COUNTY OF RIVERSIDE
STANDARD SAFETY OPERATIONS MANUAL

DOCUMENT NUMBER:	2007	**DATE ISSUED:**	09/30/03
SUBJECT:	Required Medical Exams And Medical Surveillance	**EFFECTIVE DATE:**	09/30/03
		REVISED DATE:	05/14/04

PURPOSE: To protect County employees by eliminating or reducing the health risks following exposure to various harmful substances as outlined in the California Code of Regulations, Title 8, General Industry Orders. There are a number of Sections addressing required medical examinations and surveillance when exposure to harmful substances exist.

POLICY: This policy strives to summarize required screening and surveillance guidelines set forth by various sections of the California Code of Regulations, Title 8, General Industry Safety Orders.

OBJECTIVE: To maintain Riverside County Employees' safety and health.

SCOPE: All employees, as defined by various sections of Title 8, who meet the criteria for inclusion into a medical surveillance program...

REFERENCE: California Code of Regulations, Title 8, General Industry Safety Orders, Sections 3203, 5217, 5198, 5208, 5220, 5221, 5122, 5192, 5095, 5096, 5097, 5098, 5099, 5100, 5193, 5144, 5207, CDC Guidelines for Preventing Mycobacterium Tuberculosis in Healthcare Facilities, MMWR, 1994 & CDC Guidelines for Prevention and Control of Tuberculosis in Correctional Facilities, MMWR, 1996.

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I. GENERAL OVERVIEW

The health of hazard-exposed workers must be monitored to determine if work-related health problems are occurring. Occupational medical surveillance examinations provide baseline and periodic measurements to detect abnormalities in workers exposed to work-related health hazards early enough to prevent or limit disease progression by exposure modification or medical intervention.

The information in this policy is intended to provide a generic, non-exhaustive overview of particular standards-related topics that may pertain to various County Job Classifications. This guide is intended as a quick reference to assist in implementing the screening and surveillance requirements of the Cal/OSHA Standards in the California Code of Regulations, Title 8, General Industry Safety Orders. Please note, more than one standard may apply in any given workplace. If so, employers must meet all the screening and surveillance requirements for all the Standards that apply.

II. RESPONSIBILITIES

A. Management/Supervision

1. Coordinate with the Safety Division to identify “at risk” job classifications for inclusion in a medical surveillance program by utilizing approved methods of testing and/or monitoring to determine exposure levels.

2. Ensure the implementation and proper administration of medical surveillance programs for all exposed County employees, as directed by the various applicable Cal/OSHA Standards.

3. Review employee’s exposure levels at least annually and again when there is as change in production, equipment, process, personnel or control measures which may result in new or additional exposures in the work environment.

4. Follow-up and take corrective action based on results and recommendations from the examining physician performing the medical surveillance evaluations.

B. Safety Division

1. Evaluate the Department’s compliance with the California Code of Regulations, Title 8, General Industry Safety Orders, relative to the requirements for medical screening and surveillance.

2. Recommend appropriate professional and technical resources to assist the departments with compliance.

3. Assist the departments in the development of medical screening and surveillance programs.

C. Occupational Health Services

1. Perform appropriate pre-placement, periodic and termination evaluations, as required, on County employees relative to work exposures.

2. Provide written Standard-specific information following the evaluation to the employer in a timely fashion.

II. RESPONSIBILITIES

3. Provide written Standard-specific information to the employee following the evaluation in a timely fashion.

4. Maintain medical records on each employee.

D. Employee

1. Participate in the medical screening and surveillance program based on type and level of exposure.

2. Report all occupational exposure incidents immediately to supervision.

III. EXPOSURES

A. FORMALDEHYDE (GISO 5217)

1. **Background**

Formaldehyde is a colorless, strong-smelling gas. Commonly known as a preservative in medical laboratories and mortuaries, formaldehyde is also found in other products such as chemicals, particle board, household products, glues, permanent press fabrics, paper product coatings, fiberboard and plywood. It is also used as an industrial fungicide, germicide and disinfectant.

Although the term formaldehyde describes various mixtures of formaldehyde, water and alcohol, the term “formalin” more precisely describes aqueous solutions, particularly those containing 37 to 50 percent formaldehyde and 6 to 15 percent alcohol stabilizer.

Formaldehyde is a sensitizing agent than can cause an immune system response upon initial exposure. It is also a suspected human carcinogen that is linked to nasal cancer and lung cancer. Acute exposure is highly irritating to the eyes, nose and throat and can make you cough and wheeze. Subsequent exposure may cause severe allergic reactions of the skin, eyes and respiratory tract. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels in the air or on the skin can cause asthma-like respiratory problems and skin irritations such as dermatitis and itching. Concentration of 100 ppm are immediately dangerous to health or life.

GISO 5217 applies to all occupational exposures to formaldehyde from formaldehyde gas, its solutions, and materials that release formaldehyde.

2. **Permissible exposure limits (PEL)** for formaldehyde in the workplace covered by the standard are 0.75 parts formaldehyde per million parts of air (0.75 ppm) measured as an 8-hour time-weighted average (TWA). The Standard includes a second PEL in the form of a short-term exposure limit (STEL) of 2 ppm that is the maximum exposure allowed during a 15-minute period.

III. EXPOSURES

A. FORMALDEHYDE (GISO 5217) - continued

3. The **Action Level** – which is the threshold for increased industrial hygiene monitoring and initiation of employee medical surveillance – is 0.5 part formaldehyde per million parts of air (0.5 ppm) when calculated as an 8-hour TWA concentration, or STEL of 2 ppm during a 15-minute period.

4. **Medical Surveillance** must be implemented for all the following employees:

   a. Those exposed to formaldehyde at concentrations at or exceeding the action level or the Short Term Exposure Limit (2 ppm over 15-minutes), prior to assignment and annually, thereafter.

   b. Those employees who develop signs and symptoms of overexposure, and

   c. All employees exposed to formaldehyde in emergencies.

   The Manager/Supervisor must give each affected employee a description of the medical surveillance program for formaldehyde exposure and explain its purpose.

5. **Details given to the employee regarding the medical surveillance should include:**

   a. Explanation that any required medical procedures will be performed by, or under the supervision of a licensed physician,

   b. Explanation that the examination shall be provided without cost to the employee, without loss of pay and at a reasonable time and place,

   c. Description of the potential health hazards associated with formaldehyde exposure,

   d. Description of the signs and symptoms of formaldehyde exposure,

   e. Directions requiring an employee to immediately report any adverse signs or symptoms related to formaldehyde exposure.

6. **The examining Physician must be provided with the following information:**

   a. A copy of the Standard (GISO 5217) and Appendices A, C, D and E.

   b. A description of the affected employee's job duties as they relate to the employee's exposure to formaldehyde.

   c. The representative exposure level for the employee's job assignment.

   d. Information concerning any personal protective equipment and respiratory protection used or to be used by the employee.

   e. Information from previous medical examinations of the affected employee within the control of the employer; and

III. EXPOSURES

A. FORMALDEHYDE (GISO 5217) - continued

f. In the event of a non-routine examination because of an emergency, the employer shall provide to the physician, as soon as possible, a description of how the emergency occurred and the exposure the victim may have received.

7. **The Medical Examination shall include:**

a. Medical Disease questionnaire, such as Appendix D of GISO 5217, must be administered. The questionnaire is designed to elicit information on work history, smoking history, any evidence of eye, nose or throat irritation; chronic airway problems or hyperactive airway disease; allergic skin conditions or dermatitis; and upper or lower respiratory problems;

b. Medical Examination (with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes) must be given to any employee who the physician feels, based on information in the medical disease questionnaire, may be of increased risk from exposure to formaldehyde and at the time of initial assignment and at least annually thereafter to all employees required to wear a respirator to reduce exposure to formaldehyde;

c. Lab examinations for respirator wearers consisting of baseline and annual pulmonary function tests. As a minimum, these tests shall consist of Forced Vital Capacity (FVC), forced Expiratory Volume in one second (FEVI) and Forced Expiratory Flow (FEF);

d. Any other test which the examining physician deems necessary to complete the written opinion;

e. Counseling of employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde on the increased risk of impairment of their health.

8. **After the evaluation, the physician will provide the employer with the following:**

a. A written opinion containing the results of the medical examination except that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde. The written opinion will include:

1) The physician's opinion as to whether the employee has any medical conditions that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde;

2) Any recommended limitations on the employee's exposure or changes in the use of personal protective equipment, including respirators; and

III. EXPOSURES

A. FORMALDEHYDE (GISO 5217) - continued

3) A statement that the employee has been informed by the physician of any medical conditions that would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

b. The employer shall provide a copy of the physician's written opinion to the affected employee within 15-days of its receipt.

c. There are Medical Removal Provisions in GISO 5217 based on results of medical determinations and recommendations of the evaluating physician.

B. LEAD (GISO 5198)

1. Background

Overexposure to lead is one of the most common overexposures found in industry. Lead overexposure is a leading cause of workplace illness. Lead is commonly added to industrial paints because of its characteristic to resist corrosion. Industries with particularly high potential exposures include: construction work involving welding, cutting, brazing, blasting, etc., on lead paint surfaces; most smelter operations either as a trace contaminant or as a major product; secondary lead smelters where lead is recovered from batteries; radiator repair shops; and firing ranges. Oral ingestion may represent a major route of exposure in contaminated workplaces. Most exposures occur with inorganic lead. Organic lead, which was added to gasoline up until the late 1970's is not commonly encountered. Organic forms may be absorbed through the skin, while inorganic forms cannot.

Lead is a systemic poison. Overexposure to lead can damage blood forming, nervous, urinary and reproductive systems. Although the toxicity of lead has been know for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined.

The occupational health standard for lead was promulgated to protect workers exposed to lead, which as defined by the standard, includes metallic lead, all inorganic lead compounds and organic lead soaps, but excludes all other organic lead compounds. The term "inorganic lead" is meant to be synonymous with the definition of lead set forth in the standard.

GISO 5198 applies to all occupational exposure to lead, with the exception of the construction industry and agricultural operations.

2. Permissible Exposure Level

The employer shall assure that no employee is exposed to lead at an 8-hour time-weighted average concentration greater than 50-micrograms per cubic meter of air.

III. EXPOSURES

A. LEAD (GISO 5198) - continued

3. **Action Level**

The Standard establishes an action level of 30 micrograms per cubic meter of air, time-weighted average, based on an 8-hour workday. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance and training and education.

4. **Medical Surveillance**

Medical surveillance must be made available to all employees exposed to lead above the action level of 30-micrograms per cubic meter of air TWA for more than 30-days each year.

a. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule which is defined by previous laboratory results, worker complaints or concerns, and the clinical assessment of the examining physician.

b. Blood lead and ZPP levels of all employees who are exposed to lead above the action level is to be determined at least every 6-months, with frequency of testing increasing to every 2-months for employees whose last blood lead level was above 40-icrograms/100g whole blood and below the level requiring medical removal.

c. An annual medical examination and consultation must be made available to each employee for whom a blood test conducted at any time during the preceding 12-months, indicated a blood lead level at or above 40-micrograms/100g.

d. Also, an examination is to be given to all employees prior to their assignment to an area in which airborne lead concentrations reach or exceed the action level.

e. In addition, a medical examination must be provided as soon as possible after notification by an employee that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice regarding lead exposure and the ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during respirator use.

f. An examination is also to be made available to each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited or specially protected pursuant to medical recommendations.

5. **The employer must inform all workers exposed to lead at or above the action level, of the following:**

a. The provisions of the Standard and all its appendices;

III. EXPOSURES

A. LEAD (GISO 5198) - continued

b. The purpose and description of medical surveillance and provisions for medical removal protection if temporary removal is required;

c. An understanding of the potential health effects of lead exposure by all exposed employees along with full understanding of their rights under the lead standard.

6. **The examining physician must be provided with the following information:**

a. A copy of the lead standard and all appendices

b. A description of the employee's duties, as related to exposure

c. The exposure level to lead and any other toxic substances (if applicable)

d. A description of personal protective equipment used

e. Blood lead levels, and all prior written medical opinions regarding the employee in the employer's possession or control.

7. **Medical Examination shall include:**

a. A complete and detailed work history, including past exposures (both work and non-work related exposures);

b. A medical history which includes a listing of all past and current medical conditions, current medications, previous surgeries and hospitalizations, allergies, smoking history, alcohol consumption and non-occupational lead exposures such as hobbies (hunting, riflery). Childhood exposures should also be elicited;

c. A careful and complete review of systems;

d. Physical examination should emphasize the neurological, gastrointestinal and cardiovascular systems, exam of teeth, gums, hematologic, blood pressure, and pulmonary status (if respiratory protection is to be used);

e. Required lab work includes: blood lead level, hemoglobin, hematocrit determinations, red cell indices, and examination of the peripheral blood smear to evaluate red blood cell morphology, blood urea nitrogen, serum creatinine, routine urinalysis and microscopic exam and a zinc protoporphyrin level;

f. Any additional lab work or other tests deemed necessary by the examining physician;

g. If requested by the employee, pregnancy testing and fertility testing (female/male).

III. EXPOSURES

A. LEAD (GISO 5198) - continued

8. **After the evaluation, the physician must provide the employer with the following:**

   A written medical opinion containing blood lead levels, the physician's opinion as to whether the employee is at risk of material impairment to health, any recommended protective measures for the employee if further exposure is permitted, as well as any recommended limitations upon an employee's use of respirators.

9. **The employer must:**

   a. instruct the examining physician not to reveal to the employer in writing or in any other way, any findings, laboratory results or diagnoses which are felt to be unrelated to occupational lead exposure.

   b. instruct each examining physician to advise the employee of any occupationally or non-occupationally related medical conditions requiring further treatment or evaluation.

   c. provide a copy of the physician's written opinion to the affected employee upon receipt.

10. **There is a medical removal provision In GISO 5198 based on results of medical determinations and recommendations by the examining physician**.

C. ASBESTOS (GISO 5208)

1. **Background**

   Asbestos is the name given to a group of naturally occurring minerals used in certain products, such as building materials and vehicle brakes, to resist heat and corrosion. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these materials that have been chemically treated and/or altered.

   There are no known acute effects associated with exposure to asbestos; however, the inhalation of asbestos fibers by workers can cause serious diseases of the lungs and other organs that may not appear until years after the exposure has occurred. For instance, asbestosis can cause a buildup of scar-like tissue in the lungs and result in loss of lung function that often progresses to disability and death. Asbestos fibers associated with these health risks are too small to be seen with the naked eye, and smokers are at higher risk of developing some asbestos-related diseases.

   General industry employees may be exposed to asbestos during the manufacture of asbestos-containing products or when performing brake and clutch repairs. In the construction industry, exposure occurs when workers disturb asbestos-containing materials during the renovation or demolition of buildings. Employees in the maritime environment also may be exposed when renovating or demolishing ships constructed with asbestos-containing materials.

III. EXPOSURES

C. ASBESTOS (GISO 5208) - continued

In addition, custodian workers may be exposed through contact with deteriorating asbestos-containing materials in buildings.

GISO 5208 applies to all occupational exposures to asbestos in general industries covered by the California Occupational Safety and Health Act.

2. **Permissible Exposure Limits (PELs)**

Employee exposure to asbestos must not exceed 0.1 fiber per cubic centimeter (f/cc) of air, averaged over an 8-hour work shift. Short-term exposure must also be limited to not more than 1.0 fiber per cubic centimeter of air (1f/cc), averaged over 30 minutes.

3. **Medical Surveillance**

a. The employer shall ensure that all employees who are or will be exposed to airborne concentrations of fibers at or above the PELs be involved in the medical surveillance program which includes examination and testing at least initially and annually, thereafter, or more often if recommended by the examining physician and upon termination of employment.

b. The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, and at a reasonable time and place.

4. **The employer must provide the examining physician with the following information:**

a. A copy of this standard and appendices;

b. A description of the employee's work assignments as they relate to asbestos exposure;

c. The employee's representative level of exposure to asbestos;

d. A description of any personal protective and respiratory equipment used; and

e. Information from previous medical examinations of the affected employee that is not otherwise available to the physician.

5. **Medical examination must include the following:**

a. Medical and work histories with special emphasis directed to symptoms of the respiratory system, cardiovascular system and digestive tract;

b. Completion of one of the respiratory disease questionnaires contained in Appendix D of GISO 5208 (part 1 for the initial examination and Part 2 for periodic examinations);

III. EXPOSURES

C. ASBESTOS (GISO 5208) - continued

c. A physical examination including a chest x-ray* and pulmonary function testing that includes measurement of the employee's forced vital capacity (FVC) and forced expiratory volume at one second (FEV1);

d. Any laboratory or other test that the examining physician deems by sound medical practice to be necessary or appropriate;

*Chest x-ray must be performed in accordance with the Standard (Table 2) and interpreted and classified in accordance with a professionally accepted classification system and recorded on an interpretation form following the format of the CDC/NIOSH (M) 2.8 form. (See 5208, Appendix E for additional details pertaining to interpretation of x-ray).

6. **The physician must provide to the employer the following:**

a. A written opinion containing the results of the medical examination; the physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of exposure-related disease; any recommended limitations on the employee or on the use of personal protective equipment; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions related to asbestos exposure that require further explanation or treatment.

b. The written opinion must not reveal specific findings or diagnoses unrelated to exposure to asbestos.

7. **The employer will provide a copy of the examining physician's opinion to the affected employee.**

D. ETHYLENE OXIDE (GISO 5220, 5221, 5222)

1. **Background**

Ethylene oxide (EtO) is a flammable colorless gas at temperatures above 51.3 F (10.7C) that smells like ether at toxic levels. EtO is found in the production of solvents, antifreeze, textiles, detergents, adhesives, polyurethane foam, and pharmaceuticals. Smaller amounts are present in fumigants, sterilants for spices and cosmetics, as well as during hospital sterilization of surgical equipment.

In addition to eye pain and sore throat, exposure to EtO can cause difficult breathing and blurred vision. Exposure can also cause dizziness, nausea, headache, convulsions, and blisters and can result in vomiting and coughing. Both human and animal studies show that EtO is a carcinogen that may cause leukemia and other cancers. EtO is also linked to spontaneous abortion, genetic damage, nerve damage, peripheral paralysis, muscle weakness, as well as impaired thinking and memory. In liquid form, EtO can cause severe skin irritation upon prolonged or confined contact.

III. EXPOSURES

D. ETHYLENE OXIDE (GISO 5220, 5221, 5222) - continued

GISO 5220 applies to all occupational exposures to ethylene oxide (EtO) except to the processing, use or handling of products made from or containing EtO where objective data demonstrate that the product is not capable of releasing airborne EtO in concentrations at or above the action level under conditions of processing, use or handling that would reasonably be expected to cause the greatest possible release.

2. **Permissible Exposure Limit (PEL)**

a. The employer shall ensure that no employee is exposed to an 8 hour time-weighted average concentration of airborne EtO in excess of one (1) part EtO per million parts of air (1 ppm).

b. The employer shall ensure that no employee is exposed to a concentration of airborne EtO in excess of 5 parts of EtO per million parts of air (5 ppm) as averaged over a sampling period of fifteen (15) minutes.

3. **Action Level**

The employer is required to institute a medical surveillance program for all employees who are or will be exposed to EtO at or above the action level (0.5 ppm) for at least 30 days per year, without regard to respirator use.

4. **Medical Surveillance**

a. All examinations and procedures must be performed by or under the supervision of a licensed physician at a reasonable time and place for the employee and at no cost to the employee.

b. The employer is required to make the examinations and tests available prior to the assignment of an employee to an area where exposure may be at or above the action level for at least 30 days a year and at least annually, thereafter; more often than specified if recommended by the examining physician; and upon the employee's termination of employment or reassignment to another work area.

c. The employer shall also provide physician recommended examinations to any employee exposed to EtO in emergency conditions and,

d. The employer shall make available medical consultations including physician-recommended examinations to employees who believe they are suffering signs or symptoms of exposure to EtO;

e. And, the employer shall make available medical consultation should the employee desire medical advice concerning the effects of current or past exposure to EtO on the employee's ability to produce a healthy child.

III. EXPOSURES

D. ETHYLENE OXIDE (GISO 5220, 5221, 5222) - continued

5. **The employer is required to provide the examining physician with the following information:**

   a. A copy of this Standard and its appendices;

   b. A description of the affected employee's duties as they relate to the employee exposure level; and

   c. Information from the employee's previous medical examinations which is not readily available to the examining physician.

6. **Medical examination shall include the following:**

   a. Medical and work histories with special emphasis directed to symptoms related to the pulmonary, hematological, neurologic and reproductive systems and to the eyes and skin;

   b. Physical examination with particular emphasis given to the pulmonary, hematologic, neurologic and reproductive systems and to the eyes and skin;

   c. Complete blood count to include at least a white cell count (including differential cell count), red cell count, hematocrit and hemoglobin determinations; and

   d. Any laboratory or other test which the examining physician deems necessary by sound medical practice;

   e. If requested by the employee, the medical examinations shall include pregnancy testing or laboratory evaluation of fertility as deemed appropriate by the physician;

   f. In certain cases, to provide sound medical advice to the employer and employee, the physician must evaluate situations not directly related to EtO (e.g., employees with skin diseases may be unable to tolerate wearing protective clothing, employees with chronic respiratory diseases may not tolerate the wearing of negative pressure respirators.

7. **The examining physician will provide the employer with the following information:**

   a. A written opinion containing the results of the medical examinations; the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of his or her health from exposure to EtO; any recommended restrictions upon the employee's exposure to EtO, or upon the use of protective clothing or equipment such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination or any medical conditions which require further explanation or treatment.

III. EXPOSURES

D. ETHYLENE OXIDE (GISO 5220, 5221, 5222) - continued

b. The employer must instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to EtO.

8. **The employer will provide the employee with a copy of the examining physician's opinion.**

E. HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (GISO 5192)

1. **Background**

GISO 5192 covers all of the following operations, unless the employer can demonstrate that the operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards: clean-up operations or hazardous substance removal work required by a governmental body that involves hazardous substances that are conducted at uncontrolled hazardous waste sites, and initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained; corrective actions involving hazardous waste clean-up operations; voluntary clean-up operations at uncontrolled hazardous waste sites; operations involving hazardous wastes that are conducted at treatment, storage and disposal facilities; and emergency response operations for releases of, or substantial threats of releases of hazardous substances without regard to the location of the hazard. (See GISO 5192 for detailed description of activities covered under this Standard and definitions of hazardous substances).

2. **Medical Surveillance**

a. The medical surveillance program shall be instituted by the employer for the following employees:

1) Any employee who is or may be exposed to hazardous substances or health hazards at or above the PELs or, if there is no PEL, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;

2) Any employee who wears a respirator during any part of a day for a period of 30 days or more in a year;

3) Any employee who is injured, becomes ill or develops signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and

4) Members of HAZMAT teams.

III. EXPOSURES

E. HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (GISO 5192) - continued

b. Frequency of medical examinations and consultations:

1) Prior to assignment

2) At least once every twelve months for each employee covered, unless the attending physician believes a longer interval (not greater than biannually) is appropriate:

3) At termination of employment, or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months;

4) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards or that the employee has been injured or exposed above the PELs or published exposure levels in an emergency situation.

5). At more frequent times, if the examining physician determines than an increased frequency of examination is medically necessary.

c. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

3. **The employer must provide the following information to the examining physician:**

a. Copy of the Standard and its appendices;

b. A description of each employee's duties as they relate to the employee's exposures;

c. Each employee's exposure levels or anticipated exposure levels;

d. A description of any PPE used or to be used by each employee:

e. Information from previous medical examinations of each employee which is not readily available to the examining physician;

f. Information required by GISO 5144 (Respirator Standard).

III. EXPOSURES

E. HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (GISO 5192) - continued

4. **Medical Examinations**

   a. Medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (e.g., temperature extremes) that may be expected at the work site;

   b. The content of the medical examination or consultations made available to the employee shall be determined by the examining physician (see the guidelines in the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities Appendix D, Ref. #10).

5. **The Examining Physician will provide the employer with the following information:**

   a. The physician's written opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use, any recommended limitations upon the employee's assigned work and a statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

   b. The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposures.

6. **The employer must obtain and furnish the employee with a copy of the physician's written opinion.**

7. **The physician must provide the results of the medical examination and tests to the employee, if requested.**

F. CONTROL OF NOISE EXPOSURE – (GISO 5095, 5096, 5097, 5098, 5099, 5100)

1. **Background**

   Noise, or unwanted sound, is one of the most pervasive occupational health problems. It is a by-product of many industrial processes. Sound consists of pressure changes in a medium (usually air), caused by vibration or turbulence. These pressure changes produce waves emanating away from the turbulent or vibrating source. Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise and the duration of the exposure.

III. EXPOSURES

F. CONTROL OF NOISE EXPOSURE – (GISO 5095, 5096, 5097, 5098, 5099, 5100) - continued

Work related hearing loss is one of the most common occupational diseases in the United States. According to NIOSH, 30 million Americans are exposed to hazardous noise at work. This has resulted in a permanent hearing loss for about 10 million workers.

GISO 5097 – The Hearing Conservation Program is designed to protect workers with significant occupational noise exposure from hearing impairment even if they are subject to noise exposure over their entire working lifetime.

2. **Permissible Exposure Levels (PELs)**

PELs, with regard to noise exposure, are outlined in GISO 5096. When sound levels exceeding those listing in Table N-1, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of the table, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

a. PELs are computed as levels of noise exposure (dBA) and duration of exposure (e.g., PELs range from 90 dBA permitted for 8 hours to 115 dBA permitted for 15 minutes).

b. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure levels.

3. **Action Level**

The employer must administer a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A-scale (slow response) or, equivalently, a dose of fifty percent.

4. **Medical Surveillance**

a. The employer must establish and maintain an audiometric testing program by making audiometric testing available to all employees whose exposures equal or exceed the action level.

b. The program must be provided at no cost to employees.

c. The Audiometric tests must be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used.

III. EXPOSURES

F. CONTROL OF NOISE EXPOSURE – (GISO 5095, 5096, 5097, 5098, 5099, 5100) - continued

d. A valid baseline audiogram must be established, against which subsequent audiograms can be compared. The baseline audiogram is to be performed during the pre-placement examination.

e. At least annually, after obtaining the baseline audiogram, the employer must obtain a new audiogram for each employee exposed at or above the action level.

f. If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.

g. An audiologist, otolaryngologist or physician shall review problem audiograms and determine whether there is a need for further evaluation.

h. The employer must provide the following information to the person performing the above evaluation:

1) A copy of the requirements for hearing conservation as set forth in GISO 5097, 5098, 5099 & 5100;

2) The baseline audiogram and most recent audiogram of the employee to be evaluated;

3) Measurements of background sound pressure levels in the audiometric test room as required in Appendix C;

4) Records of audiometric calibrations required by the Standard.

i. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, as defined by the Standard, the employee shall be informed of this fact, in writing, within 21 days of the determination.

G. TUBERCULOSIS (GISO 3203, 5144, CDC GUIDELINES FOR PREVENTING MYCOBACTERIUM TUBERCULOSIS IN HEALTHCARE FACILITIES, MMWR, 1994 & CDC GUIDELINES FOR PREVENTION AND CONTROL OF TUBERCULOSIS IN CORRECTIONAL FACILITIES, MMWR, 1996.

1. **Background**

Mycobacterium Tuberculosis (TB) is a disease that is spread from person to person through the air in tiny infectious droplet nuclei of 1 to 5 microns in diameter. These droplets may be generated when a person with pulmonary and laryngeal TB disease coughs, speaks, sings, sneezes, or spits. When inhaled by susceptible persons, the mycobacteria in these droplets may become established in the lungs, and in some cases, spread throughout the body. After an interval of months, years, or even decades, the initial infection many then progress to clinical illness (i.e., tuberculosis disease). Transmission of TB is most likely to occur from persons with pulmonary or laryngeal TB that are not on effective anti-TB therapy and who have not been placed in respiratory isolation.

III. EXPOSURES

G. TUBERCULOSIS (GISO 3203, 5144, CDC GUIDELINES FOR PREVENTING MYCOBACTERIUM TUBERCULOSIS IN HEALTHCARE FACILITIES, MMWR, 1994 & CDC GUIDELINES FOR PREVENTION AND CONTROL OF TUBERCULOSIS IN CORRECTIONAL FACILITIES, MMWR, 1996. - continued

The Centers for Disease Control and Prevention (CD) have issued guidelines for preventing transmission of TB in various settings. The following worksites have been identified by the CDC as high risk for Tuberculosis exposure: **healthcare settings, correctional institutions, homeless shelters, long-term facilities for the elderly and drug treatment centers.**

Although there is no actual "Tuberculosis Standard", Cal/OSHA has issued enforcement guidance to protect exposed workers against tuberculosis. Employers found in violation of the requirements can be fined. Citations can be issued to employers with employees working in one of the above identified workplaces where the CDC has identified workers as having a higher incidence of TB infection than the general population, when the employees are not provided appropriate protection and who have exposure to potentially infectious expelled air of a TB patient. Part of the Infection Control Plan of such a facility must include Medical Surveillance.

5. **Medical Surveillance (Employees working at sites identified by Cal/OSHA as having risk of exposure to Tuberculosis)**

Initial Exams

a. The employer must administer TB skin tests (at no cost to the employee) prior to exposure. A two-step baseline shall be used for new employees who have an initially negative PPD test result and who have not had a documented negative TB skin test result during the preceding 12 months. The TB skin tests shall be offered at a time and location convenient to workers. Follow-up and treatment evaluations are also to be offered at no cost to the workers.

b. The reading and interpretation of the TB skin tests shall be performed by a qualified individual as described in the CDC Guidelines.

c. New employees with documented proof of positive reaction to the TB skin test will be given a chest x-ray, rather than the TB skin test.

6. **Periodic Evaluations**

a. TB skin testing shall be conducted every three (3) months for workers in high risk categories, every six (6) months for workers in immediate risk categories, and annually for low risk personnel. The CDC has defined the criteria for high, intermediate and low risk categories. Each Department will assess the frequency of periodic evaluations for each location, based on risk of exposure. Frequency of testing will be addressed in each department's Exposure Control Plan.

III. EXPOSURES

G. TUBERCULOSIS (GISO 3203, 5144, CDC GUIDELINES FOR PREVENTING MYCOBACTERIUM TUBERCULOSIS IN HEALTHCARE FACILITIES, MMWR, 1994 & CDC GUIDELINES FOR PREVENTION AND CONTROL OF TUBERCULOSIS IN CORRECTIONAL FACILITIES, MMWR, 1996. - continued

b. Workers with a documented positive TB skin test are exempt from the TB skin test but must be informed periodically about the symptoms of TB and the need for immediate evaluation of any pulmonary symptoms suggestive of TB by a physician or trained healthcare provider to determine if symptoms of TB disease have developed.

7. **Reassessment following Exposure or Change in Health**

Workers who experience exposure to an individual with suspect or confirmed infectious TB for whom infection control precautions have not been taken shall be managed according to CDC recommendations. An employee who develops symptoms of TB disease shall be immediately evaluated according to the CDC Guidelines.

8. **Respiratory Protection**

If personal respiratory protection is used, Cal/OSHA requires that an effective personal respiratory protection program be developed, implemented, administered and periodically re-evaluated.

All employees who need to use respirators for protection against infection from TB should be included in the respiratory protection program.

9. **Medical Screening/Surveillance for Respiratory Protection**

a. Employees should not be assigned a task requiring use of respirators unless they are physically able to perform the task while wearing the respirator. A licensed physician shall determine what health and physical conditions are pertinent. Employees should be medically evaluated by a physician or other licensed health care professional (PHLCP)for pertinent medical conditions at the time they are hired, and then reviewed at least annually.

b. The screening process should begin with a general screening (e.g., a questionnaire) for pertinent medical conditions, and the results of the screening should be used to identify employees who need further evaluation. (See I. Respiratory Protection).

10. **Additional Medical Evaluations**

The employer will provide additional medical evaluations if:

a. An employee reports medical signs or symptoms that are related to ability to use a respirator;

b. A PLHCP, supervisor, or the respirator program administrator informs the employer than an employee needs to be reevaluated.

III. EXPOSURES

G. TUBERCULOSIS (GISO 3203, 5144, CDC GUIDELINES FOR PREVENTING MYCOBACTERIUM TUBERCULOSIS IN HEALTHCARE FACILITIES, MMWR, 1994 & CDC GUIDELINES FOR PREVENTION AND CONTROL OF TUBERCULOSIS IN CORRECTIONAL FACILITIES, MMWR, 1996. - continued

c. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluations; or

d. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

H. BLOODBORNE PATHOGENS (GISO 5193)

1. **Background**

Bloodborne pathogens are infectious materials in blood that can cause disease in humans, including hepatitis B and C and human immunodeficiency virus, or HIV. Workers exposed to these pathogens risks serious illness or death.

The Bloodborne Pathogen Standard details what employers must do to protect workers whose jobs put them at a reasonable risk of coming into contact with blood and other potentially infectious materials.

GISO 5193 applies to all occupational exposure to blood or other potentially infectious materials.

2. **Medical Surveillance**

The following will be offered at no cost to the employee and at a reasonable time and place. The procedures will be performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and provided according to recommendations of the U.S. Public Health Service current at the time the evaluations and procedures take place. The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

a. **Initial**

1) The employer must make available the Hepatitis B vaccinations to all employees with occupational exposure to Bloodborne pathogens within 10 days of assignment unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

III. EXPOSURES

H. BLOODBORNE PATHOGENS (GISO 5193) - continued

2) If the employee initially declines the hepatitis B vaccinations but at a later date while still covered under the Standard decides to accept the vaccination, the employer shall make available hepatitis vaccinations at that time. If the employee declines to accept the hepatitis B vaccination offered by the employer, the employee must sign the statement (Hepatitis B Declination) in Appendix A of the Standard.

3) As per CDC recommendation, the employee will be offered the opportunity to have lab work drawn, after receiving the vaccination series, to determine if the employee has achieved immunity to Hepatitis B. If the lab work indicates that the employee has not achieved immunity, the employee will be offered the opportunity to receive another series of three (3) hepatitis B vaccinations. Lab work to determine immunity again will be offered. If lab work again demonstrates no immunity, the employee will be advised of the need to be evaluated by a physician to determine the reason for inability to achieve immunity to Hepatitis B.

b. **Post-Exposure Evaluation**

1) Following a report of an exposure incident, the employer must make immediately available to the exposed employee a confidential medical evaluation and follow up. The employer will provide the following to the examining physician:

i. A copy of this regulation;

ii. A description of the exposed employee's duties as they relate to the exposure incident;

iii. Documentation of the route(s) of exposure and circumstances under which exposure occurred, as required by the Standard:

iv. Results of the source individual's blood testing, if available; and

v. All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

2) The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

III. EXPOSURES

H. BLOODBORNE PATHOGENS (GISO 5193) - continued

3) The healthcare professional's written opinion for hepatitis B vaccinations shall be limited to whether hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

4) The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

i. That the employee has been informed of the results of the evaluation; and

ii. That the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment.

I. RESPIRATORY PROTECTION (GISO 5144)

1. **Background**

The purpose of a respirator is to prevent the inhalation of harmful airborne substances or to provide a source of respirable air when breathing in oxygen-deficient atmospheres.

Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended.

Using a respirator may place a physiologic burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used and the medical status of the employee.

To determine whether a worker is able to tolerate the added strain of a respiratory protective device, the medical certification program must be viewed as an important element in a comprehensive respiratory protection program.

When respirator use is required, GISO 5144 requires the employer to develop and implement a written respiratory protection program addressing the elements for required respiratory use.

The following specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator.

2. **Medical Evaluation**

The employer must provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.

III. EXPOSURES

I. RESPIRATORY PROTECTION (GISO 5144) - continued

a. **Medical evaluation procedures:**

The employer must provide the following information to the physician or other licensed health care professional (PHLCP) prior to the evaluation:

1) The type and weight of the respirator to be used by the employee;

2) The duration and frequency of respirator use (including use for rescue and escape);

3) The expected physical work effort;

4) Additional protective clothing and equipment to be work; and

5) Temperature and humidity extremes that may be encountered;

6) A copy of the written respiratory protection program and a copy of the Standard.

b. **Initial**

Employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire (GISO 5144, Appendix C).

c. **Follow-up**

1) The employer shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any questions among questions #1 thru #8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.

2) The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

d.. **Administration of the Medical Questionnaire and Examinations**

1) The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content.

2) The employer shall provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

III. EXPOSURES

I. RESPIRATORY PROTECTION (GISO 5144) - continued

e. **Additional Medical Evaluations**

The employer will provide additional medical evaluations if:

1) An employee reports medical signs or symptoms that are related to ability to use a respirator;

2) A PLHCP, supervisor or the respirator program administrator informs the employer that an employee needs to be re-evaluated;

3) Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluations; or

4) A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

f. **The PLHCP shall provide a written recommendation to the employer regarding the employee's ability to use the respirator and will include:**

1) Whether or not the employee is medically able to use the respirator;

2) The need, if any, for follow-up medical evaluations; and

3) A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

F. CADMIUM (GISO 5207)

1. **Background**

Cadmium is a natural element in earth's crust. It is usually found as a mineral combined with other elements such as oxygen (cadmium oxide), chlorine (cadmium chloride), or sulfur (cadmium sulfate, cadmium sulfide).

Exposure to cadmium happens mostly in the workplace where cadmium products are made. People can be exposed to cadmium by breathing contaminated workplace air (battery manufacturing, metal soldering or welding).

Breathing high levels of cadmium severely damages the lungs and can cause death. Long-term exposure to lower levels of cadmium in air, food, or water leads to a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones.

GISO 5207 applies to all occupational exposure to cadmium and cadmium compounds, in all forms.

III. EXPOSURES

F. CADMIUM (GISO 5207) - continued

2. Permissible Exposure Level (PEL)

The employer shall assure that no employee is exposed to an airborne concentration of cadmium in excess of five micrograms per cubic meter of air (5mg/m3), calculated as an eight-hour-time-weighted average exposure (TWA).

3. Action Level

Action Level is defined as an airborne concentration of cadmium 2.5 micrograms per cubic meter of air (2.5 mg/m3), calculated as an 8-hour time-weighted average (TWA). The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance and training and education.

4. Medical Surveillance (general requirements)

a. The employer shall institute a medical surveillance program for all employees who are or may be exposed to cadmium at or above the action level unless the employer demonstrates that the employee is not and will not be, exposed at or above the action level on 30 or more days per year (twelve consecutive months). A limited medical examination shall also be conducted by the employer to determine an employee's fitness for using a respirator.

b. The employer shall assure that all medical examinations and procedures required by this standard are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects section of Appendix A of GISO 5207, the regulatory text of the Standard, the protocol for sample handling and laboratory selection in Appendix F of GISO 5207, and the questionnaire of Appendix D of GISO 5207.

c. These examinations and procedures will be provided without cost to the employee and at a time and place that is reasonable and convenient to employees.

d. The employer shall assure that the collecting and handling or biological samples of cadmium in urine (CdU), cadmium in blood (CdBO), and beta-2 microglobulin in urine (b2-M) taken from employees under this Standard is done in a manner that assures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (b2-M) taken from employees under this standard is performed in laboratories with demonstrated proficiency for that particular analyte (see Appendix F of GISO 5207).

III. EXPOSURES

F. CADMIUM (GISO 5207) - continued

5. **The employer must provide the following information to the examining physician:**

   a. A copy of GISO 5207 and appendices;

   b. A description of the affected employee's former, current and anticipated duties as they relate to the employee's occupational exposure to cadmium;

   c. The employee's former, current and anticipated levels of occupational exposure to cadmium;

   d. A description of any personal protective equipment, including respirators, used or to be used by the employee, including when and for how long the employee has used that equipment; and

   e. Relevant results of previous biological monitoring and medical examinations.

6. **Initial Exam**

   a. The employer must provide an initial pre-placement examination to all employees covered by the medical surveillance program. The examination must be provided to those employees within 30 days after initial assignment to a job with exposure to cadmium.

   b. An initial examination is not required to be provided if adequate records show that the employee has been examined in accordance with the requirements of GISO 5207 within the past 12 months. In that case, such records shall be maintained as part of the employee's medical records and the prior exam shall be treated as if it were an initial examination.

   The Initial Exam must include:

   a. A detailed medical and work history, with emphasis on: past, present and anticipated future exposure to cadmium; any history of renal, cardiovascular, respiratory, hematopoietic, reproductive, and/or musculo-skeletal system dysfunction; current usage of medication with potential nephrotoxic side-effects; and smoking history and current status; and

   b. Biological monitoring that includes the following: Cadmium in urine (CdU), standardized to grams of creatinine (g/Cr); Beta-s microglobulin in urine (b2-M), standardized to grams of creatinine (g/Cr), with pH specified, as described in Appendix F; and Cadmium in blood (CdBO), standardized to liters of whole blood (lwb).

   c. Subsequent actions (i.e., frequency of periodic examinations and biological monitoring) are triggered by initial biological monitoring (see GISO 5207 for details).

III. EXPOSURES

F. CADMIUM (GISO 5207) - continued

7. Periodic Medical Surveillance

For each employee who is covered under the Standard, the employer must provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination shall be provided within one year after the initial examination and thereafter, at least biennially. Biological sampling shall be provided at least annually, either as part of a periodic medical examination or separately as periodic biological monitoring.

a.. The Periodic Medical Examinations must include the following:

1) A detailed medical and work history, or update thereof, with emphasis on: past, present and anticipated future exposure to cadmium; smoking history and current status; reproductive history; current use of medications with potential nephrotoxic side-effects; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculosketal system dysfunction; and as part of the medical and work history, for employees who wear respirators, questions 3-11 and 25-32 in Appendix D of GISO 5207.

2) A complete physical examination with emphasis on: blood pressure, the respiratory system and the urinary system;

3) A 14” x 17”, or a reasonably standard sized posterior-anterior chest x-ray, (after the initial x-ray, the frequency of chest x-rays is to be determined by the examining physician);

4) Pulmonary function tests, including forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

5) Biological monitoring as outlined in subsection (1)(2)(B)2;

6) Blood analysis, in addition to the analysis required in subsection (1)(2)(B)2, including blood urea nitrogen, complete blood count, and serum creatinine;

7) Urinalysis, in addition to the analysis required under subsection (1)(2)(B)2, including the determination of albumin, glucose, and total and low molecular weight proteins;

8) For males over 40 years old, prostate palpation, or other at least as effective diagnosis tests; and

9) Any additional tests deemed appropriate by the examining physician.

b. At termination of employment, the employer must provide a medical examination in accordance with GISO 5207 if certain criteria are met.

III. EXPOSURES

F. CADMIUM (GISO 5207) - continued

8. **There are medical provisions in GISO 5207 based on results of medical determinations and recommendations of the evaluating physician.**

9. **The physician must provide the following information to the employer:**

   a. A signed medical opinion which includes: the physician's diagnosis for the employee; a statement as to whether the employee has any detected medical conditions that would place the employee at increased risk of material impairment to health from further exposure to cadmium, including any indications of potential cadmium toxicity; the results of any biological or other testing or related evaluations that directly assess the employee's absorption of cadmium; any recommended removal from, or limitation on the activities or duties of the employee or on the employee's use of personal protective equipment, such as respirators; a statement that the physician has clearly and carefully explained to the employee the results of the medical examination, including all biological monitoring results and any medical conditions related to cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.

   b. The employer must instruct the physician not to reveal orally or in the written medical opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to cadmium.

10. **The employer must promptly obtain a copy of the results of any biological monitoring provided by the employer to an employee independently of a medical examination and, in lieu of a written medical opinion, an explanation sheet explaining those results.**