

SHORT COURSE ON COMPUTER-ORIENTED MINE VENTILATION PLANNING AND ANALYSIS

Presented By:



Mine Ventilation Services, Inc.

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Dates:

June 3rd & 4th 2006

Location:

Penn State University
State College, Pennsylvania

Introduction

This course is designed for engineers and technicians responsible for the planning and implementation of mine ventilation systems. The course is organized by Mine Ventilation Services, Inc. (MVS) and the 11th US Mine Ventilation Symposium and is designed to provide the latest technology in the field of subsurface ventilation. The two day course will cover the theory, modern planning techniques, and the basics of computer simulated mine ventilation systems.

The course will be taught by Mr. Keith G. Wallace, Jr. and Mr. Brian Prosser, P.E. of MVS. Mr. Wallace holds a Bachelor and Master's Degree in Mining Engineering from the University of California at Berkeley. He has been involved in the design of mine ventilation systems for over 20 years and is a past Chairman of the Underground Ventilation Committee of the Society of Mining Engineers. Mr. Prosser holds a Bachelor degree from the Virginia Polytechnic Institute and State University. He has worked in the field of subsurface environmental engineering for more than 10 years. Each of the instructors has extensive experience in ventilation design for metal, non-metal, and coal mining operations throughout the world.

Objectives

The main objectives of the course are:

1. to provide an outline of the elements of modern thinking involved in the planning, design and control of mine ventilation circuits,
2. to provide an update on the theory and methodologies underlying the various aspects of ventilation planning,
3. to provide an overview of basic computer modeling and simulation of ventilation systems.

The course will also discuss new technologies in ventilation monitoring and control systems. It is hoped that the participants will leave the course enhanced in their ability to obtain the data required for quantitative ventilation planning, and the skill to engage in practical design procedures through ventilation network simulations.

Methodology

The course will emphasize the use of the VnetPC 2003 ventilation network simulator. Versions of this program are in use at over 300 operations around the world and it remains one of the most popular programs of its type. The course will discuss the basic theory of ventilation planning and survey techniques in order for participants to understand the importance of the data that is input to the program.

Outline of Ventilation Planning Course

Saturday June 3rd – Review of Basic Theory

- Introduction to Ventilation Planning
- Factors Which Affect Airway Resistance
- Ventilation Economics
- Fan Theory
- Introduction to Mine Ventilation Thermodynamics
- Ventilation Surveys
- Reduction of Field Data from Ventilation Surveys

Sunday June 4th – Introduction to Computer Modeling

- Modeling of Coal Mines
- Gas Simulation
- Gob/Bleeder Areas
- Fan Selection