

SPECIALIZATIONS:

- **ASI-S2 Mechanical • ASI-E5 Instrumentation**
- **ASI-S3 Electrical • U4 Power Line Distribution**

The Prime Power Production Specialist, with an associated ASI, installs, operates, maintains, repairs, and supervises electrical power plants and distribution equipment worldwide. The generating units are primarily diesel or gas turbine engine-driven models producing 750 kW to 4,500 kW at 3800 or 4160 volts. Power Plant operator duties include procedures for start-up, operations, monitoring, operator's maintenance, and shutdown of power plant equipment and auxiliary systems. Maintenance duties include inspecting, testing, maintenance, and repair at organizational, direct, and general support levels for Prime Power generation and distribution equipment and associated support systems and equipment. Prime Power Production Specialist have a long list of tasks, missions, and roles within the military operations that range from supporting the war fighter to nation building to national disasters and so on.

To see the full **Energy Industry Competency Model for Generation, Transmission, and Distribution**, please visit:

www.cewd.org/documents/energymodel.pdf

Graduates of the Prime Power School have earned 38 college credits in Math, Science, and Technical skills. All of the graduates receive training in:

- **Safety**, including OSHA regulations; lockout/tagout rules and procedures; electrical shock; and first aid
- **Print Reading**, including electrical/electronic schematics; single-line diagrams; electronics and logic circuit diagrams; shop drawings; and prints
- **Electrical System Engineering**, including fundamentals of electrical concepts; series and parallel DC circuits; DC meters; transformers; single-phase and three-phase AC circuits; and capacitance
- **Mechanical System Engineering**, including fluid dynamics; temperature and thermal expansion; heat energy transfer; 2nd and 3rd laws of thermodynamics; pumps and pumping power; and energy and energy forms
- **Prime Movers**, including batteries and battery chargers; hand, power, and special tools; test measuring and diagnostic equipment; petroleum, oils, and lubricants; maintenance management; and troubleshooting equipment and systems
- **Power Plant Operations**, including voltage regulators and exciters; power plant operations; power reliability; power distribution equipment; and maintenance log and record keeping

The Veterans that have received this training and field experience can move into energy jobs at a level higher than entry level and should be able to “test out” of some aspects of the internal technical training.

COMPARABLE ENERGY JOBS:

POWER PLANT OPERATOR

GENERATION TECHNICIAN

- Mechanical
- Electrical
- Instrument & Control

ELECTRIC T&D TECHNICIAN

- Substation Technician
- Relay Technician

LINE WORKER

AUTO & DIESEL MECHANIC

EMPLOYER FACT SHEET

The military training received also provides job-specific training for:

POWER PLANT OPERATOR

12P – PRIME POWER PRODUCTION SPECIALIST

Electrical and mechanical protective systems used in electrical power production; generator system and equipment grounding fuses; power systems philosophy of protection; load assessment; and power reliability

GENERATION TECHNICIAN

ASI-S2 – MECHANICAL SPECIALIST

- *Mechanical* – Introduction to diesel engine fundamentals; diesel engine systems (air/exhaust, coolant, oil, and fuel); troubleshooting; introduction to maintenance welding and heat processes; metal piping systems; fluid systems materials; valves; threaded copper tubing soldered connections; compressed air; hydraulic and pump design and operations; fluid system controls design and operation; and fuel systems environmental requirements and maintenance
- *Electrical* – DC/AC circuits; test equipment; power quality; three-phase power calculations; theory of semiconductors; diodes and common diode application; voltage regulator circuits; basic DC motors and generators; multi-voltage connection; machine branch circuits; machine controller maintenance and troubleshooting; solid state machine controllers; introduction to power cables; and repair
- *Instrument & Control* – Fundamental solid state principles; common and special diode applications; introduction to amplifiers and amplifier design; solid state switching circuits; logic gates and Boolean algebra; combinational logic circuits; measuring instruments; flow, level, and power and energy measurement; electrical meter mechanisms; control panel testing and calibration; programmable logic controllers; introduction to voltage regulators; introduction to relaying; electrical systems analysis; instrument transformers; voltage relays; uninterruptible power supplies; digital synchronizer; and load controller

ELECTRIC T&D TECHNICIAN

ASI-E5 – INSTRUMENTATION SPECIALIST

- *Relay/System Protection Technician*
Fundamental solid state principles; common and special diode applications; introduction to amplifiers and amplifier design; solid state switching circuits; logic gates and Boolean algebra; combinational logic circuits; measuring instruments; flow, level, and power and energy measurement; electrical meter mechanisms; control panel testing and calibration; programmable logic controllers; introduction to voltage regulators; introduction to relaying; electrical systems analysis; instrument transformers; and voltage relays

ASI-S3 – ELECTRICAL SPECIALIST

- *Substation Technician/Electrician*
Circuit breaker and switchgear operations; electrical systems equipment monitoring and protective devices; introduction to the electric distribution system; grounding; petroleum; oils; and lubricants

LINE WORKER

U4 – POWER LINE DISTRIBUTION

Medium and low voltage cable splicing and termination; grounding; wiring methods; circuits and protection; voltage regulator circuits; climbing; single- and three-phase transformer connection configurations and safety; current and voltage transformers; protective relays; circuit breaker maintenance; and test equipment

AUTO & DIESEL MECHANIC

ASI-S2 – MECHANICAL SPECIALIST

Air and exhaust; fuel, coolant, and oil systems; introduction to diesel engine fundamentals; diesel engine troubleshooting; diesel engine diagnostic tools and equipment; and diesel engine rebuild procedures

