

LABORATORY 1

TITLE: Power Generation

OBJECTIVES:

1. To understand how power is generated in a magnetic field
2. To understand the principles of standby power generation systems.

NOTES:

Electric power is generated when a coil moves inside a magnetic

field. The coil movement is usually by hydraulic power or

thermal energy. Power is generated nationwide by a National

Institution or National Electric Power Authority (NEPA.)

Sometimes when NEPA power fails, farms resort to standby

electric power generator.

PROCEDURE

- a) The generator
 1. You will be shown the electric power generator that is driven by the mains supply.
 2. Connect the rotor to the stator and switch on the system
 3. Observe and write a report on what you see.
- b) Stand by generator

1. You will be shown a 1 – cylinder, single phase standby electric power generator
 2. Identify the engine parts and the shaft that serves as rotor
 3. Describe how the machine operates
 4. Using the total load and the critical load systems, design a standby generator for the Agric. Engineering block (Use the procedures taught in class).
- c) Answer the following questions
1. Explain the differences and similarities between a hydro- and thermo – electric power station
 2. List the advantages of having a stand-by generating plant.

