Chapter 4 - INDUSTRIAL HYGIENE

A. Industrial Hygiene Inspection Frequency and Scope

Industrial Hygiene (IH) inspections shall be conducted annually in at least 5 percent of all surface and underground mines located within each district. Special emphasis should be placed on surface shops and coal testing laboratories.

An IH inspection can be either a complete inspection for a mine site of all health hazards or a limited inspection such as that of a process, a chemical or physical hazard.

B. Qualifications of IH Inspection Personnel

All-IH inspections are to be conducted by MSHA employees who meet at least one of the requirements listed below:

1. The person can meet the requirements specified in OASAM Directive No. OD-236-83;

2. the person has successfully completed the advanced IH training course (16 to 18 weeks) at the National Mine Health and Safety Academy in Beckley, West Virginia; or

3. the person is determined to be qualified to conduct IH inspections by the District Manager. However, due to the possible hazards associated with toxic substances, District Managers should ensure that individuals qualified under this provision are fully aware of the proper sampling techniques for each toxic substance sampled.

C. Pre-inspection Procedures

Due to the wide variety of conditions in coal mining and processing, preinspection preparation is essential in conducting a quality inspection.

1. The IH inspector shall carefully review all pertinent information contained in the mine file and should review appropriate reference sources to become knowledgeab1e in the potential hazards.

2. The IH inspector should review appropriate standards and sampling methods. Based on experience and information known about the mine, the IH inspector should anticipate the instruments necessary for the inspection. The IH inspector or technician should then prepare the instruments and equipment according to the standard method of sampling and calibration.

3. The IH inspector should coordinate the inspection with the local MSHA field office supervisor.

4. The IH inspector shall prepare and use appropriate personal protective equipment when exposure to toxic substances is anticipated.

5. Upon arriving at the mine site, the IH inspector shall contact a representative of the operator and the miners informing each of the inspection. Where there is no

representative, the IH inspector shall consult with a reasonable number of the miners concerning matters of health and safety in such mines.

6. The IH inspector should obtain a list of operations, processes, and chemicals in use at the mine, if available, in an effort to set priorities for the inspection. Material safety data sheets should be requested for chemicals in use. If necessary to assist the inspection, the IH inspector should request blueprints, process flow charts or mine maps. If these are not available, the IH inspector should sketch, as necessary during the course of the inspection, a diagram identifying the operations and the relative dimensions of the work area. Where pertinent, distribution of equipment, including engineering controls in use, should also be included on the sketch.

D. Inspection Procedures

1. A walk-through (partial or full) is required for all IH inspections. The main purpose of the walk-through is to identify potential health hazards in the workplace.

2. As the walk-through proceeds, the IH inspector should record all relevant information concerning potential exposure to chemical substances or physical hazards, such as, potential sources of the health hazards, duration and frequency of the hazard, employee symptoms, pertinent employee comments, location of employees during the inspection, types of engineering contrQ~ls and use of personal protective equipment –including types of respirators, ear and eye protection, clothing, etc. Material safety data sheets (MSDS) should be’reviewed where available and appropriate.

3. The IH inspector shall inventory the toxic materials found at each mine site. A good place to start is at the mine supply house or warehouse. Upon completion, list the toxic materials found on the IH Inspection Data Form No. 2000187 and submit the information to the District Health Office to assist in compiling a toxic material data bank.

4. The following areas should also be evaluated during the IH inspection:

   a. Education and Training. Observations should be made to determine if the operator’s training program, as it relates to toxic substances and harmful physical agents, is adequate. If a miner has not attended the training required by 30 CFR 48.25(b) (8) or 48.28 (b) (8), appropriate citations will be issued. A special effort shall be made to determine miners’ knowledge of (a) health hazards at the mine, (b) precautions that need to be taken, (c) emergency procedures, and (d) maintenance and use of personal protective equipment. If the miners’ knowledge is inadequate, the details shall be promptly brought to the attention of the appropriate Education and Training Specialist so that remedial action can be taken.

   b. Protective Clothing and Respiratory Equipment. A detailed evaluation shall be made to determine compliance with the specific regulations which require protective clothing and respirator equipment (30 CFR 70.300, 70.305, 75.1720, 77.1710).

c. Bathing facilities, Change Rooms, Sanitary Flush Toilets and Sanitary Toilet Facilities. A detailed evaluation shall be made to determine compliance with the specific regulations which cover bathing facilities, change rooms, sanitary flush toilets and sanitary toilet facilities (30 CFR 71.400 through 71.501, and 75.1712 through 75.1712-10).

d. Drinking Water. An evaluation shall be made to determine if there is an adequate supply of drinking water, if it is being maintained and dispensed in a sanitary manner in accordance with 30 CFR 71.600, 71.602, 71.603 and 75.1718.

e. Reports of Occupational Illness. The IH inspector shall determine compliance with 30 CFR 50, with respect to occupational illness.

E. Collecting Samples

The IH inspector shall determine whether sampling is required by utilizing the information collected during the walk-through and from the preinspection review. If sampling is necessary, a sampling strategy shall be developed by considering potential chemical and physical hazards, number of samples to be taken and the operations and locations to be sampled.

1. Representative occupations must be selected for sampling and personal sampling devices prepared accordingly. Employees with the highest expected exposure at specific operations shall be monitored.

2. All sampling equipment shall be checked and calibrated prior to collecting samples. A record of each calibration shall be maintained.

3. Although it is not essential that the IH inspector continuously observe each employee being monitored, an accounting of each monitored employee's movements and duties in each area of the mine which may significantly affect the total exposure must be made.

4. Sampling equipment shall be checked frequently during the inspection to ensure proper operation.

5. If the employee refuses to wear the sampling pump and another employee who is similarly exposed cannot be sampled, the III inspector shall collect the sample by holding the collection device in the breathing zone of the employee or by any other means which provides a representative sample of the employee's exposure.

6. Area samples may be taken to identify contaminant sources and their relative contributions to employee exposure (e.g., to assist in the determination of the effectiveness of, or need for, engineering controls).

7. Where the IH inspector doubts the quality of drinking water, the drinking water shall be tested to determine whether it meets the requirements of 30 CFR 71.601 and 75.1718-1.

8. Where necessary, the appropriate tests shall be conducted to determine whether bathing facilities, change rooms, toilet facilities, and sanitary toilets meet the

requirements of 30 CFR 71.402(a), 71.501, 75.1712-3(a), and 75.1712-10.

F. Evaluation of Sampling Data

The IH inspector shall evaluate all sampling data to determine whether applicable standards have been exceeded or whether a potential health hazard exists.

1. If at any time during the inspection noncompliance is determined, the appropriate citation(s) and/or order(s) shall be issued.

2. Airborne contaminant standards in 30 CFR 71.700 or gas standards in 75.301-2 should be referenced when making compliance or noncompliance decisions.

3. If, while indicating compliance with the applicable standard, the sample data suggests a potential health hazard, the IH inspector shall bring this to the attention of both labor and management and should offer assistance to the operator in preventing the condition from developing into an actual health hazard. A potential health hazard exists if the measured levels exceed 50 percent of the TLV level.

4. Additional sampling may be necessary either before or after the preventative action has been taken to further assess the condition.

5. If the sampling data results in a citation, a reasonable time shall be given to abate the condition. When corrective action has been taken, the IH inspector shall collect additional samples to determine the effectiveness of the control measures. However, at surface mines and surface areas of underground mines, the IH inspector may collect the additional samples or require the coal operator to collect the additional samples in accordance with 30 CFR 71.701. Sampling data obtained during the reevaluation shall be used to determine whether compliance has been achieved.

G. Closing Conference

The IH inspector shall meet with a representative of the operator and an authorized miner representative to discuss all available inspection results. Since the IH inspector may not have the results of all samples prior to the closing conference, a second closing conference may be necessary to inform both labor and management of sample results.

H. Sample Analysis and Reporting Procedures

1. All samples collected during the inspection shall be sent to the appropriate MSHA laboratory for analysis provided MSHA can do the analysis. If MSHA cannot do the analysis, arrangements with an independent laboratory will need to be made. When possible, a bulk sample of no more than 100 milliliters should be sent along with the environmental samples to the MSHA laboratory.

2. If no samples were collected during the inspection or if no sample results are outstanding, the IH inspector shall consider the inspection completed and submit a final IH inspection report to the supervisor.

3. All IH inspections shall be reported under the inspection code AEA (Toxic

Substances, Harmful Physical Agents Investigations).

4. If samples are outstanding at the conclusion, the inspector should complete an interim report and submit it to the supervisor.

5. Upon receipt of the sample results, the IH inspector shall evaluate the data, take appropriate actions under 30 CFR, and conduct a second closing conference with both labor and management.

6. Following the second closing conference, the IH inspector shall complete the final IH inspection report and submit it to the supervisor.

7. Any MSDS obtained from a coal operator should be maintained in the district files for further reference and a copy of the MSDS should be forwarded to the Chief, Physical and Toxic Agents Division (PTAD), Pittsburgh Health Technology Center (PHTC).

8. Form 2000-187 is to be completed for each industrial hygiene inspection. One copy is to be included with the AEA inspection report and a second copy is to be mailed, to the Chief, PTAD, PHTC, for computerization of the data, after all sample results have been received and the survey has been completed.

9. Form 2000-194 is to be completed only if samples were collected. If this form is completed, it should also be included with the AEA report and a copy sent, to the same location listed above, after all sample results have been received and the survey has been completed.