

National Industrial Sand Association (NISA) Occupational Health Program

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OHP Overview

- Current OHP is dated 2010 and is a revision to the 1997 OHP Manual.
- Purpose:
 - “Conducting a surveillance program as outlined in this manual is crucial to our industry in reaching our goal of preventing the development of new cases of silicosis in member company employees.”

Sections of The OHP

- NISA OHP consists of 4 sections:
 - Introduction;
 - Respiratory Health Effects of Exposure to Crystalline Silica
 - Workplace Dust Surveys; and
 - Respiratory Medical Surveillance for Silicosis.

Introduction

- Respiratory Health Effects of Exposure;
- Workplace Dust Surveys; and
- Respiratory Medical Surveillance.

Respiratory Health Effects of Exposure to Crystalline Silica

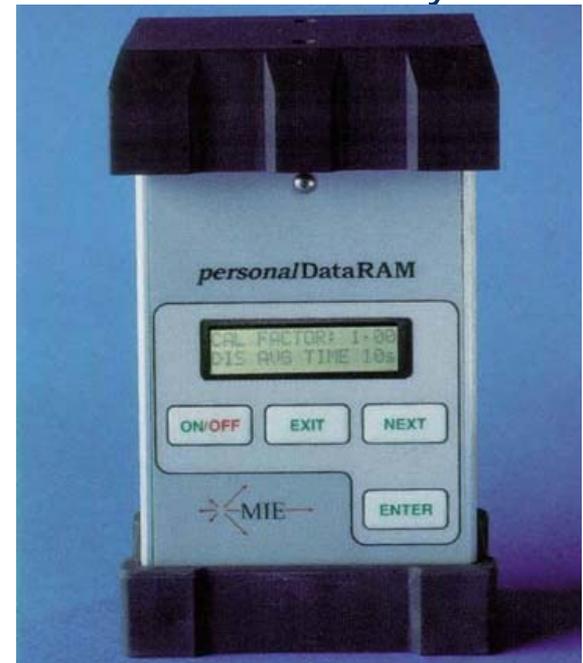
- Description of Respiratory System;
- Pneumoconiosis;
- Silicosis:
 - Chronic, Accelerated, and Acute.
- Silica and Lung Cancer;
- Medical Surveillance and Epidemiology; and
- Exposure Limits:
 - How to determine via PEL calculation.

Workplace Dust Surveys

- Purpose:
 - Evaluate workplace exposure to silica dust.
- Respirable Dust Sampling:
 - Sampling Equipment;
 - Calibration of Sampling Train; and
 - Burette and Electronic calibration methods.
- Sampling Procedures:
 - Personal Sampling; and
 - General Workplace or Area.

Workplace Dust Surveys (cont'd)

- Direct Reading Instruments:
 - Instrumental in pin-pointing exposure sources whether they be equipment or work practices.
- Analytical Procedures:
 - Gravimetric & X-Ray Diffraction (XRD);
 - NIOSH 7500.
- Sampling Records:
 - Pump Calibration;
 - Data Sheet;
 - Sampling Results; and
 - Activity Log.



Workplace Dust Surveys (cont'd)

- **Sampling Frequency:**
 - General guidelines for how many workers to sample based on population.
- **Discussion of Results:**
 - What do the numbers mean to the miner?
- **Sampling Strategy:**
 - Determine sampling frequency based on exposures.

Respiratory Medical Surveillance for Silicosis

- Purpose:
 - Establish baselines;
 - Detect abnormalities at an early stage;
 - Prevent development of silicosis;
 - Disclose occupational and non-occupationally related abnormalities to worker for clinical follow-up;
 - Identify potentially hazardous working conditions; and
 - Develop data on which epidemiological studies can be based.

Respiratory Medical Surveillance for Silicosis (cont'd)

- Medical and Occupational History;
 - Respiratory History;
 - Smoking History;
 - Prior exposure to potentially harmful dusts, chemicals, and other physical agents; and
 - Any adverse effects related to exposures.

Respiratory Medical Surveillance for Silicosis (cont'd)

- Medical examination:
 - Of the thorax to assess worker's respiratory fitness;
 - A 14-by-17 inch PA chest x-ray
 - Evaluated by qualified board-certified radiologists who are NIOSH-certified B Readers.
 - List of current B Readers may be found at <http://www.cdc.gov/niosh/topics/chestradiography/breader-info.html>
 - Radiograph interpretation – Art or Science, particularly at lowest categories?
 - Pulmonary Function Tests (PFTs).
 - TB Tests for employees with more than 25 years exposure.

Respiratory Medical Surveillance for Silicosis (cont'd)

- Consensus X-Ray Interpretation:
 - Normal – No additional reading.
 - Abnormal (Non-Occupational) – Refer for follow-up.
 - Abnormal (Occupational) – Second Reading.
 - First and second readings agree – No additional reading.
 - First and second readings disagree – Third Reading.
 - Consensus = median reading of all 3.

Respiratory Medical Surveillance for Silicosis (cont'd)

- X-Ray Retention and Storage:
 - ANSI Standards for storage recommended.
- Spirometry (Pulmonary Lung Function Testing)
 - Mandatory element of OHP.
- Medical Assessment of Ability to Wear a Respirator
 - Performed by physician considering
 - Worker's health;
 - Type of respirator; and
 - Type of working conditions.

Respiratory Medical Surveillance for Silicosis (cont'd)

- Record Keeping & Worker Notification:
 - Records kept 30 years past end of employment; and
 - Worker provided with results and evidence of this exchange should also be kept on file.
- Frequency of Examinations:
 - Medical evaluations (excluding x-rays) biennially;
 - X-Ray frequency based on:
 - Number of years since first exposure to silica dust;
 - Age of the worker; and
 - Whether any signs or symptoms are present.

NISA Silicosis Prevention Program

- Program contains 6 elements:
 - Occupational Health Program Implementation;
 - Medical Assessment;
 - Dust Exposure Assessment;
 - Dust Control;
 - Employee Involvement; and
 - Smoking Cessation Program.

NISA Silicosis Prevention Program

- The NISA Silicosis Prevention Program is a GREAT program and if implemented will prevent development of new cases of silicosis.
- NISA Membership – 24 operators.
- NISA members committed to the Silicosis Prevention Program – **9!**

NISA Silicosis Prevention Program

- Despite the potential value of the program, only 37.5% of the membership has committed.
- Commitment levels vary between participating companies.
- Roadblocks to commitment:
 - Concern for the creation of enforceable data (e.g. dust samples);
 - Cost;
 - Not fully understanding the program (even after all of these years).

NISA Silicosis Prevention Program

- The NISA OHP is state of the art.
- The NISA SPP will prevent new disease.
- The NISA membership understand this.
- Even with “no cost” mentoring, the majority of members are hesitant to fully commit.

Ontario Ministry of Labour Lesson

- Within the Province of Ontario, the Ministry of Labour (MOL) is equivalent to the MSHA.
- Historically, MOL legislation required employers to maintain a “Health & Safety Plan”.
- Sophisticated employers are constantly measuring performance and adjusting programs.
- Un-sophisticated employers lack resources to constantly measure and adjust programs, let alone implement formal programs.
- MOL has abandoned program requirement.