Title	**Operate, monitor and control performance of a thermal energy plant for wood panel manufacturing**		
Level	**4**	**Credits**	**20**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the fundamentals of thermal energy plant operation; operate a thermal energy plant; monitor and control the performance of a thermal energy plant; and explain and complete maintenance and documentation requirements.

Classification	Wood Manufacturing - Generic Skills > Wood Panel Manufacturing Skills

Available grade	Achieved

Guidance Information

1 Legislation
Health and Safety at Work Act 2015.
Resource Management Act 1991.

2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider wood manufacturing industry as examples of best practice.
Corrective action may include actions such as communication to management, communication to on-site technical support person, communication to off-site technical support person, cleaning, communication with maintenance staff, recalibration, or changes made to the operating system in accordance with workplace procedures.
Preventative maintenance refers to the care and servicing of equipment and machinery. This may include periodic checks and inspections, testing, measurements, adjustments, or parts replacement as required in accordance with worksite policies and procedures for the purpose of preventing faults or failures and to maintain production requirements.
Thermal energy plant refers to a plant that may raise steam, heat oil, or heat air for further wood panel processing.
Workplace procedures refer to documented policies and procedures set by the organisation carrying out the work, and to documented or other directions provided to staff, and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions,

and procedures to comply with legislative and local body requirements relevant to the wood manufacturing industry sector.

3 Assessment information
All activities and evidence must meet workplace procedures and accepted industry practice.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the fundamentals of thermal energy plant operation.

Performance criteria

1.1 The purpose of the thermal energy plant in the wood panel manufacturing process is described.

1.2 The operating parameters and capability of thermal energy plant are explained.

Range may include but are not limited to – pressures, temperatures, throughput speeds, fuel types, air and/or fuel ratio, environmental requirements, water quality.

1.3 Operating components and process controls of thermal energy plant are identified, and their purpose is explained.

Range may include but are not limited to – fuel transport system, heat transfer, temperature controls, venting system, emission control system and/or water treatment system and/or ash removal system.

1.4 Hazards associated with thermal energy plant are identified, and the role of protective equipment and safety features is explained.

Range hazards may include but are not limited to – hot oil, pressure, flash points, radiation, working at elevated temperature;
safety features may include but are not limited to – personal protective equipment, hold cards, lockouts, stop buttons, guards, fire and explosion detection and prevention systems, safety valves, low water cut outs, sight glasses.

1.5 The consequences of non-conformance with quality and safety standards are described.

Outcome 2

Operate a thermal energy plant.

Performance criteria

2.1 The thermal energy plant is set up, started, operated, and shut down.

Range output heat requirements, operating efficiency.

Outcome 3

Monitor and control the performance of a thermal energy plant.

Performance criteria

3.1 Process requirements, plant performance, and thermal energy quality are maintained by monitoring and interpreting feedback information and adjusting control parameters.

3.2 Operating faults are identified, and corrective action is taken.

Range may include but are not limited to – fuel feed, temperature fluctuations, pressure fluctuations, power loss.

3.3 Equipment faults and malfunctions are identified, and corrective action is taken.

Range equipment faults and malfunctions – electrical, mechanical, hydraulic, pneumatic, instrumentation.

3.4 Emissions from the thermal energy plant are monitored and controlled.

Outcome 4

Explain and complete maintenance and documentation requirements.

Performance criteria

4.1 Preventative maintenance and cleaning requirements are explained and applied.

4.2 Production, maintenance, and quality records are explained and completed.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 January 1995	31 December 2012
Review	2	24 November 1995	31 December 2012
Revision	3	12 February 1998	31 December 2012
Review	4	25 March 1999	31 December 2012
Review	5	29 March 2005	31 December 2012
Rollover and Revision	6	23 February 2007	31 December 2013
Review	7	19 April 2012	N/A
Review	8	23 April 2020	N/A

Consent and Moderation Requirements (CMR) reference	0013

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.