

BEFORE THE
NUCLEAR REGULATORY COMMISSION

In the Matter of Revision)
of Orders to Modify Licenses,)
American Nuclear, Corp., et al.)

Docket No. 40-4492

DECLARATION OF DANIEL F. LUECKE

1. I, Daniel F. Luecke, am employed as a senior scientist at the Environmental Defense Fund (EDF). I also am the Director of EDF's Rocky Mountain Office, located at 1405 Arapahoe Avenue, Boulder, Colorado (80302).

2. The Environmental Defense Fund (EDF) is a nationwide public interest organization with approximately 50,000 members. EDF's staff of lawyers, scientists, and economists work to protect and improve environmental quality and public health. EDF pursues responsible reform of public policy in the fields of energy and resource conservation, toxic chemicals including uranium mill tailings, water and air quality, and wildlife working through research, public education, and judicial, administrative, and legislative action. EDF is organized under the laws of the State of New York and has its headquarters at 444 Park Avenue South, New York, New York (10016). EDF also has regional offices in Boulder, Colorado; Berkeley, California; Washington, D.C.; and Richmond, Virginia.

3. EDF and its members have a strong interest in assuring that uranium mill tailings at licensed uranium mills are managed and disposed of in an environmentally sound manner that prevents

or minimizes the release of toxic and hazardous substances to the human environment, especially to ground water resources underlying uranium mills and mill tailings piles.

4. As director of the Rocky Mountain Office, I am familiar with the membership figures and residences of EDF's members in the Intermountain West.

a) Over 1,000 members of EDF live in the States of Colorado, Utah, New Mexico, and Wyoming. Many members of EDF live, work, and travel in proximity to uranium mills and uranium mill tailings. I am familiar with the chemical composition of uranium mill tailings impoundments, with the chemical composition of contaminant plumes that have in the past leached from such ponds to ground water, with the physical parameters that determine rate and direction of flow of such plumes, and with the implications for human health, safety, and the environment of such ground water contamination. I also have studied and am familiar with the regulations issued on October 7, 1983, by the Environmental Protection Agency for protection of ground water resources at uranium mills. In my expert opinion, the health, safety, and welfare of these EDF members will be adversely affected by any agency decision to relax or to not fully enforce the EPA ground water protection standards.

b) Several members of EDF, including Dr. M. Dilley, live in Canon City, Colorado. Dr. Dilley resides at 426 Greydene Avenue, Canon City, Colorado (81212). Other

members of EDF live and work in the City of Pueblo, Colorado, which is downstream of the Canon City mill on the Arkansas River. The health, safety, and the environment of these individuals, and of the public at large would be adversely affected by any agency action that led to a relaxation of ground water protection standards. Consequently, Dr. Dilley has authorized EDF to represent her interests in this proceeding.

c) Several members of EDF live in the towns of Casper, Wyoming, and Douglas, Wyoming. I understand that these communities are situated within fifty air miles or less of several licensed uranium mills, including the Bear Creek Uranium Co. mill and the Pathfinder Mines Corp. mill in Shirley Basin. I also have studied the memoranda to the files prepared by NRC field staff on ground water monitoring at these sites. In my expert opinion, the health, safety, and welfare of EDF members and the public at large would be adversely affected by agency action to not enforce the EPA ground water protection standards at these sites.

d) Several members of EDF live in the City of Moab, Utah, near the Atlas minerals mill. Mr. Larry Thomas lives at 408 Marcus Court, Moab, Utah (84532) with his family, and has authorized EDF to represent his health and environmental interests in this proceeding. Other EDF members use the aesthetic and recreational resources of Arches National Park, five miles from the Atlas mill, and the Colorado River downstream of the mill. The

health, safety, and welfare of EDF's members and the public at large would not be adequately protected by a decision not to implement and enforce the EPA ground water protection standards.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated this 18th day of December 1985.


Daniel F. Luecke

DANIEL F. LUECKE

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Date of Birth

26 November 1939

Education

University of Notre Dame, B.S. (with Honors), Civil Engineering,
1961; M.S. Civil Engineering, 1965.
Utah State University, National Science Foundation, Summer
Institute in Water Resources, 1965.
Harvard University, M.A. 1969; Ph.D., Environmental Engineering,
1971.

Professional History

1980-

Present: Senior Staff Scientist and Director of Water Resources
Program, Environmental Defense Fund, Boulder,
Colorado.

1981 -

Present: Member, Policy Advisory Council of the Colorado Water
Resources Research Institute.

1981 -

Present: Member, Technical Advisory Committee of the California
Department of Water Resources Desalting Pilot Study.

1981 -

Present: Member, Denver Metropolitan Water Roundtable, Denver,
Colorado.

1979: Advisor to the Food and Agriculture Organization of the
United Nations Development Program, Rome.

1975-80: Senior Environmental Engineer, Meta Systems Inc.,
Cambridge, Massachusetts.

1975-77: Associate of Graduate School of Education, Harvard
University.

- 1971-75: Lecturer and Research Associate, Center for Studies in Education and Development, Graduate School of Education, Harvard University.
- 1973-75: Member of Advisory Committee, Water Program, Environmental Defense Fund.
- 1969-70: Teaching Fellow in General Education, Harvard University.
- 1968-73: Volunteer with South End Tenants' Council and DARE, Inc. (both of Boston, Massachusetts) on urban housing, youth, and family problems.
- 1967-68: Consultant to OSTI (Organization for Social and Technological Innovation), Cambridge, Massachusetts.
- 1967: Hydraulics Engineer, Ruhrverband, Essen, Germany.
- 1965: Instructor, Department of Civil Engineering, University of Notre Dame.
- 1963: Construction Engineer, Thomas L. Hickey Co., South Bend, Indiana.
- 1961-63: Engineering Officer, United States Marine Corps.

Professional Affiliations and Awards

AAAS

Federation of American Scientists

Sigma Xi, National Research Honor Society

Tau Beta Pi, National Engineering Honor Society

Chi Epsilon, National Civil Engineering Honor Society

U.S. Public Health Service Traineeships, 1965-68, Harvard University

Foreign Language

Spanish

Publications, Reports, Written Testimony, and Comments

"An Analysis of a Multipurpose Reservoir with a Stochastic Input," Masters Thesis, University of Notre Dame, South Bend, Indiana, 1965.

"Some Legal and Institutional Aspects of Weather Modification," Ph.D. Thesis, Harvard University, Cambridge, Massachusetts, 1971.

"Decision and Institutional Aspects of Weather Modification," final report prepared for the U.S. Department of the Interior, Bureau of Reclamation, Office of Atmospheric Water Resources Research, Denver Federal Center, Colorado, June 1971 (with M.B. Fiering and M. Horwitz).

"Systems Analysis in Water Resources Planning," prepared by Meta Systems Inc. for the National Water Commission, Washington, D.C., July 1971.

"Applications of Systems Analysis Models to the Problem of Conjunctive Use of Surface and Groundwater in the Vega de Granada," presented at FAO Seminar on Groundwater, Granada, Spain, October 1971 (with R. deLucia, M.B. Fiering, N. Trac, and C. Alvarez).

Beyond Repair -- The Ecology of Capitalism, Barry Weisberg, Beacon Press, Boston, 1971, in The Phoenix, Cambridge, Massachusetts, February 9, 1971. (Book Review)

Water Wasteland: Ralph Nader's Study Group Report on Water Pollution, David Zwick and Mary Benstock, Grossman Pub., New York, 1971, in Science, May 12, 1972, Vol. 176 (Book Review with R. Harris).

"The NOAA Flood Warning System, A Case Study of Tropical Storm Agnes," prepared by Meta Systems Inc. for the National Oceanic and Atmospheric Administration, Washington, D.C., August 1972.

"Analysis of the 1973 Survey of Needs," prepared by Meta Systems, Inc. for the U.S. Environmental Protection Agency, Washington, D.C., 1973.

"Modeling Demand for Medical Care in Colombia," presented at the Joint National Meeting of ORSA/TIMS, Boston, Massachusetts, April 1974 (with R. Galan and C. Myers).

"Educational Objectives and Measurement of Outcomes," Omega, The International Journal of Management Science, Vol. 3 November 6, 1975, Pergamon Press, London; also presented at the Joint National Meeting of ORSA/TIMS, Boston, April 1974 (with N. McGinn).

"Evaluation of Alternative Methods for Financing Municipal Waste Treatment Works," prepared by Meta Systems Inc. for the Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., March 1975.

"Regression Analysis and Education Production Functions: Can They Be Trusted?" Harvard Educational Review, Vol. 45, No. 3, August 1975 (with N. McGinn).

"Identification of the Municipal Choice of Options for Meeting the Effluent Limitations and Goals Specified in Public Law 92-500 86 Stat. 816," prepared by Meta Systems Inc. for the National Commission on Water Quality, Washington, D.C., 1975.

"Social and Economic Impact Studies for the Cross Florida Barge Canal," presented at the Social Scientists Conference of the Institute of Water Resources, Memphis, Tennessee, September 21, 1976.

"Overall Assessment of the Cross Florida Barge Canal," prepared by Meta Systems Inc. for the Army Corps of Engineers, Jacksonville, Florida, 1976.

"Socioeconomic Assessment of the Cross Florida Barge Canal," prepared by Meta Systems Inc. for the Army Corps of Engineers, Jacksonville, Florida, 1976.

Analisis de Demanda y Oferta Medica y Odontologica para Colombia, Ministerio de Salud, Bogota D.E., Colombia, 1977 (with R. Galan and C. Myers).

"Resource Use and Residuals Generation of Households," report prepared by Meta Systems Inc. for the U.S. Environmental Protection Agency, Washington, D.C., May 1977 (with J. Kuhner, M. Shapiro and others).

"Energy Consumption and Conservation Related to Various Household Functions," Proceedings of National Conference on Technology for Energy Conservation, Information Transfer Inc., Rockville, Maryland, June 1977 (with J. Kuhner).

"Assessment of the Environmental Infrastructure Required by Large Public and Private Investments," Discussion Paper D77-6, Department of City and Regional Planning, Harvard University, Cambridge, Massachusetts, July 1977; also published in the Journal of Environmental Management, London, Summer 1978 (with M. Shapiro and J. Kuhner).

"Water Use and Wastewater and Residuals Generation in Households: Potential for Conservation," presented at the Second National Home Sewage Treatment Symposium, Chicago, Illinois, December 1977 (with J. Kuhner and R. Sharpin).

"New Residential Developments and the Quantity and Quality of Runoff," presented at the Second Technical Interproject Workshop of the Urban Stormwater Management Program, U.S. EPA, Edison, New Jersey, December 1977 (with R. Berwick, J. Kuhner, and M. Shapiro).

"Qatar Water Resources Plan: Consultant's Report to FAO," Food and Agriculture Organization of the United Nations, Rome, May 1979.

"Comment on Proposed EPA Regulations for Visibility Protection for Federal Class I Areas," before the Air Quality Control Commission, Colorado Department of Health, Denver, Colorado, July 1980.

"Comment on Environmental Problems of Enhanced Oil Recovery," Department of Energy Enhanced Oil Recovery Workshop, Bozeman, Montana, August 1980.

"Comment on Cathedral Bluffs' Petition to Replace the SO₂ BACT Emission Standards," before the Colorado Air Quality Control Commission, Denver, Colorado, October 1980.

"Comment on Moon Lake Draft EIS," to Bureau of Land Management and the Rural Electrification Administration, Washington, D.C., March 1981.

"The Federal Budget, the Free Market, and Cost-Effective Energy Development," prepared for U.S. House Budget Committee Task Force on Energy and the Environment, Denver, Colorado, March 1981.

"The Administration's Budget and Energy Issues" Environmental Defense Fund, Denver, Colorado, March 1981.

"National Energy Policy and Energy Issues in the Mountain and Northern Plains States," for Hearings on Third National Energy Plan, Denver, Colorado, April 1981.

"Proposed Oil Shale Leasing Legislation," testimony before the House Committee on Mines and Mining, Vernal, Utah, May 1981 (with P. Phillips).

"Treatment of Oil Shale Waste Waters," comments prepared for Oil Shale: The Environmental Challenges, U.S. Department of Energy Oil Shale International Symposium, Vail, Colorado, August 1981.

"Water: The Value of a Priceless Resource," The EDF Associate, New York, New York, September 1981.

"Comment on Colorado River Basin Salinity Control Forum's Water Quality Standards for Salinity, 1981 Review, (Proposed Report)," Grand Junction, Colorado, October 1981.

"Comments on Gulf-Exxon Exploration Proposals for Uranium in Fifty-Mile Wilderness Study Area in Utah," to the Bureau of Land Management, Denver, Colorado, November 1981 (with D. Mastbaum).

"U.S. Synfuels Corporation, Oil Shale Development and the Environment," presented at the U.S. Synfuels Corporation meeting, Salt Lake City, Utah, December 1981.

"The Reagan Administration's Approach to Energy Policy and the Clean Air Act," University of Colorado Environmental Center, Boulder, Colorado, February 1982.

"Comments on Notice of Proposed Rulemaking Regarding the Proposed Arizona SIP Revision Containing Regs Governing Emissions from Nonferrous Smelters Before EPA, 46 Fed. Reg. 58098 11/20/81," Boulder, Colorado, February 1982, (with A. Babich and R. Yuhnke).

"A Geometric Representation of Demand for Water During Peak and Off-Peak Periods," Denver Metropolitan Water Roundtable, Denver, Colorado, March 1982.

"Water Resource Development in the West: Some Comments on Economics and the Environment," Boulder, Colorado, April 1982.

"Opportunities for Improving Agricultural Efficiency Through the Interindustry Transfer of Water," presented at the ASCE meeting on Energy and Water, Colorado State University, Fort Collins, Colorado, May 1982.

"Opportunities in Colorado for Salinity Control through the Interindustry Transfer of Water as a Function of Improved Agricultural Efficiency," Rural Communities Institute, Western State College, Gunnison, Colorado, July 1982.

"An Economic and Technical Review of a Comprehensive Alternative to the Juniper-Cross Mountain Project," submitted to the Federal Energy Regulatory Commission, July 1982 (with M. Koved).

"Water Conservation Opportunities in the Denver Metropolitan Area," 12th Vail Symposium, Vail, Colorado, September 1982.

"Deregulation and Its Impact on the Environment," presented at Region VIII Conference of American Society for Public Administration, Denver, Colorado, October 21, 1982.

"Comments on Draft Environmental Statement on Industrial Water Service: Yellowtail (Bighorn)-Boysen Reservoirs," submitted to Bureau of Reclamation, Billings, Montana, February 1983 (with G. Pring and others).

"A Plan for Satisfying the Denver Metropolitan Area Water Needs Through the Year 2010," proposed by the Environmental Representatives to the Metropolitan Water Roundtable, Denver, Colorado, March 1983 (with L. Rozaklis and others).

"Comments on Proposed Standards for Radionuclides Under Section 112 of the Clean Air Act," submitted to the U.S. Environmental Protection Agency, Washington, D.C., July 1983 (with R. Yuhnke and others).

"Proposed Evaluation Criteria Systemwide EIS Metropolitan Denver Water Supply," comments on preliminary draft, Denver, Colorado, August 1983 (with L. Rozkalis).

"Critique of Future Water Demands (Draft): Appendix 2 of Systemwide EIS - Metropolitan Denver Water Supply," submitted to U.S. Army Corps of Engineers, Omaha, Nebraska, September 1983 (with J. R. Morris).

"The Relationship Between Peak Demand in Individual REA Cooperatives and the Aggregate Peak Demand of the Colorado-Ute Electric Association System: A Statistical Analysis," testimony before the Colorado Public Utilities Commission, Denver, Colorado, September 1983 (with M. Koved).

"Water and Denver's Future," Rocky Mountain News, Denver, Colorado, December 30, 1983.

"Wise Water Use: Alternatives to Interbasin Transfers," Sixtieth Annual Meeting, Southwestern and Rocky Mountain Division American Association for the Advancement of Science, Lubbock, Texas, March 1984 (with L. Rozaklis).

"The Economic Impact on Water Based Recreation of a Decline in Water Quality," testimony before the Colorado Water Quality Control Commission, Denver, Colorado, April 1984.

"Capital Program Decisions: Error Analysis and Water Supply System Expansion," presented at the American Water Resources Association, Seattle, Washington, June 1984.

"Regional Growth, Water Supply and the Environment," Colorado Municipalities, Volume 61, Number 2, March-April 1985.

"Front Range Water -- Moving the Continental Divide West," presented at the 1985 Spring Convention of the American Society of Civil Engineers, Denver, Colorado, May 1985.

"Subsidizing Fantasy: Our Romance with Water," PAC Newsletter, Boulder, Colorado, June 1985.

"Questions of State Water Policy," testimony before the Colorado General Assembly's Interim Committee on Water and Land Resources, Denver, Colorado, September 13, 1985.