OSHA Directives
CPL 2-2.6 CH-1 - Removal of Obsolete Sections

- **Record Type:** Instruction
- **Directive Number:** CPL 2-2.6 CH-1
- **Subject:** Removal of Obsolete Sections
- **Information Date:** 06/03/1985

OSHA Instruction CPL 2-2.6 CH-1 JUN 3 1985 Office of General Industry Compliance Assistance

Subject: Removal of Obsolete Sections

A. Purpose. This notice transmits page changes which remove sections that contain policies and procedures superseded by guidelines set forth in the Field Operations Manual (FOM), OSHA Instruction CPL 2.45A.

B. Scope. This notice applies OSHA-wide.

C. Action. Replace existing pages with the attached CH-1 pages as listed below:

Existing Pages Replacement Pages 4 through 14 4 through 14

D. Significant Changes. The instruction will be totally revised and reprinted at a later date. In the interim, the following sections are removed:

CPL 2-2.6, October 30, 1978: Paragraph 5. Inspection Procedures, pages 5 through 14.

E. Background. A decision was made at the time The FOM was revised to incorporate all policies and procedures of a non-technical nature into that manual. When the FOM was published, numerous changes were made to existing health policy. These changes made the procedural sections of the instruction obsolete. To avoid confusion for directives users, it has become necessary to remove inapplicable sections from the instruction. The remainder of the instruction is still in effect until the directive has been totally revised and reprinted at a later date.

John B. Miles, Jr., Director Directorate of Field Operations

OSHA Instruction CPL 2-2.6 CH-1 JUN 3 1985 Office of General Industry Compliance Assistance

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OSHA Instruction CPL 2-2.6 October 30 1978

(a) Mechanical. Because mercury is a liquid at low temperatures with no tendency to wet glass, it is widely used in scientific Instruments such as thermometers and barometers. Mercury is also used in the pressure gauges of vacuum pumps. Potential mercury exposure is a problem not only in the production of such instruments, but also in research institutions where such instruments are used extensively.

(b) Electrical. Mercury's very high level of electrical conductivity lends itself to use in electrical appliances. The principal use of mercury in this category is for batteries. Mercury is also used in rectifiers, oscillators, power control switches, and vapor lamps.

Mercuric oxide is used extensively in dry cells. In such a battery, the depolarizer is composed of mercuric oxide, the electrolyte is a strongly alkaline solution of potassium hydroxide saturated with potassium zincate, and the anode is of zinc. In the manufacture of these cells, processes such as mixing, blending, and tableting of the mercury present potential exposure problems. The exposure may be to mercury dust or vapor.

(c) Chlorine. The chlor alkali process uses saturated and heated salt brine (25% NaCl in water) to produce Cl2 (chlorine gas), H2 (hydrogen); and NaOH (sodium hydroxide) by electrolysis. The two basic cell types are diaphragm cells and the mercury cells. Several different designs in each cell type can be found. Low-voltage, high-amperage power is used in both types. The cells are usually hooked up in series. Diaphragm cell construction materials include asbestos, lead, concrete, stoneware, and possibly Fiberglas. Diaphragm cells do not contain mercury. The mercury cell uses mercury in a two-chamber system: in the first (electrolyzing) chamber, chlorine gas is produced and the sodium ion is amalgamated in the mercury. In the second (denuding) chamber, hydrogen is formed when the amalgam contacts water and the sodium ions combine with the remaining hydroxyl ion (OH-) to form NaOH. The basic process reaction for the electrolytic cells is

$$Na^+ + Cl^- + H^+ + OH^- = Na^+ + 1/2Cl_2 + 1/2H_2 + OH^-$$

In this process the NaOH is extremely corrosive and mercury leaks, spillage, and recovery are always a problem. As the cells age and become inefficient, they have to be rebuilt. Rebuilding is a routine operation in chlor alkali plants, where cells are operated in batteries of tens and even hundreds. During the rebuilding process, the cells are leveled off, exposing the mercury surface, creating a potential exposure problem.

(d) Paint. In the paint industry, mercury is commonly used in its organic form. In the primary paint industry, however, mercury may initially be in its elemental form, even though the final

product may be organic. In such primary manufacture, there may be some potential mercury exposure.

(e) Medicinals. Mercury is used primarily in dental supply and equipment. Dentists have a variety of uses for mercury, the primary one being a filler for cavities. Due to mercury's use in medical equipment and supplies, dental schools and offices and hospitals are sites of potential exposure.

(2) Signs and Symptoms of Intoxication. Intoxication may occur in workers excessively exposed to mercury or to its compounds. The exposure may be due to mercury vapor, mist, dust, or fume, by inhalation, ingestion, or through skin.

Two general types of mercury intoxication exist, chronic and acute. Chronic mercury intoxication is caused by exposure to a low concentration of mercury over an extended period of time. Acute mercury intoxication is due to a greater exposure and is unrelated to time factors. Definite symptoms of chronic mercurialism may not appear until after six months of exposure, or longer. The symptoms are primarily of the nervous and digestive systems.

The symptoms of overexposure to mercury may include such personality manifestations as: irritability, excitability, or excessive timidness. Other symptoms include: headaches, drowsiness or insomnia, and weakness. Many cases also include reports of sore mouths, excessive salivation, and perspiration. In mercury intoxication, a common symptom is a tremor which is aggravated by emotion or excitement. Also included in the literature as symptoms of mercury intoxication are: loss of appetite, weakness, digestive disorders, kidney damage, and bleeding gums.

If an inspector is unfamiliar with the biological monitoring methods used for mercury, he or she should check with his Senior Industrial Hygienist. When evaluating biological symptoms, trends within groups of employees should be noted. Elevation in mercury levels within a group is often a more significant finding than elevations in an individual because it indicates a common source.

PARAGRAPH DELETED

This page replaces deleted pages 6-14.