FirstEnergy Efforts to Address Climate Change

It will take a broad approach, including renewable energy, energy efficiency, and new technologies such as carbon sequestration to tackle climate change. FirstEnergy is proud to contribute to the research and development of safe and effective carbon sequestration techniques. This poster illustrates some of the steps involved in a field test taking place at FirstEnergy's R.E. Burger electric generating facility.

The first stage involves detailed site characterization to insure that the area is a good location for an injection test. Figure 1 shows an aerial view of the plant. Figure 2 shows vibroseis trucks creating a sound wave used in a seismic survey to develop an image of the underground geology. Figure 3 shows a technician recording the echoes from the sound waves.

The seismic survey demonstrated that the ground under the R.E. Burger plant is well suited for carbon sequestration. Figure 4 shows the various stages involved in grading and preparing a small plot to locate the injection well. The well is contained in several layers of metal casing (Figure 5) to insure that groundwater at the surface is protected from injection which will occur at the bottom of the well, nearly 8,400 feet below the surface.

Figure 6 shows a picture of the drill bits used in drilling the test injection well. The drilling crew used different bits as they drilled through different rock layers. Figures 7 and 8 show the drilling rig being operated. The well drilling was completed in February 2007. The drilling rig was removed and a small well head device was installed. The next steps for the research project will involve obtaining an injection permit to inject a small amount of CO₂ into the well. The research team, led by Battelle, will run a series of tests during and after the injection to measure and monitor the behavior of the injected CO₂.

This research is part of a national effort consisting of 25 injection projects designed to provide information about the best approaches to carbon sequestration and to engage and educate all participants, including regulatory officials, stakeholders and citizens, about carbon sequestration.