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the two agencies told BNA that the inquiry
to delay publication of a final ethylene
rulemaking. The Department of Labor, OMB
purpose, and burden associated with
recordkeeping requirements are not justified
mission." A "major problem," the memoran
the vast set of medical tests that are
workers exposed to one-half of the proposed
limit) for over one month per year or
patent.

that it "is not clear how these tests will
per incidence of EDB exposure."

was expressed by the budget office regard
of a record of respiratory fit tests and
records, emergency plans, medical opinions,
extensive monitoring, and labeling." The
Again, the health benefits that could
such records are not clear from the

Purpose of Tests

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was submitted to the DOL Office of the
for Management, the Labor Department
documents under the Paperwork Reduc
are referred, Gary Strobel, an assistant
rator Thorne Auchter, told BNA. The
was relayed to OSHA's directorate of techn
will draft a response.

deputy director of the technical support
that OMB's objections apparently pertain
tests and other laboratory analyses that
under the proposal. Mallinger noted that
are intended to detect toxic effects of
and kidneys, and are not related to the
carcinogenic risks.

response to the budget office will explain the
the medical surveillance requirements in fur
Mallinger said.

ment in the ethylene dibromide rulemaking
of continuing controversy. The proposed
was scheduled for publication Sept. 30,
after OSHA learned that the budget office
final approval to the action. The proposal
later (Current Report, Oct. 13, p. 435).

estimated that it will take at least two weeks to
se to OMB. The situation is not viewed as
SHA is still in the early, comment-gathering
ethylene dibromide rulemaking action, he

man Edwin L. Dale Jr. commented that the
anticipates the problem will be cleared up in
of a final standard."

Consultation

OF TIME FOR PUBLIC COMMENT ATION REVISIONS GRANTED BY OSHA

on of time for submission of written comments
revisions to the Occupational Safety and Health
on's on-site consultation regulations was an
4 (48 FR 50902).

ne for submission of comments was extended to
the original date of Nov. 4.

OSHA proposed the amendments last month in order to
broaden the scope of the on-site consultation regulations in

29 CFR Part 1908, and to initiate a conditional inspection
exemption program for employers using consultation ser
vices (Current Report, Oct. 13, p. 435).

According to the agency, the extension of the comment
period was granted in response to requests from interested
parties. The requests "indicated that additional time is
needed to prepare an adequate response," the notice stated.

Also, the agency noted that it was asked to add to the
rulemaking docket "various documents relevant to the pro
posed amendments." These documents include:

► A list of state agencies providing, or scheduled to pro
vide, consultative services.

► An OSHA notice dated July 25, 1983, to agency field
staff on the agency's experimental program for inspection
exemption through consultation. The notice refers to the
directive as No. TED 2, but an OSHA spokesman said the
correct number is TED 3. This program was initiated in
seven Southern states in 1982 and extended in July for an
additional six months (Current Report, July 14, p. 158).

► A letter from Emmett Jones, director of the CAL/OSHA
Consultation Service, describing the impact of California's
experimental exemption program.

► The most recent evaluation reports on the state consul
tation projects participating in the program.

► Testimony on proposed revisions to the consultation
regulation before the National Advisory Committee on Oc
cupational Safety and Health.

► Comments by a NACOSH subcommittee on an earlier
draft of the proposed revisions, and a brief summary of the
rationale for OSHA's response to those comments.

► A solicitor of labor opinion on release to the public of
consultant reports to employers.

Written comments on the proposal should be submitted in
quadruplicate to the Docket Office, Docket No. C-1, Room S-
6212, 200 Constitution Ave., N.W., Washington, D.C. 20210;
tel. (202) 523-7894.

For further information, contact James F. Foster, OSHA
Office of Information and Consumer Affairs, Room N-3637,
U.S. Department of Labor, 200 Constitution Ave., N.W.
Washington, D.C. 20210; tel. (202) 523-8151.

Asbestos

DU PONT FINDS 22 MALIGNANCY CASES THROUGH SCREENING PROGRAM, OFFICIAL SAYS

NEW ORLEANS — (By a BNA Staff Correspondent) — As
a result of its asbestos screening program covering 112,000
employees and pensioners, E.I. du Pont de Nemours &
Company has discovered 22 cases of malignancies related to
asbestos exposure, according to Burford W. Culpepper, the
company's medical director.

Culpepper told the Joint Conference on Occupational
Health Nov. 3 that the company became aware of the need to
"intensify" its detection efforts more than four years ago,
when a number of asbestos-related X-ray abnormalities
were found at several Du Pont plants. As a result, in 1980
the company began a full-scale review of medical histories
of employees 40 years of age or older and with 10 years'
experience at Du Pont in jobs where they may have been
exposed to asbestos.

Subsequently, the program was expanded to the com
pany's 80,000 pensioners, with 10,000 electing to participate
in the screening program and to have an X-ray at the
company's expense. Culpepper noted that since the begin
ning of its comprehensive program, Du Pont has required
that all radiographs be read by a board-certified or qualified

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Lung Disease Research

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als briefed the board on current activities by seven divisions, including developments in epidemiology, respiratory disease study, research on pl through material substitution and engineering, respirator certification, and information dissemination. The presentations reflected various facets of battle against lung disease.

Glenn, director of the NIOSH Division of Respiratory Studies, reported on recommendations by an SH work group on ways to control lung diseases caused by dust, fibrous minerals, non-fibrous minerals, and asbestos. The intent of the recommendations is to prevent these diseases in new workers exposed in 1988. Glenn noted (see related article in this

Johnson, director of the NIOSH Division of Bio-Behavioral Sciences, reported on recent studies on the materials used as substitutes for silica in the glass and plastic operations. The idea in introducing substitutes is to reduce worker exposure to silica. The substitutes first must be tested to ensure that they do not create new hazards to exposed workers, Johnson

Johnson said two types of materials that have been used as substitutes for silica sand: coal slags and mineral slags. Johnson's institute looked at one coal slag product and one mineral slag. In each instance, 20 micrograms of the material were introduced into the tracheas of rats, Johnson indicated.

Johnson was found to be fibrogenic in the test of the mineral slags "relatively free" of fibrogenicity, NIOSH official reported. Other coal slags then were tested, and the results of these experiments are still being analyzed, he said.

Johnson decided to evaluate the possibility of a carcinogen from the mineral slags, which may contain asbestos and beryllium, Johnson also stated. The tests indicated no carcinogenicity from the slags in the animals, he remarked.

EDUCATION, EPIDEMIOLOGICAL STUDY DU PONT'S EMPLOYEE ASBESTOS PROGRAM

In an effort to combat and deal with potential exposure to asbestos fibers, E.I. du Pont de Nemours & Co. routinely provides information on asbestos hazards, medical examinations, and X-rays to employees in the midst of conducting an epidemiological study of employees who had signs of potential asbestos-related illnesses.

The program was presented in a speech given by C. E. Culp, medical director of Du Pont, at a meeting of Organization Resources Counselors, Inc., "Dealing with Asbestos in the Industrial Environment."

The Du Pont's employee program began in 1975 in response to cases of asbestos-related abnormalities among Du Pont employees. The early part of the program involved testing of high-risk employees, those greater than 40 years of age with 10 years of exposure to asbestos dust. The program later was broadened

to include all of Du Pont's employees and its 30,000 pensioners, Culp said.

The results of Du Pont's study showed that of the 112,000 people evaluated, 29 had malignancies which the company conceded were related to asbestos exposure; 200 had asbestosis; and, about 1,300 had X-ray evidence of asbestos-related pleural thickening. The majority of cases were found in employees working in maintenance positions such as insulators, pipefitters, ladders, and mechanics, Culp said. He noted that the numbers were slightly higher than was anticipated, adding, however, that the "vast majority" of employees don't have asbestos-related problems.

The epidemiological study the company has instituted is primarily a "systematic follow-up" on those employees which showed signs of asbestos-related illnesses, Culp said.

Annual X-rays Provided

As part of the company's medical surveillance program, Culp said the company provides at a minimum annual X-rays for those employees having shown signs of asbestos-related illness. Culp said that the company has hired a pulmonary specialist who provides regular medical and follow-up exams for employees to determine if a change in work assignment is needed.

Culp explained that the company provides compensation for medical expenses related to the illness if it is determined that it is asbestos related, adding that Du Pont has given compensation even in instances where it is unclear that asbestos is the reason for the illness. However, at a question and answer session after the meeting, Culp said that the company will not pay any medical costs where it is determined that an employee's exposure to asbestos occurred prior to joining Du Pont.

Other procedures used by the company include replacing all asbestos-containing insulation when necessary; using strict controls when there is no substitute; monitoring exposure levels on a routine basis; eliminating potential exposure; and, providing protective clothing.

As part of the employees' education program, Du Pont also has produced a 25-minute film, "Caring About Asbestos," comprised mainly of Du Pont employees and medical specialists discussing the problems of dealing with the fear of asbestos.

Use of Respirators

A study on the use of face masks used to protect employees against asbestos exposure concluded that the majority of males tested could be satisfactorily fitted with medium-sized half-mask facepieces, while the small and large sized half-mask facepieces adequately protected all but a few of those tested.

The results of the study were reported in a paper prepared for the symposium by Norman A. Beddows, called "Working with Asbestos-Containing Materials, and the Use of Respirators to Protect Against Asbestos Fibers."

In a study of the use of half-mask facepieces on 1,066 males, the paper reported that 99.8 percent exceeded a fit factor (FF) of 10; 95 percent exceeded 20 FF; and 50 exceeded 200 FF. A fit factor, also called the protection factor, is a measure of facial seal quality.

The study also concluded that full facepieces provided more than a 50 FF in 56 tests; while 95 percent of those 56 tested experienced greater than a 100 FF; and, 50 percent exceeded 1,000 FF.

radiologist. In addition, plant physicians have undergone internal training in the early detection of lung abnormalities and the company's X-ray sales technical staff regularly visit all plant sites to evaluate and make sure that the best quality of film is being used.

In addition to 22 cases of malignancies, the Du Pont medical director reported that 200 employees were determined to have asbestosis and about 1,300 employees and pensioners, or slightly more than 1 percent, were found to have "evidence of asbestos related pleural thickening," but the majority were found to have "no illness or physical disability."

According to Culpepper, these results indicate that asbestos-related abnormalities "are more prevalent than we suspected four years ago," even considering the wide use of asbestos-containing insulation in chemical plants. On the other hand, he added, the results also show that "the vast majority" of the company's employees and pensioners do not have asbestos-related medical problems.

As another part of the asbestos screening program, the Du Pont medical director explained all employees have seen a company-produced 25-minute film, "Caring About Asbestos," which describes the problems involved in asbestos-related abnormalities, using Du Pont employees as well as medical experts such as Dr. Irving Selikoff of the Mt. Sinai Medical Center and Dr. Benjamin Felson of the University of Cincinnati College of Medicine.

Referral to Specialists

All those with asbestos-related abnormalities have been referred to pulmonary specialists at company expense for evaluation and consultation and are offered follow-up exams annually, "or at an interval prescribed by the specialist," to determine whether there is "any impairment that requires a change in work assignment," the medical director explained.

In those situations where work-related illness or impairment develops, Culpepper said that Du Pont "will accept responsibility for appropriate related medical costs, and will offer the employee or pensioner compensation based on our understanding of the workers' compensation laws in that jurisdiction," in addition to assisting in obtaining other community benefits. Further, he noted that the company's policy covers employees even "when we are not certain that the abnormality stems from exposure at a Du Pont site."

Culpepper said that the company generally has not purchased asbestos-containing insulation since the 1970s and is replacing the asbestos it has with non-asbestos insulation when other repairs are necessary. In the few sites where asbestos-containing products are used, there are strict controls and plant employees follow written procedures, including routinely monitoring exposure levels, using protective equipment and clothing, and having regular medical examinations.

Determining Pulmonary Disability

Judging the degree of pulmonary disability resulting from asbestos exposure has been a problem for Du Pont which has been further complicated by the varying criteria established by state workers' compensation laws. Culpepper explained that in some cases the company relies on X-ray abnormalities and pulmonary function changes and has found the American Medical Association's criteria for disability "frequently useful," except in assessing lesser degrees of disability. The British Medical Research Council's criteria "are less suitable," he added, since they were developed primarily for emphysema and chronic bronchitis.

In an effort to overcome this continuing problem, the company medical director reported, Du Pont has contracted with Selikoff to help develop a system "for a quantitative, reproducible, analytical method for the evaluation of pulmonary disability."

Culpepper told BNA that the project has been in the works for about a year and that the company hopes to get something definitive this year so that it can "begin setting some real boundaries for medical determination of pulmonary disability for asbestosis."

Since Du Pont knows little about the risk of developing disabling conditions from asbestos-related abnormalities, Culpepper said that the company also is beginning an epidemiologic study of all employees and pensioners with asbestos-related abnormalities. He anticipated that the data would be helpful "to quantitate the risk of future malignancies, impaired lung function, or other diseases," as well as in assessing "the relative contributions of cigarette smoking and asbestos exposure to pulmonary disease and impaired lung function."

Benzene

BENZENE CALLED MULTI-POTENTIAL CARCINOGEN, BUT DOSE-RESPONSE RELATIONSHIP SEEN UNCLEAR

NEW YORK — (By a BNA Staff Correspondent) — Although the dose-response relationship between exposure to benzene and the occurrence of leukemia is still unclear, it is certain that benzene is an indirect-acting, multi-potential carcinogen, Arthur Upton, of New York University, concluded in summing up the results of an international conference on the substance.

The conference, sponsored by the Collegium Ramazzini, focused on recent experimental observations regarding carcinogenicity, blood dyscrasias, and toxicology associated with benzene.

Results presented by scientists attending the conference indicated that benzene produces leukemia and many other cancers in laboratory animals and there is "cause to believe that it produces the same results in humans, although this is not yet proven," according to Upton. The following conclusions also were drawn by Upton:

- Variations in the duration and extent of exposure may be responsible for production of the different types of cancer found in the laboratory animals.

- Age and sex of the exposed animals affect their physical responses to benzene exposure.

- A risk assessment modeled to an exposure dose is still difficult at this point.

Upton emphasized the need to determine the metabolic derivative or active principal in benzene that causes leukemia. He also stressed the need for better empirical data and additional animal research to determine the effects of intermittent peak exposures as opposed to time-weighted averages.

Most conference speakers agreed that determination of a dose/time relationship for benzene, or the impact of intermittent exposure vs. constant exposure in the development of leukemia, is crucial.

Health Effects of Benzene Exposure

Muzaffer Aksoy of Medical School, Istanbul, Turkey, asserted that leukemia develops through both genetic factors and environmental factors, citing familial studies indicating that some people are genetically more susceptible to leukemia.

Chromosomal changes were found in humans exposed to benzene, according to M. Berlin, University of Lund, Sweden. It is unclear, however, whether there is a connection between chromosomal changes and the carcinogenic effect of benzene.

C. Maltoni, of the Institute of Oncology, Bologna, Italy, presented research showing that benzene produces different types of cancers in different organs, produces cancer whether administered by inhalation or ingestion, and produces solid tumors in multiple sites with different exposure methods. He emphasized the need for more systematic investigation of the effects of benzene, additional experimental inhalation studies, and further experimental studies oriented toward primary prevention. On the basis of his research, Maltoni also hypothesized that toluene and xylene may be carcinogens.

Actual Industrial Exposures

An overview of benzene exposure in American industry from 1978 to 1983, presented by H.E. Runion of the Gulf Oil Corporation, indicated that on a national basis 87.6 percent of all industrial exposures to benzene were below 1 ppm and that 98.4 percent were below 10 ppm. Runion noted that some variability between industries occurred as expected, with the highest exposures seen in those operations involving the bulk transfer of benzene and in benzol plant operations.

U.S. industry operates well below the present Occupational Safety and Health Administration standard of 10 ppm, he asserted. Runion suggested that these data may have some relevancy to the absence of reported benzene-induced leukemias among workers having initial exposure since 1977.

Louis Beliczky, industrial hygiene director for the United Rubber Workers, urged that benzene be eliminated from industrial solvents altogether since it is present only as an impurity. Citing URW study results, he also noted a decrease in benzene exposure in the workplace, from a 1.3 ppm average exposure in 1977 to a 0.2 ppm average exposure in 1983.

Peter Infante, director of the OSHA Office of Carcinogen Identification and Classification, estimated that a working lifetime exposure of 45 years to benzene at 10 ppm would result in a leukemia risk ranging from approximately 44 to 152 excess leukemia deaths per 1,000 exposed workers. A working lifetime exposure to benzene at 1 ppm would result in a leukemia risk ranging from five to 16 excess leukemia deaths per 1,000 exposed workers, he stated.

At different lengths of exposure, the risk associated with 10 ppm was consistently 10 times greater than the risk at 1 ppm. Infante explained that this order of magnitude difference in risk was expected because the risk estimates were based on the one-hit model, and the one-hit model has been shown to be essentially linear at low doses.

Deficiencies in Proposed Rule

Ken Miller, of the Oil, Chemical and Atomic Workers Union, asserted that the proposed OSHA benzene standard is deficient in several areas. He criticized the absence of a provision for following previously exposed workers once they have retired or changed jobs. In addition, there is no provision requiring personal sampling for benzene-exposed workers so there is no method for determining actual individual exposures, he said. Miller suggested that requiring maintenance of a cumulative exposure log for each employee could remedy these problems.

"Prospective surveillance is sorely lacking," Miller maintained. Studies of the effects of benzene exposure on human reproduction and studies to determine whether there is a

correlation between chromosomal aberrations and leukemic response are needed, he said.

Retrospective surveillance and cohort mortality studies also are needed to determine the effects of benzene and to detect excess risks for various other conditions, Miller stated.

OSHA realizes that its benzene standard will be challenged in nearly its entirety and is striving to propose a feasible regulation that can be achieved, according to Ralph Yodaiken, director of OSHA's Office of Occupational Medicine.

Yodaiken raised difficult questions regarding the regulation of benzene in the workplace, including: Is a complete blood count a good indicator of the incidence of leukemia? If so, how often should it be done? What is the upper limit of normal for a white blood count? Should OSHA mandate gloves and hoods for handling benzene if it can be absorbed through the skin? Should respirators be required? Should breath analysis be part of a medical surveillance program? Should phenols in urine be measured as part of medical surveillance?

J. Klotz, of the Natural Resources Defense Council, supported strict application of state-of-the-art technology to controlling benzene. She stated that the federal government must be urged to consider the long-run protection of the public, halt the discharge of hazardous chemicals into the environment, and "err on the side of safety."

Litigation

ADDITIONAL TWO WEEKS FOR PLAN GRANTED TO MANVILLE; MULTI-LATERAL TALKS ORDERED

NEW YORK — (By a BNA Staff Correspondent) — Manville Corporation Nov. 7 was granted an additional, conditional two-week extension for submitting a reorganization plan to a federal bankruptcy judge for the Southern District of New York.

The extension granted by Judge Burton Lifland in *In Re Johns-Manville Corporation* (Nos. 82-B-11656 — 11678) requires that discussions between Manville and claimants seeking compensation for asbestos-related injuries be broadened by Nov. 14 to include other concerned parties.

In requesting an additional extension of the deadline for submitting a plan, Manville attorney Michael Crammes stated that his client needed additional time to respond to proposals made by the litigants group at a meeting Nov. 4. Based on this response, the two groups will decide whether further meetings to arrive at an acceptable reorganization plan would be fruitful, Crammes said.

Crammes did not discuss the substance of the proposals.

Objection to a further extension was voiced by Arthur S. Olick, an attorney representing an unofficial committee of companies which are co-defendants with Manville in a number of asbestos compensation cases. Manville and its claimants have had 14 months to develop a reorganization plan, a grant of time that is "manifestly excessive," Olick argued.

The credibility of the court is at stake, Olick further contended, because Lifland's first grant of extension was a "pre-emptory" grant that precluded any further extensions. However, Olick noted, two additional extensions have been granted since then.

The matter should be brought to a "speedy conclusion," the lawyer asserted, because Manville is protected from its creditors while its co-defendants are languishing.

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