Generator Power Systems

This 12- week (academic length), 300 clock hour program was designed for the technician desiring to obtain one of the highest levels of training in the Diesel Equipment and Technology industry. Enrollment status for this program requires successful completion of Auto-Diesel Master Vehicle Technology, Diesel Equipment Technology, or either of the Associate Degree Programs. Graduates of the Generator Power Systems Program have secured careers with companies such as Cummins, Detroit Diesel, and Caterpillar.

Course	Course Title	Clock Hours	Weeks	Quarter Credit Hours
GPS-101	Electrical Generating Systems	50	2	3
GPS-102	Electrical Wiring Diagrams	50	2	3
GPS-103	Generator Controls & Governing	50	2	3
GPS-104	Automatic Transfer Switches	50	2	3
GPS-105	Paralleling Systems	25	1	1.50
GPS-106	Installation, Preventative Maintenance, Troubleshooting an Emergency Power System	75	3	4
		300	12	17.50

GPS-101 Electrical Generating Systems
Students will be introduced to generator set systems by learning basic electrical concepts including electrical energy, structure of matter, electric current, electrical components, theory of magnetism and magnetic induction, AC current, and DC current. Students will also be trained in electromagnetism and generators, generator component testing, and electrical safety guidelines.

GPS-102 Electrical Wiring Diagrams
Students will be introduced to the identification of electrical symbols, control circuits, the interpretation of wiring and ladder diagrams, and the application to gen sets.

GPS-103 Generator Controls & Governing
Students will be introduced to generator metering, engine metering, control panel pre-alarms, and control panel shutdown alarms. Students will also learn diesel engine governing systems and diesel engine governor installation and adjustment.

GPS-104 Automatic Transfer Switches
Students will learn the operating principles of several automatic transfer switch brands including: ASCO, Generac and Westinghouse as well as Russelectric operating systems. Students will also be trained in troubleshooting common complaints and transfer switch safety guidelines.

GPS-105 Paralleling Systems
Students will learn manual paralleling and auto stand-by paralleling systems, paralleling diagrams, gen sets installation, as well as diesel engine cooling systems, diesel engine fuel systems, diesel engine exhaust systems, and diesel engine air intake systems. Students will also be trained in gen sets pre- start inspection and gen sets start-up procedures.

GPS-106 Installation, Preventative Maintenance, Troubleshooting, and Emergency Power System
Students will be introduced to mechanical and electrical inspection and maintenance, diesel engine tune-up procedures, and operation of resistive load banks. Students will also be trained in generator load testing and troubleshooting procedures for a diesel gen sets.