Conoco Chemicals Company
A Division of Conoco Inc.
15990 North Barker's Landing Road
P.O. Box 19029
Houston, TX 77224

[redacted] XF: Contract employee
Pohe

December 15, 1983

Mr. David Clemons
Lone Star Pipe
P.O. Box 741
Ennis, TX 75119

Dear David:

Per our discussion, enclosed are forms to report the health effect allegations under TSCA Section 8(c). Please complete through number 10. Also enclosed is a summary of that regulation. Please call if you have questions regarding the form.

Sincerely,

Thomas G. Grumbles, C.I.H.
Director, Industrial Hygiene

ajo

Enclosures

conoco [redacted] RF

XF: Contractor Employee Policy

Interoffice Communication

To W. R. Parker

From T. G. Grumbles, R. D. Bradley

Date December 13, 1983

Subject Croda Terminal Visit

All items were resolved to the satisfaction of all present. We have no reservations about continuing to use Croda Storage Inc. for this service.

The visit took place on December 5, 1983. Present were Ed Morahan and Larry Benson of Croda, and Dave Middleton of Quadrel. The topic of discussion was the November 15 incident involving a Quadrel driver. He was picking up a load of TMP destined for Hoffmann-LaRoche. This driver wrote a letter to Quadrel regarding general unsafe conditions at Croda. This was forwarded to Hoffmann-LaRoche, who designated Quadrel to Conoco. They contacted the TSR, who contacted the CSR. Questions raised in the letter and subsequent discussions were serious enough to necessitate a visit by Conoco before attempting to answer the questions. All present agreed the driver became alarmed when he heard noises and saw the wall of the tank moving. This set off a chain of events leading to this report. There appeared to be no malicious intent by the driver in writing the letter, simply concern for the general conditions at Croda.

As a result of vent line becoming clogged with solidified TMP, a vaccum was drawn on the tank during loading. This caused the tank wall to contract slightly, resulting in the loud cracking noises and wall movement the driver saw. The Croda pumper immediately shut down the loading pump when this occurred.

Croda has taken several steps to prevent this from happening again. A steam line has been placed on top of the tank to heat the vent line, if necessary, before loading. Also, it is now SOP to open the gauge hatch before loading.

The driver also expressed concern over exposure to vapors and crystalized TMP during the dip stick guaging procedure. There is a potential for exposure if proper precautions are not followed. Croda requires slicker suits and goggles during loading and advise the drivers to stand up-wind of the hatch. While the potential does exist for exposure, our plant experience and the procedures used by Croda indicate the potential for significant exposure to occur is small.

In conclusion, we see no reason to discontinue using the Croda service. They are capable and well aware of what it takes to handle, store and load this material properly. Their quick actions to eliminate any danger in this incident only confirms this fact.

Thomas G Grumbles

Thomas G. Grumbles
Operations-Environmental

R D Bradley

R. D. Bradley
Supply & Transportation

CCR 000000428

RF

Thomas G. Grumbles

conoco

To John Friend

Date

In late spring you brought to our attention the enclosed study from Germany. The english translation and Dr. Chester's review of the article are enclosed for your information. Please call if you wish to discuss.

T

Thomas G. Grumbles XF: RF conoco

To Carl Kenfoort
Bill Greves
Bill Breedlove

Date 11/30

Another list to Review!

Enclosed is the next list of chemical TIC peoples to review. Please Review the list for chemicals or major contaminants or components of our products. Let me know if you see anything.

T

CCR 00000430

petitions or protests should be filed on or before November 16, 1983. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a petition to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

FR Doc. 83-30262 Filed 11-8-83; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. QF84-000]

Union Camp Corp.; Application For Commission Certification of Qualifying Status of a Cogeneration Facility

November 3, 1983.

On October 24, 1983, Union Camp Corporation, (Applicant) of 1600 Valley Road, Wayne, New Jersey 07470, filed with the Federal Energy Regulatory Commission (Commission) an application for certification of a facility as a qualifying cogeneration facility pursuant to § 292.207 of the Commission's rules.

The topping-cycle cogeneration facility will be located at the Applicant's pulp and paper mill near Eastover, Richland County, South Carolina. The facility will consist of a recovery boiler, a power boiler, and a steam turbine generator. The useful thermal energy output will be in the form of process steam for use in pulp and paper making processes. The primary energy source for the facility will be biomass in the form of dry black liquor solids. The net electric power production capacity of the facility will be 48, 172 kilowatts.

Any person desiring to be heard or objecting to the granting of qualifying status should file a petition to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426, in accordance with rules 211 and 214 of the Commission's Rules of Practice and Procedure. All such petitions or protests must be filed within 30 days after the date of publication of this notice and must be served on the applicant. Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a petition to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 83-30250 Filed 11-8-83; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. RP72-41-012]

Western Transmission Corp., Proposed Changes

November 2, 1983.

Take notice that on October 28, 1983, Western Transmission Corporation (Western) tendered for filing as part of its FPC Gas Tariff, Original Volume No. 1, the following sheet:

Twenty-first Revised Sheet No. 3-A, superseding Substitute Twentieth Revised Sheet No. 3-A

The proposed changes would decrease the monthly charges for purchased gas to Colorado Interstate Gas Company, Western's sole jurisdictional customer, pursuant to the provisions of Section 18 of Western's FPC Gas Tariff, Original Volume No. 1.

The proposed effective date of the above tariff sheet is December 1, 1983.

Copies of the filing have been served upon Colorado Interstate Gas Company.

Any person desiring to be heard or to protest said filing should file a petition to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such petitions or protests should be filed on or before November 16, 1983. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a petition to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 83-30263 Filed 11-8-83; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. ER78-414-008]

Delmarva Power & Light Co.; Compliance Filing

November 4, 1983.

Take notice that on October 28, 1983, Delmarva Power & Light Company ("DP&L") submitted for filing its Compliance Report pursuant to Opinion Nos. 185 and 185-A in Docket No. ER78-414-000.

Any person desiring to be heard or to protest this filing should file comments with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, on or before November 14, 1983. Comments will be considered by the Commission in determining the appropriate action to be taken. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 83-30324 Filed 11-8-83; 8:45 am]

BILLING CODE 6717-01-M

ENVIRONMENTAL PROTECTION AGENCY

OPTS 41012 BH-FRL 2462-1

Chemicals to be Reviewed by the Toxic Substances Act Interagency Testing Committee; Public Meeting and Request for Information

AGENCY: Toxic Substances Contstances Control Act Interagency Testing Committee.

ACTION: Notice of public meeting and request for information.

SUMMARY: The Toxic Substances Control Act (TSCA) Interagency Testing Committee (ITC) will hold a public meeting to receive comments and information on a new list of chemicals selected for review by the ITC. The method of scoring and selecting chemicals for inclusion on the list will be described. The public is also invited to submit to the ITC, after the meeting, written comments and technical data on the listed chemicals. The chemicals on the list are candidates for possible recommendation to the Administrator of the U.S. Environmental Protection Agency (EPA), to be given priority consideration for the promulgation of testing rules pursuant to section 4(a) of TSCA.

DATES: The meeting will be held on Thursday, December 8, 1983 at 9:00 a.m.

Oral comments may be presented at the meeting. Written comments, data, and information should be sent to the Executive Secretary, ITC, no later than January 14, 1984.

ADDRESSES: The meeting will be held at: Disabled American Veterans Building, Main Floor, 807 Maine Ave., SW., Washington, D.C. 20024.

Written comments and information to: Martin Greif, Executive Secretary, TSCA Interagency Testing Committee,

Environmental Protection Agency, (TS-792), 401 M St. SW., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Martin Greif, (202-382-3550).

SUPPLEMENTARY INFORMATION:

I. Background

The Toxic Substances Control Act, 15 U.S.C. 2601 *et seq.* (TSCA), authorizes the Administrator of the Environmental Protection Agency to require testing of chemicals in commerce if the Administrator makes certain findings that are set forth in section 4(a) of TSCA. Section 4(e) established the TSCA Interagency Testing Committee. The ITC is charged with recommending to the EPA Administrator chemical substances or mixtures (chemicals) to which EPA should give priority consideration for promulgating health and environmental effects testing rules under section 4(a) of TSCA. The EPA Administrator must respond to the ITC recommendations by proposing testing rules for the recommended chemicals or issue for publication in the Federal Register the reasons for not doing so.

Eight Federal agencies are specified in section 4(e)(2)(A) of TSCA as statutory members of ITC. The agencies are: Council on Environmental Quality, Department of Commerce, Environmental Protection Agency, National Cancer Institute, National Institute of Environmental Health Sciences, National Institute for Occupational Safety and Health, National Science Foundation, and Occupational Safety and Health Administration.

The ITC has invited five other Federal agencies and one national program, with activities related to the control of toxic substances, to participate in a liaison capacity. They are: Consumer Product Safety Commission, Department of Agriculture, Department of Defense, Department of the Interior, Food and Drug Administration, and National Toxicology Program. Staff support is provided by the Environmental Protection Agency and the National Library of Medicine.

In developing its recommendations the ITC is directed by section 4(e)(1)(A) of TSCA to consider, together with all other relevant information, the following priority factors with respect to chemicals under consideration:

1. Quantity manufactured.
2. Quantity which will enter the environment.
3. Occupational exposure.
4. Non-occupational human exposure.
5. Similarity in chemical structure to other substances which are known to present an unreasonable risk of injury to health or the environment.
6. Existence of data concerning health and environmental effects.
7. The extent to which testing will develop useful data on the risk of injury to health or the environment.
8. The reasonably foreseeable availability of testing facilities and personnel.

The ITC is also directed by section 4(e)(1)(A) of TSCA to give priority attention, in establishing its list of recommended chemicals, to those chemicals which are known or suspected to cause cancer, gene mutations or birth defects.

Section 4(e) requires that the ITC revise its list of recommended chemicals as necessary at least once every six months. The initial report of the ITC to the EPA Administrator was published in the Federal Register of October 12, 1977 (42 FR 55026). This report contains a description of the Committee's scoring and review processes, together with the initial list of recommended chemicals. Eleven subsequent reports have been issued by the ITC.

The ITC completed its Fifth Scoring Exercise in September 1983. This exercise was designed to select additional chemicals which warrant detailed review to determine which should be recommended to the EPA Administrator for priority consideration. This scoring exercise produced a list of 52 chemicals to be reviewed by the ITC during the next 18–24 months. The chemicals are listed in Unit II of this notice.

II. 1983 List of Chemicals Selected for Review by TSCA Interagency Testing Committee

(Ascending CAS No. Sequence)

CAS No.	Chemical name
75-69-4	Trichlorofluoromethane.
78-67-1	2,2'-Azobis(isobutyronitrile).
78-79-5	2-Methyl-1,3-butadiene.
78-88-6	2,3-Dichloropropene.
79-94-7	Tetrabromobisphenol A.
80-43-3	Cumene peroxide.
81-55-0	1,8-Dihydroxy-4,5-dinitroanthraquinone.
84-65-1	Anthraquinone.
85-22-3	Pentabromoethylbenzene.
87-59-2	2,3-Xylidine.
87-60-5	3-Chloro-o-toluidine.
87-83-2	Pentabromomethylbenzene.
87-24-4	2,2'-Methylenebis(6-tert-butyl-4-ethylphenol).
95-14-7	1H-Benzotriazole.
95-31-8	N-tert-Butyl-2-benzothiazolesulfenamide.
95-33-0	N-Cyclohexyl-2-benzothiazolesulfenamide.
95-69-2	4-Chloro-o-toluidine.
96-37-7	Methylcyclopentane.
97-60-3	2-[Methyl(1-oxo-9-(Z)-octadecenyl)amino]ethanesulfonic acid.
98-94-2	N,N-Dimethylcyclohexylamine.
99-65-0	m-Dinitrobenzene.
100-37-8	2-(Diethylamino) ethanol.
101-68-8	1,1'-Methylenebis(4-isocyanatobenzene).
102-08-9	Thiocarbanilide.
102-36-3	1,3-Diisothiocyanatobenzene.
103-74-2	2-Pyridine ethanol.
107-18-6	Allyl alcohol.
107-22-2	Ethanedial.
108-89-4	4-Methylpyridine.
109-70-6	1-Bromo-3-chloropropane.
110-05-4	Di-tert-butyl peroxide.
112-41-4	1-Dodecene.
116-85-5	1-Amino-2-bromo-4-hydroxyanthraquinone.
117-52-4	2-Amino-1, 5-naphthalenedisulfonic acid.
119-61-9	Benzophenone.
119-64-2	1,2,3,4-Tetrahydronaphthalene.
120-78-5	2, 2'-Dithiobisbenzothiazole.
122-39-4	Diphenylamine.
126-33-0	Tetrahydrothiophene 1,1-dioxide.
126-73-8	Tributyl phosphate.
128-39-2	2,6,-Di-tert-butylphenol.
128-80-3	1,4-Di-p-toluidinoanthraquinone.
135-88-6	N-Phenyl-2-naphthylamine.
142-59-6	1,2-Ethanediylbis(carbamodithioic acid)disodium salt.
145-49-3	1,5-Diamino-4,8-dihydroxyanthraquinone.
150-39-0	N-(2-hydroxyethyl)ethylenediaminetriacetic acid.
529-34-0	3,4-Dihydro-1(2H)-naphthalenone.
592-41-6	1-Hexene.
592-76-7	1-Heptene.
616-45-5	2-Pyrrolidinone.
872-05-9	1-Decene.
1072-68-2	1-Aziridine ethanol.
1163-19-5	Decabromodiphenyl ether.
1634-04-4	tert-Butyl methyl ether.
1837-91-8	1,2,3,4,5,6-Hexabromocyclohexane.
2176-62-7	Pentachloropyridine.
3081-01-4	N-(1,4-Dimethylpentyl)-N'-phenyl-1,4-benzenediamine.
3734-48-3	4,5,8,7,8,8-Hexachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene.
6419-19-8	Nitrilotris(methylphosphonic acid).
8007-18-9	C.I. Pigment yellow 93.
15096-52-3	Cryolite.
19980-16-3	2,3-Dibromopropyl acrylate.
25339-58-4	Heptene, mixed isomers.
26006-22-4	Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, methyl sulfate, polymer with 2-propenamide.
26447-40-5	1,1'-Methylenebis(isocyanatobenzene).
27215-95-8	Nonene.
27515-66-8	Bis(2-methylpropyl)phenol.
38051-01-4	2,2-Dichloroneopentyl 1,3-propanediyl diphosphite tetrakis (2-chloroethyl)ester.
55697-43-1	1,1-Dichloro-4-methyl-1,3-pentadiene.
59906-76-5	Tetrachlorocyclopentene.
61791-38-4	4,5-Dihydro-1H-imidazole 2-norfall-oil alkyl derivatives.
61931-62-6	N-(1,3-Dimethylbutyl)-N-phenyl-1,4-benzenediamine.
63451-40-1	4-(Phosphinothioyl)-2,5-cyclohexadien-1-one oxime, sodium salt.
67700-99-6	Di-(C_{14}-C_{18})-alkylmethylamines.
68122-66-1	Imidazolium compounds, 4,5-dihydro-1-methyl-2-norfallow alkyl-1-(2-tallow amidoethyl), methyl sulfates.
68139-35-5	Ethanaminium, 2-amino-N-(2-aminoethyl)-N-(2-hydroxyethyl)-N-methyl-,N,N'-ditallow acyl derivatives, methyl sulfates (salts).
68187-41-7	Phosphorodithioic acid, O,O'-di(C_1-C_{14})-alkyl esters.
68259-91-3	Hexaphlorocyclopentene.
68394-67-8	1,1,2,3,4-Pentachloro-4-(1-methylethoxy)-1,3-butadiene.
68457-79-4	Phosphorodithioic acid, o,o-bis(mixed iso-bu and pentyl) esters, zinc salts.
68974-78-7	Thiobis(tetra propenyl) phenol), magnesium salt.
69227-21-6	(C_{10}-C_{16}) Alkyl alcohol ethoxylate propoxylate.

III. Public Meeting and Request for Comments

A public meeting of the ITC will be held in Washington, D.C. on December 8, 1983, at the time and place designated in the beginning of this notice. At this meeting a representative of the ITC will describe the chemical-scoring and selection process used by the

Committee. Interested persons are invited to present relevant oral comments on the process and on chemicals listed in Unit II of this notice. Additional comments and information may be submitted in writing to the Executive Secretary, TSCA Interagency Testing Committee, at the address shown at the beginning of this notice. The kinds of information that would be most helpful to the ITC in assessing the need for testing are those related to the eight priority factors listed in Unit I of this notice. Of particular value would be:

1. Technical bulletins.
2. Material safety data sheets.
3. Current annual production data and trends.
4. Number of workers exposed, concentrations, controls, use of open versus closed systems, etc.
5. Use data (types of uses, percent of production by use, etc.).
6. Environmental impact data (waste control procedures, pollution potential, fraction released to the environment, route of environmental entry, environmental reactions, degradation rates, and ecotoxicity).
7. Toxicological data (laboratory test protocols and results, occupational and non-occupational epidemiology, etc.).

The ITC would appreciate receiving notification if a listed chemical is no longer being manufactured or distributed.

The information submitted will become part of the public record of the ITC review process unless it is clearly designated as Confidential Business Information (CBI). Submitters should separate CBI from other information and mark such information clearly as "TSCA-CBI." It will be treated in accordance with procedures outlined in the "TSCA Confidential Business Information Security Manual."

Any persons wishing to make an oral presentation at the December 6, 1983 public meeting should notify the Executive Secretary, ITC not later than November 30, 1983, at the address or telephone number set forth in this notice. Respondents are requested to provide the CAS registry number and the name of any chemical they wish to comment on. Oral presentations will be limited to 10 minutes per person.

Written comments, data, and formation on chemicals should be ubmitted to the Executive Secretary, ITC, not later than January 14, 1984, in order to be assured timely review by the ITC.

Dated: October 26, 1983.

Elizabeth K. Weisburger,

Chairperson, TSCA Interagency Testing Committee.

[FR Doc. 83-29865 Filed 11-8-83; 8:45 am]

BILLING CODE 6560-50-M

[OPP-30195B; PH-FRC 2463-4]

Ciba-Geigy Corp.; Approval of Application To Register a Pesticide Product Containing a New Active Ingredient

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA has approved the application by Ciba-Geigy Corp. to register the algaecide Belclene 322 containing an active ingredient not included in any previously registered pesticide product pursuant to the provisions of section 3(c)(4) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

FOR FURTHER INFORMATION CONTACT: By mail: Richard Mountfort, Product Manager PM 23, Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

Office location and telephone number: Rm. 237, CM#2, 1921 Jefferson Davis Highway, Arlington, VA 22202, (703-557-1830).

SUPPLEMENTARY INFORMATION: EPA issued a notice published in the Federal Register of January 12, 1981 (46 FR 2716) which announced that Ciba-Geigy Corp., Ardsley, NY 10502, had submitted an application to register the algaecide Belclene 310 containing 96 percent of the active ingredient 2-(methylthio)-4-(ethylamino)-6-(1,2-dimethylpropyl) amino]-*s*-triazine, an active ingredient not included in any previously registered pesticide product.

On August 25, 1983 registration was issued for a product called "Belclene 322" containing 10 percent of the active ingredient described above. Belclene 322 is assigned EPA Registration No. 40610-4 and is approved for general use. The active ingredient is declared in the label ingredient statement as: *N*-(1,2-dimethylpropyl-*N*'-ethyl-6-(methylthio)-1,3,5-triazine-2,4-diamine.

A copy of the approved label and the list of data references used to support registration are available for public inspection in the office of the product manager. Requests for data must be made in accordance with the provisions of the Freedom of Information Act and must be addressed to the Freedom of Information Office (A-101), EPA, 401 M St., SW., Washington, D.C. 20460. Such requests should: (1) Identify the product name and registration number and (2) specify the data or information desired.

(Sec. 3(c)(2) FIFRA, as amended)

Dated: October 25, 1983.

Edwin L. Johnson,

Director, Office of Pesticide Programs.

[FR Doc. 83-29863 Filed 11-8-83; 8:45 am]

BILLING CODE 6560-50-M

(OPP-30214A; PH-FRL 2469-7)

ICI Americas, Inc.; Approval of Application To Conditionally Register a Pesticide Product Containing a New Active Ingredient

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA has conditionally approved the application by the ICI Americas, Inc. to register the herbicide Fusilade 4E Herbicide containing an ingredient not included in any previously registered pesticide product, pursuant to the provisions of section 3(c)(4) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

FOR FURTHER INFORMATION CONTACT: Richard Mountfort, Product Manager (PM) 23, Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, CM#2, Rm. 237, 1921 Jefferson Davis Highway, Arlington, VA 22202, (703-557-1830).

SUPPLEMENTARY INFORMATION: EPA issued a notice published in the Federal Register of March 10, 1982 (47 FR 10289) which announced that ICI Americas, Inc., Wilmington, DE 19897, had submitted an application to register the herbicide Fusilade 4E Herbicide containing 46.5 percent of the active ingredient butyl (*R S*)-2-[4-[[5-trifluoromethyl)-2-pyridinyl] oxy] phenoxy] propanoate, an ingredient not included in any previously registered product.

The application was approved on April 20, 1983 for general use in pesticide formulation. The product was assigned EPA Registration No. 10182-67.

A copy of the approved label and the list of data references used to support registration are available for public inspection in the office of the product manager. Requests for data must be made in accordance with the provisions of the Freedom of Information Act, and must be addressed to the Freedom of Information Office (A-101), EPA, 401 M St., SW., Washington, D.C. 20460. Such

CONOCO

Interoffice Communication

To Darrell Riffe, Laurie Mauerman, Sid Pitts

From Tom Grumbles

Date November 23, 1983

Subject CONFERENCE ON BENZENE HEALTH EFFECTS

For your information, enclosed are summary documents concerning a recent conference on the health effects of benzene. Several significant points are raised by the information presented at this meeting.

1. Data from recently completed animal studies involving inhalation and ingestion studies indicate that benzene is a "multi-site" tumor causing agent. The effects of benzene had been known to occur in the blood forming organs, but hard tissue tumors had not been seen until recently.

2. The evidence now available will probably be sufficient to meet the Supreme Court mandate to OSHA for demonstrating unacceptable risk at exposures below 10 ppm. A 1.0 ppm standard can probably be defended by OSHA.

Based on this new information, some revisions in our Benzene Education Program texts will be necessary when the programs are next updated.

Thomas G. Grumbles

ajo

Enclosure

conoco RECEIVED

NOV 22 '83

Interoffice Communication

To Distribution

From W. D. Broddle, Ph.D., Medical, Ponca City

Date November 9, 1983

Subject TRIP REPORT/INTERNATIONAL CONFERENCE ON BENZENE NOVEMBER 3-4

Route: _____

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The above conference was held in New York City and was an intensive two-day review of health-related research on benzene. It was more than "coincidential" that recently a regulatory timetable has been published by OSHA wherein a new workplace standard will be published in November (1983), public hearings in February (1984) and a final rule by June (1984).

The conference was attended by approximately 80 people and included many well-known scientists who are actively involved with benzene research (see Attachment). Participants represented European organizations, EPA, NOISH, OSHA, unions, public interest groups (NRDC, etc.), API, CMA, CIIT and many oil or chemical corporations.

A summary of highlights follows:

- I. Selikoff, Mt. Sinai Hospital
  Benzene represents a potential health hazard that must be assessed in rms of toxicology, epidemiology, regulations, politics, social and economic parameters.

- N. Nelson, New York University
  Health effects of benzene have been known for many years (1897, first human deaths; 1910-13, benzene's initial effect of decreasing white blood cells, WBCs, is used to treat leukemia; 1918, search for benzene substitute; 1938, first reported case of benzene-related leukemia).

- B. Goldstein, EPA
  New animal carcinogenesis data shows benzene ($\geq$ 100 ppm) causes hematological and non-hematological solid tissue tumors. The OSHA workplace standard, PEL, of 10 ppm must be lowered. Benzene in gasoline ($\leq$ 2%, U.S.A.; $\leq$ 5% , Europe) should be lowered (remember that API studies with gasoline showed a carcinogenic response in the kidney); since the transportation and storage of gasoline creates the potential for polluting aquifers, a gasoline/drinking water carcinogenic study in animals should be instigated (API has placed this on low priority).

- M. Aksoy, Turkey
  Dr. Aksoy is a hematologist who has published many studies involving Turkish shoeworkers since they use benzene-containing solvents. His work in the 1970s showed slight elevations of acute myelocytic leukemia, AML, but recent data also show slight increases of multiple myloma and lung cancer.

These studies are compromised due to several uncontrolled variables, such as mixed solvent exposure, cigarette smoking, and inadequate data for non-exposed populations. (Several participants raised the question of whether genetic testing would predict or demonstrate benzene toxicity since benzene is quite toxic to the immune system and genetic material.)

- M. Berlin, Sweden
  Benzene exposures or content:
  Cigarettes, 60-100 mcg/cigarette (40-100 ppm in smoke)
  Gasoline, 1-5%
  Urban air, 1 ppb
  Strawberries and several other common foods, 1-100 ppm
  Petroleum Operations: 3-10 ppm (transportation operations)
  0.05-0.5 ppm (service station attendants)

  Studies in humans show two detoxification half-lives ($t_{\frac{1}{2}}$) for benzene; one is 1-2 hours and the longer one is 24-48 hours (remember, it takes 6-7 half-lives to reach zero, i.e. total detoxification). Chemical workers had a breath concentration for benzene of 13 parts per billion (ppb) but this decreased to 7 ppb during a 6-week vacation. This decrease is less than anticipated and may indicate that benzene is only slowly removed from fatty tissues such as bone marrow, adipose tissue, etc. Another study showed a doubling of chromosomal aberrations in gasoline tank-truck drivers.

  Even though cancer is commonly viewed as a non-threshold response (the "one-molecule, one cancer" theory), if benzene causes cancer by an initial process that is non-genotoxic (immunotoxic, tissue destruction, etc.), then the cancer response may have a threshold exposure that is non-carcinogenic due to tissue repair mechanisms.

- C. Maltoni, Institute of Bologna/Italy
  Lifetime oral or inhalation animal studies in Sprague Dawley rats (oral doses of 50, 250 and 500 mg/kg; inhalation of 200 ppm) showed a carcinogenic response in all test groups (skin, mammary and zymbal gland, stomach, liver angiosarcomas and oral cavity). More rodent studies are ongoing (Wistar rat and Swiss mice).

  PLEASE NOTE: Lifetime oral rat studies (500 mg/kg/day) for ethyl benzene, toluene and xylene showed a carcinogenic response but only if analyzed as total tumors per test group. Remember that previous chronic rodent studies (CIIT, API) do not substantiate this carcinogenic effect of alkyl benzenes. However, I am sure Dr. Maltoni will continue studying the carcinogenic potential of alkyl benzenes. Also the EPA is presently outlining a research program that they feel industry should conduct on alkyl benzenes.

- J. Huff, National Toxicology Program
  Lifetime rodent oral studies with benzene (rats at 50, 100 and 200 mg/kg; mice at 25, 50 and 100 mg/kg) showed a similar tumorigenic

response as Maltoni's data except that tumors also occurred in the lung, Harderian gland, endometrium and lymphatic leukemia.

- R. Albert, New York University
Sprague Dawley rats and CD-1 or C-57 mice were exposed chronically to benzene on an intermittent basis (300 or 900 ppm/one of every three weeks or 1200 ppm for 10 weeks and no exposure thereafter). Each test group showed an increase of tumors in the zymbal gland and lung.

- E. Cronkite, Brookhaven National Laboratories and
C. Snyder, New York University
Studies with mice showed that benzene was toxic to white blood cells and the immune system at exposures as low as 10 ppm. In vitro studies show these effects at levels of 1-10 ppm.

- R. Snyder, Rutgers University
Studies with mice showed that benzene can alter its own cellular detoxification pathway.

- R. Irons, Chemical Industry Institute of Toxicology (U.S.A.)
Studies in mice revealed that benzene is detoxified to toxic metabolites like quinones, hydroquinones and perhaps ring-opened derivatives.

- A. Tunek, London
In vitro studies show that benzene toxicity is more dependent on time-weighted average exposures than to higher, intermittent exposures.

- G. Kalf, Jefferson Medical College
Benzene binds to and inhibits mitochrondrial DNA activity.

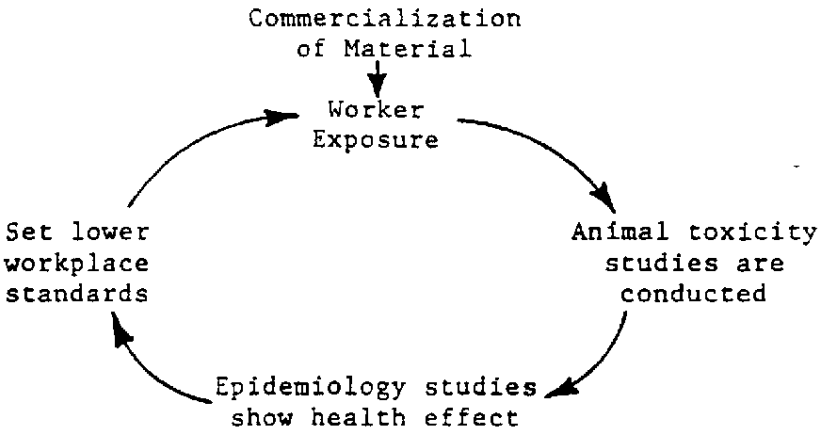
- R. Tice, Brookhaven National Laboratories and
M. Gad-El-Karim, University of Texas
Studies with mice show that the earliest signs of benzene toxicity involve the bone marrow (cytotoxicity and chromosomal aberrations).

- H. Runion, Gulf Oil
Employee exposure data were given for the oil, chemical, steel and paint industries for 1978-83. Overall, 88% and 98% of the exposures were below 1 ppm and 10 ppm, respectfully. Note that petroleum transportation workers (barges, trucks, etc.) had higher exposures such that 95% of exposures were only below 5 ppm (total petroleum industry had 95% below 2.5 ppm).

The above data partially explains why the petroleum and chemical industries are not terribly against a benzene workplace standard of 1 ppm.

-L. Beliczky, United Rubber Workers Union
Skin exposure is prevalent in the rubber industry so air sampling does not reflect TOTAL BODY BURDEN of benzene.

- Dr. Greenberg, unknown affiliation
  It is interesting how workplace standards for several potentially toxic industrial materials (asbestos, benzene, arsenic, etc.) have evolved:



- K. Miller, Oil, Chemical, and Atomic Workers Union (OCAW)
  Animal, medical, and hematological review allows each worker to be his own control and allows for quicker detection of occupational health problems. This could help screen for benzene toxicity since leukemia may be preceded by aplastic anemia and pancytopenia.

  OCAW is concerned over reports that benzene carcinogenesis may involve tissues other than the bone marrow or blood.

- R. Murray, England
  Peak exposures to benzene may be more significant than a time-weighted average (see article by Van Raalte and Grasso). Also, no benzene-related diseases have been reported in England since 1952.

- D. Hoel, HIEHS
  The risk of leukemogenic mortality in workers exposed to 10 ppm benzene for 45 years of employment ranged from 1-20%. This excess leukemia risk is calculated by using the very conservative One-Hit, Non-Threshold Probability Model. Risk would be better assessed if there were dose-response data in animals correlated with "delivered dose" at the site of toxicity (bone marrow, lung, etc.)

- P. Infante, OSHA
  Multiple myelomas were elevated in epidemiology studies conducted by De Coufle et al. (Conoco benzene alkylation plant in Baltimore) and Thomas et al. (non-statistical increase in refinery workers). A recent press release by Shell Oil noted that epidemiology studies at five refineries showed an increase of leukemia in only the two refineries having a benzene unit.

- R. Yodaiken, OSHA
  OSHA is drafting a new workplace standard for benzene and is contemplating the following:

  ° If benzene is a respiratory carcinogen, should respirators be mandated? OSHA may require respirators depending on a risk/benefit analysis.

  ° If benzene is a skin carcinogen, what special protection is needed?

  ° To assess over-exposures, analysis of urinary phenols may be required.

- OSHA spokesman
  OSHA is very aware that its regulations must consider all health-effect data, technologic and economic feasibilty, the presence of a significant adverse health-effect and whether the regulation will significantly lower the adverse health-effect.

- J. Klotz, Natural Resources Defense Council
  More controls are needed for benzene exposures in the workplace.

- T. Scovel, Texaco
  Dr. Scovel questioned whether sufficient evidence is available to show that the 10 ppm workplace standard represents an unreasonable health hazard.

- B. Holmberg, Sweden
  The Swedish government is comfortable with their 5 ppm benzene standard, which is based on chromosomal effects in humans.

- A. Upton, New York University
  Dr. Upton summarized the presentations given at the conference but no surprises were evident, not even a conclusion concerning lowering the workplace standard.

W. D. Broddle, Ph.D.
Senior Toxicologist

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Att.

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radiologist. In addition, plant physicians have undergone ·ernal training in the early detection of lung abnormalities l 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 ·ually, "or at an interval perscribed by the specialist," to ·ermine 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 ·rican Medical Association's criteria for disability "fre-·ly useful," except in assessing lesser degrees of disability. The British Medical Research Council's criteria "are even 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 dyscerasias, 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.

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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 — 11676) 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 Crames stated that his client needed additional time to respond to proposals made by the litigants group at a meeting Nov. 4. Based on this reponse, the two groups will decide whether further meetings to arrive at an acceptable reorganization plan would be fruitful, Crames said.

Crames 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.