

DEC 2 2 1980

MEMORANDUM FOR REGIONAL ADMINISTRATORS

THRU: JOHN MILES
FROM: R. HAYS BELL
SUBJECT: Use of Non-Approved Respirators

OSHA Industrial Hygiene Field Operations Manual (IHFOF) has a statement concerning the use of non-approved respirators:

"MSHA/NIOSH will provide a test schedule for any respirator against any specific contaminant. The use of unapproved respirators, even in special use situations, is unacceptable unless approval is pending before NIOSH."

We have been informed by the Testing and Certification Branch of NIOSH that any respirator manufacturer can submit their respirators to NIOSH for approval. Because a respirator has been submitted to NIOSH for approval does not necessarily mean that it will meet the minimum requirements prescribed in 30 CFR 11 and be approved. The manufacturer can resubmit the device to NIOSH as often as they wish even when the products previously failed the certification test.

The IHFOF statement is in contradiction to the OSHA standard on respiratory protection which specifies that only approved or accepted respirators may be used, 29 CFR 1910.134(b)(11). Since the standard takes precedence over the IHFOF, the use of non-approved respirators is not permitted. Appropriate citations shall be issued when violations are found.

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3. Description of the Operations and Processes Used by the Applicant (Cont'd.)

potassium chloride solution (brine), utilizing a flowing mercury cathode in the cell. Mercury is continuously pumped into and out of the cell. The stream leaving the cell contains sodium or potassium amalgam which is removed by reaction with water in equipment called a Decomposer. Hydrogen gas and weak caustic leave the Decomposer as products and mercury is recycled to the cell. Chlorine is liberated at the anode in the cell and removed directly for cooling, drying and liquifying.

From time-to-time in the Cell Room and particularly during periodic maintenance of the cells and decomposers, the workers are potentially exposed to mercury vapor. Whenever leaks or other sources of mercury vapor are discovered by use of a portable mercury vapor meter or when maintenance activities which have exposure potential associated with them are performed, respiratory protection is required.

There are no chemical cartridge or air-purifying respirators which have been certified for use in mercury vapor contaminated atmospheres. Air-supplied respirators or self-contained breathing apparatus (SCBA) are not practical for use in all areas of a Cell Room because of their size or weight, and lack of worker acceptance. Also, if used in a Cell Room, these respirators can present hazards of their own, such as tripping or electrical shock. However, two types of air-purifying respirators are available from two manufacturers which are effective in mercury vapor service. The variance being requested is to permit the use of the following respirators:

- a. 3-M Brand Mercury Vapor/Chlorine Respirator No. 8708, 3-M Company, St. Paul, Minnesota 55101
- b. MSA Mersorb Indicating Cartridge (Part No. 463532) for the Comfo II Respirator, Mine Safety Appliances Company, Pittsburgh, Pennsylvania 15208

Technical data are attached to support the manufacturer's claim for effectiveness.

4. In order to monitor workplace exposure potentials, Diamond Shamrock has a long-standing program which includes periodic personnel and area air sampling for airborne mercury at each Mercury Cell Chlorine facility. In addition, urinary mercury analyses are performed regularly as an additional check to confirm that worker protection has been maintained. Therefore, we feel that the use of the above respirators would assure our workers' safety far better than using air-supplied respirators which are bulky, electrically conductive, and have poor worker acceptance.