

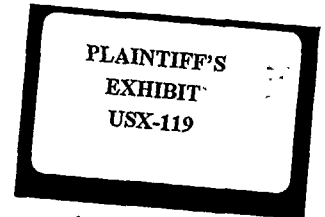
1- Plant General Managers, General Superintendents, Plant Managers, Administrative Physicians, Industrial Hygiene and Safety Representatives



Interorganization Correspondence

Date: April 27, 1984

From: Frederick M. Toca, Ph.D.
Manager-Industrial Hygiene



Subject: Revised Corporation Asbestos Guidelines and Radiation Guidelines

Revised copies of the Corporation guidelines for assisting in the protecting of our employees from the hazards associated with asbestos and ionizing radiation exposures are attached. The asbestos guidelines were revised by Health Services Personnel and include the criteria of the recent OSHA Emergency Temporary Standard (ETS) for Asbestos. The criteria of the ETS is included, although a Federal appeals court struck down this Standard, because we believe that a permanent Standard proposing the same criteria will be promulgated shortly.

The ionizing radiation guidelines were revised by the Corporation Radiation Committee and Industrial Hygiene Services. Included with this guideline are selected portions of the NRC regulations concerning Specific and General License requirements. These excerpts are included to provide information regarding the difference between the two types of licenses and an overview of the requirements of each type.

Holders of the Industrial Hygiene Policy and Guidelines Manual should insert the revised copy of the asbestos guidelines into Section I, I.H.-12 of this Manual and the revised copy of the radiation guidelines into Section I, I.H.-3 of the Manual. Please discard the original guidelines.

Fred.

JBM/mdd
Attachments

cc: Holders of Industrial Hygiene Policy
and Guidelines Manuals

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GUIDELINES FOR MEDICAL SURVEILLANCE

ASBESTOS EXPOSURE

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The following guidelines for medical surveillance shall be followed in all United States Steel Corporation operations whenever exposure to asbestos occurs.

1. All employees exposed to asbestos shall be provided (or made available) a comprehensive medical examination prior to first employment in an occupation exposed to airborne concentration of asbestos fibers. These medical examinations will be required for any 7- to 8-hour time-weighted average concentration of 0.1 fibers/cc, or for a greater concentration. (The OSHA Asbestos Standard permits this examination to occur within 30 calendar days of the first exposure.)

Annually thereafter and within 30 calendar days before or after termination of employment in an occupation exposed to airborne concentration of asbestos fibers requiring a medical examination as designated above, a physical examination shall be provided or made available to these employees.

Whenever pleural thickening is found on any routine chest x-ray on an individual who has had any airborne asbestos exposure, this individual shall be kept under yearly medical surveillance.

The minimum components of the examination shall be:

- (a). A medical history, including a respiratory questionnaire to elicit symptomatology of respiratory disease.
 - (b). A 14" x 17" chest x-ray - posterior-anterior view. Whenever there is evidence of pleural response, right and left oblique views and expiratory posterior-anterior view should be taken to confirm or rule out pleural findings.
 - (c). Pulmonary Function testing to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).
2. A complete work history shall be taken on initial assignment to an occupation where exposure to airborne concentration of asbestos fibers will occur. This is particularly important if changes in the chest x-ray begin to occur. The work history will include all work experiences in United States Steel and other non-United States Steel work experiences to determine extent of exposure to asbestos. In order to be complete, military exposures, i.e. ship and shipyard exposures; hobbies; exposures of family members (father, brothers, grandfathers, mother, sisters, etc.) who might have brought asbestos fibers home on their clothing; living (home) location (geographic) for proximity to asbestos mining or manufacturing plant; and play areas

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The language for OSHA-200 Log recording for (b) and (c) has been agreed upon in a meeting held October 1, 1980 of Personnel, Medical, Labor Relations, Safety & Environmental Health, Law, and Workers' Compensation & Casualty representatives.

- (d). Unilateral pleural thickening or plaques with or without adequate history of asbestos exposure (with or without calcification) and with or without pulmonary decrements. The most likely explanation for the pleural thickening in this (d) group is one of the following: infection (pleural effusion) or hemorrhage, callous from rib fracture, radiation fibrosis, scleroderma, chronic mineral oil aspiration, metastatic disease, lymphoma, myeloma or a combination of these. **DO NOT RECORD ON OSHA-200 LOG.** Normal anatomical shadows -- pectoral shadow area, extra pleural fat deposits, serratus and external oblique muscle shadows can usually be ruled out by the above mentioned (1. (b)) techniques.
 - (e). Pulmonary Function Decrement only - Emphysema. It is important to establish whether this is result of occupational exposure or is due to non-occupational origin. Differentiation between obstructive and restrictive disease must be made. Do not record on OSHA-200 Log unless occupationally related. Define cause if so recorded.
 - (f). Normal Chest - further follow-up testing failed to substantiate suspicions in original chest x-ray or pulmonary function tests. The role of smoking in any pulmonary function decrement must be carefully evaluated. Diffusing capacity determinations may be helpful in ruling out pulmonary fibrosis and probably should be done. In coke plants, the possibility of coalworkers pneumoconiosis with or without focal emphysema must always be ruled out.
6. Recommendations to the physician in discussing findings with the affected employees:
- (a). All employees must be told of any positive findings found during his/her examination and the United States Steel physician evaluation (also consultant if used) of these findings. Recorded exposure levels should also be given to the employee. Because of proper handling of asbestos today, these environmental levels should ordinarily be helpful in allaying any fears of continued exposure to hazardous levels.

**Guidelines For Medical Surveillance
Asbestos Exposure**

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in relation to discarded wastes from asbestos factories. The Environmental Health unit (corporate headquarters or plants) will be helpful in evaluating the extent of work exposures.

3. The chest x-ray should be read by at least two United States Steel physicians or physicians selected by the plant physicians. Any positive chest x-ray shall be read by a "B" reader for confirmation of the findings. It is permissible to contract with a "B" reader to read all x-rays in this program. (A "B" reader is certified following successful completion of qualifying examination of 125 chest x-rays by NIOSH and the American College of Radiology.)
4. A clinical evaluation leading to a diagnosis and recommendations will be made.
 - (a). Correlate all medical findings - history, physical findings, chest x-ray interpretation, pulmonary function results, and any other medical information -- with the environmental exposure data.
 - (b). Referral to a pulmonary specialist to assist in this evaluation may be done at the option of the plant medical director or other examining physician.
 - (c). Referral of the chest x-ray to another "B" reader may occasionally be necessary for the proper interpretation of the x-ray.
5. The clinical evaluation will usually result in a diagnosis of one of the following, in descending order of importance:
 - (a). Asbestosis - pulmonary infiltrate classified by I.L.O. System and documentation of exposure with or without pulmonary function decrements, and with or without pleural thickening or plaques (with or without calcification). Record on OSHA-200 Log as "Asbestosis".
 - (b). Pleural thickening with a history of asbestos exposure - bilateral pleural thickening or plaques (with or without calcification) and with or without pulmonary function decrements. Without pulmonary function decrements, no need to refer unless requested by employee. Record on OSHA-200 Log as "Pleural thickening with asbestos exposure".
 - (c). Pleural thickening with a history of asbestos exposure - unilateral pleural thickening or plaques (with or without calcification) and with or without pulmonary function decrements. Without pulmonary function decrement, no need-- to refer unless requested by employee. Record on OSHA-200 Log as "Pleural thickening with asbestos exposure". This diagnosis is one of elimination from 5.(d).

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If believed to be nonoccupational, then referral to private physician, if appropriate - follow yearly.

- (f). Normal - yearly follow-up.
 - (g). Those persons who have demonstrated radiologic changes in chest film, and who have been exposed to asbestos, should be removed from further exposure either through engineering means, or personal protective equipment (respirators, air masks, disposable clothing, etc.), or by removal from work in the exposure area.
7. Environmental monitoring - will be carried out by the Environmental Health unit (corporate headquarters or plants) according to requirements of the OSHA Asbestos Standard.

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- (b). **Pulmonary infiltrate due to asbestos exposure with or without pleural reaction.** Shall be advised that this response is due probably to exposures of many years past. Depending upon the pulmonary function finding, the risk of continued decrement is probably directly correlated to continued smoking especially if any continued exposure is properly handled by respiratory protection and is of very minimal, if any, monitored value. The corporate headquarters Environmental Health unit shall prescribe the approved manner of handling any continuing exposure. To be followed every year unless pulmonary function is decreased, then at shorter intervals if clinically indicated. Every effort should be made to get the individual to **STOP SMOKING** if he/she is a smoker. The risk of lung cancer in those with parenchymal infiltrate is up to sixteen (16) times the risk of a non-smoker with the same exposure and ninety (90) times that of a worker who is a non-smoker and not exposed to asbestos.
- (c). **Bilateral or unilateral pleural thickening or plaques due to asbestos exposure (with or without calcification).** Should be advised that this response is the result of many years of low level of exposure. This also should not progress if the exposure has been eliminated or properly controlled by proper handling of asbestos and by respiratory protection if exposure continues. Depending upon the pulmonary function findings, the risk of continued decrement is directly correlated with continued smoking especially if any continued exposure is properly handled by respiratory protection and is of very minimal, if any, monitored value. The corporate headquarters Environmental Health unit shall prescribe the approved manner of handling any continuing exposure. To be followed yearly unless there is a decrement in pulmonary function then at shorter intervals if clinically indicated. Every effort should be made to get the individual to **STOP SMOKING** if he/she is a smoker. The risk of lung cancer in those with bilateral pleural thickening or plaques is two and one-half (2-1/2) times those without pleural reaction.
- (d). **Unilateral pleural thickening or plaques (with or without calcification) not the result of exposure to asbestos.** Continue to follow on a yearly basis.
- (e). **Emphysema - if believed due to occupational exposure - follow yearly unless otherwise indicated or requested by employee.**

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