Module Overview
This module provides the trainees with an overview of the power industry, from source to end user. It covers fossil-fuel power and nuclear generation plants, as well as the alternative power sources that represent an important part of the future for the power industry. The trainees will learn about the career opportunities in the industry and will be introduced to the safety issues that are specific to the industry.

Prerequisites
Prior to training with this module, it is recommended that the trainee shall have successfully completed Core Curriculum.

Objectives
Upon completion of this module, the trainee will be able to do the following:
1. Define energy and name its sources.
2. Identify the different methods of converting energy into electricity.
3. Explain how electricity is transmitted and distributed.
4. Describe the economics of power generation and distribution.
5. Describe the environmental impacts of producing and distributing electricity and methods used to minimize negative effects.
6. Identify safety considerations associated with the power industry.
7. Identify career opportunities and training requirements in the power industry.
8. Identify concerns that might affect the future of the power industry.

Performance Tasks
This is a knowledge-based module; there are no performance tasks.

Materials and Equipment
Whiteboard/chalkboard
Markers/chalk
Introduction to the Power Industry
PowerPoint Presentation Slides
(ISBN 978-0-13-214845-0)
Pencils and scratch paper

Multimedia projector
Desktop or laptop computer
Appropriate personal protective equipment
Example of a company safety procedure
Trade Terms Quiz*
Module Examinations**

* Located in the Trainee Module
** Use your access code to download this exam from the IRC.

Safety Considerations
Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. This module may require that the trainees visit job sites. Ensure that trainees are briefed on site safety policies prior to any site visits.
Additional Resources

This module is intended to present thorough resources for task training. The following reference works are suggested for both instructors and motivated trainees interested in further study. These are optional materials for continued education rather than for task training.


Teaching Time for This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 12½ hours are suggested to cover Introduction to the Power Industry. You will need to adjust the time required for hands-on activity and testing based on your class size and resources.

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B. Electrical Transmission and Distribution
   1. Transmission Subsystem
      a. Substations and Switchyards
   2. Distribution System
C. Careers in the Power Industry
   1. Power Plant and Auxiliary Equipment Operators
   2. Maintenance
   3. Fuel Handling
   4. Laboratory Analyst
   5. Line Workers
   6. Energy Brokers

Session III. Safety Regulations; Safety Practices
A. Government Agencies Involved with Safety
   1. Occupational Safety and Health Administration
   2. Mine Safety and Health
   3. American National Standards Institute
   4. Environmental Protection Agency
   5. Department of Transportation
   6. Nuclear Regulatory Commission
   7. Transportation Security Administration
B. Safety Practices
   1. Policies and Procedures
   2. Foreign Material Exclusion
   3. Grounding

Session IV. Power Industry Economics; The Future of the Power Industry; Standardized Training by NCCER
A. Power Industry Economics
   1. Laws
      a. Federal Energy Regulatory Commission
   2. Costs
   3. Reliability
B. The Future of the Power Industry
   1. Environmental Considerations
   2. Future Technology
C. Standardized Training by NCCER
   1. Apprenticeship Training
   2. Youth Training and Apprenticeship Programs

Session V. Field Trip; Review and Testing
A. Field Trip
B. Module Review
C. Module Examination
   1. Trainees must score 70 percent or higher to receive recognition from NCCER.
   2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.