FOSECO, INC.

INTER-COMPANY AND INTER-DEPARTMENTAL CORRESPONDENCE

TO: See Distribution List

FROM: E. J. Jago - SMPD-Commercial Development

DATE: June 28, 1972

SUBJECT: LOW HEALTH HAZARD HOT TOPS

It is essential to our economic survival that we be in a position to offer an "asbestos free" and "low hazard" substitutes for Profax and Proflex as a standard production item should the need arise. The laboratory here, in Canada and at FIL have been working very hard to produce satisfactory products. Our need now is for full scale tests at the earliest possible moment of asbestos free products followed before the end of the year by "silica free" products.

These tests must involve trials on various types of machinery and on various sizes of ingots. All tests must be fully documented and followed closely at all stages. It is therefore expected that every department who needs to be will become "involved" and put every effort into solving our problems.

Bob Dzurilla and Don Butler are responsible for the program and are expected to have a complete collation of the initial test data by 31 July. At that time they will call a meeting of selected personnel and present a proposed expanded test program. Before that date they will be requesting support for preliminary work from various people. Your maximum cooperation and dedication to the program is requested.

E. J. Jago

EJJ/btb/434

Distribution:
R. C. Phoenix
W. C. Sutherland
P. A. Partington
W. C. Fletcher
H. D. Shephard
J. Moore
District Managers
All SMPD Salesmen
R. R. Dzurilla
D. Butler
G. Fenton
R. Porter
R. Callahan
VT Mellows - FIL
R. T. Jeffares
F. S. Bilton

Ted: When the info. is available, please keep me fully informed on the which materials we intend to consider + date at which Asbestos will be phased out

FOS-00-0000003843

TABLE G-3—MINERAL DUSTS

Substance	Mppcf	Mg/M³
Silica:		
Crystalline:		
Quartz (respirable)	250	10mg/M³ ÷ %SiO₂+2
Quartz (total dust)	%SiO₂+5	%SiO₂+2 30mg/M³
Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz.		
Tridymite: Use ½ the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	80mg/M³ %SiO₂
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc	20	
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction, less than 5% SiO₂)		2.4mg/M³ or 10mppcf
For more than 5% SiO₂		%SiO₂+2
Inert or Nuisance Dust:		
Respirable fraction	15	5mg/M³
Total dust	50	15mg/M³

NOTE: Conversion factor—
mppcf×35.3=million particles per cubic meter
c=particles per c.c.

[1] Millions of particles per cubic foot of air, based on impinger samples counted by right-field technique.

[2] The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

[3] As determined by the membrane filter method at 430 × phase contrast magnification.

[4] Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE, the figure corresponding to that of 2.4 M/M³ in the table for coal dust is 4.5 M/M³.

§ 1910.93a Asbestos.

(a) *Definitions.* For the purpose of this section, (1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

(b) *Permissible exposure to airborne concentrations of asbestos fibers*—(1) *Standard effective July 7, 1972.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(2) *Standard effective July 1, 1976.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(3) *Ceiling concentration.* No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(c) *Methods of compliance*—(1) *Engineering methods.* (i) *Engineering controls.* Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in paragraph (b) of this section.

(ii) *Local exhaust ventilation.* (a) Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2–1971, which is incorporated by reference herein.

(b) See § 1910.6 concerning the availability of ANSI Z9.2–1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(iii) *Particular tools.* All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with subdivision (ii) of this subparagraph.

(2) *Work practices*—(i) *Wet methods.* Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in paragraph (b) of this section, unless the usefulness of the product would be diminished thereby.

(ii) *Particular products and operations.* No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne asbestos fibers in excess of the limits prescribed in paragraph (b) of this section.

(iii) *Spraying, demolition, or removal.* Employees engaged in the spraying of asbestos, the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment in accordance with paragraph (d)(2)(iii) of this section and with special clothing in accordance with paragraph (d)(3) of this section.

(d) *Personal protective equipment*—(1) Compliance with the exposure limits prescribed by paragraph (b) of this section may not be achieved by the use of respirators or shift rotation of employees, except:

(i) During the time period necessary to install the engineering controls and to institute the work practices required by paragraph (c) of this section;

(ii) In work situations in which the methods prescribed in paragraph (c) of this section are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by paragraph (b) of this section; or

(iii) In emergencies.

(iv) Where both respirators and personnel rotation are allowed by subdivisions (i), (ii), or (iii) of this subparagraph, and both are practicable, personnel rotation shall be preferred and used.

(2) Where a respirator is permitted by subparagraph (1) of this paragraph, it shall be selected from among those approved by the Bureau of Mines, Department of the Interior, or the National Institute for Occupational Safety and Health, Department of Health, Education, and Welfare, under the provisions of 30 CFR Part 11 (37 F.R. 6244, Mar. 25, 1972), and shall be used in accordance with subdivisions (i), (ii), (iii), and (iv) of this subparagraph.

(i) *Air purifying respirators.* A reusable or single use air purifying respirator, or a respirator described in subdivision (ii) or (iii) of this subparagraph, shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in paragraph (b) of this section, when the ceiling or the 8-hour time-weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed no more than 10 times those limits.

(ii) *Powered air purifying respirators.* A full facepiece powered air purifying respirator, or a powered air purifying respirator, or a respirator described in subdivision (iii) of this subparagraph, shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in paragraph (b) of this section, when the ceiling or the 8-hour time-weighted average concentrations of asbestos fibers are reasonably expected to exceed 10 times, but not 100 times, those limits.

(iii) *Type "C" supplied-air respirators, continuous flow or pressure-demand class.* A type "C" continuous flow or pressure-demand, supplied-air respirator shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in paragraph (b) of this section, when the ceiling or the 8-hour time-weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed 100 times those limits.

(iv) *Establishment of a respirator program.* (a) The employer shall establish a respirator program in accordance with the requirements of the American National Standards Practices for Respiratory Protection, ANSI Z88.2–1969, which is incorporated by reference herein.

b. See § 1910.6 concerning the availability of ANSI Z88.2–1969 and the maintenance of an historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(e) 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 with available 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.

(3) *Special clothing.* The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers which exceed the exposure level prescribed in paragraph (b) of this section.

(4) *Change rooms:* (i) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, the employer shall provide change rooms for employees working regularly at the place.

(ii) Clothes lockers: The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(iii) Laundering: (*a*) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(*b*) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (*a*) of this subdivision to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(*c*) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with paragraph (g) of this section.

(*e*) *Method of measurement.* All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400–450 × (magnification) (4 millimeter objective) with phase contrast illumination.

(*f*) *Monitoring*—(1) *Initial determinations.* Within 6 months of the publication of this section, every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in paragraph (b) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with paragraph (*c*) of this section.

(2) *Personal monitoring*—(i) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees who exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section.

(3) *Environmental monitoring*—(i) samples shall be collected from areas of a work environment which are representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) *Sampling frequency and patterns.* After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in paragraph (b) of this section.

(4) *Employee observation of monitoring.* Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(g) *Caution signs and labels.* (1) *Caution signs.* (i) *Posting.* Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(ii) *Sign specifications.* The warning signs required by subdivision (i) of this subparagraph shall conform to the requirements of 20" x 14" vertical format signs specified in § 1910.145(d)(4), and to this subdivision. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in this subdivision.

Legend	Notation
Asbestos	1" Sans Serif, Gothic or Block.
Dust Hazard	¾" Sans Serif, Gothic or Block.
Avoid Breathing Dust	¼" Gothic.
Wear Assigned Protective Equipment.	¼" Gothic.
Do Not Remain In Area Unless Your Work Requires It.	¼" Gothic.
Breathing Asbestos Dust May Be Hazardous To Your Health.	14 point Goth

Spacing between lines shall be at le equal to the height of the upper of t two lines.

(2) *Caution labels*—(i) *Labeling. Ca* tion labels shall be affixed to all [illegible] except th no fibers released are asbestos fibe have been modified by a bonding age coating, binder, or other material so th during any reasonably foreseeable c handling, storage, disposal, proces ing, transportation, no airborne concentr tions of asbestos fibers in excess of t exposure limits prescribed in paragra (b) of this section will be released.

(ii) *Label specifications.* The cautio labels required by subdivision (i) of th subparagraph shall be printed in lette of sufficient size and contrast as to readily visible and legible. The label sha state:

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause Serious Bodily Harm

(h) *Housekeeping*—(1) *Cleaning.* A external surfaces in any place of emplo ment shall be maintained free of acc mulations of asbestos fibers if, with the dispersion, there would be an excessi concentration.

(2) *Waste disposal.* Asbestos wast scrap, debris, bags, containers, equi ment, and asbestos-contaminated clot ing, consigned for disposal, which m produce in any reasonably foreseeab use, handling, storage, processing, d posal, or transportation airborne conce trations of asbestos fibers in excess of t exposure limits prescribed in paragra (b) of this section shall be collected a disposed of in sealed impermeable ba or other closed, impermeable containe

(i) *Recordkeeping*—(1) *Exposure re ords.* Every employer shall maintain re ords of any personal or environment monitoring required by this section. Re ords shall be maintained for a period at least 3 years and shall be made avai able upon request to the Assistant Secr tary of Labor for Occupational Safe and Health, the Director of the Nation Institute for Occupational Safety a Health, and to authorized represent tives of either.

(2) *Employee access.* Every employe and former employee shall have reasor able access to any record required to b maintained by subparagraph (1) of th paragraph, which indicates the em ployee's own exposure to asbestos fibers

(3) *Employee notification.* Any em ployee found to have been exposed at a time to airborne concentrations of asbe tos fibers in excess of the limits pr scribed in paragraph (b) of this sectio shall be notified in writing of the exp sure as soon as practicable but not lat than 5 days of the finding. The employ shall also be timely notified of the co rective action being taken.

(j) *Medical examinations*—(1) *General.* The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos required by this paragraph.

(2) *Preplacement.* 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 (posteroanterior 14 x 17 inches), a history to elicit symptomatology of pulmonary disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV$_{1.0}$).

(3) *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 exposed in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posteroanterior 14 x 17 inches), a history to elicit symptomatology of pulmonary disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV$_{1.0}$).

(4) *Termination of employment.* 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 which shall include, as a minimum, a chest roentgenogram (posteroanterior 14 x 17 inches), a history to elicit symptomatology of pulmonary disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV$_{1.0}$).

(5) *Recent examinations.* No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

(6) *Medical records*—(i) *Maintenance.* Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(ii) *Access.* The contents of the records of the medical examinations required by this paragraph shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a medical examination required by this paragraph shall furnish to the employer of the examined employee all the information specifically required by this paragraph, and any other medical information related to occupational exposure to asbestos fibers.

[37 FR 11318]

§ 1910.94 Ventilation.

(a) *Abrasive blasting*—(1) *Definitions applicable to this paragraph.*—(i) *Abrasive.* A solid substance used in an abrasive blasting operation.

(ii) *Abrasive-blasting respirator.* A continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

(iii) *Blast cleaning barrel.* A complete enclosure which rotates on an axis or which has an internal moving tread to tumble the parts in order to expose various surfaces of the parts to the action of an automatic blast spray.

(iv) *Blast cleaning room.* A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(v) *Blasting cabinet.* An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(vi) *Clean air.* Air of such purity that it will not cause harm or discomfort to an unprotected if it is inhaled for extended periods of time.

(vii) *Dust collector.* A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(viii) *Exhaust ventilation system.* A system for removing contaminated air from a space, comprising two or more of the following elements: (a) enclosure or hood to capture dust laden air at its source, (b) dust collecting equipment, (c) exhauster, and (d) discharge stack.

(ix) *Particulate-filter respirator.* An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(x) *Respirable dust.* Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(xi) *Rotary blast cleaning table.* An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

(xii) *Abrasive blasting.* The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(2) *Dust hazards from abrasive blasting.* (i) Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(ii) The concentration of respirable dust or fume in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels specified in § 1910.93.

(iii) Cleanable abrasives which are combustible shall be used only in automatic systems. Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring, shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z 33.1–1951 (NFPA 91–1961), and the National Electrical Code, NFPA 70–1971; ANSI C1–1971 (Rev. of 1968). The blast nozzle shall be bonded and grounded to prevent the build up of static charges. Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion Venting Guide, NFPA 68–1954.

[37 F.R. 3431, effective 3/15/72]

(3) *Blast-cleaning enclosures.* (i) Blast-cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation.

(a) All air inlets and access openings shall be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles will be prevented. Warning signs will be hung so that visible sparks of dust will not be observed.

(b) The rate of exhaust shall be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting.

(c) Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the dusty air within the enclosure.

(d) Safety glass protected by screening shall be used in observation windows where hard, deep-cutting abrasives are used.

(e) Slit abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

(f) Doors shall be flanged and tight when closed.

(g) Doors on blast-cleaning rooms shall be openable from both inside and outside, except that where there is a small operation access door, the large work access door may be closed or opened from the outside only.

Asbestos

ADVISORY COMMITTEE SUGGESTS MONITORING, [illegible] OF EXPOSURE

Proposed standards for employee asbestos exposure monitoring and maintenance of exposure records were included in the report made by the Advisory Committee on Asbestos to the Assistant Secretary of Labor for Occupational Safety and Health, George C. Guenther.

Final recommendations adopted by the committee and submitted to the Assistant Secretary will be included in next week's Current Report. Recommendations for monitoring and records determined at the February 23 meeting of the committee follow:

(g) Monitoring and Records

Employee exposure monitoring shall be undertaken by the employer on the basis of the membrane filter method at 400-450X (magnification) [illegible] objective) phase contrast illumination as [illegible] by the National Institute for Occupational Safety and Health in Criteria for a recommended standard ... Occupational Exposure to Asbestos (HSM 72-10267). Employers will be required to maintain records of [illegible] exposure to asbestos in the workplace based on the following monitoring schedule and procedures:

(1) [illegible] Zone samples will be collected [illegible] at least every six months for [illegible] work operations. Samples will be collected [illegible] but not necessarily all employees whose exposure may be considered representative of the specific work area.

(2) Personal [illegible] samples will be collected and evaluated as both [illegible] and peak values.

(3) Personal exposure samples will be collected and recorded at least once [illegible] from those work areas found to be in excess of the standard.

(4) Monitoring will be [illegible] on a monthly basis [illegible] workplace [illegible] with the [illegible]

(5) The first [illegible] period will be completed within a time frame specified by the Secretary.

(6) Records of the evaluation of the workplace air will be maintained by the employer for a period of time prescribed by the Secretary of Labor. Employees shall have access to these records upon request.

(7) Exposed employees shall be informed of their workplace air levels.

Opinions

Monitoring is not frequent enough, Andy Haas, Asbestos Workers International, said.

Monitoring provisions should not go into extreme detail, Jack Bahlf, chief engineer, New York Division of Industrial Hygiene, said. Monitoring is part of the overall professional expertise of the industrial hygienist who is [illegible] to do the work. [illegible] assurance that [illegible] done by [illegible] NIOSH [illegible] membrane filter [illegible] should be used.

[illegible] legislation and Haas agreed. "You cannot enforce until you know where to enforce," Bahlf said.

Methods of Compliance

Provision for housekeeping was added to methods of compliance. The recommendations include the following:

(b) Methods of Compliance

(1) Engineering methods.

One or more of the following engineering methods, either singly or in combination, shall be used to achieve and maintain airborne concentrations of asbestos fibers at or below the exposure limits prescribed in paragraph (a) of this section.

(i) Substitution of a material, mixture, process or method of operation which will prevent or reduce the dissemination of airborne asbestos fibers.

(ii) Local exhaust ventilation designed, constructed, installed and operated in accordance with the latest revision of American National Standard Institute Fundamentals Governing the Design and Operation of Local Exhaust Systems: ANSI Z9.2.

(iii) Application of water or other wetting agent.

(iv) Enclosure or isolation of the operation.

(2) Housekeeping

(i) Housekeeping methods shall be in conformance with good engineering practices and procedures. No dry sweeping of floors shall be performed. Where feasible, all cleanup of asbestos dust shall be performed by vacuum cleaners or wet methods.

(ii) Asbestos containing waste, scrap, bags and containers shall be collected and disposed of in sealed impermeable paper or plastic bags or in other closed containers and shall be labeled in accordance with subsequent paragraph (f).

(3) Personal Protection

When the limits of exposure to asbestos fibers prescribed in paragraph (a) of this section are exceeded and engineering control methods required by subparagraph (1) of this paragraph are not feasible or do not reduce the concentration of asbestos fibers to or below the limits prescribed in paragraph (a) of this section, the employer shall supply, and the employee shall use a personal respiratory protective device and protective clothing selected in accordance with paragraph (c) and (d) of this section.

Respiratory Protection and Protective Clothing

Recommendations for respiratory protective devices were approved unanimously. The provision that protective clothing be used when dust concentration is projected to be greater than 10 times the limit was described as "unnecessarily restrictive" by Bahlf and Isaac Weaver, corporate director, Environmental Controls, Raybestos-Manhattan Corporation.

The recommendations follow:

(c) Respiratory Protective Devices

(1) Where engineering methods are not feasible, or do not reduce the concentrations to or below the limits prescribed in paragraph (a) of this section, respiratory protective devices (respirators) shall be selected and used

FOSECO 2006

in accordance with the following conditions. Except for emergency respirators, no respirator used under a variance is approved and penalties are granted. Selection of respirators shall be decided on the basis of peak concentration limits. Only approved (30 C.F.R. Part 11) respirators shall be selected. The selection of allowable respirators shall be based on the following concentration limits for each type of device. However, a respirator approved for higher concentrations may be used.

(2) For protection up to 5 times the limit, a single use valveless mist respirator shall be used.

(3) For protection up to 10 times the limit, a reusable or single use type with a dust filter respirator shall be used.

(4) For protection up to 100 times the limit, a full facepiece "high efficiency" filter respirator shall be used.

(5) For protection up to 500 times the limit, a powered "high efficiency" filter respirator shall be used.

(6) For protection exceeding 500 times the limit, a Type C continuous flow supplied-air respirator shall be used.

(7) The employer shall establish a respirator program in accordance with the requirements of the latest revision of the American National Standard Practice for Respiratory Protection Z88.2, with the exception that no employee should be assigned to tasks requiring use of respirators if his pre-assignment medical examination indicates: (a) Forced vital capacity less than 70% of predicted value for age, height and sex or (b) Forced vital capacity less than 80% of predicted value for age, height or sex in addition to at least two of the following criteria:

(a) Xray evidence of asbestosis

(b) Dyspnea (shortness of breath)

(c) Rales

(d) Chronic cough

(8) The employee shall use the respirator provided in accordance with the requirements of ANSI Z88.2.

(9) The respirators provided each employee shall be properly fitted, inspected, cleaned, repaired, and stored.

(d) Protective Clothing

(1) The employer shall provide each employee with protective clothing when they are required to work in a variance area and it is expected that the asbestos dust concentration will be greater than 10 times the limit. Such clothing may be coveralls or similar full body protective clothing and head gear.

Work Practices

Concerning particular operations and products under the proposed asbestos standard, it was recommended that paragraphs (1) and (2) be omitted and that other paragraphs be revised and relocated.

Recommendations for work practices follow:

(e) Work Practices

(1) Asbestos cement, mortar, coatings, grout, and plaster shall be mixed in closed bins or in other closed containers or in mixers equipped with local exhaust ventilation that conforms to the latest ANSI standard Z9.2 covering design and operation of local exhaust systems.

(2) Use of compressed air jets for cleaning purposes shall be prohibited unless the following conditions are met.

(a) All persons not engaged in the cleaning operations are vacated from the area.

(b) All entrances to the area are posted with warning signs or signals.

(c) The workers performing the cleaning work use personal protective equipment as in accordance with section(b)(3) of this standard.

(3) Employees exposed to the spraying of asbestos, to the demolition of pipes, structures, or equipment covered or insulated with asbestos, or to the demolition of insulating strippings, shall be provided with personal protection in accordance with paragraph (b)(3) of this section.

Weaver suggested a safety practices guide be developed for particular major categories of asbestos work. Babb suggested a work practices guide be developed for all asbestos operations. Development of a work practices manual probable is the responsibility of NIOSH. Charles Powell, assistant director of NIOSH for research and standards development said.

Recommendations for warning label and signs follow:

(f) Warning Label and Signs

1. Proposed warning label for raw products, mixtures, and finished products containing 5 or more percent by weight of asbestos.

DANGER
Contains ASBESTOS fibers.
Do not make unnecessary dust.

DO NOT BREATHE DUST – MAY CAUSE
ASBESTOSIS AND CANCER

2. Proposed warning sign to be used when material or products require an asbestos warning label or where known hazards exist.

DANGER
ASBESTOS Dust Area
Unauthorized persons and other trades
KEEP OUT
When ASBESTOS work is being done.
Breathing dust may cause ASBESTOSIS
and CANCER

In the second sentence an airborne concentration "Paragraph (a) of this section" was replaced by "The above standard" (Current Report, February 17, p. 864). Additional changes were made at an earlier committee meeting (Current Report, February 24, p. 896).

The first sentence on medical surveillance was amended to read "A comprehensive history and physical examination shall be performed on all workers and applicants" (Current Report, February 24, p. 896). In the last sentence "Preemployment" was changed to "The initial"

Asbestos

ADVISORY COMMITTEE MEMBER PROTESTS PROCEDURE, CALLS RECOMMENDATIONS INVALID

Proper procedures for the conduct of advisory committee hearings were not followed and the recommendations of the Asbestos Advisory Committee are "totally invalid and must be disqualified," Isaac Weaver, corporate director, Environmental Controls, Raybestos-Manhattan Corporation, said.

In a letter to Assistant Labor Secretary George C. Guenther, the advisory committee member said the asbestos industry was denied its right to be heard before the federal advisory committee.

During the hearings of the committee, representatives from the National Institute for Occupational Safety and Health were permitted to testify as expert witnesses on behalf of the NIOSH criteria package proposals, Weaver said. Because of the exclusion of other outside testimony, the hearings are patently biased in favor of the NIOSH proposals, he said.

In a statement during the February 23 meeting of the committee Weaver questioned the propriety of the presence of "NIOSH personnel as experts in and be considered as proper to the NIOSH representatives of the committee to have the benefit of supportive comment from NIOSH's counterparts. He was denied the privilege of calling on some of the "equally conscientious and respected men in medical and scientific circles whose data, opinions, interpretations and theories may differ from those supported by NIOSH."

Text of Letter

The text of Weaver's letter to Guenther, dated February 25, follows:

I understand that the Advisory Committee on Asbestos Dust is to submit its report to the Secretary of Labor on February 25, today. Final report is being written by the Chairman of the Advisory Committee. I will not have the opportunity to review this report in its final form before submission. Whatever this report may contain, I hereby make known to you my dissent to the proceedings of the Advisory Committee. I believe the impropriety of the proceedings goes to the heart of, and invalidates, the recommendations.

During the hearings of the Advisory Committee, representatives of NIOSH, who were not Committee members, were permitted to testify as expert witnesses on behalf of the NIOSH criteria package proposals. All other outside testimony was denied. Because of the exclusion of other outside testimony, the hearings are patently biased in favor of the NIOSH proposal.

I submit that an intent of the statute providing for advisory committees is to provide a forum at which the industry to be regulated may be adequately heard. When the Act was before the House Labor Committee, the following comments were made with regard to advisory committees:

... "Industry wants to be assured that it will be heard and its *technical input* properly evaluated ... Public safety needs technical advisory committees with better accomplish this since the openness of meetings imposes an extra duty of preparation and scrutiny."

The asbestos industry has been denied this right.

The tightness of the time schedule is no excuse for a one-sided proceeding that can only result in improperly developed recommendations for asbestos dust regulations. The asbestos industry, which in its wide diversity affects more than a half million jobs, respectfully demands adequate representation and time concerning an issue of this magnitude.

Inasmuch as the proper procedures for the conduct of the hearings of an advisory committee were not followed, the recommendations of the committee are totally invalid and must be disqualified from consideration in the proposed rulemaking.

Standards

CONSTRUCTION COMMITTEE CHANGES DATE OF STANDARDS FOR ROLLOVER PROTECTION

The Construction Safety Advisory Committee has agreed to recommend a change in the date that equipment manufactured on or after July 1, 1972, must be equipped with rollover protective structures to September 1, 1972.

The decision was made on the recommendation of Allan Martin, chairman of the subcommittee on Proposed Revision of Subpart W, during the full committee meeting February 23. The Labor Department proposed changes in the rollover requirements October 29 (Current Report, November 4, p. 516).

Other effective dates contained in 1926.1000 (formerly 1518.1000) were modified accordingly, as the committee recommendations. Machines manufactured on or after January 1, 1972, "shall be fitted no later than April 1, 1973," was the recommended language for 1926.1000(c)(1). The effective date for these machines was suggested for January 1, 1973.

Firm recommendations which the Secretary will act upon, should be made, Barry C. Brown, director of the Michigan Department of Labor and chairman of the subcommittee on tunnel safety, told the committee.

Manufacturers should be putting out machines that are in compliance as soon as possible, Brown said.

Manufacturers have avoided retrofit, fearing machines might not be strong enough to satisfy standards and manufacturers might be subject to suit, David V. MacCollum, subcommittee member, told the group. It would be better to look at this issue from the point of view of protecting the operator from being crushed, he said, in reference to rollover protective structures.

Employer liability

If a particular machine does not have a specific standard calling for a rollover protective device, but does, in fact, roll over and the operator is killed, to what degree would the employer be liable and would this be a violation under the general duty clause Brown asked.

There would be no trouble with such a case, the legal

Skin Addition.

[a] Parts of vapor or gas per million parts of contaminated air by volume at 25° C. and 760 mm. Hg pressure.

[b] Approximate milligrams of particulate per cubic meter of air.

(An italicized "X" is used to avoid confusion with other superscripts.)

[c] An atmospheric concentration of not more than 0.02 p.p.m., or personal protection may be necessary to avoid headache.

[d] As sampled by method that does not collect vapor.

[e] For control of general room air, biologic monitoring is essential for personal control.

TABLE G-2

Material	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift: Concentration	Maximum duration
Benzene (Z37.40-1969)	10 p.p.m.	25 p.p.m.	50 p.p.m.	10 minutes.
Beryllium and beryllium compounds (Z37.29-1970)	2 µg./M³	5 µg./M³	25 µg./M³	30 minutes.
Cadmium fume (Z37.5-1970)	0.1 mg./M³	3 mg./M³		
Cadmium dust (Z37.5-1970)	0.2 mg./M³	0.6 mg./M³		
Carbon disulfide (Z37.3-1968)	20 p.p.m.	30 p.p.m.	100 p.p.m.	Do.
Carbon tetrachloride (Z37.17-1967)	10 p.p.m.	25 p.p.m.	200 p.p.m.	5 minutes in any 4 hours.
Ethylene dibromide (Z37.31-1970)	20 p.p.m.	30 p.p.m.	50 p.p.m.	5 minutes.
Ethylene dichloride (Z37.21-1969)	50 p.p.m.	100 p.p.m.	200 p.p.m.	5 minutes in any 3 hours.
Formaldehyde (Z37.16-1967)	3 p.p.m.	5 p.p.m.	10 p.p.m.	30 minutes.
Hydrogen fluoride (Z37.28-1969)	3 p.p.m.			
Fluoride as dust (Z37.28-1969)	2.5 mg./M³			
Lead and its inorganic compounds (Z37.11-1969)	0.2 mg./M³			
Methyl chloride (Z37.18-1969)	100 p.p.m.	200 p.p.m.	300 p.p.m.	5 minutes in any 3 hours.
Methylene Chloride (Z37.23-1969)	500 p.p.m.	1,000 p.p.m.	2,000 p.p.m.	5 minutes in any 2 hours.
Organo (alkyl) mercury (Z37.30-1969)	0.01 mg./M³	0.04 mg./M³		
Styrene (Z37.15-1969)	100 p.p.m.	200 p.p.m.	600 p.p.m.	5 minutes in any 3 hours.
Trichloroethylene (Z37.19-1967)	do.	do.	300 p.p.m.	5 minutes in any 2 hours.
Tetrachloroethylene (Z37.22-1967)	do.	do.	do.	5 minutes in any 3 hours.
Toluene (Z37.12-1967)	200 p.p.m.	300 p.p.m.	500 p.p.m.	10 minutes.
Hydrogen sulfide (Z37.2-1966)		20 p.p.m.	50 p.p.m.	10 minutes once only if no other measurable exposure occurs.
Mercury (Z37.8-1971)		1 mg./10M³		
Chromic acid and chromates (Z37.7-1971)		do.		

TABLE G-3—MINERAL DUSTS

Substance	Mppcf [a]	Mg/M³
Silica:		
Crystalline:		
Quartz (respirable)	$\frac{250 [b]}{\%SiO_2+5}$	$\frac{10 mg/M^3 [e]}{\%SiO_2+2}$
Quartz (total dust)		$\frac{30 mg/M^3}{\%SiO_2+2}$
Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz.		
Tridymite: Use ½ the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	$\frac{80 mg/M^3}{\%SiO_2}$
Tremolite	5	[illegible]
Silicates (less than 1% crystalline silica):		
Asbestos: [illegible] fibers greater than 5 microns in length	[illegible]	
Mica	20	
Soapstone	20	
Talc	20	
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction less than 5% SiO_2)		2.4 mg/M³ or
For more than 5% SiO_2		$\frac{10 mg/M^3}{\%SiO_2+2}$
Inert or Nuisance Dust:		
Respirable fraction	15	5 mg/M³
Total dust	50	15 mg/M³

NOTE: Conversion factors—mppcf × 35.3 = million particles per cubic meter = particles per c.c.

[a] Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

[b] The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

[c] As determined by the membrane filter method at 430X phase contrast magnification.

[e] Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 mg/M³ in the table for coal dust is 4.5 mg/M³.

2. Section 1910.98 of Subpart G is revised to read as follows:

§ 1910.98 Effective dates.

(a) The provisions of this Subpart G shall become effective on August 27, 1971, except as provided in the remaining paragraphs of this section.

(b) The following provisions shall become effective on February 15, 1972:

§ 1910.94 (a)(2)(iii), (a)(3), (a)(4), (b), (c)(2), (c)(3), (c)(4), (c)(5), (c)(6)(i), (c)(6)(ii), (d)(1)(ii), (d)(3), (d)(4), (d)(5), and (d)(7).

(c) Notwithstanding anything in paragraph (a), (b), or (d) of this section, any provision in any other section of this subpart which contains in itself a specific effective date or time limitation shall become effective on such date or shall apply in accordance with such limitation.

(d) Notwithstanding anything in paragraph (a) of this section, if any standard in 41 CFR Part 50-204, other than a national consensus standard incorporated by reference in § 50-204.2(a)(1), is or becomes applicable at any time to any employment and place of employment, by virtue of the Walsh-Healey Public Contracts Act, or the Service Contract Act of 1965, or the National Foundation on Arts and Humanities Act of 1965, any corresponding established Federal standard in this Subpart G which is derived from 41 CFR Part 50-204 shall also become effective, and shall be applicable to such employment and place of employment, on the same date.

3. Section 1910.114 of Subpart H is revised to read as follows:

§ 1910.114 Effective dates.

(a) The provisions of this Subpart H shall become effective on August 27, 1971, except as provided in the remaining paragraphs of this section.

(b) The following provisions shall become effective on February 15, 1972:

§ 1910.101(b)
§ 1910.102
§ 1910.103 (a)(2), (b)(1)(i), (b)(2)(iii), (b)(2)(ii), and (b)(3).
§ 1910.105.
§ 1910.106 (b)(1), (b)(2), (b)(3), and (b)(4).
§ 1910.106 (b)(5), (c)(1), (c)(2), (c)(3), (c)(4), (c)(5), (c)(6), (d)(2), (d)(3)(ii), (d)(4)(i), (d)(4)(iii), (d)(4)(iv), (d)(5)(v), (d)(5)(vi)(e), (e)(3)(iii), (e)(3)(v), (e)(4), (e)(7), (f)(2)(i), (f)(3)(i), (f)(4)(iii), (f)(4)(iv), (f)(4)(viii), (f)(5), (g), (h), and (i).
§ 1910.107 [illegible], (b)(2), (b)(3), (b)(4), [illegible], (b)(5)(iv), [illegible], (c)(7), [illegible], (c)(10), (d)(1), [illegible], (e)(5), (e)(6), (e)(7), [illegible], (l)(1), and (m)(1).
§ 1910.108 [illegible], (e)(1), (e)(2), (e)(3), (e)(4), and [illegible].
§ 1910.109 (g)(6) and (h).
§ 1910.110
§ 1910.111

(c) Notwithstanding anything in paragraph (a), (b), or (d) of this section, any provision in any other section of this subpart which contains in itself a specific effective date or time limitation shall become effective on such date or shall apply in accordance with such limitation.

(d) Notwithstanding anything in paragraph (a), or (b) of this section, if any standard in 41 CFR Part 50-204, other than a national consensus standard incorporated by reference in § 50-204.2(a)(1), is or becomes applicable at any time to any employment and place of employment, by virtue of the Walsh-Healey Public Contracts Act, or the Service Contract Act of 1965, or the National Foundation on Arts and Humanities Act of 1965, any corresponding established

FOSECO 2009

AMERICAN METAL MARKET

The Daily Newspaper of the Metal Industries

VOL. LXXVIII — No. 232 — MONDAY, DECEMBER 6, 1971

NEWS ANALYSIS

Compromise on Prices Of Sheet Steel Sought

By Freeman Hudson
Washington Bureau Chief

WASHINGTON — The steel industry [illegible] Price Commission [illegible] compromise on prices [illegible] both.

"The need for this increase [illegible] the industry's ability [illegible] Price Commission [illegible] Arthur M. Okun [illegible]

C. Jackson Grayson, chairman of the Price Commission, last week said that the commission will not be much further than it is now on the road of raising prices for steel mill products.

Steel industry representatives were at the nation's capital most of last week conferring with Price Commission officials to emphasize the need for a boost in steel sheet prices which would cover about 40 percent of annual output.

If the Price Commission turns down the petition it has been said [illegible] Commission intends to avoid [illegible] to hold the [illegible] steel industry to [illegible]

"This is a very important [illegible] commission could make or break the steel industry by getting in [illegible] judgment."

(Continued on page 8)

Copper, Brass Mill Product Imports Down in October

Metal Center News Report

NEW YORK — [illegible] October [illegible] the previous month but [illegible] the same month [illegible] Government statistics.

The [illegible] were 14,224 [illegible] 2,186 [illegible] pounds from October 1970. The [illegible] of the total [illegible] 12,038,000 pounds, an increase of 18,186,000 [illegible]

(Continued on page 2)

Tentative Air Standards Revealed For Mercury, Beryllium, Asbestos

By EDWIN BOWLES
Washington Bureau

WASHINGTON — Proposed [illegible] standards for [illegible] pollutants [illegible] Environmental Protection Agency [illegible] industrial [illegible] spokesmen for the [illegible] were [illegible] [illegible] U.S. [illegible] [illegible] [illegible]

METAL MARKET'S PRICE FORECAST

Ferrous, Nonferrous Prices Moving—in Divergent Paths

Metal Market Staff Report

[illegible]

PRICE OUTLOOK

Copper	steady
Aluminum	weak
Lead	steady
Zinc	firm
Nickel (Merchant)	weak
Molybdenum	steady
Silver	weak

[illegible]

Tungsten Order Books

[illegible]

SILVER — With a marked rise in the stock market over five days silver saw a pretty good increase ... [illegible]

Silver mining share prices ... [illegible] ... trends in Europe and Japan.

NICKEL — New business ... [illegible] ... before the end of the year.

Nickel supplies are plentiful in the United States and Europe. Inco has further reduced production which will mean a total cut of 22 percent before 1972. Inco has also cut back production in England.

Intimations are heard in the trade that the current oversupply of nickel will be substantially reduced before Inco labor negotiations begin next July.

Merchant nickel is available at about 10 cents under the producer price of $1.33 which reflects the increase of five cents last October. The Pittsburgh area ... [illegible] ... scrap price, which is often an indicator of nickel supply, is now about $2... per ton. During the last scarcity it had peaked at over $... [illegible]

Big expansions in nickel producing capacity are underway in several parts of the world and by 1975 there could still be oversupply ... [illegible] ... million pounds as compared with the present estimated 1.3 billion pounds.

ALUMINUM — Strong price competition is present in aluminum. There have been some signs of increased optimism ... [illegible] ... But there is plenty of metal around so the emphasis is on volume rather than scarcity. Ample capacity assures a continued competitive market for months to come.

Soviets, U.S. To Talk On Shipping

[illegible]

IN TODAY'S ISSUE

[illegible]

Today's American Metal Market Prices

[illegible]

Tentative Air Standards Revealed

(Continued from first page)

[illegible] ... control immediately and if steps can be taken to make certain that the health of persons will be protected from any immediate risk of significant harm.

At a news conference, EPA spokesmen said they had had complaints from mercury miners saying they will be driven out of business by the new standards, but the officials said they did not believe this to be the case. "The mercury miners' problems are with depressed prices," EPA said.

The proposed standards apply to various stationary sources producing, manufacturing or using any of the three substances. For beryllium these would include extraction plants, ... foundries, ... plants, propellant plants and ... [illegible] ... There are about 100 such operations in the U.S., EPA said.

The mercury standards will apply to mercury ... [illegible] ... plants of which there are about ... in the U.S. ... [illegible]

... three steps for preventing asbestos emissions include using filters to clean gases from mining, milling, manufacturing and fabrication of asbestos — ... [illegible] ... from a variety of sources related to mining, manufacturing and fabrication processes, and prohibiting the spraying of asbestos fire proofing and insulation except where spraying is done indoors under conditions where the air that would be released to the atmosphere can be cleaned.

Controlling mercury emissions to meet the proposed standards will present an annualized cost to mercury miners 2.5 to 3.5 percent of the total products worth, EPA said. For chlor-alkali plants, the ... control costs as a percent of total ... will vary from 0.5 to 0.9 percent ... [illegible]

The proposed regulations require application to EPA for approval to construct or modify any source to which any of the standards apply.

For sources of beryllium emissions, operators will be required to conduct periodic tests of emission to take air samples around the plant and report results to EPA. For mercury, emission tests only will be required.

Copper, Brass Mill Imports Down

(Continued from first page)

pounds over the comparable 1970 period.

The imports in October consisted of ... pounds of copper alloy products and ... pounds of all copper items.

A copper alloy product, seamless tube, was the largest single import category in October '71 with ... pounds. In second place was copper alloy plate, sheet and strip with ... pounds. Third place went to ... copper ... seamless tube with ... pounds.

U.S. exports of copper and brass mill products in October also dipped to 2,018,000 pounds. This was ... pounds less than for the preceding month but up 17,000 pounds from October '70. For the first ten months of this year the shipments abroad totaled ... pounds, a rise of ... pounds over the like 1970 period.

The council's statistics do not include copper rod since this product is used predominantly for electrical wire.

COOK UNITED

Cook United Inc. has declared a regular quarterly dividend of 12½ cents payable Dec. 15 to shareholders of record Nov. 26.

FOSECO 2011