

1. Module details**Module name****Minor Maintenance to a Generating Plant****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 56 - 60 hours.

Module code

NUE029

Discipline code

07031

2. Module purpose

This module will provide the learners with the skills required to perform minor maintenance and service procedures to a power generation plant.

3. Prerequisites

NUE028 Power Station Instrument/Meter Reading.

4. Relationship to competency standards

This module provides part of the underpinning knowledge and skills in the 'Evidence Guide' of specific units of competency in the National Electrotechnology Training Package and provides similar support, where mapped, to equivalent units in the National Metals and Engineering Competency Standards. For details refer to the module to unit maps, available from NUEITAB.

5. Content**Minor servicing of the power station's generating plant**

Engine oil and filters

Fuel filters

Coolant filters

Water trap devices

Air cleaners

Minor maintenance of the power station's generating plant

Fan and accessory drive belts

Repair of minor leaks: coolant, oil and fuel

Servicing of the power station's generating plants battery systems

Starting battery set

Switchboard (nicad) batteries (if applicable)

6. Assessment strategy

Assessment methods

Assessment should be progressive reflecting a holistic approach to ensure the module purpose is met. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written tests consisting of a number of item types, such as multiple choice, short answer and problem solving.

Conditions of assessment

Learning and assessment will take place in an environment that is conducive to a learner’s development.

7. Learning outcome details

Learning outcome 1

Perform minor service procedures to the diesel powered generation equipment in accordance with the prepared maintenance schedule.

Assessment criteria

- 1.1 Change engine oil refilling the engine with the correct type grade and quantity of new oil.
- 1.2 Remove oil filters and replace with new filters of the specified type.
- 1.3 Remove fuel filters and replace with new filters of the specified type.
- 1.4 Service the fuel system water trap devices.
- 1.5 Bleed the fuel system, dip the fuel tank and refill for continuous running, ensure an adequate supply of stand by fuel is readily accessible.
- 1.6 Remove the engine coolant system filters, if applicable, and replace with new filters of the specified type.
- 1.7 Service the air cleaners and clean and or replace.
- 1.8 Clean all oil and fuel spills from in and around the power station. Remove all drain tins soiled rags and used parts from the power station and dispose of the used consumables in an environmentally friendly manner.
- 1.9 Observe all safety procedures including the wearing of personal protective equipment.

Learning outcome 2

Perform minor maintenance procedures on the installed diesel powered generation equipment in accordance with the prepared maintenance schedule.

Assessment criteria

- 2.1 Inspect, replace and/or adjust fan belts, use the specified fan belt if replacement is necessary.
- 2.2 Diagnose fluid leaks from the: fuel system, coolant system and lubricating oil system.
- 2.3 Repair any minor fluid leaks from the: fuel system, coolant system and lubricating oil system.
- 2.4 Clean and or remove any oil, fuel or coolant leaks from the power station and restore any tools and equipment to their appropriate position. Dispose of any used consumables in an environmentally friendly manner.
- 2.5 Observe all safety procedures including the wearing of personal protective clothing.

Learning outcome 3

Service all operational batteries and battery packs in the community's power station in accordance with the prepared maintenance plan.

Assessment criteria

- 3.1 Service the generation plants main battery starting pack.
- 3.2 Clean the area free of any battery acid contamination and store battery tools and consumables (distilled water) in their correct place.
- 3.3 Service the switchboard backup (nicad) battery pack (if applicable).
- 3.4 Observe all safety procedures including the wearing of personal protective equipment.

8. Delivery of the module

Delivery strategy

Delivery strategies must be suitable for learning both theoretical and practical aspects described in the module purpose. It is considered that the most effective method to achieve this is by integration of theory and practice where students learn by experimentation, research and reports. It is recommended that learning and assessment be facilitated in a holistic manner that may require learning outcome sequence other than that indicated in the module.

Resource requirements

Students will need access to an operational powerhouse to gain maximum benefit from this module. They will also need access to all service manuals for the equipment they are training on.

Occupational health and safety requirements

A safe and healthy environment will be provided for students and teachers as well as the particular safety procedures followed as part of the learning / teaching activity and content.