1946 TLV

taken by Dr. Goldman's Committee, but rather to present the need and suggest that the Conference consider the question of setting up these procedures on the same basis as Dr. Goldman is following with the analytical methods.

DR. GOLDMAN: Of course, the subject has been discussed in our special seminar, and I think it was indicated there that if the Conference was amenable, the Committee would undertake that work also.

CHAIRMAN BREHM: Any other discussion? The chair will entertain a motion for the acceptance of the report of the Committee on Standard Methods.

MR. FLUCK: I so move.

. . . The motion was seconded by Mr. Wilson, put to a vote, and carried . . .

CHAIRMAN BREHM: The motion is carried. Thank you, Dr. Goldman.

The last committee report we have this morning is that of the Committee on Threshold Limits by Dr. W. G. Fredrick, chairman of that Committee. Dr. Fredrick.

Report of the Sub Committee on Threshold Limits

DR. FREDRICK: Considerable difficulty attends the fixing of satisfactory values for maximal allowable concentrations of chemicals in respirable atmospheres because of the lack of sufficient toxicological data and the lack of a uniform definition of the maximal allowable concentration concept. One concept is that the M.A.C. value should represent as accurately as possible that concentration at which a worker exposed for a sufficient period of time will just escape physiological or organic injury and occupational disease. A second concept is that the M.A.C. should represent some fraction of that concentration which will injure the worker in order to allow a margin of safety in the design of protective equipment and guard against possible synergistic effects in the case of multiple exposures. A third concept is that the M.A.C. should perform the functions of the former concepts and in addition provide a work environment free of objectionable but non-injurious concentrations of smokes, dusts, irritants and odors. Obviously all of these concepts cannot be fulfilled with the establishment of a single value. M.A.C. values in use at the present time represent examples of all of these concepts.

The committee feels that the establishment of dual lists or a single definition of the M.A.C. is not possible at the present time.

An extensive list of M.A.C. values is presented to the conference for use during 1946, with the definite understanding that it be subject to annual revision. Values have been compiled from the list reported by this sub-committee at the 5th annual meeting of the N.C.G.I.H. in 1942, from the list published by Warren Cook in Industrial Medicine, vol. 14, p. 936, 1945, and from published values of the Z-37 committee of the American Standards Association.

It will be noted that many of these values have been in general use by members of the conference for several years.

Maximum Allowable Concentrations of Air Contaminants for 1946

(These values are subject to annual revision)

Data for these values have been obtained primarily from the report of this Committee in 1942, the compilation by Warren Cook, Industrial Medicine, Vol. 14, p. 936, 1945 and the values established by the American Standards Association Committee.

Group I. Gases and Vapors

Substance	*M.A.C.* (ppm)
Acetaldehyde	200
Acetic acid	10
Acetone	500
Acrolein	0.5
Acrylonitrile	20
Ammonia	100
Amyl acetate	200
iso-Amyl alcohol	100
Aniline	5
Arsine	1
Benzene (Benzol)	100
Bromine	1
1, 3-Butadiene	5000
n-Butanol	50
2, Butanone	200
n, Butyl acetate	200
Butyl cellosolve	200
Carbon dioxide	5000
Carbon disulfide	20
Carbon monoxide	100
Carbon tetrachloride	50
Cellosolve	200
Cellosolve acetate	100
Chlorine	5
2-Chlorobutadiene	25
Chloroform	100
1-Chloro-1-nitropropane	20
Cyclo hexane	400
Cyclo hexanol	100
Cyclo hexanone	100
Cyclo hexene	400
o-Dichlorobenzene	75
Dichloro difluoro methane	10,000
1, 1-Dichloro ethane	100
1, 2-Dichloro ethane	100
1, 2-Dichloro ethylene	200
Di chloro ethyl ether	15
Di chloro methane	500
Di chloromonofluromethane	5000
1, 1-Dichloro-1-nitro ethane	10
Dichlorotetrafluoro ethane	10,000
Dimethylaniline	5
Dimethylsulfate	1
Dioxane	500
Ethyl acetate	400
Ethyl alcohol	1000
Ethyl benzene	200
Ethyl bromide	400
Ethyl chloride	5000
Ethylene chlorhydrin	10
Ethylene dichloride—see 1, 2-Dichloroethane	
Ethylene oxide	100
Ethyl ether	400
Ethyl formate	200
Ethyl silicate	100
Freon—see dichloro difluro methane	
Formaldehyde	10
Gasolene	500
Heptane	500

Hexane	500
Hydrogen chloride	10
Hydrogen cyanide	20
Hydrogen fluoride	3
Hydrogen selenide	0.1
Hydrogen sulfide	20
Isophorone	25
Mesityl oxide	50
Methanol	200
Methyl acetate	100
Methyl bromide	20
Methyl butanone	200
Methyl cellosolve	100
Methyl cellosolve acetate	100
Methyl chloride	200
Methylcyclohexane	500
Methyl cyclo hexanol	100
Methyl cyclo hexanone	100
Methyl ethyl ketone	200
Methyl formate	400
Methyl iso-butyl ketone	200
Mono chloro benzene	75
Mono fluro trichloro methane	10,000
Mononitro toluene	5
Naphtha (coal tar)	100-200
Naphtha (petroleum)	500
Nitro benzene	5
Nitro ethane	200
Nitrogen oxides (other than nitrous oxide)	25
Nitroglycerine	0.5
Nitromethane	200
Octane	500
Ozone	1
Pentane	5000
Pentanone (methyl propanone)	200
Perchloroethylene—see tetrachloroethylene	
Phosgene	1
Phosphine	1
Phosphorus trichloride	0.5
iso-Propanol	400
Propyl acetate	200
iso-Propyl ether	500
Stibine	10
Stoddard solvent	500
Styrene monomer	400
Sulphur chloride	1
Sulphur dioxide	10
1, 1, 2, 2,-Tetra chloroethane	10
Tetra chloro ethylene	200
Toluene	200
Toluidine	5
Trichloroethylene	200
Turpentine	100
Vinyl chloride	500
Xylene	200

Group II. Toxic Dusts, Fumes and Mists	*Mg/M³*
Barium peroxide (as Ba)	0.5
Cadmium	0.1
Chloro di phenyl	1.0
Chromic acid and chromates (as Cr_2O_3)	0.1
Dinitro toluene	1.5
Fluorides (as F)	2.5
Iodine	0.1
Iron oxide fume	15
Lead	0.15
Magnesium oxide fume	15
Manganese	6
Mercury	0.1
Pentachloronaphthalene	0.5
Sulphuric acid	0.5
Tellurium	0.01
Tetryl	1.5
Trichloronaphthalene	5
Trinitrotoluene	1.5
Zinc oxide fume	15

Group III. Mineral Dusts	*M.P.P.C.F.**
Alundum	50
Asbestos	5
Carborundum	50
Portland cement	50
Mica (below 5% free silica)	50
Nuisance (no free silica)	50
Silica—High (above 50% free SiO_2)	5
Silica—Medium (5-50% free SiO_2)	20
Silica—Low (below 5%)	50
Slate—(below 5% free SiO_2)	50
Soapstone (below 5% free SiO_2)	50
Talc	20
Total dust (below 5% free SiO_2)	50

Group IV. Radiations

Material or Radiation	*Radiant Energy*
Radon or thoron gas	10^{-8} Curies/M³
X or Gamma Radiation	0.1 Roentgen per 8 hr. day

CHAIRMAN BREHM: Thank you, Dr. Fredrick. Is there any comment? If not, the chair will entertain a motion regarding that report.

. . . It was moved and seconded that the report be accepted. The motion was put to a vote and carried . . .

CHAIRMAN BREHM: The motion is carried. Thank you, Dr. Fredrick.

MR. BROWN: Mr. Chairman, in order to provide now for the consideration of the report of the Committee on Industrial Hygiene Codes, I move that that report now be taken from the table for consideration. The report was tabled pending presentation of the report of the Committee on Threshold Limits.

. . . Seconded by Mr. Wilson . . .

CHAIRMAN BREHM: Is there any discussion?

DR. GREENBURG: I wonder if the limits set forth by the Committee on Codes were transmitted to that Committee from the Committee on Threshold Limits?

DR. FREDRICK: No, they were not. These committees were not in communication. I regret there seems to be some overlapping in the fields of activity.

MR. BLOOMFIELD: Mr. Chairman, I would like to make a suggestion for the sake of saving time and expediting the meeting, since we want to go into Executive Session soon to transact important business. I suggest that the Threshold Limits and Industrial Hygiene Code be omitted and we consider the report without those limits. Do you think that would be agreeable to Mr. Buxell and your Committee? There is an overlapping and I am not sure that both report limits are in agreement. That is my suggestion.

MR. BROWN: I personally agree, Mr. Bloomfield, but in order to consider that, I think the report ought to be brought back to the Conference. It can't actually be considered until it is before the Conference. At that time that point should be taken up.

CHAIRMAN BREHM: The motion to bring off the table is now before the meeting.

---

*Million particles per cubic foot of air, standard light field count.

. . . The motion was put to a vote, and carried . . .

CHAIRMAN BREHM: The motion is carried.

MR. BLOOMFIELD: I would now like to make the suggestion which I made before we voted.

CHAIRMAN BREHM: All right. Does anyone have any other discussion?

MR. BROWN: May I speak on that point, Mr. Chairman? As a member of the Conference, and having nothing to do with this report, I have felt the need for such a code as is contemplated by the Conference. I would like to see the various elements which go into that report adopted by the Conference.

The individual units for the codes will probably be of great help to us individually by having them adopted by the Conference with the thought in mind that in the future they will all be combined in the form of a unified code.

As far as the report is concerned, various individuals have expressed a desire for a code at the earliest possible opportunity. This fact was kept in mind by the Committee in considering the material which it reported. It has in mind very definitely continuing the work which it is doing in an effort to arrive at a code at the earliest possible opportunity.

It would be of considerable help to the Committee in its deliberations to have expressions from the membership as to what units should be included in the code.

If this report isn't accepted by the Conference, as far as I am personally concerned, an expression as to the desires of the members as to units for such a code would prove of value.

If the Conference should desire to ask the Committee to reconsider its suggestion as to maximum allowable concentrations in the light of the report of the Committee on Threshold Limits, I think the Committee should do so.

CHAIRMAN BREHM: The report of the Committee on Threshold Limits has been approved by the Conference, which brings before us now the question of approving the report of the Committee on Industrial Hygiene Codes. Is that correct, Mr. Secretary-Treasurer?

MR. BLOOMFIELD: That is right. It ought to be disposed of one way or the other.

CHAIRMAN BREHM: The chair will entertain a motion to accept or reject at this time that report.

MR. MORSE: I make a motion we accept the report of the Committee on Industrial Hygiene Codes, deleting the section on maximum allowable concentrations pending the establishment by that Committee of allowable toxic limits.

. . . Seconded by Mr. Bloomfield . . .

DR. GRAY: By adopting the report of the Committee on concentrations, have we adopted the minimum concentrations they suggested? If we have, we could adopt the other code by substituting for their toxic doses one that the Committee on Threshold Limits endorses. Do I make myself clear?

MR. BLOOMFIELD: Yes, you do, Dr. Gray, but I don't see any reason for two committees coming out with two sets of limits, even if they are consistent within themselves.

DR. GREENBURG: As a matter of fact, Mr. Chairman, the provision of a list of maximum allowable concentrations by the Committee on Codes is not providing the society with a code. It is just providing the society with a list of maximum allowable concentrations, and a code is something quite different from that.

It seems to me that if we desire maximum allowable limits, we get those from the existing committee set up for that purpose.

MR. BLOOMFIELD: As Mr. Brown told you, we are now working on a code which will be submitted to the Committee on Codes. Our Division has already prepared a rough draft of a very extensive code and not just allowable limits.

CHAIRMAN BREHM: The motion has been made and seconded to the effect that the Committee report on Industrial Hygiene Codes be adopted with the exception that its recommendation on maximum allowable limits be deleted—pending the submission of such allowable limits by the Committee on Threshold Limits.

MR. WITHERIDGE: As a member of the Committee on Codes, I wonder if the motion might be modified to state, instead of "pending" the submission of a report, that the list prepared by the Threshold Committee be "substituted" for the original list?

MR. MORSE: As another member of that Committee, I think that is what I said, did I not?

CHAIRMAN BREHM: Well, Gentlemen, I think the motion can be brought to a vote.

. . . The motion was put to a vote, and carried . . .

CHAIRMAN BREHM: The motion is carried. That disposes of our committee reports for the morning. We will now go into our second Executive Session.

. . . The meeting recessed at twelve o'clock . . .