PLAINTIFF'S
EXHIBIT
AL-1387

D. E. HUDDLESTON

PITTSBURGH OFFICE - 6

FEB 25 1985

M. ROHDE
KESSLER PREMIUM CASTINGS
EL PASO, TEXAS

1985 February 25

RE: PLANT VISIT - 1985 FEBRUARY 05 - 07

During my recent visit to Kessler Premium Castings, we discussed many topics and plans of action. The following are comments on the discussions for each subject area.

MEDICAL TESTS

A meeting was held 1985 February 06 with Dr. Watson in which audiometric testing and lung spirometry testing were discussed. It was concluded that spirometry tests and X-rays would be completed on Furnace Tenders, Assemblers, and Welders during the next three months. The decision to perform these tests on employees in other job classifications will be determined at a later date. Audiometric testing will be conducted in the late spring of 1985. Dr. Watson will investigate the reliability of data collected by mobile consultants from the El Paso area in performing the audiometric tests. Attached is information on the costs to install and operate an audiometric booth at Kessler. As promised to Mike Sigler in our meeting, attached is information on employee access to medical records.

RADIATION

Kessler's radiation program was reviewed with R. Morales and H. Aviena. Joe Damiano has contacted R. Morales and discussed the registration of Radiographers with the State of Texas. Additional training will be conducted on all Radiographers, and registrations will be completed in the near future. The Landauer Badge Program will continue with a copy of all results being sent to Pittsburgh Radiation Safety Officer, Joe Damiano. A good program has been established which documents all radiation surveys of the X-ray units. Good documentation and recordkeeping is essential for a good radiation protection program.

MATERIAL SAFETY DATA SHEETS

As we discussed, a Material Safety Data Sheet should be acquired for all materials used within the plant. MSDSs have been acquired for the majority of the materials used within Kessler, but a review of the inventory should be completed to assure Safety Data Sheets are present at the plantsite. Bob Grady in Purchasing assures acquisition of Material Safety Data Sheets would occur on all new purchased materials.

ALCOA

RESPIRATORY PROTECTION

When respiratory protection equipment is provided for emergency use, training, maintenance, and inspection programs are necessary. Your self-contained breathing respirators should be kept in a clean environment and immediately cleaned and maintained after each use. A monthly inspection program should be implemented with documentation to assure emergency equipment is in good working order. Attached is the OSHA standard for respiratory protection.

ENGINEERING CONTROLS ON A-622 FLUXING UNITS

Maurice Wei of Pittsburgh Environmental Engineering visited the plant on 1985 February 07 to review the proposed engineering solutions to control the beryllium fumes being released to the workplace environment. The Kessler recommended engineering solution is to place a steel vacuum ring between the furnace top and the A-622 fluxing unit. The ring is connected by a flex steel hose to a vacuum line which will run to a bag house located outside. One system would be set up in the Assembly area, and two vacuum units would be built in the R-330 area. The vacuum system for the Assembly area will be designed, installed, and evaluated before similar units would be installed in the R-330 area. Industrial hygiene monitoring was completed on the Furnace Tenders with the test vacuum system in place and the Venturi filters on the A-622 fluxing units shut off. The samples were sent to EHL for analysis. Additional testing was also completed in the Assembly area and R-330 area for respirable silica.

LETTER TO OSHA

A letter was drafted in response to the OSHA citation which details the implementation dates for the design, installation, and testing of controls for beryllium exposures. The letter identifies completion dates and the engineering method listed above.

Thank you for your kind hospitality shown to Maurice and myself during our visit. If you have any further questions or require additional information, please feel free to contact me.

DALE E. HUDDLESTON

DEH:wp

Attachments

cc: E. E. Rumberger, Pittsburgh - 6
M. Wei, Pittsburgh - WPH
H. D. Belk, M.D., Pittsburgh - 6
M. E. Sigler, Kessler Premium Castings, El Paso, Texas

FROM E. E. RUMBERGER

PITTSBURGH OFFICE

TO

LOCATION INDUSTRIAL HYGIENISTS

1980 August 25

RE: EMPLOYEE AND OSHA ACCESS TO PLANT EXPOSURE AND MEDICAL RECORDS

A controversial and potentially troublesome regulation became effective 1980 August 21 that will enable employees, employee representatives, and OSHA to gain easy access to plant medical and industrial hygiene records. (This regulation does not apply to MSHA.) Although legal challenges to this regulation have been filed, there has not yet been any decision on a stay. Plants should be prepared now to cope with the regulation.

The broad employee access to occupational health records affords the labor and health activists among our employees new opportunities to create issues. It will also provide those employees filing Workers' Compensation claims with a rather large body of medical and personal sampling data to support their claims.

Attached is a summary of the regulation which outlines plant responsibilities relative to both medical and exposure records. Dr. Belk has provided a similar version (with the emphasis on medical records) to the Location Managers, Physicians, and Personnel Managers. For your information, the attached copy includes the identical information relative to medical records. In addition, more specific comments pertaining to the Industrial Hygienists' responsibilities for employee exposure records are included.

The regulation does not specify the types or methods of exposure records to be kept; it deals only with aspects of access to the records. You may want to consider establishing two types of exposure record files: one for individual employees; and one for job classes. To prevent what could be a needless clerical task, we suggest that any new files only include exposure data generated from this point forward. Data generated prior to this could be added on an "as needed" basis, i.e., when a request for access occurs.

Prior to the Industrial Hygienists providing records to anyone, they should make every effort to counsel employees on the perspective and the meaning of such data. Combining the implications of disclosure of both exposure and medical records, you should consider a review of the situation with your location management and the plant physician.

As questions might occur on any aspect of this regulation, please contact either the Industrial Hygiene Division or the Legal Department.

E. E. RUMBERGER

EER/eds
Attachments
cc: See Page 2 (reverse side)

ALCOA

cc: Location Managers
Dr. B. D. Dinman - Pittsburgh
Dr. H. D. Belk - Pittsburgh
J. R. Archibald - Pittsburgh
J. A. Lytle - Pittsburgh
P. W. Osborne - Pittsburgh

MEMORANDUM

1980 AUGUST 25

RE: COMPLIANCE WITH OSHA STANDARD "ACCESS TO EMPLOYEE EXPOSURE AND MEDICAL RECORDS"

The Occupational Safety and Health Administration (OSHA) published its final standard on access to exposure and medical records in the Federal Register on May 23, 1980. The standard, which prescribes rights of access of employees, authorized representatives and OSHA (not NIOSH) becomes effective on August 21, 1980. The purpose of this memorandum is to inform you of the requirements of the standard and to establish guidelines for its implementation.

The standard applies to exposure and medical records, as well as analyses thereof, of Alcoa employees exposed to toxic substances or harmful physical agents. "Exposed" means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and does not take into account the amount or level of contact, except that if it can be demonstrated that an employee is not subjected to toxic substances or harmful physical agents used, handled, stored, generated or present in the workplace in any amount or manner different from typical non-occupational situations, then he is not covered by this standard.

"Toxic substance or harmful physical agent" is defined as:

> "any chemical substance, biological agent (bacteria, virus, fungus, etc.) or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and non-ionizing radiation, hypo- or hyperbaric pressure, etc.) which:
>
> (i) is regulated by any Federal law or rule due to a hazard to health,
>
> (ii) is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances ...,
>
> (iii) has yielded positive evidence of an acute or chronic health hazard in human, animal, or other biological testing conducted by, or known to, the employer, or
>
> (iv) has a material safety data sheet available to the employer indicating that the material may pose a hazard to human health."

Clearly, the group of employees covered by this standard is a very broad one, however, it should be noted that records of employees who are exposed only to typical safety hazards (trips, falls, traumatic injury) are not covered by the standard.

Once it is determined that the employee is covered by this standard, there are three types of records whose availability is governed, and access to each varies:

- o exposure records
- o medical records
- o analyses using exposure or medical records.

It is important to note that the standard extends to all employee exposure and medical records and analyses thereof, whether or not the records are related to specific occupational safety and health standards, and whether or not the recording or monitoring is specifically required by OSHA. The standard does not impose any new obligations to create medical or exposure records.

I. Exposure Records

A. Definition

An exposure record is a record containing any of the following kinds of information concerning employee exposure (inhalation, ingestion, skin contact or absorption etc.) of a toxic substance or harmful physical agent:

- o environmental monitoring or measuring (personal, area, grab, wipe) and related collection or analytical methodologies, calculations, and other background data relevant to interpretation of monitoring results.
- o biological monitoring results that directly assess absorption of a substance or agent by the body (blood lead level, urine mercury, urine phenols, exhaled carbon monoxide). These do not include results that evaluate the biological effect of a substance or agent (lung function, cytology, kidney function, hemoglobin levels) which more directly measure some aspect of an individual's unique health status. Instead, these are treated as medical records.
- o material safety data sheets.

B. Access

An employee has a right of access to exposure records relevant to himself. These include records of the individual's past or present exposure; exposure records of other employees with past or present job duties or working conditions related to or similar to those of the employee; records containing exposure information concerning the individual's workplace or working conditions; and exposure records pertaining to workplaces or working conditions to which the employee is being assigned or transferred.

An employee may elect to give a third party access to his/her exposure records by giving him/her written authorization. A recognized or certified collective bargaining agent, in other words the local union executive board, need not have the individual's written authorization to obtain access to exposure records.

OSHA may have access to exposure records upon request. When an employee's exposure records are released to anyone other than the individual employee, personal identifiers should be removed prior to their release.

When an exposure record is being released, the Work's industrial hygienist is encouraged to meet with the individual

gaining access to explain fully the significance of the data.

II. Medical Records

A. Definition

Medical records are those records concerning the health status of an employee which are made or maintained by a physician, nurse, other health care personnel, or technician. Included are medical and employment questionnaires or histories; results of medical examinations and laboratory tests; medical opinions, diagnoses, progress notes, and recommendations; descriptions of treatments and prescriptions; and employee medical complaints.

Items not considered part of the medical record are physical specimens that are routinely discarded in normal medical practice and which are not required to be maintained by other legal requirements; records regarding health insurance claims if maintained separately from the medical program and records and not directly accessible by employee name or other personal identifier; and records pertaining to employee assistance programs (alcohol, drug abuse, personal counseling programs) if they are maintained separately from the company medical program and records.

B. Access

1. Employees

Each employee is entitled to access to his own medical record. Alcoa's procedure will be as follows:

a. The physician should establish an appointment for the purpose of an employee review and discussion of the contents of the medical record.

b. The physician may offer to provide a written summary of the material facts and opinions set forth in the record.

c. The physician finally may offer to provide a copy of the record to a physician or other designated representative. The designated representative, even if a recognized or certified collective bargaining agent, must have the employee's written consent for access to medical records.

The employee should never be left alone with the original medical record.

If after consultation with the physician the employee requests a copy of the record, it must be provided.

At the physician's discretion, two types of information may be withheld from the employee. Potentially harmful information regarding terminal illness or a psychiatric condition may be withheld. The employee must be informed, however, that information withheld will be provided to a representative upon written request.

The physician may also delete from the records the identity of a family member, personal friend, or fellow employee who has provided confidential health information concerning the employee.

2. OSHA

There are four common situations in which an OSHA representative may seek access to personally identifiable medical records:

- o During an inspection to determine compliance with medical surveillance requirements of a standard;
- o When an inspector has been authorized by the employee as a designated representative;
- o When an OSHA physician consults on site with a company physician; and
- o When an OSHA representative presents a written access order.

a. Inspection for medical surveillance requirements of a standard.

Access to medical records must be provided for OSHA inspectors who request an opportunity to verify medical surveillance recordkeeping requirements of a standard. This examination must be conducted in the medical department and should be under the observation of the company physician. The inspector must not record or take off site any information from medical records other than to document compliance or non-compliance with an existing standard.

b. OSHA as an employee's designated representative.

In this situation the guidelines applicable to other designated representatives apply.

c. OSHA physician consultation.

The OSHA physician may request a consultation with the company physician. In this instance the OSHA physician should evaluate employee medical records in the medical department. No employee medical records or copies of records shall be taken out of the medical department without specific written consent of the employee or a written access order.

d. OSHA presentation of a written access order.

The employee's written consent is not required before an OSHA representative gains access to employee medical records covered by a "written access order."

Each written access order should state:

- The purposes for which access is sought;
- The kind of employee medical information that will be examined and why there is a need to examine personally identifiable information;
- Whether medical information will be examined on site and what type of information will be copied and removed from the medical department;
- The name, address, and phone number of the principal OSHA investigator and any other authorized persons expected to review and analyze medical information;
- The name, address, and phone number of the OSHA Medical Records Officer; and
- The anticipated period of time during which OSHA expects to retain the employee medical information in personally identifiable form.

The following sequence of events should occur when OSHA personnel present a written access order to a location:

1. The OSHA investigator should present to local management at least two copies of the written access order and an accompanying cover letter. One copy of the written access order will not identify specific employees whose medical records OSHA expects to obtain;

2. The OSHA investigator will also present copies of the written access order (without employee names) and cover letter to the local bargaining agent.

3. The OSHA investigator will request that local personnel post a copy of the written access order (without employee names) and accompanying cover letter.

4. The OSHA investigator will discuss with management personnel and the local bargaining agent the appropriateness of individual notice to employees affected by the written access order. Generally such notification should be provided so that an employee may have an opportunity to object. If individual employee notification is to be given, the OSHA investigator will provide sufficient copies of the written access order (without employee names) and cover letter to enable local management to provide a copy to each affected employee. A copy of the written access order and its cover letter should also be filed in each affected employee's medical record.

5. A quiet, private area in the medical department should be provided the OSHA investigator who should present a copy of the written access order (if not previously presented to medical personnel) and his/her personal identification.

One copy of the written access order will contain names of employees for whom medical record access is requested. Only specific records requested should be provided the investigator. An investigator having a written access order may review the records in private in the medical department. If records are removed from the medical department for copying purposes, the investigator should be accompanied by medical personnel until original records are returned to the medical department. After records are returned to company medical personnel, each record should be checked for completeness and misfiled information.

Only those personally identifiable medical records specifically defined in the written access order should be copied.

6. An employee, bargaining agent, or management person may submit a written objection to the written access order. This will be directed to the OSHA Medical Records Officer, but access to records will not generally be delayed, unless the Agency determines otherwise. The Agency will subsequently respond to objections in writing, and may rescind the access order if appropriate.

III. Analyses Using Exposure or Medical Records

A. Definition

An "analysis using exposure or medical records" is any compilation of data, or any research, statistical or other study based at least partially upon information collected from individual medical or exposure records or information collected from health insurance claims forms. For access to be granted, it is necessary that the analysis is complete and that no further work is currently being done.

B. Access

An employee has a right of access to such an analysis, as does his representative who has the employee's written authorization. However, a recognized or certified collective bargaining agent, the local union executive board, has an automatic right of access to such analysis without written authorization of the employee.

If access is requested to an analysis which reports the contents of employee records by direct identifier or by information that could reasonably be used to identify specific employees, the employer must assure that personal identifiers are removed before access is granted.

OSHA has an immediate right of access to analyses using exposure or medical records.

IV. Miscellaneous Guidelines

A. Form of Records and Retention

Employee exposure records and analyses based upon exposure and medical records must be retained for 30 years. Medical records must be retained for the duration of employment plus 30 years.

The standard does not prescribe the form in which records should be maintained, except for x-rays, in which case the original films must be retained. Records are only to be "preserved and retrievable." Microfiche, microfilm, computerization or hard copy of records is appropriate.

B. Employee Notification

Within 60 days (after August 21, 1980) and annually thereafter employees must be informed of their rights under the standard. Notification should cover the following areas:

- The existence, location, and availability of exposure and medical records;
- The persons responsible for maintaining and providing access to exposure and to medical records; and
- The employee's right of access to these records.

New employees should be apprised of their rights of access upon employment. The plant physician should be responsible for maintaining and providing access to medical records; the individual functionally responsible for industrial hygiene should assume similar responsibility for exposure records.

For that purpose, the notice attached to this memorandum should be completed and posted in appropriate locations so that all affected employees are informed.

Locations are required to "make readily available to employees a copy of this standard and its appendices." Accordingly, a copy of the standard will be provided to each location.

C. Time of Access and Costs

Access pursuant to an employee or authorized employee representative's request must be provided "in a reasonable time, place, and manner, but in no event later than fifteen (15) days after the request for access is made."

If the employee or representative requests an exact copy of a record, the location has two options. It can (1) provide a copy without cost, or (2) make available without cost the necessary mechanical copying facilities. Alcoa will not loan the original record to the employee or representative, but a

location may copy a record once and loan that copy when requested.

After the first copy is provided without cost to an employee or representative, a reasonable charge based upon nondiscriminatory administrative cost (including search and copying expenses but not including overhead expenses) may be assessed for additional copies. However, there are two exceptions to this. First, the first copy of any new information added to a record that was previously copied must be supplied without charge. Second, a certified or collective bargaining agent's, the local union executive board's, initial request for an employee exposure record or an analysis using exposure or medical records must be provided without cost, even if the employee himself previously received a copy.

D. Trade Secret Information

Any trade secret data that discloses manufacturing processes or the percentage of a chemical substance in a mixture may be deleted before a record is made available. However, an employee requesting access must be informed that information has been deleted, and if the deletion conceals when and where exposure occurred, alternate information sufficient to enable the employee to identify those facts must be supplied. If it is not possible to delete trade secret information without

substantially impeding evaluation of the record, then the Legal Department should be contacted immediately so that an appropriate written agreement to safeguard Alcoa's interests may be prepared.

E. Form of Authorization of Designated Representatives

A representative must produce written authorization of the employee whose records are sought. Such authorization must contain:

- the name and signature of the employee authorizing release of the information;
- the date of the authorization;
- the name of the individual or organization that is authorized to receive the released information;
- a general description of the information that is authorized to be released;
- a general description of the purpose for the release of the information; and
- a date or condition on which the written authorization will expire (if less than one year).

A written authorization does not authorize the release of information not in existence on the date of the authorization unless this is specifically provided for. A written authorization may be revoked in writing at any time. A sample form for authorization for access to medical records is attached to this memorandum.

Should you have questions regarding implementation of this standard, feel free to contact the Pittsburgh Health and Safety Department or the Legal Department for assistance.

CHRISTINE DIXON-ERNST

PITTSBURGH OFFICE - 6

D. E. HUDDLESTON

PITTSBURGH OFFICE - 6

1985 February 13

RE: AUDIOMETRIC EQUIPMENT NEEDS FOR EL PASO

Listed below are the makes and models of equipment the El Paso plant will need to begin audiometric testing.

Audiometric testing booth: Industrial Acoustic Company
IAC Series 400-A
$3725.00 + $468 shipping
Industrial Acoustic Company
1160 Commerce Avenue
Bronx, NY 10462 212/931-8000

Audiometer: Maico Hearing Instruments, Inc.
MA-39
$850.00
Maico Hearing Instruments, Inc.
7375 Bush Lake Road
Minneapolis, MN 55434 612/835-4400

I would recommend that your contact at El Paso call these manufacturers for information on the sales representatives in the El Paso area. As we discussed, someone from the El Paso plant will have to attend an audiometric certification course. These courses run three days and usually cost in the $300-400 range.

If you are in need of any other information or have any questions, please do not hesitate to call.

CHRISTINE DIXON-ERNST

CDE:wp

cc: H. D. Belk, M.D., Pittsburgh - 6

6. Respirators shall be stored in a convenient, clean and sanitary location.
7. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use, such as self-contained devices, shall be thoroughly inspected at least once a month and after each use.
8. Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.
9. There shall be regular inspection and evaluation to determine the continued effectiveness of the program.
10. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually).
11. Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it was designed in accordance with standards established by competent authorities.

OSHA Standard 1910.134-Respiratory Protection

Since the program described herein so directly relates to this OSHA standard, a copy is provided in the following pages for easy referral.

§1910.134 Respiratory protection.

(a) *Permissible practice.* (1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

(2) 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. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in paragraph (b) of this section.

(3) The employee shall use the provided respiratory protection in accordance with instructions and training received.

(b) *Requirements for a minimal acceptable program.* (1) Written standard operating procedures governing the selection and use of respirators shall be established.

(2) Respirators shall be selected on the basis of hazards to which the worker is exposed.

(3) The user shall be instructed and trained in the proper use of respirators and their limitations.

(4) Where practicable, the respirators should be assigned to individual workers for their exclusive use.

(5) Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

(6) Respirators shall be stored in a convenient, clean, and sanitary location.

(7) Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use

(8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.

(9) There shall be regular inspection and evaluation to determine the continued effectiveness of the program.

(10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually).

(11) Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U.S. Department of Interior, Bureau of Mines, and the U.S. Department of Agriculture are recognized as such authorities. Although respirators listed by the U.S. Department of Agriculture continue to be acceptable for protection against specified pesticides, the U.S. Department of the Interior, Bureau of Mines, is the agency now responsible for testing and approving pesticide respirators.

(c) *Selection of respirators.* Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969.

(d) *Air quality.* (1) Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

(2) Breathing air may be supplied to respirators from cylinders or air compressors.

(i) Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178).

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(ii) The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing airtype compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be frequently tested for carbon monoxide to insure that it meets the specifications in subparagraph (1) of this paragraph.

(3) Air line couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with nonrespirable gases or oxygen.

(4) Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

(e) *Use of respirators.* (1) Standard procedures shall be developed for respirator use. These should include all information and guidance necessary for their proper selection, use, and care. Possible emergency and routine uses of respirators should be anticipated and planned for.

(2) The correct respirator shall be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual should be durably marked to indicate to whom it was assigned. This mark shall not affect the respirator performance in any way. The date of issuance should be recorded.

(3) Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

(i) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(ii) When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment.

(iii) Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atomspheres shall be used. A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

(4) Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

(5) For safe use of any respirator, it is essential that the user be properly instructed in its selection, use, and maintenance. Both supervisors and workers shall be so instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

(i) Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This may be done by following the manufacturer's facepiece fitting instructions.

(ii) Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed. Systems have been developed for mounting corrective lenses inside full facepieces. When a workman must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

(iii) If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

(f) *Maintenance and care of respirators.* (1) A program for maintenance and care of respirators shall be adjusted to the type of plant, working conditions, and hazards involved, and shall include the following basic services.

(i) Inspection for defects (including a leak check),

(ii) Cleaning and disinfecting,

(iii) Repair,

(iv) Storage

Equipment shall be properly maintained to retain its original effectiveness.

(2) (i) All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

(ii) Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

(iii) Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting

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tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

(iv) A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

(3) Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected respirator. Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

(4) Replacement or repairs shall be done only be experienced persons with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

(5) (i) After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

(ii) Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

(iii) Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

(g) *Identification of gas mask canisters.* (1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(2) All who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

(3) On each canister shall appear in bold letters the following:

(i) –

Canister for _____
(Name for atmospheric contaminant)
or
Type N Gas Mask Canister

(ii) In addition, essentially the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than _____ percent by volume of _____"
(Name of atmospheric contaminant)

(4) Canisters having a special high-efficiency filter for protection against radionuclides and other highly toxic particulates shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3-micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

(5) Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

(6) Each gas mask canister shall be painted a distinctive color or combination of colors indicated in Table I-1. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

TABLE I-1

Atmospheric contaminants to be protected against	Colors assigned*
Acid gases	White
Hydrocyanic acid gas	White with ½-inch green stripe completely around the canister near the bottom
Chlorine gas	White with ½-inch yellow stripe completely around the canister near the bottom
Organic vapors	Black
Ammonia gas	Green
Acid gases and ammonia gas	Green with ½-inch white stripe completely around the canister near the bottom
Carbon monoxide	Blue
Acid gases and organic vapors	Yellow
Hydrocyanic acid gas and chloropicrin vapor	Yellow with ½-inch blue stripe completely around the canister near the bottom
Acid gases, organic vapors, and ammonia gases	Brown
Radioactive materials, excepting iodine and noble gases	Purple (Magenta)
Particulates (dusts, fumes, mists, fogs or smokes) in combination with any of the above gases or vapors	Canister color for contaminant as designated above with ½-inch gray stripe completely around the canister near the top
All of the above atmospheric contaminants	Red with ½-inch gray stripe completely around the canister near the top

*Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

Note: Orange shall be used as a complete body or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

(Secs. 4(b)(1), 6(b), and 8(c), 84 Stat. 1592, 1593, 1596, 29 U.S.C. 653, 655, 657; Secretary of Labor's Order No. 8-76 (41 FR 25059); 29 CFR Part 1911)

[39 FR 23502, June 27, 1974, as amended at 43 FR 49748, Oct. 24, 1978]

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