evaluation of heat plant data and performance details 2.9. Heat plant management and output are monitored to record possible process improvements
3. Coordinate heat plant shutdown and storage	3.1. Shutdown and lock-out procedures are directed in line with OHS legislation, and statutory and environmental regulations 3.2. Condition of heat plant is assessed and personnel are directed to undertake cleaning and maintenance

ELEMENT**PERFORMANCE CRITERIA**

requirements in line with site procedures, manufacturer recommendations and environmental requirements

3.3. Mode of **storage** is selected and personnel are directed to store heat plant in line with statutory requirements

3.4. Modifications are made to generation levels or schedules to ensure optimum performance, which are then communicated to personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit.

Required skills

- Technical skills sufficient to use and maintain relevant tools, machinery and equipment; efficiently and safely plan and coordinate heat plant operations; monitor heat plant output
- Communication skills sufficient to use appropriate communication and interpersonal techniques with colleagues and others
- Literacy skills sufficient to record and report workplace information; maintain documentation
- Numeracy skills sufficient to measure, estimate and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults; demonstrate appropriate response procedures

Required knowledge

- Applicable commonwealth, state or territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for planning and coordinating heat plant operations
- Environmental protection requirements, including the safe disposal of waste material, the safe use and storage of chemicals, the minimisation of carbon emissions, and the cleaning of plant, tools and equipment
- Organisational and site standards, requirements, policies and procedures for planning and coordinating heat plant operations
- Environmental risks and hazards
- Using energy effectively and efficiently
- Procedures for heat plant startup, operation, shutdown and storage

REQUIRED SKILLS AND KNOWLEDGE

- Energy generation levels
- Heat plant scheduling and planning
- Past performance analysis
- Established communication channels and protocols
- Problem identification and resolution strategies, and common fault finding techniques
- Types of tools and equipment, and procedures for their safe use and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace information

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently plan and coordinate heat plant operations in line with organisational requirements

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to, and satisfy, all of the requirements of the elements of this unit and include demonstration of:

- following applicable commonwealth, state or territory legislative and regulatory requirements and codes of practice relevant to planning and coordinating heat plant operations
- following organisational policies and procedures relevant to planning and coordinating heat plant operations
- planning and coordinating heat plant operations for the enterprise
- modifying production and schedules for heat plant operations within the enterprise
- coordinating personnel to follow planning, communications and scheduling for heat plant operations

EVIDENCE GUIDE

Context of and specific resources for assessment

- Competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to follow relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to undertaking work applicable to this unit
 - specifications and work instructions

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of required knowledge
- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable

EVIDENCE GUIDE

adjustment may be applied during assessment

- Language and literacy demands of the assessment task should not be higher than those of the work role

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS requirements:

are to be in line with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include:

- personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- safe forest practices, including required actions relating to forest fire
- manual handling including shifting, lifting and carrying
- legislation
- organisational policies and procedures
- workplace practices

Environmental requirements may include:

Legislative requirements:

are to be in line with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice and may include:

- award and enterprise agreements
- industrial relations

RANGE STATEMENT

	• Australian Standards • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care
Organisational requirements may include:	• legal • organisational and site guidelines • policies and procedures relating to own role and responsibility • quality assurance • procedural manuals • quality and continuous improvement processes and standards • OHS, emergency and evacuation procedures • ethical standards • recording and reporting requirements • equipment use, maintenance and storage requirements • environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
Heat plant is to include:	• energy generating heat plants
	and may include:
	• thermal oil heating systems • gas burners • dust systems, including extraction • solid fuel systems • steam generators • fuel intake • water intake • oil flow (pump operation) • hydraulic systems • blowing down steam generators
Operation order is to include:	• instructions for the safe startup, operation, shutdown and storage of a heat plant
Schedules	are itineraries setting startup and shutdown times in line with heat plant generation requirements

RANGE STATEMENT

Generation levels are to include:

- amount of heat produced
- subsequent amount of energy generated as a result of the pressure

Communication may include:

- verbal and non-verbal language
- constructive feedback
- active listening
- questioning to clarify and confirm understanding
- use of positive, confident and cooperative language
- use of language and concepts appropriate to individual social and cultural differences
- control of tone of voice

Pre-startup checks are conducted to ensure:

- equipment has been set up correctly
- systems are performing accurately
- equipment is operating to optimum performance

Diagnosis is to include:

- use of audio, visual and written information
- water quality
- chemical testing

Emergency shutdown is the immediate shutting off of the equipment to prevent an accident or damage to the plant

Records and reports may include:

- fuel efficiency recordings and environmental impact
- calculations
- operating logs
- storage location
- quality outcomes
- hazards
- incidents
- equipment malfunctions

and may be:

- manual
- a computer-based system
- other appropriate organisational communication system

Heat plant data may include:

- heat levels
- pressure levels

RANGE STATEMENT

- energy generation levels
- heat build-up
- system overload information

Output

is the amount of energy produced to provide power to site operations

Shutdown

is the process of winding down the heat plant and reducing heat until the system is cold and ready for cleaning and maintenance

Storage is to include:

- close down time the heat plant is inactive
- procedures for shutdown

Unit Sector(s)

Not Applicable

Competency field**Competency field**

Common Technical