

PRIVATE & CONFIDENTIAL

DATE AUGUST 7, 1972

TO REFINERY MANAGERS

ANACORTES ODESSA/CIMIZA
HOUSTON WILMINGTON
MARTINEZ WOOD RIVER
NORCO

FROM GENERAL MANAGER REFINING -
HEAD OFFICE

PLAINTIFF'S EXHIBIT

SH-1361

SUBJECT OSHA ASBESTOS STANDARDS

Per Mr. Ballman, 8/9/72, no copies
of this distributed. He to discuss with
RPK before any copies go out.

Manufacturing Engineering's memorandum of June 28, 1972, discussed provisions of a permanent standard to control employee exposure to asbestos, which was published in the Federal Register on June 7, 1972. Some specific plans which have now been formulated for implementation of paragraphs (f) Monitoring, and (j) Medical Examinations of the standard are discussed below.

With reference to monitoring, the new standard requires an initial determination of potential employee exposure to asbestos at each refinery by December 7, 1972. The purpose of this monitoring program is to determine whether any employee's exposure exceeds the limits specified in paragraph (b) of the standard. When excessive exposure occurs, the employer will be required to take special precautions and initiate engineering controls.

Since a determination of the airborne concentrations of asbestos fibers is a complex procedure, we decided it would be prudent to defer widespread sampling until some specific information was obtained regarding atmospheric levels of asbestos which might be expected in conjunction with performance of typical refinery work involving materials containing asbestos. This information will be procured from studies to be conducted at Houston and Wood River Refineries within the next few weeks under the general supervision of Head Office industrial hygienists. An attempt will be made to characterize employee exposure to asbestos from various tasks such as fabrication, application, removal, and demolition of insulation. Results of the preliminary studies should yield information in regard to what, if any, changes in our work practices will be required to avoid exposure of employees to limits above the specified levels.

Information on results of the monitoring programs at Houston and Wood River will be forwarded as soon as available to all locations along with specific advice on any action which is considered necessary to reduce exposure of employees to asbestos fibers. While awaiting the outcome of results from the monitoring program, employees engaged in any operation involving asbestos where there is any visible dust should continue to wear an air purifying respirator approved by the Bureau of Mines or by NIOSH. A list of approved respirators is shown in Attachment A.

Regardless of results of the findings at Houston and Wood River, in order to comply with paragraph (f), each refinery will still be required to conduct a comprehensive monitoring program in work areas where asbestos exposure may occur. In preparation for this, we suggest you proceed with purchase of equipment for sampling asbestos. Recommended equipment and suppliers are shown in Attachment B. Phase contrast microscopes will not be required as it is anticipated all microscopic evaluation of asbestos fibers will be performed at one central location.

LAM 024318

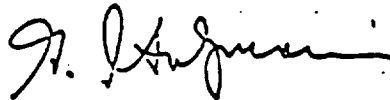
ABS-007497

In addition to procurement of sampling equipment, each location should prepare an inventory of all materials containing asbestos which are used within the refinery and develop a plan to permit ready identification of these materials. Consideration will also have to be given to the frequency and duration of various jobs involving asbestos exposure to individual employees. This information will influence the length of sampling periods and evaluation of results in terms of potential exposure exceeding either an eight hour time-weighted average concentration of five fibers per cubic centimeter or a ceiling concentration of ten fibers per cubic centimeter.

Also attached is a copy of a July 10 memorandum which contains specific recommendations of Shell's Medical Director covering a program to achieve compliance with medical examination requirements of the OSHA asbestos standard. The memorandum is self-explanatory and our only comment pertains to scope of coverage. Regarding examination of current employees, within Manufacturing we propose to include only those whose regular assignment involves working with asbestos. At most locations these employees are classified as insulators, but in some cases are designated as cement workers or as combination insulators and brick masons. Currently, this involves about 75 employees at our eight refineries. w/16 4c

As specified in the permanent asbestos regulations, a medical examination must be performed on all employees currently exposed to asbestos on or before January 31, 1973. In the case of newly assigned employees or for situations involving termination, the examination must be performed within 30 calendar days. Insofar as scope of coverage is concerned, the same criteria should be applied in regard to both new assignments or terminations as was specified above for current employees.

Any questions or comments pertaining to the recommendations in this memorandum should be referred to this office or Head Office Manufacturing Engineering.



G. Holzman

Attachment

cc: Senior Advisor - Manufacturing
Occupational Safety and Health - Manager
Medical Director - Dr. R. E. Joyner
Manufacturing Engineering - Manager
Manufacturing Operations - Mr. R. H. Tubman
Legal Department - Mr. James Evans
Shell Engineering Council - Chairman
Shell Chemical Company - Engineering - Manager
Exploration and Production - Mr. P. A. Dennie

LAM 024319

ABS-007498

ATTACHMENT A

The asbestos standards call for the use of an air-purifying respirator to be selected from those used under the provisions of 30 CFR Part 11 (37 FR 6244, Mar. 25, 1972).

Since this is a new schedule, and since NIOSH has just taken over the responsibility for respirator approval, there are few, if any, respirators on the market which have been approved under the new schedule.

The schedule calls for two types:

1. Respirators, with replacement filters, designed as respiratory protection against asbestos-containing dusts and mists.
2. Single-use dust respirators...[for] ... asbestos ...

Only those respirators approved by NIOSH/USZM can be so marked.

NIOSH has advised us that any respirator meeting the old Bureau of Mines Schedule 21B requirements will suffice until there are sufficient respirators on the market under the new schedule.

Single-use respirators.

Type 8500. Three-M Co.
3M Center
St. Paul, Minn. 55101

Schedule 21-B respirators (Representative List)

American Optical Corp.
14 Mechanic Street
Southbridge, Mass. 01550

Bausch & Lomb Incorporated
635 St. Paul Street
Rochester, N. Y. 14602

Conco Safety Products, Inc.
100 E. 16th Street
Kansas City, Mo. 64108

Mine Safety Appliances Co.
201 North Braddock Ave.
Pittsburgh, Pa. 15208

Pulmosan Safety Equip. Corp.
30-48 Linden Pl.
Flushing, N. Y. 11354

Rochester Safety Equip. Co., Inc.
53 Howell Street
Rochester, N. Y. 14607

Welsh Mfg. Co.
9 Magnolia Street
Providence, R. I. 02909

Willson Products Div.
2nd and Washington Sts.
Reading, Pa. 19603

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ATTACHMENT B

EQUIPMENT NEEDED

A. Sampling Pump (One of the following three. Specify that pump should meet the OSHA requirements for pulsation dampening.)

1. Bendix-Unico C-115 Air Sampler, with battery and charger.
Catalog No. 3650 - \$240.00
2. Bendix-Unico Micronair Personal Air Sampler, with battery and charger. Catalog No. 3900-10 - \$195.00
3. MSA Portable Pump, Model G, with battery and charger.
Catalog No. 456252 - \$200.00

B. Sampling Accessories

(Item 1 is the complete 3-piece plastic cassette with filter and pad. Item 2 is the replacement filter and support pad for use in the plastic cassette.)

1. Millipore Aerosol Analysis Monitor, with type AA filter, white, plain, and thin support pad. Catalog No. NAWP 037 A0. Carton of 50.
\$50.00
2. Millipore Type AA Filter, white, plain, 37 mm, with thin support pad.
Catalog No. AAWP 017 00. Package of 100. \$18.50

(Choice of Items 3 and 4, the metal adapter which connects the plastic cassette to the sampler hose.)

3. Millipore Aerosol Adapter. Catalog No. XX62 000 04. Each \$6.00
4. Adapter, hose end for 1/4 inch tubing to male leur slip.
Catalog No. LM/L (Price unknown)
(Becton, Dickinson and Company)

(Items 5 and 6 are a 3 foot length of plastic hose for connecting the filter assembly to the pump; has clips to secure to clothing.)

5. Bendix-Unico 3-Foot Sampling Hose with clip.
Catalog No. 3900-908 - Each \$1.25.

6. MSA Sampling Line Assembly
Catalog No. 456226 - Each \$1.25

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(Items 7 and 8 are cellulose bands placed over the filter-end and mid-sections of the plastic cassette to help keep them together and prevent leakage of air and dust contamination.)

7. MSA Cellulose Bands, jar of 60. Catalog No. 625415 - Jar \$1.50
8. White, opaque, cellulose bands, 41 x 25, No. 28 (Price unknown)
(Walter H. Jolly & Co., Inc.)

ABS-007500

Respiratory Disease History

Eliciting a history for symptomatology of respiratory disease can be accomplished by a nurse or technician. A special history and examination form to meet this requirement is attached as Appendix A. It is suggested that affected locations reproduce this form for their own use.

Spirometry

Pulmonary function tests involve the use of specialized medical equipment. In locations where relatively few examinations will be scheduled, or where a nurse is not available to administer the test, this procedure will have to be accomplished through an arrangement with outside medical facilities. In larger locations, the purchase of equipment and performance of the test on-site can be economically justified. If it can be projected that as many as 15 or 20 spirometry tests will be performed annually at a given location, the purchase of a spirometer will be economically advantageous. Spirometry equipment recommended for an in-plant testing program is detailed in Appendix E. *Penn*

The nurse conducting spirometry tests should familiarize herself thoroughly with the literature and instructions accompanying the machine, and should be further qualified through a brief training course, which can be arranged with an outside facility currently providing spirometry testing. Physicians specializing in internal medicine and/or chest diseases are most likely to have this equipment in their offices. Most hospitals also utilize such equipment and the nurse's training might be arranged through the hospital administrator. An essential element of an effective spirometry program is the nurse's ability to elicit, through instruction and encouragement, the patient's maximum ventilatory effort. *I*

Physician's Review

The chest x-ray report, respiratory disease history, and pulmonary function test results should be reviewed by a physician, and his comments and evaluation documented in writing on the previously mentioned form (Appendix A).

LAM 024322

ABS-007501

DATE JULY 10, 1972

TO MESSRS. T. BARON
J. W. ELGER
R. L. FERRIS
J. B. HENDERSON
A. C. HOGGE
J. W. SHEEHAN
F. H. STAUB
S. G. STILES
O. L. STONE
G. C. BANKSTON

FROM MEDICAL DIRECTOR
PUBLIC AFFAIRS

SUBJECT MEDICAL REQUIREMENTS TO
MEET OSHA ASBESTOS STANDARDS

On December 7, 1971, an emergency standard pursuant to the Occupational Safety and Health Act of 1970, regulating employee exposure to asbestos fibers was published in the Federal Register (36 F.R. 23207). Since that date, appropriate hearings have been held by OSHA, and a permanent standard has now been issued (37 F.R. 11318), portions of which will become effective this month.

The purpose of this memorandum is to advise all concerned of the applicable regulations and to recommend what would appear to be the most feasible methods of implementation.

The permanent standard contains specific requirements relating to medical services to employees. These requirements, all of which were effective July 7, 1972, are as follows:

1. Preplacement Examinations

"The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV_{1.0})."

The implementation of the program outlined in the above paragraph will necessarily hinge upon industrial hygiene studies to identify those specific areas in plant locations where the new employee can reasonably be expected to be "exposed to airborne concentrations of asbestos fibers". Once these areas are delineated, then all employees entering work in such areas must be provided the specific medical examinations.

Chest X-Ray

Since none of Shell's locations have on-site x-ray capability, the chest x-ray will usually have to be performed in an outside facility. Local arrangements should be made to provide for taking the x-ray and for a written interpretation by a physician.

ABS-007502

LAM 024323

ADDRESSES OF SUPPLIERS OF EQUIPMENT AND ACCESSORIES LISTED

1. Bendix-Unico items:

National Environmental Instruments, Inc.
P. O. Box 590
Fall River, Massachusetts 02722

2. MSA items:

Mine Safety Appliances Company
400 Penn Center Blvd.
Pittsburgh, Pa. 15235

3. Millipore Corporation
Bedford, Massachusetts 01730

4. Becton, Dickinson and Company
Rutherford, New Jersey 07070

5. Walter H. Jelly & Co., Inc.
2822 Birch Street
Franklin Park, Illinois 60130

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Whether or not the "comprehensive medical examination" referred to above should include a clinical examination by the physician has not yet been determined. In the case of preplacement examinations, this presents no problem, since a clinical examination is conducted as an integral part of the preplacement examination. Annual re-examinations for exposed employees, however (Item 2), will have to be tailored according to future OSHA guidelines. For the present, test results should be reviewed by a physician as noted above, and clinical examinations should be performed only on those employees which, in the opinion of the physician, have valid indications for such examination. These indications should include:

- (a) An abnormal chest x-ray reading indicative of possible chronic pulmonary disease.
- (b) A vital capacity less than 70% of the predicted value. (Method of determining predicted vital capacity is detailed in Appendix C.)
- (c) A forced expiratory volume (one second) less than 70% of the measured vital capacity.
- (d) Respiratory history responses indicative of possible chronic pulmonary disease.

Those locations already having part-time medical services available may utilize this channel for the physician's review procedure. Where adequate physician services are not available, the report of the Special Medical Examination - Asbestos, may be forwarded to the office of the Medical Director for review.

2. Annual Examinations

"On or before January 31, 1973, and at least annually thereafter, every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers."

Annual examinations must include all features of the preplacement examinations set forth above, and the physician's review and recommendations should be conducted in the same manner. The incidence of clinical examinations necessitated by this standard will naturally increase with the employee's age and length of service.

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3. Termination Examinations

"The employer shall provide, or make available within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination."

Termination examinations must include all features of the preplacement examinations set forth above, and the physician's review and recommendation should be conducted in the same manner.

4. Use of Respirators

"No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, an examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority status, and rate of pay he had just prior to such transfer, if such a different position is available."

This provision of the standard appears clear-cut and requires no comment. Hopefully, very few instances will occur in which the use of a respirator is prohibited.

5. Medical Records

"Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations for a period of at least 20 years."

In locations where a Medical Department staffed by at least one nurse exists, records of these examinations should be permanently maintained in individual medical jackets designated for each employee. Where in-plant departments do not exist, records should be forwarded to the office of the Medical Director.

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6. Access to Medical Records

"Access to medical records is limited to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, authorized physicians and medical consultants of either of the above, and upon request of an employee or former employee, his personal physician."

It would appear that, in practice, the above text will limit access to medical records to physicians only. This interpretation is in keeping with OSHA's general philosophy that individual medical records do not have to be made available to a Compliance Officer in the event of an inspection.

Controversy over employer access to medical records is expected as additional standards requiring medical examinations are promulgated. The Department of Labor has said "... there is no intention to allow employers to abuse medical information obtained pursuant to the Act to the detriment of employees. Therefore, the administration of the medical records requirement will be closely watched, and, in cases of abuse, appropriate action will be considered."

Medical records obtained pursuant to the Act should, accordingly, be kept by the Medical Director or other physicians and/or paramedical personnel under his supervision or acting upon his advice.

I will be happy to furnish any assistance requested to further the implementation of this program. I am located in Room 1570 - One Shell Plaza; telephone 220-6359.



R. E. Joyner, M.D.
Medical Director

Attachments

cc (w/attachments) -

Messrs. R. J. Bauer
G. A. Burton
M. N. Papadopoulos
H. E. Walker
J. E. Green
H. R. Kemmerer
B. W. Dunbar
P. A. Dennie
H. T. Eglint
V. G. Whittington
T. A. Crain

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ABS-007506

Pursuant to OSHA Regulations published in the Federal Register (37 F.R. 13313), the following procedures were performed on the above-named employee:

MEDICAL HISTORY: (Please check Yes or No)

1. Have you had shortness of breath in the past few months?
2. Does your shortness of breath make you stop for breath after climbing one flight of stairs?
3. Does shortness of breath interfere with your work?
4. Does shortness of breath ever awaken you from sleep?
5. Does shortness of breath ever occur at rest?
6. Do you have to sleep on several pillows at night in order to breathe easily?

yes	no

7. Do you have a bothersome cough nearly every day?
8. Is your cough mainly on lying down?
9. Is your cough mainly on arising in the morning?
10. Is your cough about the same all through the day?
11. Do you cough up yellowish or greenish sputum?
12. Have you coughed up blood within the past six months?
13. Do you think the blood came from your nose, throat, or chest? (Circle one)
14. Are you frequently aware of whistling or wheezing when you breathe?
15. Has a Doctor ever said you have emphysema?
16. Do you get frequent chest colds?

yes	no

Remarks: _____

Employee's Signature

II. **SPIROMETRY:** Ht. _____ Wt. _____ Age _____ Predicted Vital Capacity _____
Measured Vital Capacity _____, which is _____% of Predicted Vital Capacity
Forced Exp. Vol. (1 second) _____, which is _____% of Measured Vital Capacity

III. **CHEST X-RAY:** Date _____ Where performed? _____
Where is film filed? _____

Result: (Attach reading of chest x-ray.)

Remarks: _____

IV. PHYSICIAN'S EVALUATION:

- ☐ History and test results above do not show evidence of chronic respiratory disease.
☐ Marginal findings. Recommend follow-up as noted below.
☐ Recommend immediate further study as noted below.
☐ Employee may wear respirator.
☐ Employee should not wear respirator.

Remarks: _____

Physician's name (print)_____
Physician's signature_____
Date

V. **CLINICAL EXAMINATION:** (when indicated) - (Attach report of examination).

VI. **ADDITIONAL PROCEDURES, REMARKS, ETC.:**

Signature
LAM 024328

ABS-007507

APPENDIX B

RECOMMENDED SPIROMETRY EQUIPMENT

1. Monaghan Portable Pulmonary Function Analyzer - Model M 403 with digital read-out. Price - \$950.00. Manufacturer: Monaghan, Inc.
500 Alcott Street
Denver, Colorado 80204

The major advantage of this machine is its portability (weight - 10 pounds), which would enable it to be moved to various locations where high density employee populations exist. One such unit, for example, would probably meet the demands of the entire Houston area insofar as asbestos examinations are concerned. Subsequent OSHA standards may require increased pulmonary function testing, at which time additional equipment may become necessary. This machine has no special installation requirements, and training in operation can be accomplished in three to four hours.

2. Jones Pulmonor III Price - \$728.00
Manufacturer: Jones Medical Instruments Company
200 Windsor Drive
Oakbrook, Illinois 60521

National Distributor: Reynolds & Reynolds
503 W. Main Street
Maywood, Illinois 60153

This is a suitable optional choice. Its major disadvantages are weight, space requirements, and the fact that the operator must make manual calculations in order to derive the needed figures.

3. Certain pieces of equipment have been found unsatisfactory. If purchases other than the above-mentioned models are anticipated, please contact the Medical Director for further information.
4. There is a possibility that OSHA will, at some later date, issue guidelines setting forth specifications on type of test machine, certification of training for operators, etc. It is, therefore, suggested that locations considering equipment purchases update the information contained in this memorandum through a telephone call to the Medical Director just prior to taking such action.

LAM 024329

ABS-007508

APPENDIX C

CALCULATION OF PREDICTED VITAL CAPACITY

The Predicted or "Normal" Vital Capacity is calculated from the equation below, using the age, height and sex of the patient:

$$\begin{aligned}\text{Males} &= .133H - .022A - 3.60 \\ \text{Females} &= .104H - .021A - 2.69\end{aligned}$$

Where H = height in inches, and A = age in years (Example: a 40-year old, 5'7" male would be calculated by multiplying .133 x 67" and subtracting from the result .022 x 40 years. From the second result, subtract 3.60 to obtain a value of 4.43 liters, or 4430 cc. A 37-year old, 5'5" female will similarly show a Predicted Vital Capacity of 3.40 liters, or 3404 cc.)

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