

PHILLIP J. WALSH

Education

Ph.D., 1968, University of North Carolina, Environmental Sciences - major, Physics - minor.

M.S., 1965, University of North Carolina, Health Physics - major, Physics - minor.

B.S., 1964, North Carolina State University, Nuclear Physics - major, Mathematics - minor.

Positions Held

H&R Technical Associates, Inc.
Senior Environmental Health Scientist

Oak Ridge National Laboratory
Director, Health and Safety Research Division

Oak Ridge National Laboratory
Head, Health Studies Section
Health and Safety Research Division

Oak Ridge National Laboratory
Group Leader, Health Effects and Epidemiology
Health and Safety Research Division

Oak Ridge National Laboratory
Research Staff Member, Environmental Sciences Division

National Institutes of Health
Radiation Physicist, Environmental Biophysics Branch
National Institute of Environmental Health Sciences

University of North Carolina
Adjunct Assistant Professor, Radiological Hygiene

Experience

Contributor to hazard analyses, safety assessments, safety studies, safety analyses, facility safety evaluations, health and safety plans and risk assessments for low level and hazardous waste sites, environmental control systems and production processes.

Contributor to risk assessments under RCRA, CERCLA and TSCA.

Contributor to DOE Workshop on Radon Daughter Dosimetry and risk.

Contributor to the Environmental Impact Assessment Plan for the National Aerospace Plane (NASP).

Member of H&R team with CHM Hill to provide an assessment of Martin Marietta Energy Systems environmental monitoring program.

Major reviewer of EPA's proposed air quality regulations for radionuclides.

EPA Workshop participant on Florida Areawide Phosphate EIS.

Member of H&R Team to develop and apply chemical and radiation hazard screening methodology.

General technical support to H&R staff on radiological and chemical hazard and risk.

Co-Chairman, Seventh ORNL Life Sciences Symposium, Biological Indicators: Exposure and Effects.

Oak Ridge Interim Action Committee, Oak Ridge Task Force. Derived interim action guidelines for areas contaminated with mercury.

Division Coordinator, Fossil Energy Technology Environmental Program. Areas included advanced instrumentation development and risk assessment.

Program Manager, Health and Environmental Effects Document on Direct Coal Liquefaction. The project scope was a comprehensive health and ecological risk assessment.

ORNL "Wizards" group - R&D needs for energy technologies.

Co-Chairman, Third ORNL Life Sciences Symposium on Health Risk Analysis. Proceedings editor.

ONEP Working Group, Health Effects of Conventional and Alternative Energy Technologies. Contributed to report.

ORNL Speaker's Bureau. Lectured on health risks associated with energy technologies.

ORAU Lecturer. Lecture on radon health risks.

Division Coordinator, Life Sciences in Support of Synthetic Fuels Program.

Steering Committee, ORNL Office of Environmental Policy Analysis.

Panel on Chemical Dosimetry (Chairman), DOE Occupational Health Research Planning. Contributed to report.

Project Group of Federal Interagency Task Force on Environmental Cancer, Heart and Lung Disease. Contributed report that was published in open literature.

Federal Interagency Ad Hoc Task Force on Indoor Air Pollution. Contributed main report.

EPA Workshop on Environmental Risk Assessments for Synfuels. Contributed to report.

EPA Workshop on Transport and Fate of Toxic Chemicals in the Environment, Conservation Foundation. Contributed to report.

EPA Workshop on Exposure Assessment, Norfolk, Virginia. Contributed to report.

Federal/state advisory panel on Grand Junction remedial action program-related to uranium mill tailings used for construction purposes. Helped develop initial remedial action guidelines.

Second NIEHS Task Force on research needs in Environmental Health Sciences. Contributed to report.

Committee on materials of the federal council on science and technology; materials R&D needs for nuclear energy. Contributed to two reports.

Federal Interagency Uranium Mining Radiation Review Group-related to radiation standards for uranium miners. Contributed to report.

Selected Publications and Technical Reports

P. J. Walsh, (1991). Radionuclides in Foods: Putting the Risk in Perspective. In: Symposium on Radionuclides in Agricultural Products. Orlando, Florida.

L. C. Waters, R. L. Schenley, B. A. Owen, P. J. Walsh, et al., (1989). Biotesting of Wastewater: A Comparative Study Using the Salmonella and CHO Assay Systems. Environmental and Molecular Mutagenesis 14, 254-263.

T. D. Jones and P. J. Walsh (1990). Cancer Models for Benzo(a)pyrene, Benzidine, Benzene and Chromium. ASCE Journal of Energy Engineering.

T. D. Jones, P. J. Walsh, A. P. Watson, B. A. Owen, L. W. Barnhouse, and D. A. Sanders, (1988). Chemical Scoring by a Rapid Screening of Hazard (RASH) Method. Risk Anal. 8, 99-118.

- T. D. Jones and P. J. Walsh, (1985). Animal Studies and Prediction of Human Tumors can be Aided by Graphical Sorting of Animal Data. *Amer. J. Ind. Med* 7, 185-217.
- T. D. Jones and P. J. Walsh, "Dose-Response Models of Neoplastic Risk from B(a)P, Benzene, Benzidine, and Chromium," *Journal of Industrial Medicine*, 1985.
- T. D. Jones, P. J. Walsh, and E. A. Zeighami, "Permissible Concentrations of Chemicals in Air and Water Derived from RTECC A RASH Chemical Scoring System," *Journal of Toxicology and Industrial Health*, Vol. 1(4): 213-234 (1985).
- P. J. Walsh, C. S. Dudley, and E. D. Copenhaver (Eds.), Indoor Air Quality, CRC Press, January 1984.
- P. J. Walsh and W. M. Lowder, "Fadon" chapter in Indoor Air Quality, CRC Press, January 1984.
- T. D. Jones, G. D. Griffin, and P. J. Walsh, (1983). A Unifying Concept for Carcinogenic Risk Assessments. *J. Theor. Biol.* 105, 35-61.
- A. P. Watson, E. L. Etnier, and P. J. Walsh, "Health Implications of Conventional Energy Production and Use," Proceedings of 3rd International Conference on Alternative Energy Sources, December 15-17, 1980, Miami Beach, Florida, 1983.
- C. S. Dudley, P. J. Walsh, T. D. Jones, E. E. Calle, and G. D. Griffin, "On the Use of Relative Toxicity for Risk Estimation," in Proceedings of EPA Symposium on Application of Short-Term Tests in the Analysis of Complex Environmental Mixtures, January 25-28, Chapel Hill, North Carolina, Eds. Waters, Sandhu, Lewtas, Claxton, Chernoff, and Nesnow, Plenum Publishing Corporation, 1983.
- S. Dudley, P. J. Walsh, and B. A. Owen, "On the Application of Short-Term Biotests to Health Risk Analysis of Fluorinated Compounds," in Proceedings of the Third International Symposium on Gaseous Dielectrics, March 7-11, 1982, Knoxville, Tennessee, Ed. L. G. Christophorou, Pergamon Press, 1982.
- P. J. Walsh, T. D. Jones, G. D. Griffin, C. S. Dudley, E. E. Calle, and C. E. Easterly, "Risk Assessment Approaches: General Definitions, Limitations, and Research Needs," Journal of Environmental Sciences and Health A17(4): 541-552, 1982.

- C. B. Richmond, P. J. Walsh, and E. D. Copenhaver (Eds.), Health Risk Analysis, Proceedings of Third ORNL Life Sciences Symposium, Franklin Institute Press, Philadelphia, Pennsylvania, 1981.
- P. J. Walsh, E. L. Ffner, and A. P. Watson, "Health and Safety Implications of Alternative Energy Technologies. III. Fossil Energy," Environmental Management 5(6): 483-494, 1981. Springer-Verlag New York, Inc., Secaucus, New Jersey.
- P. J. Walsh, "Ionizing Radiation and the Nuclear Reactor," SciQuest, pp. 16-21, July/August 1980.
- G. D. Griffin, C. E. Easterly, and P. J. Walsh, "Assessment of Potential Health Effects of Dielectric Gases," in Gaseous Dielectrics II, Ed. L. G. Christophorou, Pergamon Press, New York, pp. 439-448, 1980.
- P. J. Walsh, "Dose Conversion Factors for Radon Daughters," Health Physics, Vol 36, pp. 601-609, May 1979.
- E. M. Rupp, D. C. Parzyck, P. J. Walsh, et al., "A Composite Hazard Index for Assessing Limiting Exposures to Environmental Pollutants-Application through a Case Study," Envr. Sci. Tech. 12: 802-807, 1978.
- P. J. Walsh, C. G. Killough, and P. S. Rohwer, "A Composite Hazard Index for Assessing Limiting Exposures to Environmental Pollutants: Formulation and Derivation," Envr. Sci. Tech. 12: 799-802, 1978.
- P. J. Walsh, "Radiation Dose to the Respiratory Tract Due to Inhalation of cigarette Tobacco Smoke," Proceedings of Symposium on Public Health Aspects of Radioactivity in Consumer Products, Ed. A. A. Moghissi, Georgia Institute of Technology, February 2-4, 1977.
- P. J. Walsh and P. E. Hamrick, "Radioactive Materials-Determinants of Dose to the Respiratory Tract," in Handbook of Physiology, Section 9: Reactions to Environmental Agents, pp. 233-242, American Physiological Society, Bethesda, Maryland, 1977.
- P. J. Walsh, "Dose to the Tracheobronchial Tree Due to Inhalation of Radon Daughters," in Proceedings of the Tenth Midyear Topical Symposium of the Health Physics Society, pp. 192-193, Saratoga Springs, New York, October 11-13, 1976.
- P. E. Hamrick and P. J. Walsh, "Environmental Radioactivity and the Lung," Environmental Health Perspectives 9: 33-52, 1974.

- P. J. Walsh, P. E. Hamrick, and N. Underwood, "Application of X-Ray Emission Spectrometry to the Determination of Mercury in Biological Samples," Review of Scientific Instruments 44, No. 8: 1019-1020, 1973.
- P. J. Walsh and D. I. McRae, "Depth-dose Curves for Alpha Particles from Area Sources and Point Sources," Health Physics 20: 352-353, 1970.
- P. J. Walsh and N. Underwood, "Energy Loss of Heavy Charged Particles," Health Physics 18: 561-565, 1970.
- P. J. Walsh, "Stopping Power and Range of Alpha Particles," Health Physics 17: 312-316, 1970.
- P. J. Walsh, "Radiation Dose to the Respiratory Tract of Uranium Miners -- A Review of the Literature," Environmental Research 3: 14-36, 1970.

Technical Reports

- I. R. Glass, T. D. Jones, C. E. Easterly, and P. J. Walsh, "Use of Short Term Test Systems for the Prediction of Hazard Represented by Potential Chemical Carcinogens." ORNL/TM-11413, 1990.
- T. D. Jones, P. J. Walsh, et al., "A Guidance Document for Prioritizing Supplemental Monitoring Around Synfuels Facilities." ORNL/FETEP 15. (1986).
- E. D. Copenhaver, P. J. Walsh, et al., "Environmental Health and Safety Assessments for Direct Coal Liquefaction: Volume 7a. Potential Health Effects." ORNL/FETEP 7. (1985).
- C. S. Dudley, E. D. Copenhaver, and P. J. Walsh. Health and Environmental Effects Document on Direct Coal Liquefaction - 1983, ORNL/TM-9287, October 15, 1984.
- P. J. Walsh and W. M. Lowder, Assessing the Risk from exposure to Radon in Dwellings, ORNL/TM-8824, 1983.
- A. J. Witten, F. C. Kornegay, D. B. Hunsaker, E. C. Long, R. D. Sharp, P. J. Walsh, E. A. Zeighami, J. S. Gordon, and W. L. Lin, The Implication of a Stochastic Approach to Air Quality Regulations. ORNL/TM-8440, 1982.
- C. S. Dudley and P. J. Walsh (Eds.), Report of Ad Hoc Task Force on Indoor Air Pollution, ORNL/TM-7679, 1981.

P. J. Walsh, E. D. Copenhaver, E. E. Calle, C. S. Dudley,
G. D. Griffin, A. P. Watson, J. Farthing, J. W. Parue, C. C.
Travis, J. P. Witherspoon, L. Sannathanan, and R. H. Busch,
The Northeast Regional Environmental Impact Study:
Reference Document for the Health Effects of Air Pollution,
ANL/ES 121, November 1981.

J. Dobson, P. J. Walsh, G. D. Griffin, et al., "Assessment of
Environmental Parameters of Small Fixed Bed Coal Gasifiers
as Industrial Fuel," ORNL/TM-7361, 1980.

D. E. Dunning, S. R. Bernard, G. G. Killough, P. J. Walsh,
and J. C. Pleasant, "Estimates of Dose Equivalent to 22
Target Organs for Radionuclides Occurring in Routine
Releases from Nuclear Fuel Cycle Facilities," Vol. II,
ORNL/NUREG/TM-190, June 1978.

P. J. Walsh, et al., "CUMEX-A Cumulative Hazard Index for
Assessing Limiting Exposures to Environmental Pollutants,"
ORNL/TM-5263, April 1977.

P. J. Walsh, et al., "Chemical Dosimetry," Proceedings of the
DOE-OHER Workshop on Monitoring and Dosimetry in an
Occupational Health Research Program for Synfuel
Technologies. CONF-8405150, National Technical Information
Service, Springfield, Virginia.

P. J. Walsh, "Problems in Conducting Hazard Assessments for
Complex Mixtures with Emphasis on Biological Screening
Systems," Proceedings of EPA Workshop on Water Quality-Based
Toxic Reduction Program, Cincinnati, Ohio, December 3-4,
1984.

P. J. Walsh, T. D. Jones, G. D. Griffin, C. S. Dudley,
B. S. Hass, and E. D. Copenhaver, "Evaluation of Hazard
Assessment Methodologies and Validation by Simulation,"
Report submitted to Corvallis Environmental Research
Laboratory, EPA, 1981.

P. J. Walsh, A. P. Watson, E. L. Etnier, et al., "Health
Implications of Unconventional Sources of Energy," Report to
ONEP Working Group, ORNL, January 1980.

P. J. Walsh, et al., Input to Environmental Impact
Statements: SRC I and SRC II, Memphis Gas and Light,
Illinois Coal Gasification Group, and Conoco, 1980.

P. J. Walsh, EPA Workshop on Chemical Exposure Assessment,
Elkridge, Maryland, June 5-7, 1979.

P. J. Walsh, Second NIEHS Task Force on Research Needs in
Environmental Health Sciences, Chapter 5: Physical Factors,
Ionizing Radiation, January 1977.

P. J. Walsh, "Relationship of Experimental to Empirical Findings and Theoretical Dose Calculations," Interagency Uranium Mining Radiation Review Group, Report of Subcommittee 1.B, Chapter III, 1971.

Professional Societies

American Association for the Advancement of Science
Health Physics Society
Society for Risk Analysis
Sigma Pi Sigma
Sigma Xi
Delta Omega-Public Health Honor Society

P. J. Walsh has broad training and experience spanning physics, health physics, industrial and air hygiene, public health, epidemiology, inhalation toxicology, biophysics and biomedical engineering. He has more than 80 publications in these research areas. He has over eight years' research and management experience at the National Institute of Environmental Health Sciences. The Institute's mission is the long-term, low level effects (e.g., carcinogenesis, mutagenesis, and teratogenesis) of exposure to chemical, physical, and biological environmental pollutants. He also has over ten years' research and management experience at Oak Ridge National Laboratory (ORNL). He built the Health Effects and Epidemiology Group which he headed for over four years. The group has two primary goals: (1) to develop and apply comprehensive methodologies to perform human health risk analysis for toxic materials associated with all energy technologies or other technological activities in order to prioritize research and health protection activities, and (2) to conduct collaborative supporting research at human, animal, cellular, and subcellular levels focused on methods for extrapolation from all levels of biological organization to perform human health risk analysis. He headed the Health Studies Section of the Health and Safety Research Division at ORNL for four years. The Health Studies Section develops advanced instrumentation and methods for chemical detection and biomonitoring; develops new radiopharmaceuticals for nuclear medicine applications; conducts epidemiological studies; develops comprehensive methods for health effects assessment; conducts field studies in occupational and domestic settings; and conducts experimental biological studies in support of analytic health hazard assessment. He served as Interim Director of the Health and Safety Research Division at ORNL for one year. The division's mission is to improve knowledge of detection and bioeffects of technology-related physical and chemical agents with emphasis on human health. Major areas of research include: health risk analysis and epidemiology; instrumentation for biological indicators and pollutant detection; nuclear medicine; properties of dielectrics; radiation dosimetry; radiological, chemical and surface physics; field surveys of chemicals and radionuclides and pollutant transport modeling. He is currently a Senior Environmental Health Scientist with H&R Technical Associates, Inc., where he provides technical support to H&R staff on radiological and chemical hazards and risk. He has recently provided expertise on radiation dosimetry and risk to DOE, EPA and Martin Marietta Energy Systems. Dr. Walsh is an international expert on radon daughter dosimetry and risk and is currently working with the Florida Institute of Phosphate Research and DOE to initiate new research directions for environmental radon risk determinations.