

## **Module discussion questions (adapted from CEWD and NTER materials)**

### **MODULE 1:**

Just as individuals make changes to save money on their energy bills by using energy more efficiently, utilities are also striving to improve the efficiency of generation, transmission, and distribution activities.

Write a short response that answers the questions:

- What are the main reasons utilities want to make their operations more efficient?
- What methods do they employ to improve efficiency?
- Give a specific example of an efficiency improvement from an Arizona-based power plant.

### **MODULE 2:**

OSHA covers just about every occupation, including jobs in the energy industry.

Write a short response that answers the questions:

- Have you ever had a job that required safety training?
- Have you or anyone you know been part of a workplace related accident?
- What regulations are you aware of at your current/most recent job (or school)?
- What are some ways that safety training in the energy industry might differ from the safety training in your current/most recent job (or school)?

### **MODULE 3:**

Assume you are a reclamation engineer with a coal-fired power company. As a reclamation engineer, you are responsible for restoring the land to a usable state (grassland, wetland, forest, or farmland) after it has been mined.

Write a short response that answers the questions:

- What types of information need to be collected to suggest one mining method over another for a specific site?
- How do different mining methods affect natural resources?
- What groups of people benefit from restoration of mining land to any specific usable state?
- What other populations might benefit from land restoration (animals, vegetation, other)?

### **MODULE 4:**

When it comes to improving the transmission system companies not only face financial complications but also social complications. The concept of “NIMBY” (Not in My Backyard) has proven to be a factor on the advancement of much-needed energy infrastructure updates. Many environmental interest groups or local community committees fight the development of power

generation and transmission projects that are in close proximity to their locations, even though these improvements are typically beneficial to all members of the general public.

Write a short response that answers the questions:

- How can NIMBY affect the economy, jobs, and growth?
- Has NIMBY affected any energy-related projects in Arizona?

#### **MODULE 5:**

Natural gas is typically used in two ways for electric power generation. The first method is through steam turbine generation by burning natural gas to provide heat to create steam similar to the way coal is used to create steam in coal-fired plants. The second method of using natural gas as a fuel source is through gas turbine generation, by the use of the hot gases produced by the combustion of natural gas.

Write a short response that answers the questions:

- What is natural gas fuel cell technology?
- What are the financial implications of using natural gas as a fuel source without using combustion methods to generate electricity?
- What are the environmental implications?