GLOSSARY

AC---Alternating Current

ALTERNATING CURRENT---Current which varies from zero to a positive maximum to zero to a negative maximum to zero, a number of times per second, the number being expressed in cycles per second or Hertz (Hz)

ALTERNATOR---A device for converting mechanical energy into electrical energy in the form of alternating current. It may be called an AC generator.

AMMETER---An instrument designed to measure electric current flow.

AMP---See Ampere

AMPERAGE---The strength or intensity of an electric current, measured in amperes. See ampere.

AMPERE---The unit of electric current flow. One ampere will flow when one volt is applied across a resistance of one ohm.

BRUSH---A conducting element, usually graphite and/or copper, which maintains sliding electrical contact between a stationary and a moving element

BRUSHLESS---A unit that derives its field current via magnetic transfer from the stator to the rotor. No sliding or moving electrical contacts are needed.

CONDUCTOR---A wire or cable designed for the passage of electrical current.

CONTINUOUS CURRENT---A steady non-pulsating direct current.

CONTINUOUS LOAD---Any load up to and including full rated load that the generator set is capable of delivering for an indefinitely long period,except for shutdown for normal preventative maintenance.

CORE---The laminations in the generator constituting the magnetic structure thereof.-

CURRENT---The rate of flow of electricity. See AMPERE

CYCLE---One complete reversal of an alternating current or voltage, from zero to a positive maximum to zero to a negative maximum back to zero. The number of cycles per second is the frequency,expressed in Hertz (Hz).

DC---Direct current-

DIODE---A solid state device which allows current to pass in one direction only. Since it allows only one half cycle of an alternating current pass, its output will be unidirectional and it may be considered a rectifying element.

DIRECT CURRENT---An electric current flowing in one direction only. DC is

produced by chemical action (e.g., a storage battery) or by electromagnetic induction.

DYNAMO---A machine for converting mechanical energy into electrical energy by electromagnetic induction. A generator.

EFFICIENCY---The efficiency of a generator set shall be defined as the ratio (expressed as a percentage) of its useful power output to its total power input.

ELECTROMAGNET---A core of magnetic material, usually soft iron, surrounded wholly or in part by a coil of wire through which an electric current is passed which magnetizes the core.

ELECTRO-MAGNETIC FIELD---A magnetic field generated by the passage of current through a coil surrounding a ferrous pole structure.

ELECTRO-MOTIVE FORCE (EMF)---The force which causes current to flow in a conductor; in other words, the voltage or potential.

ELECTRON---An elementary particle consisting of a charge of negative electricity.

EMF---See Electro-motive Force

FREQUENCY---a) In physics,the number of vibrations or cycles per unit of time. b) Specifically, the number of cycles per second of an alternating electric current. See Hertz

FREQUENCY CONVERTER---A device for transforming electrical current from one frequency to another.

FLUX---Magnetic lines of force.

FLUX DENSITY---Magnetic lines of force per unit of area.

GENERATOR---A general name for a device for converting mechanical energy into electrical energy. The electrical energy may be direct current (DC) or alternating current (AC). An AC generator may be called an alternator.

GROUND---A connection, either intentional or accidental, between an electric circuit and the earth or some conducting body serving in place of the earth.

HERTZ---A unit representing the measurement of one cycle per second

HIGH CYCLE GENERATOR---An electric generator with a 180 Hz, 3 phase output.

HOUSE CURRENT---The electric service delivered to a residence or place of business by a public utility. See Utility Power Supply.

HZ---See Hertz.

IDLER--- A device to reduce the engine speed when a generator set is not being operated under load. An idler conserves fuel, reduces noise and saves wear and tear on the engine.

INDUCTION MOTOR---An AC electric motor in which the rotor has a current induced into it by the alternating electric field of the stator.

INSULATOR---A non-conducting body or substance used to prevent current flow.

NO LOAD POWER---No load power for a generator set is a state of operation at rated speed wherein all control, monitoring and excitation circuits or devices are energized and functioning and it is only necessary to close the output switching device to provide power to the load. In the event that the generator set is equipped with more than one power producing device, such as a battery charger, then these devices shall be treated as separate power producing devices whose no load state shall be defined as above.

NON-CONDUCTOR---See insulator

OHM---Unit of electrical resistance. One volt will cause a current of one ampere to flow through a resistance of one ohm.

OHM'S LAW---The law that states the intensity (amperage) of an electrical current is directly proportional to the electromotive force(voltage) and inversely proportional to the resistance (ohms). (Amps =volts/ohms) or (I=E/R).

OVERLOAD POWER---Overload power is that load in excess of rated load which the generator set is capable of delivering for a specified period of time. It should be recognized that the voltage. frequency and operating temperature may differ from normal rated values

PF---Power factor

PARALLEL CONNECTION---An electrical connection in which the input terminal of element is connected to the input terminal of another element and the output terminals are similarly connected together, thereby providing two paths for current flow. See SHUNT CONNECTION

PHASE---The number of complete voltage and/or current sine waves generated per 360 electrical degrees. Each phase requires a complete set of windings.

POWER FACTOR---The ratio of true power in watts to the volt-amperes of an AC circuit. When current (amps) and voltage (volts) are in phase, the power factor is 1 (watts=volts x amps).

RATED POWER---The stated or guaranteed net electric output which is obtainable continuously from a generator set when it is functioning at rated conditions. If the set is equipped with additional power producing devices, then the stated or guaranteed net electric power must take into consideration that the auxiliaries are delivering their respective stated or guaranteed net output simultaneously, unless otherwise agreed to. 'See EFFICIENCY.

RATED SPEED---Revolutions per minute at which the set if designed to operate.

RATED VOLTAGE---The rated voltage of an engine generator set is the voltage at

which it is designed to operate

REAL POWER---A term used to describe the product of current, voltage and the power factor, expressed in KW.

RECTIFIER---A device that converts AC to DC. See DIODE.

RELAY---An electrically operated switch usually used in control circuits and whose contacts are considered low amperage, compared to a contactor.

RESISTANCE---Opposition to the flow of current. See OHM.

RESIDUAL VOLTAGE---Voltage generated with zero field current.

ROTOR---The rotating element of a motor or generator.

SERIES CONNECTION---An electrical connection in which the output terminal of one element is connected to the input terminal of another element, thereby providing one path for current flow.

SERIES WOUND---A generator in which all of the current output passes through the field windings.

SHORT CIRCUIT---Generally an unintentional electrical contact between current carrying parts resulting in the passage of current through an undesirable path.

SHUNT CONNECTION---Parallel connection in which the terminals of two or more devices are connected together

SINGLE PHASE---A single phase alternating current system has a single voltage in which voltage reversals occur at the same time and are of the same alternating polarity throughout the system.

STATOR---The stationary part of a generator or motor.

THREE PHASE---Three complete, separate sine waves spaced 120 electrical degrees apart.

UNITY POWER FACTOR---A power factor of 1.

UNIVERSAL MOTOR---An electrical motor which can be used on either AC or DC supply.

UTILITY LINE--The wired provided and owned by a utility company, and which carry the utility power supply.

UTILITY POWER SUPPLY---The electric service provided by a public utility. See HOUSE CURRENT.

VOLT---The unit of electromotive force That electromotive force which when steadily applied to a conductor whose resistance is one ohm will produce a current of one ampere.

VOLTAGE---Electric potential or potential difference expressed in volts.

VOLTAGE DROP---The reduction on voltage, caused by the current which flows

through a resistance. Equal to the product of current and resistance.

WATT---Unit of electric power. In direct current equals volts times amperes. In alternating current equals effective volts times effective amps times power factor times a constant dependent on the number of phases. 1000 watts equals 1 kilowatt.

WATT-HOUR---Unit of electrical energy equal to one watt of power consumed during an hour.

WINDING---All the coils of a generator. Stator winding consists of a number of stator coils and their interconnections.Rotor windings consist of all windings and connections of the rotor poles.