

ARGONNE NATIONAL LABORATORY

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 FONNER/GILBERT/BURNS
 (Dimsted)/FF

August 13, 1984

Robert L. Fonner, Esq.
 Office of Executive Legal Director
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

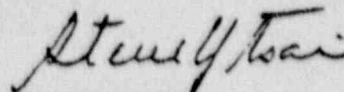
Dear Mr. Fonner:

Mr. W. Nixon recently sent me a set of the contentions that have been admitted for the ASLB hearings for the decommissioning of the Kerr-McGee West Chicago facility. He requested that we identify a witness or witnesses for each contention and provide you with a resume and synopsis of area of testimony for each witness.

Enclosed please find the requested information. As you may be aware, some ANL staff members who were involved in the preparation of the Final Environmental Statement (FES) for the project are no longer employed at the Laboratory. Therefore, some of the potential witnesses whom we have preliminarily identified based on their areas of expertise are relatively new to the project.

Mr. Nixon indicated that at this time our efforts should be directed solely at becoming familiar with the contentions and the FES. It is our understanding that further NRC instructions will be provided later as to when and how our testimony should be prepared for the hearings. If you should have any questions about the enclosed information, please let me know.

Sincerely,



Steve Y. Tsai
 Kerr-McGee Project Leader
 Environmental Research Division

SYT:mz

Encl.

cc: W. A. Nixon, NRC

P. A. Benioff
 A. J. Dvorak
 T. L. Gilbert
 P. F. Gustafson
 R. W. Vocke

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 PDR FOIA
 LASHB9-386

PDR
 U.S. DEPARTMENT OF ENERGY

THE UNIVERSITY OF CHICAGO

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Environmental Research Division
Argonne National Laboratory

Kerr-McGee West Chicago Project

Name of Potential Witness

Dr. Paul A. Benioff
Chemist

Synopsis of Area of Testimony

Analysis of organic and inorganic contaminants in waste; Evaluation of potential effect of organic compounds on clay liner.

Dr. Thomas L. Gilbert
Senior Physicist

Assessment of radiological impacts and the need for monitoring program; Evaluation of radioactivity in building rubble and sediment load; Estimate of radiation dose.

Dr. Steve Y. Tsai
Hydrologist

Analysis of surface- and ground-water quality; prediction of long-term contaminant migration in water; Evaluation of ground-water monitoring program.

PAUL BLNIOFF

ENVIRONMENTAL RESEARCH DIVISION

Chemist

EDUCATION:

A.B., 1951 University of California, Berkeley
 Botany

Ph.D., 1959 University of California, Berkeley
 Nuclear chemistry

EMPLOYMENT HISTORY:

1952-1954 Tracerlab, Inc., Richmond, CA
 Radiochemist

1960 Weizmann Institute of Science, Israel
 Postdoctoral (physics)

1961 Niels Bohr Institute, Denmark
 Postdoctoral (physics)

1961-present Argonne National Laboratory
 Chemistry Division
 Assistant chemist, 1961-1972
 Chemist, 1972-1978
 Environmental Impact Studies Division
 Chemist, 1978-1983
 Environmental Research Division
 Chemist, 1983-

EXPERIENCE:

Nuclear and Theoretical Chemistry

Experience includes: (1) theoretical and experimental research on simple nuclear reactions at high energies; and (2) theoretical research in computational chemistry, including energy levels, minimum energy configurations and minimum energy reaction pathways.

Environmental Impact Analysis

Professional experience includes: (1) analysis of technical engineering and hazardous chemical dispersion for large scale battery industry needed to support a large fleet of electric vehicles; (2) analysis of source terms for and environmental fates of some chemicals in commerce for the EPA; and (3) characterization of source terms and analysis of environmental impacts for hazardous chemical contaminants for several sites in the U.S. DOE remedial action program.

PROFESSIONAL SOCIETIES:

Weizmann Fellow 1961
Phi Beta Kappa
Sigma Xi
American Association for the Advancement of Science
American Physical Society

SELECTED PUBLICATIONS:

Over 50 publications on problems in nuclear and theoretical chemistry, on foundational problems in mathematical physics and quantum mechanics, on quantum mechanical models of computers, and on aspects of environmental assessment. Representative examples of environmental assessments are listed below.

Health and Environmental Effects Document for Batteries--1982: The Lead/Acid and Zinc/Halogen Batteries. ANL/ES-129. Prepared by Argonne National Laboratory for Office of Energy Research, U.S. Department of Energy, September 1983.

Assessment of the Environmental Effects of Chlorobenzenes: Technical Support Document. Prepared by Argonne National Laboratory for the U.S. Environmental Protection Agency, June 1983.

Draft Environmental Statement Related to Operation of the Wolf Creek Generating Station. NUREG-0878. Prepared by Argonne National Laboratory for U.S. Nuclear Regulatory Commission, January 1982. (Contribution - description of nonradioactive waste management system and impact on water quality.)

Environmental Fate and Ecological Effects of Chlorinated Paraffins. Prepared by Argonne National Laboratory for Office of Pesticides and Toxic Chemicals, U.S. Environmental Protection Agency, April 1981.

Environmental Fate and Ecological Effects of Toluene. Prepared by Argonne National Laboratory for Office of Pesticides and Toxic Substances, U.S. Environmental Protection Agency, October 1981.

Environmental Fate and Ecological Effects of Xylene. Prepared by Argonne National Laboratory for Office of Pesticides and Toxic Substances, U.S. Environmental Protection Agency, November 1981.

Health and Environmental Effects Document for Batteries - 1981: The Zinc/Halogen Batteries. ANL/ES-119. Prepared by Argonne National Laboratory for Office of Energy Research, U.S. Department of Energy, November 1981.

THOMAS L. GILBERT

ENVIRONMENTAL RESEARCH DIVISION

Senior Physicist

EDUCATION:

B.S., 1944	California Institute of Technology, Pasadena Physics
Ph.D., 1956	Illinois Institute of Technology, Chicago Theoretical physics

EMPLOYMENT HISTORY:

1944-1956	Armour Research Foundation, Chicago, IL Research assistant, 1944-1946 Physicist, 1947-1956
1956-present	Argonne National Laboratory Solid State Science Division Assistant physicist, 1956-1959 Physicist, 1959-1976 Senior physicist, 1976-1979 Environmental Impact Studies Division Risk analyst, 1979-1981 Project leader, 1981-1983 Environmental Research Division Project leader, 1983-

EXPERIENCE:

Environmental Research and Assessment

Experience in a variety of areas in environmental research, including: (1) pathway analyses and assessments for radiological impacts; (2) comparative risk analysis; (3) analysis of issues involved in establishing radiological standards and criteria; (4) project leadership for environmental impact statements.

Theoretical Chemical and Condensed Matter Physics

Experience and accomplishments in basic theoretical research in chemical physics and condensed-matter physics include: (1) calculations for clarifying and interpreting the structure and properties of atoms, molecules, and defect centers in crystals; (2) development of the soft-sphere model for closed-shell interatomic interactions; (3) development of the Adams-Gilbert equation for calculating localized electronic structures in molecules and solids; and (4) development of the Gilbert equation for anomalous damping of magnetization fields in ferromagnets; (5) definitive analysis of anomalous rotational damping in ferromagnetic materials.

EXPERIENCE (Cont'd):

Applied Physics

Experience in applied theoretical physics covers: (1) mathematical modeling of complex systems; (2) mathematical physics; (3) analysis of noise in magnetic sound recorders; and (4) analysis of light scattering by aerosols.

PROFESSIONAL SOCIETIES:

American Physical Society
 Health Physics Society
 American Association for the Advancement of Science
 Society for Risk Analysis
 Sigma Xi
 Tau Beta Pi

SELECTED PUBLICATIONS:

Over 50 publications in environmental research and assessment, chemical and solid-state physics, applied physics, and philosophy; representative examples are listed below.

Gilbert, T.L. and C. Luner. Analysis of Alternatives for Greater-Confinement Disposal of Low-Level Radioactive Waste. DOE Low-Level Waste Management Program. March 1984.

Gilbert, T.L., et al. Pathways Analysis and Radiation Dose Estimates for Radioactive Residues at Formerly Utilized MED/AEC Sites. ORO-832. March 1983.

Gilbert, T.L. U.S. Nuclear Regulatory Commission. Operating License Supplement, Final Environmental Impact Statement for the Callaway Steam-Electric Generating Station, Unit 1. NUREG-0813. January 1982. (Contribution - project leader).

Gilbert, T.L. The Hohenberg-Kohn Theorem for Nonlocal External Potentials. Phys. Rev. B12:2111. 1975.

Gilbert, T.L. Multiconfiguration Self Consistent-Field Theory for Localized Orbitals: I, Phys. Rev. A5, 580 (1972); II, J. Chem. Phys. 60:3835 (1974).

Gilbert, T.L., W.J. Stevens, H. Schrenk, M. Yoshimine, and P.S. Bagus. Chemical Bonding Effects in the Oxygen K α X-Ray Emission Bands of Silica. Phys. Rev. B8:5977. 1973.

Gilbert, T.L. and A.C. Wahl. Single-Configuration Wave Functions and Potential Curves for Low-Lying States of He₂, Ne₂, Ar₂, F₂⁻, Cl₂⁻, and the Ground State of Cl₂. J. Chem. Phys. 55:5247. 1971.

Gilbert, T.L. The Soft-Sphere Model for Closed-Shell Atoms and Ions. J. Chem. Phys. 49:2640. 1968.

STEVE Y. TSAI

ENVIRONMENTAL RESEARCH DIVISION

Hydrologist

EDUCATION:

B.S., 1969	National Taiwan University, Taipei Civil engineering
M.S., 1972	South Dakota State University, Brookings Civil engineering
Ph.D., 1978	University of Illinois - Urbana Civil engineering

EMPLOYMENT HISTORY:

1970-1971	Department of Civil Engineering, South Dakota State University, Brookings, SD Research assistant
1971-1973	Department of Civil Engineering, University of Illinois Research assistant, Urbana, IL
1973-1975	Sargent and Lundy Engineers, Chicago, IL Senior engineer
1975-1978	Department of Civil Engineering, University of Illinois, Urbana, IL Research and teaching assistant
1978-1979	ESCOR, Inc., Northbrook, IL Environmental scientist
1979-present	Argonne National Laboratory Environmental Impact Studies Division Assistant civil engineer, 1979-1982 Civil engineer, 1982-1983 Environmental Research Division Civil engineer, 1983-

EXPERIENCE:

Waste Dispersion Analysis

Experience in waste transport and dispersion analysis includes: (1) conducting analytical and experimental studies on the transport mechanics of pollutants in water; (2) developing computer models for studying pollutant migration in surface- and ground-water systems; (3) performing transport modeling of radioactive and chemical substances in fractured and porous media; (4) performing remedial design, field sampling, and analysis of water-quality data; and (5) providing expert testimony on environmental impacts of nuclear power plants at Atomic Safety and Licensing Board hearings.

EXPERIENCE (Cont'd):

Hydrogeology

Professional experience in hydrogeologic characterization and analysis includes: (1) performing hydrogeologic characterization for site selection and design of waste disposal facilities; (2) analyzing seepage from uranium mill tailings ponds and its effects on groundwater systems; and (3) modeling groundwater flow recovery processes for the reclamation of open-pit uranium mining areas.

Hydraulics/Hydrology

Experience in hydrologic analysis and hydraulic designs include: (1) performing flow frequency and hydrograph analyses, and watershed simulation for hydro-power development projects; (2) performing hydraulic routing, backwater computation, and sediment transport study; and (3) analyzing and designing various hydraulic structures (e.g., dam, spillway, intake and discharge structures) for nuclear power plants.

PROFESSIONAL SOCIETIES:

American Society of Civil Engineers
 American Geophysical Union
 Karl Emil Hilgard Hydraulic Award from ASCE, 1980

SELECTED PUBLICATIONS

Thirty-five publications in journal articles, reports, and conference proceedings on environmental research and assessment; representative examples are listed below.

Tsai, S.Y., J.M. Peterson, and M.C.B. Winters. 1984. Analysis of Potential Groundwater Contamination in the Vicinity of the Weldon Spring Raffinate Pits Site, ANL/ER-TM-84-4, Argonne National Laboratory, July 1984.

Tsai, S.Y., and W.H. Smith, 1983. Hydrogeological Characterization for Back Forty Area, Albany Research Center, Albany, Oregon, ANL/ER-TM-83-4, Argonne National Laboratory, December 1983.

Harrison, W., ... S.Y. Tsai, et al., 1983. Geology, Hydrology, and Mineral Resources of Crystalline Rock Areas of the Northeastern United States, ANL/ES-136, Part 1, prepared for U.S. Department of Energy by Argonne National Laboratory, October 1983.

Gilbert, T.L., ... S.Y. Tsai, et al., 1983. Pathways Analysis and Radiation Dose Estimates for Radioactive Residues at Formerly Utilized MED/AEC Sites, ORO-832, U.S. Department of Energy, Oak Ridge Operations, March 1983.

Tsai, S.Y., 1981. Mathematical Modeling of Thermal Plume Interaction at Waterford Nuclear Power Station, Proceedings, Third Conference on Waste Heat Management and Utilization, Miami Beach, Florida, May 11-13, 1981.