PLAINTIFF'S
EXHIBIT
DOW-420j

RESUME'

Jack E. Peterson, P.E., Ph.D.
Certified Industrial Hygienist

November 10, 1998

Consulting Office:
PETERSON ASSOCIATES
2830 Via Viejas Oeste
Alpine, CA 91901
Phone: (619) 445-9668: FAX (619) 445-6257

QUALIFICATIONS IN BRIEF: Broad industrial, academic, and consulting experience in all areas of industrial hygiene. Emphasis on human inhalation toxicology of carbon monoxide and organic solvents and on the hazards of gases, vapors, and dusts and their control especially by engineering methods in chemical manufacturing plants, foundries, and metal-working operations. Experience in evaluating and controlling heat stress, ionizing radiation, noise, and air pollution; teaching about air pollution, toxicology, and industrial hygiene.

PROFESSIONAL OBJECTIVES: To evaluate and solve environmental and occupational health problems and to organize health conservation efforts of clients. To offer the best possible training and education in industrial hygiene/toxicology and air pollution.

EXPERIENCE: Currently consultant in industrial hygiene and toxicology. Appointment at the Medical College of Wisconsin as Clinical Professor of Preventive Medicine and at the University of Illinois as Visiting Professor in Occupational and Environmental Health Sciences.

August 1975 to June 1986

Half-time at Marquette University as Associate Professor of Civil Engineering until 1980 and half-time industrial hygiene and toxicology consultant. Professor and Visiting Professor in Occupational and Environmental Health Sciences, University of Illinois from 1977. Professor of Allied Health, University of Wisconsin–Parkside, 1984 to 1986.

June 1968 to August 1975

Completed a text, Industrial Health; helped to pilot the production of a unique small electrostatic precipitator; began consulting for Fred S. James & Co. and Briggs & Stratton. Joint appointment at Marquette University and the Medical College of Wisconsin, first as Assistant, then as Associate Professor of Civil Engineering and of Environmental Health Engineering. Completely responsible for planning and teaching courses on the principles of industrial hygiene/toxicology and community air pollution, one course each semester since 1969.

Responsible for the direction of several MS and doctoral candidates. Began research on small incinerator emissions with a grant from the Naulin Foundation in 1974.

Responsible for the design, plan, construction, and operation of two human inhalation exposure chambers and ancillary laboratory facilities. Interfaced an on-line computer to the analytical equipment for the chamber and wrote programs used to acquire, interpret, and summarize much of the toxicological data gathered.

August 1952 to August 1965

Environmental Health Engineer, Biochemical Research Laboratory, The Dow Chemical Company, Midland, Michigan.

Primary responsibility for the evaluation of health hazards in the preproduction stages of chemical manufacture and for assuring the use of appropriate controls during growth from the laboratory bench to full production. Evaluation and control of fumigation, heat stress, ionizing radiation, and noise hazards. Research on air pollution, on air sampling methods, ventilation (including laboratory hood design), and toxicology.

EDUCATION: B.S. in Chemical Engineering, Washington State College, 1951.

MS in Chemical Engineering, University of Michigan, 1952.

Ph.D. in Industrial Health, University of Michigan, 1968. Thesis: "Human Biothermal Strain in Relation to Environmental Stress Parameters.

HONORS AND AWARDS: "With honors" graduation in 1951.

Authorship award from the American Industrial Hygiene Association for the "Outstanding paper published in the American Industrial Hygiene Association Journal" in 1962 and again in 1970.

Henry F. Smyth, Jr. lecture and award from the American Academy of Industrial Hygiene, 1987.

Certified in "Comprehensive Aspects " by the American Board of Industrial Hygiene, 1973, by examination. Recertified, 1983, 1989, and 1995.

Byron A. Berg Award from the Wisconsin Section, AIHA, 1989.

Fellow of the American Industrial Hygiene Association, 1994.

Honorary Membership in the American Industrial Hygiene Association, 1996.

CONSULTANT TO: Briggs & Stratton, FMC, Transamerica, Fred S. James & Co., Dow Chemical, Globe Battery Division of Johnson Controls, National Institute for Occupa-

Products, Rexnord, Polyurethane Manufacturer's Association, Eli Lilly, Johnson & Johnson, Oscar Mayer, Freeman Chemical, Borden Chemical, International Harvester, General Motors, Ford, Chrysler, Titus Rubber, Miller Brewing, S.C. Johnson & Son, Triple E, Bostrom Division of UOP, Anderson Development, Sanitaire, Environmental Resources Management, Gartland Foundries, American Concrete Pipe, Fiat-Allis, Southwest Forest Industries, Crawford and Company, Wisconsin Telephone, Stauffer Chemical, Miller Compressing, Monsanto, several law and insurance firms and many others.

MEMBERSHIPS: ALPHA CHI SIGMA (National Professional Chemistry Fraternity), 1949 to present.

American Industrial Hygiene Association, 1956 to present; its Hygienic Guides Committee from 1963 to 1973; chairman of that committee from 1969 to 1973. Nominating Committee, 1983 to 1986.

Spray Coating Code Advisory Committee for the State of Wisconsin, 1969 to 1973. Chairman.

Chicago Section, American Industrial Hygiene Association, 1972 to 1991.

American Academy of Industrial Hygiene, 1973 to present. Councilor, 1975 to 1978. Continuing Education Committee, 1981 to 1986. Planning Committee, 1981, Joint Conference on Occupational Health. Accreditation Committee, 1984 to 1993, Co-chairman, 1984 to 1988, Chairman, 1988 to 1991, Secretary 1991 to 1993. Vice-President, AAIH, 1995; President-Elect, 1996; President, 1997; Past-President, 1998

Wisconsin Section, American Industrial Hygiene Association, 1979 to 1991. Its Board of Directors, 1979 to 1980. President, 1981.

New York Academy of Sciences, 1979 to 1996.

Engineering Control Technology Workshop Committee (NIOSH), 1981 to 1984. Chairman, 1983.

American Conference of Governmental Industrial Hygienists, 1985 to 1989 and 1991 to present (Affiliate member).

Yuma Pacific Southwest section of AIHA since 1987. President-Elect, 1991; President, 1992; Past-President, 1993; President-Elect, 1995; President, 1996; Past-President, 1997.

Related Accreditation Commission of the Accreditation Board for Engineering and Technology, 1987 to 1992.

Air & Waste Management Association 1991 to 1995.

American Society of Heating, Refrigerating & Air Conditioning Engineers 1991 to 1995.

Indoor Air International, 1992 to 1995.

Industrial Hygiene Roundtable, 1993 to 1998.

PUBLICATIONS

Jack E. Peterson, P.E. (Wisconsin), CIH, Ph.D.

1. Peterson, J.E., H.R. Hoyle and E.J. Schneider: "The Analysis of Air for Halogenated Hydrocarbon Contaminants by Means of Absorption on Silica Gel," *Am. Ind. Hyg. Assoc. Quart.* 17:429-33 (1956).

2. Peterson, J.E.: "An Approach to a Rational Method of Recommending Face Velocities for Laboratory Hoods," *Am. Ind. Hyg. Assoc. J.* 20:259-266 (1959).

3. Schneider, E.J., J.E. Peterson, H.R. Hoyle, E.H. Ode and E.B. Holder: "Correlation of Industrial Noise Exposures with Audiometric Findings," *Am. Ind. Hyg. Assoc. J.* 22:245-51 (1961).

4. Stewart, R.D., H.H. Gay, D.S. Erley, C.L. Hake and J.E. Peterson: "Human Exposure to Carbon Tetrachloride Vapor," *J. Occup. Med.* 3:586-90 (1961).

5. Stewart, R.D., H.H. Gay, D.S. Erley, C.L. Hake and J.E. Peterson: "Observations on the Concentrations of Trichloroethylene in Blood and Expired Air Following Exposure of Humans," *Am. Ind. Hyg. Assoc. J.* 23:167-70 (1962).

6. Peterson, J.E., R.A. Copeland and H.R. Hoyle: "Health Hazards of Spraying Polyurethane Foam Out-of-doors," *Am. Ind. Hyg. Assoc. J.* 23:345-52 (1962). ("Outstanding Paper" award.)

7. Peterson, J.E. and J.A. Peay: "Laboratory Fume Hoods and Their Exhaust Systems," *Air Condit. Heat Vent.* 63-72 (May 1963).

8. Peterson, J.E.: "Air Conditioning of Research and Test Facilities: Contamination Control," *Am. Soc. Heat Refrig. Air Condit. Eng.* 53-56 (September 1964).

9. Peterson, J.E., H.R. Hoyle and E.J. Schneider: "Applications of Computer Science to Industrial Health," *Am. Ind. Hyg. Assoc. J.* 27:180-85 (1966).

10. Peterson, J.E.: *Human Biothermal Strain in Relation to Environmental Stress Parameters*, Ph.D. Thesis, U. of Michigan (1968). (Available from Xerox University Microfilms, 300 N. Zeeb Rd., Ann Arbor, MI 48106).

11. Stewart, R.D., J.E. Peterson, E.D. Baretta, R.T. Bachand, Jr., M.J. Hosko and A.A. Herrmann: "Experimental Human Exposure to Carbon Monoxide," *Arch. Environ. Health* 21:154-64 (1970).

12. Peterson, J.E. and R.D. Stewart: "Absorption and Elimination of Carbon Monoxide by Inactive Young Men," *Arch. Environ. Health* 21:165-71 (1970).

13. Peterson, J.E.: "Postexposure Relationship of Carbon Monoxide in Blood and Expired Air," *Arch. Environ. Health* 21:172-73 (1970).

14. Stewart, R.D., T.N. Fisher, J.E. Peterson, M.J. Hosko, E.D. Baretta, H.C. Dodd, P.E. Newton, and A.A. Herrmann: "Experimental Human Exposure to Carbon Monoxide," *Proceedings of the First Annual Conference on Environmental Toxicology, 9-11 Sep-*

tember, 1970, Aerospace Medical Research Laboratory, Publication No. AMRL-TR-70-102, pp. 49-75 (1970).

15. Peterson, J.E.: "Experimental Evaluation of Heat Stress Indices," *Am. Ind. Hyg. Assoc. J.* 31:305-17 (1970). ("Outstanding Paper" award.)

16. Stewart, R.D., P.E. Newton, M.J. Hosko, J.E. Peterson and J.W. Mellender: "The Effect of Carbon Monoxide on Time Perception, Manual Coordination, Inspection, and Arithmetic, p. 29-60 in *Behavioral Toxicology*, B. Weiss and V.G. Laties, eds. (Plenum Press, New York) (1972).

17. Stewart, R.D., T.N. Fisher, M.J. Hosko, J.E. Peterson, E.D. Baretta and H.C. Dodd: "Carboxyhemoglobin Elevation After Exposure to Dichloromethane," *Science* 176:295-96 (1972).

18. Stewart, R.D., T.N. Fisher, M.J. Hosko, J.E. Peterson, E.D. Baretta and H.C. Dodd: "Experimental Human Exposure to Methylene Chloride," *Arch. Environ. Health* 25:342-48 (1972).

19. Peterson, J.E. and R.D. Stewart: "Human Absorption of Carbon Monoxide from High Concentrations in Air," *Am. Ind. Hyg. Assoc. J.* 33:293-97 (1972).

20. Stewart, R.D, J.E. Peterson, M.J. Hosko, E.D. Baretta, H.C. Dodd, P.E. Newton, and A.A. Herrmann: "Effect of Carbon Monoxide Upon Human Performance," *Transactions of the Rochester Symposium on Behavioral Psychology* (1972).

21. Stewart, R.D, J.E. Peterson, T.N. Fisher, M.J. Hosko, E.D. Baretta, H.C. Dodd and A.A. Herrmann: "Experimental Human Exposure to High Concentrations of Carbon Monoxide," *Arch. Environ. Health* 26:1-8 (1973).

22. Stewart, R.D., P.E. Newton, M.J. Hosko and J.E. Peterson: "Effect of Carbon Monoxide on Time Perception," *Arch. Environ. Health* 27:155-60 (1973).

23. Peterson, J.E.: "Principles of Controlling the Occupational Environment," Chapter 35, *The Industrial Environment--Its Evaluation and Control*, pp 511-17, NIOSH, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (1973).

24. Stewart, R.D., C.L. Hake and J.E. Peterson: "Degreaser's Flush," *Arch. Environ. Health* 29:1-5 (1974).

25. Stewart, R.D., C.L. Hake and J.E. Peterson: "Use of Breath Analysis to Monitor Trichloroethylene Exposures," *Arch. Environ. Health* 29:6-13 (1974).

26. Stewart, R.D., C.L. Hake, J.E. Peterson, H.V. Forster, P.E. Newton, R.J. Soto and A.J. Lebrun: "Development of Biologic Standards for Trichloroethylene," *Behavioral Toxicology*, Xintaras, Johnson and deGroot, eds pp 81-91, NIOSH, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (1974).

27. Stewart, R.D., C.L. Hake, A.J. Lebrun, J.H. Kalbfleisch, P.E. Newton, J.E. Peterson, H.H. Cohen, R. Struble and K.A. Busch: "Effects of Trichloroethylene on Behavioral Performance Capabilities," *op. cit.* pp 96-129.

28. Stewart, R.D., J.E. Peterson, C.L. Hake, A.J. Lebrun, and P.E. Newton,: "Measurement of Physiological and Behavioral Responses in a Controlled-Environment Chamber," *op. cit.* pp 361-375.

29. Stewart, R.D., J.E. Peterson, P.E. Newton, C.L. Hake, M.J. Hosko, A.J. Lebrun and G.M. Lawton: "Experimental Human Exposure to Propylene Glycol Dinitrate," *Toxicol. Appl. Pharmacol.* 30:377-95 (1974).

30. Stewart, R.D., C.L. Hake, H.V. Forster, A.J. Lebrun, J.E. Peterson and A. Wu: *Tetrachloroethylene: Development of a Biologic Standard for the Industrial Worker by Breath Analysis*, NIOSH Report #NIOSH-MCOW-ENVM-MC-74-6, National Institute for Occupational Safety and Health, Cincinnati, OH (1975), 170 pages.

31. Stewart, R.D., C.L. Hake, H.V. Forster, A.J. Lebrun, J.E. Peterson and A Wu: *Methylene Chloride: Development of a Biologic Standard for the Industrial Worker by Breath Analysis*, NIOSH Report #NIOSH-MCOW-ENVM-MC-74-9, National Institute for Occupational Safety and Health, Cincinnati, OH (1975), 86 pages.

32. Stewart, R.D., C.L. Hake, H.V. Forster, A.J. Lebrun, J.E. Peterson and A. Wu: *Toluene: Development of a Biologic Standard for the Industrial Worker by Breath Analysis*, NIOSH Report #NIOSH-MCOW-ENVM-MC-75-3, National Institute for Occupational Safety and Health, Cincinnati, OH (1975), 118 pages.

33. Stewart, R.D., P.E. Newton, M.J. Hosko, J.E. Peterson and J.W. Mellender: "The Effect of Carbon Monoxide on Time Perception," *Behavioral Toxicology*, Weiss and Laties, eds, Chapter 2, pp 29-60, Plenum Press, New York (1975).

34. Peterson, J.E. and R.D. Stewart: "Predicting the Carboxyhemoglobin Levels Resulting from Carbon Monoxide Exposures," *J. Appl. Physiol.* 39:633-38 (1975).

35. Peterson, J.E.: *Industrial Health*, Prentice-Hall, Englewood Cliffs, NJ (1977), 347 pages.

36. Peterson, J.E.: "Modeling the Uptake, Metabolism, and Excretion of Dichloromethane by Man," *Am. Ind. Hyg. Assoc. J.*39:41-47 (1978).

37. King, W.R. and J.E. Peterson: "Phosphorus Vapor Exposure in Phosphorus Using Plants" *Am. Ind. Hyg. Assoc. J.* 39:922-27 (1978).

38. Hermann, E.D. and J.E. Peterson: "Evaluation," *Fundamentals of Industrial Hygiene*, 2nd ed., Julian B. Olishifski, ed. Chapter 16, pp 501-15, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611 (1979).

39. Peterson, J.E.: "Calculation of Vapor Penetration in Charcoal Sampling Tubes," *Am. Ind. Hyg. Assoc.* 41:450-51 (1980).

40. Peterson, J.E.: "Heat Stress," *Clinical Medicine*, John A. Spittell, Jr., Editor-in-Chief, Chapter 57, vol. 12, R.D. Stewart, ed., Harper & Row, Publishers, Philadelphia, (1981).

41. Peterson, J.E.: "Air Pollution," *op. cit.*, Chapter 77.

42. Peterson, J.E.: "Iodine and Compounds," *ILO Encyclopaedia of Occupational Health and Safety*, third (revised) edition), p. 1153, International Labour Office, Geneva, Switzerland (1983).

43. Peterson, J.E.: "Painting and Coating," *Industrial Hygiene Aspects of Plant Operations*, vol. 2, Chapter Fifteen, Cralley and Cralley, eds, John E. Mutchler Associate Ed., Macmillan Publishing Company (1984).

44. Peterson, J.E.: "Lead-Acid Storage Battery Manufacturing," *op. cit.* Chapter Thirty-Two.

45. First, M.W., C.E. Billings, R.L. Harris, J.E. Peterson, and T.B. Leamon: *Engineering Control of Occupational Safety and Health Hazards: Recommendations for Improving Engineering Practice, Education, and Research*, U.S. DHHS, Centers for Disease Control, NIOSH, Division of Training and Manpower Development (January 1984).

46. Peterson, J.E.: "Industrial Gases and Vapors," *Toxicology: Principles & Practice*, Volume 2, Chapter 5, Frederick Sperling, Ed., John Wiley & Sons, Inc. (1984).

47. Peterson, J.E.: "Selection and Arrangement of Process Equipment," *Industrial Hygiene Aspects of Plant Operations*, vol. 3, Chapter Five, Cralley and Cralley, eds. Knowlton J. Caplan Associate Ed., Macmillan Publishing Company (1985).

48. Peterson, J.E.: "The Philosophy of Occupational Safety and Health Regulation," *Am. Ind. Hyg. Assoc. J.* 49:137-142 (1988). (Henry F. Smyth, Jr. Award Lecture)

49. Peterson, J.E.: "Use and Abuse of Ambient Air Quality Standards to Evaluate Indoor Environments," *Healthy Buildings '88, Volume 3, Systems, Materials and Policies for Healthier Indoor Air*, pp. 687-695, Birgitta Berglund and Thomas Lindvall, eds., Swedish Council for Building Research, Stockholm, Sweden (1988).

50. Peterson, J.E.: "Selection and Arrangement of Process Equipment," Chapter 5, *In-plant Practices for Job Related Health Hazard Control vol. 2, Engineering Aspects*, Lester V. Cralley and Lewis J. Cralley, eds, John Wiley & Sons, Inc., New York (1989).

51. Peterson, J.E. and Lawrence W. Keller: "Painting and Coating," *op. cit.*, Chapter 23.

52. Peterson, J.E.: *Industrial Health, 2nd Revised Edition*, American Conference of Governmental Industrial Hygienists, Inc., 6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211-4438, (1991). 350 pages.

53. Peterson, J.E.: Limitations of Ambient Air Quality Standards in Evaluating Indoor Environments, *Am. Ind. Hyg. Assoc. J.* 53:216-220 (1992).

54. Shusterman, Dennis J. and Jack E. Peterson, eds.: De Novo Toxicants: Combustion Toxicology, Mixing Incompatibilities, and Environmental Activation of Toxic Agents, *Occup. Med. State Art Rev.* 8:3 July-Sept. (1993).

55. Peterson, J.E.: Toxic Pyrolysis Products of Solvents, Paints, and Polymer Films, *Occup. Med. State Art Rev.* 8:533-547 (1993).

PETERSON ASSOCIATES

INDUSTRIAL HYGIENE CONSULTANTS

2830 VIA VIEJAS OESTE ALPINE, CA 91901
PHONE (619) 445-9668 FAX: (619) 445-6257

February 17, 1998

To: Whom it may concern

From: Jack E. Peterson, P.E. (Wisconsin), CIH, Ph.D.

Subject: CONSULTATION FEES

BASE RATE:
J.E. Peterson: $400 per hour
Associates: $115 to $150 per hour

EXPERT WITNESS TESTIMONY (deposition or trial):
J.E. Peterson: $400 per hour (half day minimum)
Associates: Usually unavailable

TRAVEL:
Same as the base rate

A bid will be made on request for any job having an anticipated duration of more than one week. For expert witness work, a retainer of $3200 is requested. Work done and costs incurred will be charged against the retainer.

Commitment of time will result in a fee for that time even if the job is postponed or canceled by the client unless such arrangements are made at least two weeks in advance.

An invoice will be sent soon after a work phase is complete or at month's end; prompt payment (within 30 days) is essential. Reminders will include a surcharge of 1.5% per month (18% per year), compounded monthly.