Scott J. Rubin Attorney + Consultant 333 Oak Lane • Bloomsburg, PA 17815

Current Position

Public Utility Attorney and Consultant. 1994 to present. I provide legal, consulting, and expert witness services to various organizations interested in the regulation of public utilities.

Previous Positions

Lecturer in Computer Science, Susquehanna University, Selinsgrove, PA. 1993 to 2000.

Senior Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1990 to 1994. I supervised the administrative and technical staff and shared with one other senior attorney the supervision of a legal staff of 14 attorneys.

Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1983 to 1990.

Associate, Laws and Staruch, Harrisburg, PA. 1981 to 1983.

Law Clerk, U.S. Environmental Protection Agency, Washington, DC. 1980 to 1981.

Research Assistant, Rockville Consulting Group, Washington, DC. 1979.

Current Professional Activities

Member, American Bar Association, Public Utility Law Section.

Member, American Water Works Association.

Admitted to practice law before the Supreme Court of Pennsylvania, the New York State Court of Appeals, the United States District Court for the Middle District of Pennsylvania, the United States Court of Appeals for the Third Circuit, and the Supreme Court of the United States.

Previous Professional Activities

Member, American Water Works Association, Rates and Charges Subcommittee, 1998-2001.

- Member, Federal Advisory Committee on Disinfectants and Disinfection By-Products in Drinking Water, U.S. Environmental Protection Agency, Washington, DC. 1992 to 1994.
- Chair, Water Committee, National Association of State Utility Consumer Advocates, Washington, DC. 1990 to 1994; member of committee from 1988 to 1990.

Member, Board of Directors, Pennsylvania Energy Development Authority, Harrisburg, PA. 1990 to 1994.

- Member, Small Water Systems Advisory Committee, Pennsylvania Department of Environmental Resources, Harrisburg, PA. 1990 to 1992.
- Member, Ad Hoc Committee on Emissions Control and Acid Rain Compliance, National Association of State Utility Consumer Advocates, 1991.

Member, Nitrogen Oxides Subcommittee of the Acid Rain Advisory Committee, U.S. Environmental Protection Agency, Washington DC. 1991.

Education

J.D. with Honors, George Washington University, Washington, DC. 1981.

B.A. with Distinction in Political Science, Pennsylvania State University, University Park, PA. 1978.

Publications and Presentations (* denotes peer-reviewed publications)

- 1. "Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.
- 2. K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.
- 3. Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.
- 4. "How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.
- 5. Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.
- 6. "A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.
- 7. Workshop on Safe Drinking Water Act Compliance Issues at the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Washington, DC. 1992.
- 8. Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.
- S.J. Rubin and S.P. O'Neal, "A Quantitative Assessment of the Viability of Small Water Systems in Pennsylvania," *Proceedings of the Eighth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute (Columbus, OH 1992), IV:79-97.
- 10. "The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.
- 11. Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.
- 12. M.D. Klein and S.J. Rubin, "Water and Sewer -- Update on Clean Streams, Safe Drinking Water, Waste Disposal and Pennvest," *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 1992.
- Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993

- 14. "The Results Through a Public Service Commission Lens," speaker and participant in panel discussion at Symposium: "Impact of EPA's Allowance Auction," Washington, DC, sponsored by AER*X. 1993.
- "The Hottest Legislative Issue of Today -- Reauthorization of the Safe Drinking Water Act," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, San Antonio, TX. 1993.
- "Water Service in the Year 2000," a speech to the Conference: "Utilities and Public Policy III: The Challenges of Change," sponsored by the Pennsylvania Public Utility Commission and the Pennsylvania State University, University Park, PA. 1993.
- "Government Regulation of the Drinking Water Supply: Is it Properly Focused?," speaker and participant in panel discussion at the National Consumers League's Forum on Drinking Water Safety and Quality, Washington, DC. 1993. Reprinted in *Rural Water*, Vol. 15 No. 1 (Spring 1994), pages 13-16.
- 18. "Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.
- "Zealous Advocacy, Ethical Limitations and Considerations," participant in panel discussion at "Continuing Legal Education in Ethics for Pennsylvania Lawyers," sponsored by the Office of General Counsel, Commonwealth of Pennsylvania, State College, PA. 1993.
- 20. "Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.
- "A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.
- 22. * S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.
- 23. "Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.
- 24. "Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.
- "Relationships: Drinking Water, Health, Risk and Affordability," speaker and participant in panel discussion at the Annual Meeting of the Southeastern Association of Regulatory Commissioners, Charleston, SC. 1994.
- 26. "Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.
- 27. S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.

- S. Rubin, S. Bernow, M. Fulmer, J. Goldstein, and I. Peters, *An Evaluation of Kentucky-American Water Company's Long-Range Planning*, prepared for the Utility and Rate Intervention Division, Kentucky Office of the Attorney General (Tellus Institute 1994).
- S.J. Rubin, "Small System Monitoring: What Does It Mean?," Impacts of Monitoring for Phase II/V Drinking Water Regulations on Rural and Small Communities (National Rural Water Association 1994), pages 6-12.
- 30. "Surviving the Safe Drinking Water Act," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Reno, NV. 1994.
- "Safe Drinking Water Act Compliance -- Ratemaking Implications," speaker at the National Conference of Regulatory Attorneys, Scottsdale, AZ. 1995. Reprinted in *Water*, Vol. 36, No. 2 (Summer 1995), pages 28-29.
- 32. S.J. Rubin, "Water: Why Isn't it Free? The Case of Small Utilities in Pennsylvania," Utilities, Consumers & Public Policy: Issues of Quality, Affordability, and Competition, Proceedings of the Fourth Utilities, Consumers and Public Policy Conference (Pennsylvania State University 1995), pages 177-183.
- S.J. Rubin, "Water Rates: An Affordable Housing Issue?," *Home Energy*, Vol. 12 No. 4 (July/August 1995), page 37.
- 34. Speaker and participant in the Water Policy Forum, sponsored by the National Association of Water Companies, Naples, FL. 1995.
- 35. Participant in panel discussion on "The Efficient and Effective Maintenance and Delivery of Potable Water at Affordable Rates to the People of New Jersey," at The New Advocacy: Protecting Consumers in the Emerging Era of Utility Competition, a conference sponsored by the New Jersey Division of the Ratepayer Advocate, Newark, NJ. 1995.
- 36. J.E. Cromwell III, and S.J. Rubin, *Development of Benchmark Measures for Viability Assessment* (Pa. Department of Environmental Protection 1995).
- 37. S. Rubin, "A Nationwide Practice from a Small Town in Pa.," Lawyers & the Internet a Supplement to the Legal Intelligencer and Pa. Law Weekly (February 12, 1996), page S6.
- "Changing Customers' Expectations in the Water Industry," speaker at the Mid-America Regulatory Commissioners Conference, Chicago, IL. 1996, reprinted in *Water* Vol. 37 No. 3 (Winter 1997), pages 12-14.
- 39. "Recent Federal Legislation Affecting Drinking Water Utilities," speaker at Pennsylvania Public Utility Law Conference, Pennsylvania Bar Institute, Hershey, PA. 1996.
- 40. "Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.
- "Water Workshop: How New Laws Will Affect the Economic Regulation of the Water Industry," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, San Francisco, CA. 1996.

- 42. * E.T. Castillo, S.J. Rubin, S.K. Keefe, and R.S. Raucher, "Restructuring Small Systems," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 65-74.
- * J.E. Cromwell III, S.J. Rubin, F.C. Marrocco, and M.E. Leevan, "Business Planning for Small System Capacity Development," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 47-57.
- 44. "Capacity Development More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.
- 45. * E. Castillo, S.K. Keefe, R.S. Raucher, and S.J. Rubin, *Small System Restructuring to Facilitate SDWA Compliance: An Analysis of Potential Feasibility* (AWWA Research Foundation, 1997).
- 46. H. Himmelberger, et al., Capacity Development Strategy Report for the Texas Natural Resource Conservation Commission (Aug. 1997).
- 47. Briefing on Issues Affecting the Water Utility Industry, Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.
- 48. "Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.
- 49. "The Ticking Bomb: Competitive Electric Metering, Billing, and Collection," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.
- Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).
- 51. Scott J. Rubin, "30 Technology Tips in 30 Minutes," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 101-110 (Pa. Bar Institute, 1998).
- 52. Scott J. Rubin, "Effects of Electric and Gas Deregulation on the Water Industry," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 139-146 (Pa. Bar Institute, 1998).
- 53. Scott J. Rubin, *The Challenges and Changing Mission of Utility Consumer Advocates* (American Association of Retired Persons, 1999).
- 54. "Consumer Advocacy for the Future," speaker at the Age of Awareness Conference, Changes and Choices: Utilities in the New Millennium, Carlisle, PA. 1999.
- 55. Keynote Address, \$1 Energy Fund, Inc., Annual Membership Meeting, Monroeville, PA. 1999.
- 56. Scott J. Rubin, "Assessing the Effect of the Proposed Radon Rule on the Affordability of Water Service," prepared for the American Water Works Association. 1999.
- 57. Scott J. Rubin and Janice A. Beecher, The Impacts of Electric Restructuring on the Water and Wastewater Industry, *Proceedings of the Small Drinking Water and Wastewater Systems International Symposium and Technology Expo* (Phoenix, AZ 2000), pp. 66-75.

- 58. American Water Works Association, *Principles of Water Rates, Fees, and Charges, Manual M1 Fifth Edition* (AWWA 2000), Member, Editorial Committee.
- 59. Janice A. Beecher and Scott J. Rubin, presentation on "Special Topics in Rate Design: Affordability" at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- 60. Scott J. Rubin, "The Future of Drinking Water Regulation," a speech at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- 61. Janice A. Beecher and Scott J. Rubin, "Deregulation Impacts and Opportunities," a presentation at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- 62. Scott J. Rubin, "Estimating the Effect of Different Arsenic Maximum Contaminant Levels on the Affordability of Water Service," prepared for the American Water Works Association. 2000.
- 63. * Janice A. Beecher and Scott J. Rubin, *Deregulation! Impacts on the Water Industry*, American Water Works Association Research Foundation, Denver, CO. 2000.
- 64. Scott J. Rubin, Methods for Assessing, Evaluating, and Assisting Small Water Systems, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
- 65. Scott J. Rubin, Consumer Issues in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
- 66. "Be Utility Wise in a Restructured Utility Industry," Keynote Address at Be Utility Wise Conference, Pittsburgh, PA. 2000.
- 67. Scott J. Rubin, Jason D. Sharp, and Todd S. Stewart, "The Wired Administrative Lawyer," 5th Annual Administrative Law Symposium, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
- 68. Scott J. Rubin, "Current Developments in the Water Industry," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
- 69. Scott J. Rubin, "Viewpoint: Change Sickening Attitudes," Engineering News-Record, Dec. 18, 2000.
- 70. Janice A. Beecher and Scott J. Rubin, "Ten Practices of Highly Effective Water Utilities," *Opflow*, April 2001, pp. 1, 6-7, 16; reprinted in *Water and Wastes Digest*, December 2004, pp. 22-25.
- 71. Scott J. Rubin, "Pennsylvania Utilities: How Are Consumers, Workers, and Corporations Faring in the Deregulated Electricity, Gas, and Telephone Industries?" Keystone Research Center. 2001.
- 72. Scott J. Rubin, "Guest Perspective: A First Look at the Impact of Electric Deregulation on Pennsylvania," *LEAP Letter*, May-June 2001, pp. 2-3.
- 73. Scott J. Rubin, Consumer Protection in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.
- 74. Scott J. Rubin, Impacts of Deregulation on the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.

- 75. Scott J. Rubin, "Economic Characteristics of Small Systems," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 7-22.
- 76. Scott J. Rubin, "Affordability of Water Service," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 23-42.
- 77. Scott J. Rubin, "Criteria to Assess the Affordability of Water Service," White Paper, National Rural Water Association, 2001.
- 78. Scott J. Rubin, Providing Affordable Water Service to Low-Income Families, presentation to Portland Water Bureau, Portland, OR. 2001.
- 79. Scott J. Rubin, Issues Relating to the Affordability and Sustainability of Rates for Water Service, presentation to the Water Utility Council of the American Water Works Association, New Orleans, LA. 2002.
- 80. Scott J. Rubin, The Utility Industries Compared Water, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- Scott J. Rubin, Legal Perspective on Water Regulation, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- 82. Scott J. Rubin, Regulatory Options for Water Utilities, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- 83. Scott J. Rubin, Overview of Small Water System Consolidation, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
- 84. Scott J. Rubin, Defining Affordability and Low-Income Household Tradeoffs, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
- 85. Scott J. Rubin, "Thinking Outside the Hearing Room," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2002.
- 86. Scott J. Rubin, "Update of Affordability Database," White Paper, National Rural Water Association. 2003.
- 87. Scott J. Rubin, *Understanding Telephone Penetration in Pennsylvania*, Council on Utility Choice, Harrisburg, PA. 2003.
- 88. Scott J. Rubin, *The Cost of Water and Wastewater Service in the United States*, National Rural Water Association, 2003.
- 89. Scott J. Rubin, What Price Safer Water? Presentation at Annual Conference of National Association of Regulatory Utility Commissioners, Atlanta, GA. 2003.
- George M. Aman, III, Jeffrey P. Garton, Eric Petersen, and Scott J. Rubin, Challenges and Opportunities for Improving Water Supply Institutional Arrangements, *Water Law Conference*, Pennsylvania Bar Institute, Mechanicsburg, PA. 2004.

- 91. Scott J. Rubin, Serving Low-Income Water Customers. Presentation at American Water Works Association Annual Conference, Orlando, FL. 2004.
- 92. Scott J. Rubin, Thinking Outside the Bill: Serving Low-Income Water Customers. Presentation at National League of Cities Annual Congress of Cities, Indianapolis, IN. 2004.
- 93. Scott J. Rubin, Buying and Selling a Water System Ratemaking Implications, *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2005.
- 94. Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers, American Water Works Association. 2005.
- 95. * Scott J. Rubin, "Census Data Shed Light on US Water and Wastewater Costs," Journal American Water Works Association, Vol. 97, No. 4 (April 2005), pages 99-110, reprinted in Maxwell, The Business of Water: A Concise Overview of Challenges and Opportunities in the Water Market., American Water Works Association, Denver, CO. 2008.
- 96. Scott J. Rubin, Review of U.S. Environmental Protection Agency Notice Concerning Revision of National-Level Affordability Methodology, National Rural Water Association. 2006.
- 97. * Robert S. Raucher, et al., *Regional Solutions to Water Supply Provision*, American Water Works Association Research Foundation, Denver, CO. 2007.
- 98. Scott J. Rubin, Robert Raucher, and Megan Harrod, The Relationship Between Household Financial Distress and Health: Implications for Drinking Water Regulation, National Rural Water Association. 2007.
- 99. * John Cromwell and Scott Rubin, *Estimating Benefits of Regional Solutions for Water and Wastewater Service*, American Water Works Association Research Foundation, Denver, CO. 2008.
- 100. Scott J. Rubin, "Current State of the Water Industry and Stimulus Bill Overview," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 2009.
- 101.Scott J. Rubin, Best Practice in Customer Payment Assistance Programs, webcast presentation sponsored by Water Research Foundation. 2009.
- 102.* Scott J. Rubin, How Should We Regulate Small Water Utilities?, National Regulatory Research Institute. 2009.
- 103.* John Cromwell III, et al., Best Practices in Customer Payment Assistance Programs, Water Research Foundation, Denver, CO. 2010.
- 104.* Scott J. Rubin, What Does Water Really Cost? Rate Design Principles for an Era of Supply Shortages, Infrastructure Upgrades, and Enhanced Water Conservation, National Regulatory Research Institute. 2010.
- 105. Scott J. Rubin and Christopher P.N. Woodcock, Teleseminar: Water Rate Design, National Regulatory Research Institute. 2010.
- 106. David Monie and Scott J. Rubin, Cost of Service Studies and Water Rate Design: A Debate on the Utility and Regulatory Perspectives, Meeting of New England Chapter of National Association of Water

Companies, Newport, RI. 2010.

- 107. * Scott J. Rubin, A Call for Water Utility Reliability Standards: Regulating Water Utilities' Infrastructure Programs to Achieve a Balance of Safety, Risk, and Cost, National Regulatory Research Institute. 2010.
- 108.* Raucher, Robert S.; Rubin, Scott J.; Crawford-Brown, Douglas; and Lawson, Megan M. "Benefit-Cost Analysis for Drinking Water Standards: Efficiency, Equity, and Affordability Considerations in Small Communities," *Journal of Benefit-Cost Analysis*: Vol. 2: Issue 1, Article 4. 2011.
- 109. Scott J. Rubin, A Call for Reliability Standards, *Journal American Water Works Association*, Vol. 103, No. 1 (Jan. 2011), pp. 22-24.
- 110. Scott J. Rubin, Current Topics in Water: Rate Design and Reliability. Presentation to the Water Committee of the National Association of Regulatory Utility Commissioners, Washington, DC. 2011.
- 111. Scott J. Rubin, Water Reliability and Resilience Standards, *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 2011.
- 112. Member of Expert Panel, Leadership Forum: Business Management for the Future, Annual Conference and Exposition of the American Water Works Association, Washington, DC. 2011.
- 113. Scott J. Rubin, Evaluating Community Affordability in Storm Water Control Plans, *Flowing into the Future: Evolving Water Issues* (Pennsylvania Bar Institute). 2011.
- 114. Invited Participant, Summit on Declining Water Demand and Revenues, sponsored by The Alliance for Water Efficiency, Racine, WI. 2012.
- 115.*Scott J. Rubin, Structural Changes in the Water Utility Industry During the 2000s, *Journal American Water Works Association*, accepted for publication (expected in March 2013).
- 116.*Scott J. Rubin, Evaluating Violations of Drinking Water Regulations, *Journal American Water Works* Association, accepted for publication (expected in March 2013).

Testimony as an Expert Witness

- 1. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. Water Division*, Pa. Public Utility Commission, Docket R-00922404. 1992. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate.
- 2. *Pa. Public Utility Commission v. Shenango Valley Water Co.*, Pa. Public Utility Commission, Docket R-00922420. 1992. Concerning cost allocation, on behalf of the Pa. Office of Consumer Advocate
- 3. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. Water Division*, Pa. Public Utility Commission, Docket R-00922482. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
- 4. *Pa. Public Utility Commission v. Colony Water Co.*, Pa. Public Utility Commission, Docket R-00922375. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate

- 5. Pa. Public Utility Commission v. Dauphin Consolidated Water Supply Co. and General Waterworks of Pennsylvania, Inc., Pa. Public Utility Commission, Docket R-00932604. 1993. Concerning rate design and cost of service, on behalf of the Pa. Office of Consumer Advocate
- 6. West Penn Power Co. v. State Tax Department of West Virginia, Circuit Court of Kanawha County, West Virginia, Civil Action No. 89-C-3056. 1993. Concerning regulatory policy and the effects of a taxation statute on out-of-state utility ratepayers, on behalf of the Pa. Office of Consumer Advocate
- 7. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. Water Division*, Pa. Public Utility Commission, Docket R-00932667. 1993. Concerning rate design and affordability of service, on behalf of the Pa. Office of Consumer Advocate
- 8. *Pa. Public Utility Commission v. National Utilities, Inc.*, Pa. Public Utility Commission, Docket R-00932828. 1994. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
- 9. An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company, Ky. Public Service Commission, Case No. 93-434. 1994. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Utility and Rate Intervention Division.
- 10. *The Petition on Behalf of Gordon's Corner Water Company for an Increase in Rates*, New Jersey Board of Public Utilities, Docket No. WR94020037. 1994. Concerning revenue requirements and rate design, on behalf of the New Jersey Division of Ratepayer Advocate.
- 11. Re Consumers Maine Water Company Request for Approval of Contracts with Consumers Water Company and with Ohio Water Service Company, Me. Public Utilities Commission, Docket No. 94-352. 1994. Concerning affiliated interest agreements, on behalf of the Maine Public Advocate.
- 12. In the Matter of the Application of Potomac Electric Power Company for Approval of its Third Least-Cost Plan, D.C. Public Service Commission, Formal Case No. 917, Phase II. 1995. Concerning Clean Air Act implementation and environmental externalities, on behalf of the District of Columbia Office of the People's Counsel.
- In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of the Dayton Power and Light Company and Related Matters, Ohio Public Utilities Commission, Case No. 94-105-EL-EFC. 1995. Concerning Clean Air Act implementation (case settled before testimony was filed), on behalf of the Office of the Ohio Consumers' Counsel.
- 14. *Kennebec Water District Proposed Increase in Rates*, Maine Public Utilities Commission, Docket No. 95-091. 1995. Concerning the reasonableness of planning decisions and the relationship between a publicly owned water district and a very large industrial customer, on behalf of the Maine Public Advocate.
- 15. Winter Harbor Water Company, Proposed Schedule Revisions to Introduce a Readiness-to-Serve Charge, Maine Public Utilities Commission, Docket No. 95-271. 1995 and 1996. Concerning standards for, and the reasonableness of, imposing a readiness to serve charge and/or exit fee on the customers of a small investorowned water utility, on behalf of the Maine Public Advocate.
- 16. In the Matter of the 1995 Long-Term Electric Forecast Report of the Cincinnati Gas & Electric Company, Public Utilities Commission of Ohio, Case No. 95-203-EL-FOR, and In the Matter of the Two-Year Review of the Cincinnati Gas & Electric Company's Environmental Compliance Plan Pursuant to Section 4913.05, Revised Cost, Case No. 95-747-EL-ECP. 1996. Concerning the reasonableness of the utility's long-range

supply and demand-management plans, the reasonableness of its plan for complying with the Clean Air Act Amendments of 1990, and discussing methods to ensure the provision of utility service to low-income customers, on behalf of the Office of the Ohio Consumers' Counsel.

- 17. In the Matter of Notice of the Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 95-554. 1996. Concerning rate design, cost of service, and sales forecast issues, on behalf of the Kentucky Office of Attorney General.
- 18. In the Matter of the Application of Citizens Utilities Company for a Hearing to Determine the Fair Value of its Properties for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, and to Approve Rate Schedules Designed to Provide such Rate of Return, Arizona Corporation Commission, Docket Nos. E-1032-95-417, et al. 1996. Concerning rate design, cost of service, and the price elasticity of water demand, on behalf of the Arizona Residential Utility Consumer Office.
- Cochrane v. Bangor Hydro-Electric Company, Maine Public Utilities Commission, Docket No. 96-053.
 Concerning regulatory requirements for an electric utility to engage in unregulated business enterprises, on behalf of the Maine Public Advocate.
- In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters, Public Utilities Commission of Ohio, Case No. 96-106-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 21. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 22. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II), Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.
- 24. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 25. *Bangor Hydro-Electric Company Petition for Temporary Rate Increase*, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.
- 26. *Testimony concerning H.B. 1068 Relating to Restructuring of the Natural Gas Utility Industry*, Consumer Affairs Committee, Pennsylvania House of Representatives. 1997. Concerning the provisions of proposed

legislation to restructure the natural gas utility industry in Pennsylvania, on behalf of the Pennsylvania AFL-CIO Gas Utility Caucus.

- 27. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 97-107-EL-EFC and 97-108-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 28. In the Matter of the Petition of Valley Road Sewerage Company for a Revision in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR92080846J. 1997. Concerning the revenue requirements and rate design for a wastewater treatment utility, on behalf of the New Jersey Division of Ratepayer Advocate.
- 29. Bangor Gas Company, L.L.C., Petition for Approval to Furnish Gas Service in the State of Maine, Maine Public Utilities Commission, Docket No. 97-795. 1998. Concerning the standards and public policy concerns involved in issuing a certificate of public convenience and necessity for a new natural gas utility, and related ratemaking issues, on behalf of the Maine Public Advocate.
- 30. In the Matter of the Investigation on Motion of the Commission into the Adequacy of the Public Utility Water Service Provided by Tidewater Utilities, Inc., in Areas in Southern New Castle County, Delaware, Delaware Public Service Commission, Docket No. 309-97. 1998. Concerning the standards for the provision of efficient, sufficient, and adequate water service, and the application of those standards to a water utility, on behalf of the Delaware Division of the Public Advocate.
- 31. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters, Public Utilities Commission of Ohio, Case No. 97-103-EL-EFC. 1998. Concerning fuel-related transactions with affiliated companies and the appropriate ratemaking treatment and regulatory safeguards involving such transactions, on behalf of the Ohio Consumers' Counsel.
- 32. Olde Port Mariner Fleet, Inc. Complaint Regarding Casco Bay Island Transit District's Tour and Charter Service, Maine Public Utilities Commission, Docket No. 98-161. 1998. Concerning the standards and requirements for allocating costs and separating operations between regulated and unregulated operations of a transportation utility, on behalf of the Maine Public Advocate and Olde Port Mariner Fleet, Inc.
- 33. Central Maine Power Company Investigation of Stranded Costs, Transmission and Distribution Utility Revenue Requirements, and Rate Design, Maine Public Utilities Commission, Docket No. 97-580. 1998. Concerning the treatment of existing rate discounts when designing rates for a transmission and distribution electric utility, on behalf of the Maine Public Advocate.
- Pa. Public Utility Commission v. Manufacturers Water Company, Pennsylvania Public Utility Commission, Docket No. R-00984275. 1998. Concerning rate design on behalf of the Manufacturers Water Industrial Users.
- 35. In the Matter of Petition of Pennsgrove Water Supply Company for an Increase in Rates for Water Service, New Jersey Board of Public Utilities, Docket No. WR98030147. 1998. Concerning the revenue requirements, level of affiliated charges, and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

- 36. In the Matter of Petition of Seaview Water Company for an Increase in Rates for Water Service, New Jersey Board of Public Utilities, Docket No. WR98040193. 1999. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
- 37. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 98-101-EL-EFC and 98-102-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 38. In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters, Public Utilities Commission of Ohio, Case No. 99-106-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
- 40. *County of Suffolk, et al. v. Long Island Lighting Company, et al.*, U.S. District Court for the Eastern District of New York, Case No. 87-CV-0646. 2000. Submitted two affidavits concerning the calculation and collection of court-ordered refunds to utility customers, on behalf of counsel for the plaintiffs.
- 41. Northern Utilities, Inc., Petition for Waivers from Chapter 820, Maine Public Utilities Commission, Docket No. 99-254. 2000. Concerning the standards and requirements for defining and separating a natural gas utility's core and non-core business functions, on behalf of the Maine Public Advocate.
- 42. Notice of Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2000-120. 2000. Concerning the appropriate methods for allocating costs and designing rates, on behalf of the Kentucky Office of Attorney General.
- 43. In the Matter of the Petition of Gordon's Corner Water Company for an Increase in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR00050304. 2000. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
- 44. Testimony concerning Arsenic in Drinking Water: An Update on the Science, Benefits, and Costs, Committee on Science, United States House of Representatives. 2001. Concerning the effects on lowincome households and small communities from a more stringent regulation of arsenic in drinking water.
- 45. In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Gas Rates in its Service Territory, Public Utilities Commission of Ohio, Case No. 01-1228-GA-AIR, et al. 2002. Concerning the need for and structure of a special rider and alternative form of regulation for an accelerated main replacement program, on behalf of the Ohio Consumers' Counsel.
- 46. *Pennsylvania State Treasurer's Hearing on Enron and Corporate Governance Issues*. 2002. Concerning Enron's role in Pennsylvania's electricity market and related issues, on behalf of the Pennsylvania AFL-CIO.

- 47. An Investigation into the Feasibility and Advisability of Kentucky-American Water Company's Proposed Solution to its Water Supply Deficit, Kentucky Public Service Commission, Case No. 2001-00117. 2002.
 Concerning water supply planning, regulatory oversight, and related issue, on behalf of the Kentucky Office of Attorney General.
- 48. Joint Application of Pennsylvania-American Water Company and Thames Water Aqua Holdings GmbH, Pennsylvania Public Utility Commission, Docket Nos. A-212285F0096 and A-230073F0004. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.
- 49. Application for Approval of the Transfer of Control of Kentucky-American Water Company to RWE AG and Thames Water Aqua Holdings GmbH, Kentucky Public Service Commission, Case No. 2002-00018. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Kentucky Office of Attorney General.
- 50. Joint Petition for the Consent and Approval of the Acquisition of the Outstanding Common Stock of American Water Works Company, Inc., the Parent Company and Controlling Shareholder of West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 01-1691-W-PC. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Consumer Advocate Division of the West Virginia Public Service Commission.
- 51. Joint Petition of New Jersey-American Water Company, Inc. and Thames Water Aqua Holdings GmbH for Approval of Change in Control of New Jersey-American Water Company, Inc., New Jersey Board of Public Utilities, Docket No. WM01120833. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
- 52. *Illinois-American Water Company, Proposed General Increase in Water Rates*, Illinois Commerce Commission, Docket No. 02-0690. 2003. Concerning rate design and cost of service issues, on behalf of the Illinois Office of the Attorney General.
- 53. *Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00038304. 2003. Concerning rate design and cost of service issues, on behalf of the Pennsylvania Office of Consumer Advocate.
- West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 03-0353-W-42T. 2003. Concerning affordability, rate design, and cost of service issues, on behalf of the West Virginia Consumer Advocate Division.
- 55. Petition of Seabrook Water Corp. for an Increase in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR3010054. 2003. Concerning revenue requirements, rate design, prudence, and regulatory policy, on behalf of the New Jersey Division of Ratepayer Advocate.
- 56. Chesapeake Ranch Water Co. v. Board of Commissioners of Calvert County, U.S. District Court for Southern District of Maryland, Civil Action No. 8:03-cv-02527-AW. 2004. Submitted expert report concerning the expected level of rates under various options for serving new commercial development, on behalf of the plaintiff.
- 57. *Testimony concerning Lead in Drinking Water*, Committee on Government Reform, United States House of Representatives. 2004. Concerning the trade-offs faced by low-income households when drinking water costs increase, including an analysis of H.R. 4268.

- West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 04-0373-W-42T. 2004. Concerning affordability and rate comparisons, on behalf of the West Virginia Consumer Advocate Division.
- West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 04-0358-W-PC. 2004. Concerning costs, benefits, and risks associated with a wholesale water sales contract, on behalf of the West Virginia Consumer Advocate Division.
- 60. *Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2004-00103. 2004. Concerning rate design and tariff issues, on behalf of the Kentucky Office of Attorney General.
- 61. *New Landing Utility, Inc.*, Illinois Commerce Commission, Docket No. 04-0610. 2005. Concerning the adequacy of service provided by, and standards of performance for, a water and wastewater utility, on behalf of the Illinois Office of Attorney General.
- 62. *People of the State of Illinois v. New Landing Utility, Inc.*, Circuit Court of the 15th Judicial District, Ogle County, Illinois, No. 00-CH-97. 2005. Concerning the standards of performance for a water and wastewater utility, including whether a receiver should be appointed to manage the utility's operations, on behalf of the Illinois Office of Attorney General.
- 63. Hope Gas, Inc. d/b/a Dominion Hope, West Virginia Public Service Commission, Case No. 05-0304-G-42T. 2005. Concerning the utility's relationships with affiliated companies, including an appropriate level of revenues and expenses associated with services provided to and received from affiliates, on behalf of the West Virginia Consumer Advocate Division.
- 64. *Monongahela Power Co. and The Potomac Edison Co.*, West Virginia Public Service Commission, Case Nos. 05-0402-E-CN and 05-0750-E-PC. 2005. Concerning review of a plan to finance the construction of pollution control facilities and related issues, on behalf of the West Virginia Consumer Advocate Division.
- 65. Joint Application of Duke Energy Corp., et al., for Approval of a Transfer and Acquisition of Control, Case Kentucky Public Service Commission, No. 2005-00228. 2005. Concerning the risks and benefits associated with the proposed acquisition of an energy utility, on behalf of the Kentucky Office of the Attorney General.
- 66. Commonwealth Edison Company proposed general revision of rates, restructuring and price unbundling of bundled service rates, and revision of other terms and conditions of service, Illinois Commerce Commission, Docket No. 05-0597. 2005. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.
- 67. *Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00051030. 2006. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.
- 68. Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, and Illinois Power Company d/b/a AmerenIP, proposed general increases in rates for delivery service, Illinois Commerce Commission, Docket Nos. 06-0070, et al. 2006. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.

- 69. *Grens, et al., v. Illinois-American Water Co.*, Illinois Commerce Commission, Docket Nos. 5-0681, et al. 2006. Concerning utility billing, metering, meter reading, and customer service practices, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
- Commonwealth Edison Company Petition for Approval of Tariffs Implementing ComEd's Proposed Residential Rate Stabilization Program, Illinois Commerce Commission, Docket No. 06-0411. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.
- 71. Illinois-American Water Company, Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges Pursuant to 83 Ill. Adm. Code 655, Illinois Commerce Commission, Docket No. 06-0196. 2006. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
- 72. *Illinois-American Water Company, et al.*, Illinois Commerce Commission, Docket No. 06-0336. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Illinois Office of Attorney General.
- 73. Joint Petition of Kentucky-American Water Company, et al., Kentucky Public Service Commission, Docket No. 2006-00197. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Kentucky Office of Attorney General.
- 74. Aqua Illinois, Inc. Proposed Increase in Water Rates for the Kankakee Division, Illinois Commerce Commission, Docket No. 06-0285. 2006. Concerning various revenue requirement, rate design, and tariff issues, on behalf of the County of Kankakee.
- 75. Housing Authority for the City of Pottsville v. Schuylkill County Municipal Authority, Court of Common Pleas of Schuylkill County, Pennsylvania, No. S-789-2000. 2006. Concerning the reasonableness and uniformity of rates charged by a municipal water authority, on behalf of the Pottsville Housing Authority.
- 76. Application of Pennsylvania-American Water Company for Approval of a Change in Control, Pennsylvania Public Utility Commission, Docket No. A-212285F0136. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.
- 77. Application of Artesian Water Company, Inc., for an Increase in Water Rates, Delaware Public Service Commission, Docket No. 06-158. 2006. Concerning rate design and cost of service, on behalf of the Staff of the Delaware Public Service Commission.
- 78. Central Illinois Light Company, Central Illinois Public Service Company, and Illinois Power Company: Petition Requesting Approval of Deferral and Securitization of Power Costs, Illinois Commerce Commission, Docket No. 06-0448. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.
- 79. Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Revising the Distribution System Improvement Charge, Pennsylvania Public Utility Commission, Docket No. P-00062241. 2007. Concerning the reasonableness of a water utility's proposal to increase the cap on a statutorily authorized distribution system surcharge, on behalf of the Pennsylvania Office of Consumer Advocate.

- Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2007-00143. 2007. Concerning rate design and cost of service, on behalf of the Kentucky Office of Attorney General.
- 81. Application of Kentucky-American Water Company for a Certificate of Convenience and Necessity Authorizing the Construction of Kentucky River Station II, Associated Facilities and Transmission Main, Kentucky Public Service Commission, Case No. 2007-00134. 2007. Concerning the life-cycle costs of a planned water supply source and the imposition of conditions on the construction of that project, on behalf of the Kentucky Office of Attorney General.
- 82. *Pa. Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00072229. 2007. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.
- 83. Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges, Illinois Commerce Commission, Docket No. 07-0195. 2007. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
- 84. In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates for Water Service Provided In the Lake Erie Division, Public Utilities Commission of Ohio, Case No.07-0564-WW-AIR. 2007. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
- 85. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00072711. 2008. Concerning rate design, on behalf of the Masthope Property Owners Council.
- 86. *Illinois-American Water Company Proposed increase in water and sewer rates*, Illinois Commerce Commission, Docket No. 07-0507. 2008. Concerning rate design and demand studies, on behalf of the Illinois Office of Attorney General.
- Central Illinois Light Company, d/b/a AmerenCILCO; Central Illinois Public Service Company, d/b/a AmerenCIPS; Illinois Power Company, d/b/a AmerenIP: Proposed general increase in rates for electric delivery service, Illinois Commerce Commission Docket Nos. 07-0585, 07-0586, 07-0587. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.
- 88. Commonwealth Edison Company: Proposed general increase in electric rates, Illinois Commerce Commission Docket No. 07-0566. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.
- In the Matter of Application of Ohio American Water Co. to Increase Its Rates, Public Utilities Commission of Ohio, Case No. 07-1112-WS-AIR. 2008. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
- 90. In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Service, Public Utilities Commission of Ohio, Case Nos. 07-829-GA-AIR, et al. 2008. Concerning the need for, and structure of, an accelerated infrastructure replacement program and rate surcharge, on behalf of the Office of the Ohio Consumers' Counsel.

- 91. Pa. Public Utility Commission v. Pennsylvania American Water Company, Pennsylvania Public Utility Commission, Docket No. R-2008-2032689. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.
- 92. *Pa. Public Utility Commission v. York Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2023067. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.
- 93. Northern Illinois Gas Company d/b/a Nicor Gas Company, Illinois Commerce Commission, Docket No. 08-0363. 2008. Concerning rate design, cost of service, and automatic rate adjustments, on behalf of the Illinois Office of Attorney General.
- West Virginia American Water Company, West Virginia Public Service Commission, Case No. 08-0900-W-42T. 2008. Concerning affiliated interest charges and relationships, on behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia.
- 95. Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges, Illinois Commerce Commission, Docket No. 08-0218. 2008. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
- 96. In the Matter of Application of Duke Energy Ohio, Inc. for an Increase in Electric Rates, Public Utilities Commission of Ohio, Case No. 08-0709-EL-AIR. 2009. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
- 97. The Peoples Gas Light and Coke Company and North Shore Gas Company Proposed General Increase in Rates for Gas Service, Illinois Commerce Commission, Docket Nos. 09-0166 and 09-0167. 2009. Concerning rate design and automatic rate adjustments on behalf of the Illinois Office of Attorney General, Citizens Utility Board, and City of Chicago.
- 98. Illinois-American Water Company Proposed Increase in Water and Sewer Rates, Illinois Commerce Commission, Docket No. 09-0319. 2009. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General and Citizens Utility Board.
- 99. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2009-2132019. 2010. Concerning rate design, cost of service, and automatic adjustment tariffs, on behalf of the Pennsylvania Office of Consumer Advocate.
- 100.Apple Canyon Utility Company and Lake Wildwood Utilities Corporation Proposed General Increases in Water Rates, Illinois Commerce Commission, Docket Nos. 09-0548 and 09-0549. 2010. Concerning parent-company charges, quality of service, and other matters, on behalf of Apple Canyon Lake Property Owners' Association and Lake Wildwood Association, Inc.
- 101. Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules, Connecticut Department of Public Utility Control, Docket No. 10-02-13. 2010. Concerning rate design, proof of revenues, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.
- 102.Illinois-American Water Company Annual Reconciliation Of Purchased Water and Sewage Treatment Surcharges, Illinois Commerce Commission, Docket No. 09-0151. 2010. Concerning the reconciliation

of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.

- 103.*Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket Nos. R-2010-2166212, et al. 2010. Concerning rate design and cost of service study for four wastewater utility districts, on behalf of the Pennsylvania Office of Consumer Advocate.
- 104.Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, Illinois Power Company d/b/a AmerenIP Petition for accounting order, Illinois Commerce Commission, Docket No. 10-0517. 2010. Concerning ratemaking procedures for a multi-district electric and natural gas utility, on behalf of the Illinois Office of Attorney General.
- 105. Commonwealth Edison Company Petition for General Increase in Delivery Service Rates, Illinois Commerce Commission Docket No. 10-0467. 2010. Concerning rate design and cost of service study, on behalf of the Illinois Office of Attorney General.
- 106.*Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2010-2179103. 2010. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.
- 107.Application of Yankee Gas Services Company for Amended Rate Schedules, Connecticut Department of Public Utility Control, Docket No. 10-12-02. 2011. Concerning rate design and cost of service for a natural gas utility, on behalf of the Connecticut Office of Consumers' Counsel.
- 108. California-American Water Company, California Public Utilities Commission, Application 10-07-007. 2011. Concerning rate design and cost of service for multiple water-utility service areas, on behalf of The Utility Reform Network.
- 109.Little Washington Wastewater Company, Inc., Masthope Wastewater Division, Pennsylvania Public Utility Commission Docket No. R-2010-2207833. 2011. Concerning rate design and various revenue requirements issues, on behalf of the Masthope Property Owners Council.
- 110.In the matter of Pittsfield Aqueduct Company, Inc., New Hampshire Public Utilities Commission Case No. DW 10-090. 2011. Concerning rate design and cost of service on behalf of the New Hampshire Office of the Consumer Advocate.
- 111.In the matters of Pennichuck Water Works, Inc. Permanent Rate Case and Petition for Approval of Special Contract with Anheuser-Busch, Inc., New Hampshire Public Utilities Commission Case Nos. DW 10-091 and DW 11-014. 2011. Concerning rate design, cost of service, and contract interpretation on behalf of the New Hampshire Office of the Consumer Advocate.
- 112.Artesian Water Co., Inc. v. Chester Water Authority, U.S. District Court for the Eastern District of Pennsylvania Case No. 10-CV-07453-JP. 2011. Concerning cost of service, ratemaking methods, and contract interpretation on behalf of Chester Water Authority.
- 113.North Shore Gas Company and The Peoples Gas Light and Coke Company Proposed General Increases in Rates for Gas Service, Illinois Commerce Commission, Docket Nos. 11-0280 and 11-0281. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General, the Citizens Utility Board, and the City of Chicago.

- 114. Ameren Illinois Company: Proposed general increase in electric delivery service rates and gas delivery service rates, Illinois Commerce Commission, Docket Nos. 11-0279 and 11-0282. 2011. Concerning rate design and cost of service for natural gas and electric distribution service, on behalf of the Illinois Office of Attorney General and the Citizens Utility Board.
- 115.*Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2232243. 2011. Concerning rate design, cost of service, sales forecast, and automatic rate adjustments on behalf of the Pennsylvania Office of Consumer Advocate.
- 116.Aqua Illinois, Inc. Proposed General Increase in Water and Sewer Rates, Illinois Commerce Commission, Docket No. 11-0436. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General.
- 117.City of Nashua Acquisition of Pennichuck Corporation, New Hampshire Public Utilities Commission, Docket No. DW 11-026. 2011. Concerning the proposed acquisition of an investor-owned utility holding company by a municipality, including appropriate ratemaking methodologies, on behalf of the New Hampshire Office of Consumer Advocate.
- 118. An Application by Heritage Gas Limited for the Approval of a Schedule of Rates, Tolls and Charges, Nova Scotia Utility and Review Board, Case NSUARB-NG-HG-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
- 119.An Application of Halifax Regional Water Commission for Approval of a Cost of Service and Rate Design Methodology, Nova Scotia Utility and Review Board, Case NSUARB-W-HRWC-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
- 120.*National Grid USA and Liberty Energy Utilities Corp.*, New Hampshire Public Utilities Commission, Docket No. DG 11-040. 2011. Concerning the costs and benefits of a proposed merger and related conditions, on behalf of the New Hampshire Office of Consumer Advocate.
- 121. Great Northern Utilities, Inc., et al., Illinois Commerce Commission, Docket Nos. 11-0059, et al. 2012. Concerning options for mitigating rate impacts and consolidating small water and wastewater utilities for ratemaking purposes, on behalf of the Illinois Office of Attorney General.
- 122.Aqua Pennsylvania, Inc., Pennsylvania Public Utility Commission, Docket No. R-2011-2267958. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Pennsylvania Office of Consumer Advocate.
- 123. *Golden State Water Company*, California Public Utilities Commission, Application 11-07-017. 2012. Concerning rate design and quality of service, on behalf of The Utility Reform Network.
- 124.Golden Heart Utilities, Inc. and College Utilities Corporation, Regulatory Commission of Alaska, Case Nos. U-11-77 and U-11-78. 2012. Concerning rate design and cost of service, on behalf of the Alaska Office of the Attorney General.
- 125.*Illinois-American Water Company*, Illinois Commerce Commission, Docket No. 11-0767. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Illinois Office of Attorney General.

- 126. Application of Tidewater Utilities, Inc., for a General Rate Increase in Water Base Rates and Tariff Revisions, Delaware Public Service Commission, Docket No. 11-397. 2012. Concerning rate design and cost of service study, on behalf of the Staff of the Delaware Public Service Commission.
- 127. In the Matter of the Philadelphia Water Department's Proposed Increase in Rates for Water and Wastewater Utility Services, Philadelphia Water Commissioner, FY 2013-2016. 2012. Concerning rate design and related issues for storm water service, on behalf of Citizens for Pennsylvania's Future.
- 128.Corix Utilities (Illinois) LLC, Hydro Star LLC, and Utilities Inc. Joint Application for Approval of a Proposed Reorganization, Illinois Commerce Commission, Docket No. 12-0279. 2012. Concerning merger-related synergy savings and appropriate ratemaking treatment of the same, on behalf of the Illinois Office of Attorney General.
- 129.North Shore Gas Company and The Peoples Gas Light and Code Company, Illinois Commerce Commission, Docket Nos. 12-0511 and 12-0512. 2012. Concerning rate design, cost of service study, and automatic rate adjustment tariff on behalf of the Illinois Office of Attorney General.
- 130.Pa. Public Utility Commission v. City of Lancaster Sewer Fund, Pennsylvania Public Utility Commission, Docket No. R-2012-2310366. 2012. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.

AQUARION WATER COMPANY OF NEW HAMPSHIRE

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012 Request No.: OCA 2-4 Date of Response: October 10, 2012 Witness: C. McMorran

- REQUEST: Reference Attachment HCH-1, page 10 (Bates page 12 of 148), concerning the 2011 Customer Satisfaction Survey conducted on behalf of the Company by the The Center for Research.
 - a. The survey indicates that approximately 10% of respondents failed to rate the Company's water pressure as being "good" or "very good." Is the Company aware of specific areas of its system with pressure problems? If so, please describe these problems as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligible for inclusion in the WICA.
 - b. The survey indicates that approximately 20% of respondents failed to rate the smell of the Company's water as being "good" or "very good." Is the Company aware of specific odor problems with its water? If so, describe these problems as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligible for inclusion in the WICA.
 - c. The survey indicates that approximately 30% of respondents failed to rate the taste of the Company's water as being "good" or "very good." Is the Company aware of specific taste problems with its water? If so, describe these problems as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligiable for inclusion in the WICA.

RESPONSE:

- a. The distribution system has no areas with low pressure (less than 35 psi) except during intermittant main break repairs or other reactive work.
- b. Company staff has not observed any abnormal water odors in the distribution system. Calls received regarding water odors have been identified as originating in internal plumbing systems.
- c. Company staff has not observed any unusual taste to the water in the distribution system.

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012	Date of Response: October 10, 2012
Request No.: OCA 2-5	Witness: C. McMorran
Page 1 of 3	

REQUEST: Reference Attachment HCH-1, page 11 (Bates page 13 of 148), concerning the 2011 Customer Satisfaction Survey conducted on behalf of the Company by the The Center for Research.

- a. The survey indicates that approximately 2% of respondents state the Company's overall quality of tap water in their homes "remained poor." Is the Company aware of specific areas of its system with poor in-home water quality? If so, please describe these conditions as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligible for inclusion in the WICA.
- b. The survey indicates that approximately 6% of respondents state the Company's overall quality of tap water in their homes "worsened" between 2010 and 2011. Is the Company aware of specific areas of its system with deteriorating in-home water quality? If so, please describe these conditions as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligible for inclusion in the WICA.
- c. The survey indicates that respondents who identified their water quality as poor or worsening identified problems with taste, odor, staining, color, and sediment. Is the Company aware of specific areas of its system that experience such problems with in-home water quality? If so, please describe these conditions as well as the Company's plans for addressing such problems, including the cost and schedule for each such project and whether the project would be eligible for inclusion in the WICA.

RESPONSE:

- a. Company staff conducts routine, frequent distribution water quality sampling that show that water quality parameters are consistent throughout the distribution system. Calls from customers regarding water quality problems fall into two categories: discoloration and taste / odor.
 - a. Discoloration occurs infrequently and originates from one of two sources: pipe deterioration and bedrock wells. Aging pipes, some over 100 years old, slowly

DW 12-085 Aquarion Permanent Rate Case AQUARION WATER COMPANY OF NEW HAMPSHIRE Direct Testimony of Rubin Attachment SJR-2

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012 Request No.: OCA 2-5 Page 2 of 3 Date of Response: October 10, 2012 Witness: C. McMorran

deteriorate and slough off iron particles that accumulate as sediment in mains with slow water velocity. Small amounts of iron, manganese and other minerals originate in bedrock wells and also settle into slow velocity mains. A phosphate product is added at treatment facilities to sequester this sediment. However, at times this sediment is mobilized when higher flows occur due to use of hydrants, main breaks, flushing and other distribution activities. Routine system flushing is conducted to remove sediment.

- b. Taste and odor calls have always been observed to be internal problems, many times because customers have internal water treatment equipment (e.g., softeners or filters) which destabilize the chemistry of the water coming from the distribution system. Other causes of taste and odor include fouled faucets strainers and odors coming from drains and traps, not the faucets.
- b. Company staff has not observed of any deterioration of water quality in the distribution system. Water quality tests and observations are conducted frequently to ensure that treatment targets are being met. Customer satisfaction with water quality is indicated by the infrequency of water quality calls (only one call every two months on average).
- c. Our investigations show that taste and odor problems originate in internal plumbing systems, usually due to home treatment systems and/or poor home plumbing maintenance. Discoloration occurs infrequently and is an unavoidable consequence of aging infrastructure and the nature of bedrock wells. Aging pipes, some over 100 years old, slowly deteriorate and slough off iron particles that accumulate as sediment in mains with slow water velocity. Small amounts of iron, manganese and other minerals originate in bedrock wells and also settle into slow velocity mains. The Company undertakes the following efforts to minimize discoloration:
 - a. The Company minimizes discoloration by adding a phosphate sequestering product at production facilities. Phosphate is applied at an average dose of 12 lbs per million gallons at an average annual cost of approximately \$8,000.
 - b. The Company conducts annual flushing to flush sediment out of water mains. Flushing activities require approximately 300 labor hours per year at a cost of approximately \$7,000. Other significant costs include \$20,000 for police details.
 - c. Discoloration from old water mains is one of the factors in prioritizing annual main replacement projects. Our current proposed 5-year main replacement

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DW 12-085 Aquarion Permanent Rate Case AQUARION WATER COMPANY OF NEW HAMPSHIRE Direct Testimony of Rubin Attachment SJR-2

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012 Request No.: OCA 2-5 Page 3 of 3 Date of Response: October 10, 2012 Witness: C. McMorran

project is as follows (all WICA eligible; all costs approximate; all dates subject to change):

i.	2013	Ocean Boulevard	\$725,000
ii.	2014	Rt 101	\$1,040,000
iii.	2015	Well 7 transmission main	\$201,000
iv.	2015	Great Boars Head back alley main	\$176,000
ν.	2015	Church Street	\$162,000
vi.	2016-2	2017 Kings Highway	\$2,180,000
vii.	Not sc	heduled other 100-year or older main	s\$3,300,000
viii.	Not sc	heduled other pre-WWII mains	\$12,200,000

d. Discoloration from bedrock wells can only be totally eliminated by installing new treatment facilities, such as green sand filters, membrane filtration or similar technology. No engineering costs of construction, operations or maintenance costs have been developed, but capital costs on the order of \$1,000,000 per facility are likely.

AQUARION WATER COMPANY OF NEW HAMPSHIRE

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 3

Data Request Received: November 1, 2012 Request No.: OCA 3-5 Date of Response: November 19, 2012 Witness: T. Dixon

- REQUEST: Reference Company's response to data requests OCA 2-4 and OCA 2-5. Please provide specific information and copies of documents related to customer complaints about water pressure, water quality, main breaks and service interruptions, which the Company received in 2010, 2011 and 2012.
- RESPONSE: Below is a table indicating the number of water pressure, water quality and main break/service interruption inquires for 2010, 2011 and to date in 2012. All customer contacts are tracked within the Company's SAP system.

Description	2010	2011	2012 (to date)
Water Pressure	11	10	4
Water Quality	6	9	12
Main Break/Service Interruption	1	6	2



Aquarion Water Company of New Hampshire - EPA ID 1051010

Units: Million Gallons

ROLLING UNACCOUNTED FOR WATER

Production Water Sales Non Revenue Sales + Non Rolling Rolling Rolling Rev Rolling Month Month Unaccounted for Unaccounted % Year Annual Month Annual Annual Annual December 2008 51.97 644.30 40.59 684,89 126.33 811.22 60.12 0.14 15.6% January 2009 808.23 8.69 57.19 33.71 634.68 48.13 682.82 125.42 15.5% 55.77 812.56 685.55 15.6% February 2009 33.77 634.85 4.77 50.70 127.01 March 2009 58.07 814.46 53,96 642.91 4.94 50.15 693.06 121.40 14.9% April 2009 58.53 813.90 29.71 632.57 5.42 49.81 682.38 131.52 16.2% May 2009 74.51 812.87 32,34 629,66 14.06 60.72 690.37 122,49 15.1% 801.56 616.92 5.73 61.29 678.21 123.36 15,4% June 2009 73.31 59,96 610.95 13.74 65.03 675,98 111.19 14.1% July 2009 84.93 787.17 39,61 673.26 15.0% 95.15 791.74 58.97 606.01 8.62 67.25 118.48 August 2009 792.55 598.78 2.78 69.85 668.63 123.92 15.6% September 2009 73.85 76,68 597.19 77.55 674,74 115.06 14.6% October 2009 55.16 789.80 66.67 8.47 80.65 683.07 110.28 13.9% November 2009 54.89 793.35 56.92 602.42 3.31 102.08 December 2009 55.71 797.09 63.31 605.61 8.88 89.39 695.00 12.8%

ROLLING UNACCOUNTED FOR WATER

Aquarion Water Company of New Hampshire - EPA ID 1051010

	Produc	tion	Water S	Sales	Non Revenue				
Year	Month	Rolling Annual	Month	Rolling Annual	Month	Rolling Annual	Sales + Non Rev Annual	Unaccounted for	Rolling Unaccounted %
January 2010	59.57	799.46	30.30	602.20	4.93	87.00	689.21	110.26	13.8%
February 2010	51.32	795.01	31,74	600.18	7.27	89.21	689.39	105.62	13.3%
March 2010	56.56	793.50	54.01	600.24	7.46	91,73	691.97	101.53	12.8%
April 2010	57.23	792.19	28.59	599.11	2.91	89.03	688.14	104.05	13.1%
May 2010	76.21	793.89	32.51	599.28	11.70	86.57	685.85	108.04	13.6%
June 2010	84.60	805.17	64.70	604.02	2.14	82.88	686.90	118.27	14.7%
July 2010	123.93	844.18	44.21	608.62	7.44	76.47	685.09	159.08	18.8%
August 2010	110.58	859.60	93.75	643.40	6.15	74.01	717.41	142.20	16.5%
September 2010	81.85	867.60	99.06	665.78	4.09	75.31	741,10	126.50	14.6%
October 2010	64.96	877.40	59.49	658.61	4.57	71,31	729,92	147.48	16.8%
November 2010	55.68	878.19	55.92	657.60	1.52	69.42	727.02	151.17	17.2%
December 2010	58.18	880.66	49.05	643.34	3.76	63.93	707.27	173.39	19.7%

Prepared by Carl McMorran, Operations Manager

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1/5/2011

ROLLING UNACCOUNTED FOR WATER

Aquarion Water Company of New Hampshire - EPA ID 1051010

Units: Million Gallons

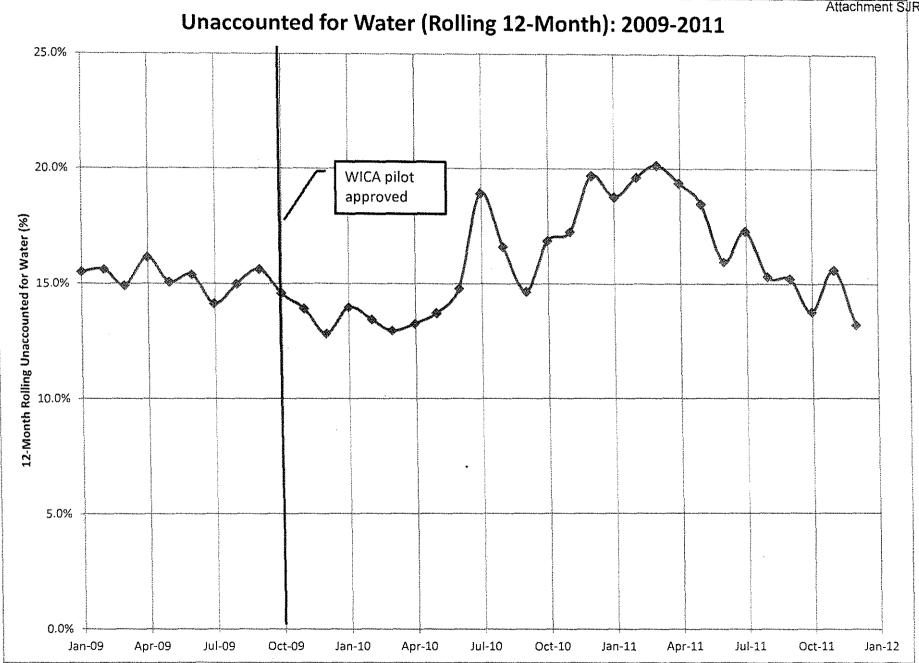
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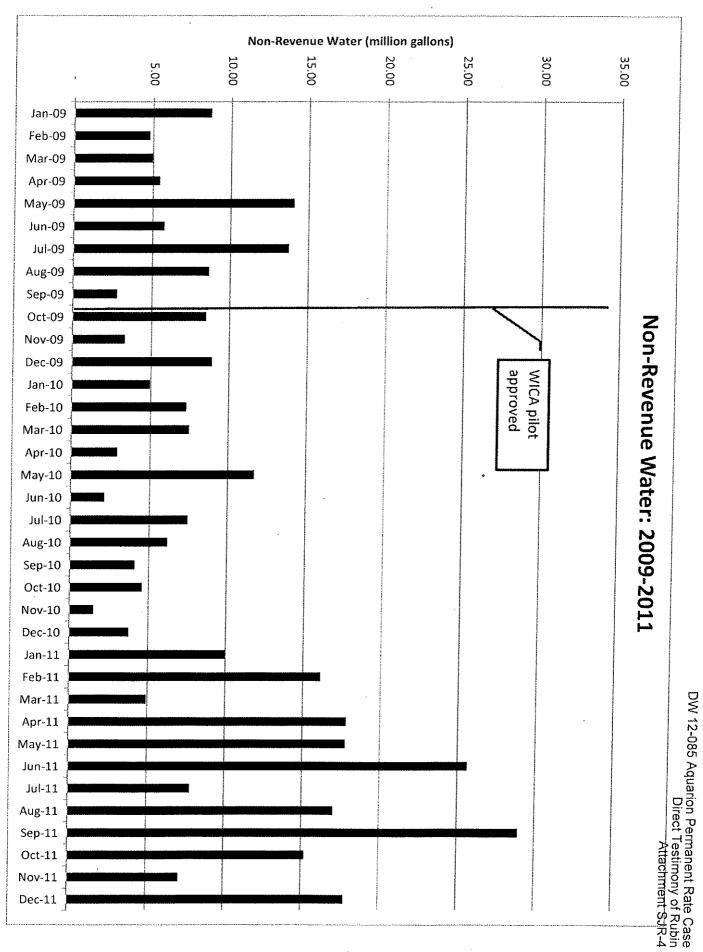
Units: Million Galions									
	Production		Water Sales		Non Revenue				
Year	Month	Rolling Annual	Month	Rolling Annual	Month	Rolling Annual	Sales + Non Rev [.] Annual	Unaccounted for	Rolling Unaccounted %
January 2011	65.23	886.32	38.01	670.48	9.96	84.35	754.84	131.48	_14.8%
February 2011	61.44	896.44	23.47	662.21	16.12	97.42	759.63	136.82	15.3%
March 2011	66.11	905.99	59.49	667,69	4.90	98.28	765.97	140.02	15.5%
April 2011	59.95	908.71	22.87	661.97	17.81	111.02	772.99	135.72	14.9%
May 2011	72.34	904.84	31.51	660.97	17.76	109.00	769.97	134.87	14.9%
June 2011	91.60	911.85	69.85	666.40	25.63	131.80	798.19	113.65	12.5%
July 2011	123.52	911.44	31.31	653.50	7.78	130.49	783.99	127.45	14.0%
August 2011	108.73	909.58	99.46	659.20	17.02	138.00	797.20	112.38	12.4%
September 2011	86.38	914.11	78.94	638.65	28.95	155.81	794.46	119.65	13.1%
October 2011	68.46	917.62	65.00	643.64	15.20	167.58	811.22	106.40	11.6%
November 2011	60.93	922.87	38.00	615.81	7.10	172.49	788.29	134.58	14.6%
December 2011	61.99	926.68	60.47	618.39	17.76	186.00	804.39	122.28	3 13.2%

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Prepared by Carl McMorran, Operations Manager

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Aquarion Water Company of New Hampshire Transmission and Distribution Expenses: 2008-2011

	2008		2009		2010		2011	
Operations	\$	198,338	\$	193,131	\$	135,051	\$	126,894
Maintenance		360,516		336,572		375,594		457,923
Total	\$	558,854	\$	529,703	\$	510,645	\$	584,817

Source: Aquarion annual reports to NH PUC

Aquarion Water Company of New Hampshire Emergency or Unplanned WICA Spending as Percent of Total: 2010-2015

	2010	2011	2012	2013	2014	2015
	<u>Actual</u>	Actual	Actual	Proposed	Proposed	Proposed
Meters	0%	0%	0%	0%	0%	0%
Hydrants	79%	74%	48%	68%	68%	68%
Services	14%	81%	48%	56%	56%	56%
Valves	86%	100%	58%	90%	90%	90%

Sources: Attachment CM-1 to WICA filings (DW 10-293, DW 11-238, DW-12-325)



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC UTILITY CONTROL TEN FRANKLIN SQUARE NEW BRITAIN, CT 06051

DOCKET NO. 07-09-09

DPUC REVIEW AND INVESTIGATION OF THE REQUIREMENTS FOR IMPLEMENTATION OF A WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT

April 30, 2008

By the following Commissioners:

John W. Betkoski, III Anne C. George Donald W. Downes

DECISION

DECISION

I. INTRODUCTION

A. SUMMARY

In this Decision, the Department of Public Utility Control (Department) establishes a process for administrating a rate adjustment mechanism for the purpose of funding eligible water infrastructure improvement projects by Department-regulated water companies.

B. BACKGROUND OF THE PROCEEDING

On June 19, 2007, Public Act 07-139, <u>An Act Concerning Water Company</u> <u>Infrastructure Projects</u> (Act or Public Act), became Connecticut law. The intended purpose of the Act is to enable the acceleration of the rate of replacement and/or rehabilitation of existing water system infrastructure to mitigate the effect of decay of aging water systems and promote conservation measures. The Act empowers the Department, in consultation with the Office of Consumer Counsel (OCC), to authorize a water company to use a rate adjustment mechanism, such as a water infrastructure and conservation adjustment (WICA), for eligible projects completed and in service for the benefit of the water company's customers.

Section 2(b) of the Act directs that:

On or before ninety days after the effective date of this section, the [D]epartment shall initiate a generic docket on what shall be included in a water company's infrastructure assessment report and annual reconciliation reports and the criteria for determining priority of eligible projects. The [D]epartment shall provide public notice with a deadline for interested parties to submit recommendations on the report contents and criteria. The [D]epartment may hold a hearing on the generic docket but shall issue a decision on the docket not later than one hundred eighty days after the deadline for interested parties to submit their recommendations on the report contents and criteria. (Emphasis added.)

Accordingly, the Department established the instant generic docket as an uncontested proceeding.

C. CONDUCT OF THE PROCEEDING

By Notice of Request for Written Comments dated September 13, 2007, the Department requested interested parties (participants, as identified in Section I.D, below) to present their recommendations on what the infrastructure assessment report and annual reconciliation reports should contain, and the criteria for determining priority

of eligible projects. In addition, the Department requested that, as applied by SJR-7 participants provide the following:

- 1. An overview of the respective utility's infrastructure, specifically transmission and distribution mains; the level of detail that the utility has regarding in-service dates, materials used, and its main break history; and, if the level of detail varies throughout the utility's system(s), an explanation of why that is so;
- 2. An overview of the utility's experience in main cleaning and relining as well as other available trenchless methods of main replacement; a commentary on the utility's ability to utilize these technologies; and a commentary on the applicability of these methods in the utility's service area;
- 3. The utility's current method of prioritizing main replacement; and, if different, the method proposed by the utility under a WICA approach;
- 4. An explanation of how the utility will perform a cost/benefit analysis of replacement rather than repair; and a copy of the model that the utility would utilize to make the replacement/repair determination;
- 5. The exhibits and other filing requirements that the utility proposes to constitute the annual reconciliation, as referenced in Section 2(j) of the Act; and
- 6. The correspondence to customers proposed by the utility for the implementation of a rate adjustment, as referenced in Section 2(j) of the Act.

Participants were given until November 9, 2007, to submit their respective filings to the Department in response to a Notice of Request for Written Comments.

By Notice of Hearing dated January 4, 2008, the Department held a public hearing on January 23, 2008, at its offices, Ten Franklin Square, New Britain, Connecticut. That hearing was held and continued to February 1, 2008. By Notice of Rescheduled Meeting dated January 25, 2008, the Department rescheduled the February 1, 2008 hearing and held it on February 25, 2008. At the conclusion of that hearing, the Department closed the record in this proceeding.

D. PARTICIPANTS

The Department designated the OCC, 10 Franklin Square, New Britain, Connecticut, 06051, and the following regulated water utilities as participants to this uncontested proceeding: Aquarion Water Company of Connecticut (Aquarion), The Avon Water Company (Avon), Bethel Consolidated Water Company, Brookfield Water Company, The Connecticut Water Company (CWC), The Ellington Acres Company, The Hazardville Water Company, Hawks Nest Beach Water Company, Heritage Village Water Company, The Jewett City Water Company, Judea Water Company, Inc., Old Newgate Ridge Water Company, Inc., Olmstead Water Supply Company, Attestion SJR-7 Plains Water Company, Rural Water Company, Inc., Topstone Hydraulic Company, The Torrington Water Company, Tyler Lake Water Company, United Water Connecticut, Inc. (United), Valley Water Systems, Inc., and West Service Corporation.

The Department also granted participant status to the South Central Connecticut Regional Water Authority (RWA)¹, 90 Sargent Drive, New Haven, Connecticut 06511; and The Connecticut Water Works Association, Inc. (CWWA)², 25 Capitol Avenue, Hartford, Connecticut 06106.

In response to the Notice of Request for Written Comments, the Department received submissions from: OCC; CWWA; Aquarion, 835 Main Street, Bridgeport, Connecticut, 06601-2353; CWC, 93 West Main Street, Clinton, Connecticut 06413-0562; and United, 110 Kent Road, New Milford, Connecticut 06776-3416.

The following participants provided responses to the Department's interrogatories and contributed testimony during the hearings: OCC, Aquarion, CWC, CWWA, United and Avon, P.O. Box 424, Avon, Connecticut, 06001. The Department received briefs and/or reply briefs from the OCC, Aquarion, CWC and United.

E. PUBLIC COMMENT

Aside from testimony provided by some of the participants identified above, the Department received no public comment on this matter.

II. DEPARTMENT ANALYSIS

A. INFRASTRUCTURE ASSESSMENT AND PLANNING

1. General

The topic of reinvesting in water infrastructure is not new. There is agreement among all participants involved, that a significant portion of many water utilities' infrastructure is approaching or exceeding what was once considered its useful life. The issue has taken on a national perspective. The Federal Environmental Protection Agency estimates water infrastructure needs over the next 20 years to be \$276.8 billion³.

Based on the age and the anticipated life of infrastructure, the current level of infrastructure investment is generally inadequate. Most water companies are not rehabilitating or replacing infrastructure on an annual basis commensurate with the

¹ While the RWA is a political subdivision of the State of Connecticut that provides water utility services throughout the greater New Haven region, it is generally not subject to the Department's jurisdiction; it is governed by its enabling legislation. Motion No. 2 (RWA letter dated October 1, 2007, to the Department).

² CWWA is an association of public water supply utilities serving more than 500,000 customers throughout Connecticut. Motion No. 4 (CWWA letter dated October 31, 2007, to the Department).

³ EPA Drinking Water Infrastructure Needs Survey and Assessment Third Report to Congress, dated June 2005.

estimated useful life of each underground asset. That being said, the partitipantent SJR-7 indicated that age alone is not a particularly useful indicator of the life of any given main. Indeed, certain underground assets have proven to serve customers well past useful service life estimates. In order to allow a relevant prioritization of system rehabilitative work to be undertaken, an inventory of existing system infrastructure needs to be performed, and criteria must be established to determine eligible projects based on factors including but not limited to age.

a. Inventory of Existing System Components

Before a thoughtful schedule of work can be established, an accurate inventory of existing system infrastructure is vital. A comprehensive inventory of the age, condition and environment of infrastructure and an estimate of remaining service lives should be an essential precursor to any meaningful replacement/rehabilitation program. Estimates should be based on updates, especially with pipe activity, etc. that extend useful life past that of previously established useful life estimates at installation.

To this end, the Department requested participants to provide the following details:

- (a) An overview of the respective utility's infrastructure, specifically transmission and distribution mains;
- (b) The level of detail that the utility has regarding in-service dates, materials used, and its main break history; and
- (c) If the level of detail varies throughout the utility's system(s), an explanation of why that is so.

Notice of Request for Written Comments, Issue #1, p. 2.

As many of the comments confirmed, past practices involving record keeping have resulted in differing levels of information on the installation date, material type, and even exact location of existing underground infrastructure. In many cases, this circumstance is not the fault of present system operators. Many current water companies are comprised of an aggregation of earlier water systems, and frequently the case is that historical records on system infrastructure are not comprehensive. However, past record keeping practices should not prevent forward progress in infrastructure planning. In some cases, infrastructure inventories will need to be estimated based on the best information available and updated as more accurate knowledge becomes documented.

The development of an accurate inventory of the existing system infrastructure is essential to the protection and improvement of the system to assure reliability of service to customers. Therefore, the Department will require the collection and assembly of accurate infrastructure inventory on an ongoing basis. To this end, the Department has developed WICA-01 as the form to be used by a water company to compile relevant data on its current infrastructure to facilitate appropriate determinations on the criteria for prioritizing repair and replacement.

b. Eligible Projects

The Act identifies projects that are eligible for WICA treatment. The Department intends to review each project for eligibility in accordance with Section 1(1) of the Act, which defines eligible projects as:

... those water company plant projects not previously included in the water company's rate base in its most recent general rate case and that are intended to improve or protect the quality and reliability of service to customers, including (A) renewal or replacement of existing infrastructure, including mains, valves, services, meters and hydrants that have either reached the end of their useful life, are worn out, are in deteriorated condition, are or will be contributing to unacceptable levels of unaccounted for water, or are negatively impacting water quality or reliability of service if not replaced; (B) main cleaning and relining projects; (C) relocation of facilities as a result of government actions, the capital costs of which are not otherwise eligible for reimbursement; and (D) purchase of leak detection equipment or installation of production meters, and pressure reducing valves.

The WICA program is intended to accelerate asset replacement for infrastructure for the purpose of improving or protecting the water quality and the reliability of service to customers. However, the WICA program is not intended to replace or reduce the scrutiny of conduct of general rate increase hearings. The level of review for prudency in a WICA proceeding is less than that of a rate proceeding. Therefore, an approval by the Department of a proposed project would be an indication that the proposed project is eligible under the WICA program; however, it would not necessarily be an indication that the Department endorses the prudency of the project as constructed.

The WICA program is also not intended to replace current practices of asset management and infrastructure replacement. While reviewing WICA applications, the Department will evaluate and consider the level of infrastructure rehabilitation and replacement spending by the company in prior years. The Department anticipates that the WICA application will include cost/benefit analysis by the company.

Section 2(d)(4) of the Act calls for a sufficient level of investment in infrastructure. In keeping with the intent of accelerating infrastructure investment, the Department will require a showing by applicants that the level of investment made through use of the WICA program actually accelerates infrastructure replacement. The Department will commence a technical meeting within thirty days of this Decision to establish guidelines for what constitutes a showing of sufficient investment in the WICA program.

c. Criteria for Determining Priority of Eligible Projects

In addition to a relevant system inventory, the enabling legislation requires objective project prioritization criteria. Based on the present condition of their system infrastructure, it is likely that multiple potential rehabilitation and replacement projects will exist for many water companies. In the past, water companies have generally not performed cost/benefit analyses for particular projects or developed predictive planning models. While the Department does not intend to usurp the management prerodative of t SJR-7 the water companies in project planning, it will require that prudent engineering and objectively determined system needs be considered that will benefit reliability of service to customers at reasonable rates and insure that companies do not become overly aggressive in prematurely investing in main renewal or other projects of questionable benefit. In particular, the Department will thoroughly evaluate any proposed projects that potentially involve revenue enhancement.

The Department reiterates that the overarching intention of the WICA program is to rehabilitate or replace aging underground infrastructure, in particular decaying pipe and valves. The WICA program is not intended to be a substitute for ongoing maintenance of system infrastructure. The WICA program should not distract water companies from performing ongoing maintenance of system infrastructure.

The Department acknowledges that the timing of specific projects is often unrelated to remaining physical life or strict economics, such as the replacement of undersized mains for improvement in pressure or fire protection, and subject to factors beyond a company's control, such as road paving schedules. Moreover, such unrelated factors may change from year to year.

The Department, with input from participants, has formulated a process by which eligible projects will be prioritized. The process utilizes eight prioritization criteria, as reflected in Section 2 of WICA-01. The specific guidelines to be used in the review of these criteria are listed below.

1. Main Breaks

- a. Main break history
 - Break frequency
 - Break repair cost
- b. Outage impact history
 - Duration of outage
 - Customer impact, including number and type of customers, need for extraordinary flushing, disinfection, complaints, etc.

2. Pipe Age / Useful Life

- a. Approaching or exceeding expected useful life
- b. Range of expected useful life
- c. Material, e.g., cast iron, cement, steel, ductile iron
- d. Location or conditions of installation
- e. Installation date / age
- f. Pressure or other factors known to affect useful life

DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

3. Material Integrity

- a. Undesirable materials
- b. Known internal or external corrosion
- c. Batch, vintage or manufacturer with known problems
- d. Unaccounted for water losses
- e. Leaks identified by survey activity

4. Critical System Impact

- a. Transmission or other large diameter main
- b. Potential failure impact on customers
 - Total number and type of customer(s) affected
 - Priority customers (schools, health / day care, senior center, hospital, significant commercial or industrial users)
 - Nature and magnitude of impact of failure (low pressure, no water)
- c. Valve operation / location issues

5. Water Quality Issues

- a. Customer complaints related to water quality (dirty / rusty water)
- b. More frequent flushing needs
- c. Mains utilizing bleeders for quality control
- d. Pipe material contributing to water quality problems

6. Hydraulic Capacity

- a. Does not meet hydraulic needs of the system
- b. Customer complaints or operational issues related to flow and/or pressure
- c. Hydrants on mains less than desired diameter
- d. Fire flow adequacy

7. Scheduled Work Coordination

- a. State or town or other government agency project
- b. Required government agency relocations
- c. Potential for restoration / paving savings due to third party work

8. Other (To be Specified by the Applicant)

- a. Unique customer or community considerations
- b. Other mitigating or unanticipated factors or conditions

Details must be provided in narrative form with the filing.

Each prioritization factor will have a weight assigned to it as follows: 0 = non-priority, 1 = low priority, 2 = moderate priority, 3 = high priority. Companies will need to assign weights to prioritization factors for each project. The total for any particular project on WICA-01, Section 2, will be the basis for a company's prioritization of projects. Companies should be prepared to justify any particular weight assigned that SJR-7 any project when presented to the Department for WICA approval.

2. Filings

a. Infrastructure Assessment Report (IAR)

The IAR is the initial application in which a water company shall furnish the best available information on its system inventory. It is also where a company first proposes projects for WICA eligibility, including the prioritization criteria and criteria for inclusion of these projects. A company is not eligible to apply for a WICA surcharge unless the Department has approved an IAR for the company.

Main break history shall be provided for projects included in the prioritization based on main break frequency (WICA-01, Section 3). The project list is not intended to include all projects, in perpetuity, under consideration by the company, since such a listing, in many cases, would be exhaustive and serve little practical use for the purposes of administrating the WICA program. The project list should be expansive enough to include all projects that could reasonably be expected to be completed prior to the next anticipated general rate case filing and, to be reasonable, be based on the company's annual retail water revenues as approved in its most recent rate filing and the financial limitations of WICA recovery (5%/year, 7.5% caps). As an additional exhibit, the company's IAR shall include a draft of the customer notification material the company intends to issue (or letter), as further discussed in Section II., B., 1., below. Upon receipt of a company's IAR, the Department will designate a new docket for that company, docket #xx-xx-xxWI01, and initiate an administrative proceeding Subsequent filings between rate cases for Semi-Annual Filing Report's and Annual Reconciliation Report's will use the same docket number with the extension WI02, WI03, etc. The minimum filing requirements for an IAR consist of the following:

- 1) WICA-01;
- 2) Proposed project list with narrative;
- 3) Draft of customer notification material;
- 4) Proposed bill form reflecting WICA adjustment; and
- 5) Training materials for customer service staff.

Section 2(d) of the Act reads, in part:

The [D]epartment may hold a hearing to solicit input on a water company's individual infrastructure assessment report provided a decision on the assessment is made not later than one hundred eighty days after filing. Any such report not approved, rejected or modified by the [D]epartment within such one-hundred-eighty day period shall be deemed to have been approved.

As the above states, the Department will act on an IAR filing within a Atention SJR-7 time period. Upon approval of the IAR, the administrative proceeding will be concluded.

After the initial IAR is approved, all subsequent project proposals will be included in the Semi-Annual Filing Report (SAFR).

b. Semi-Annual Filing Report

Subsequent to IAR approval, utilities will complete Department-approved projects. When those projects are used and useful, a company may apply for a surcharge to collect allowed costs associated with these completed projects. Upon receipt of the SAFR, the Department shall conduct an administrative proceeding.

Allowed costs are defined as depreciation and property tax expense and associated return on completed projects. Property taxes must have been billed by the taxing authority in order to be recoverable. Depreciation expense must be calculated using Department-approved depreciation rates from the company's most recent rate case. In order to track company earnings and in keeping with §16-19(g)(1) of the General Statutes of Connecticut (Conn. Gen. Stat.)⁴, each company shall also provide a calculation of its earned return on equity for the previous twelve months on a rolling twelve-month basis. For WICA purposes, this requirement applies to rate base regulated, class A water companies.

The SAFR filing will consist of Department-adopted forms accompanied by a narrative document which outlines each project for which recovery is sought. The SAFR filing shall include an updated inventory of the system infrastructure (WICA-01) to reflect changes to inventory as a result of completed projects. Upon receipt of a complete SAFR filing, the Department shall conduct an administrative proceeding which shall typically be concluded within thirty days of the filing, except in such cases where the Department may deem that a time extension is warranted. The time extension shall not exceed an additional thirty-day period for a total of sixty days in which to render a decision.

The minimum filing requirements for an SAFR are:

- 1) WICA-02: WICA Semi-Annual Filing Report (SAFR);
- 2) Updated WICA-01;
- 3) WICA-04: Eligible Projects Placed In Service;
- 4) WICA-05: Calculation of Surcharge or Credit;

⁴ Conn. Gen. Stat. §16-19(g)(1) reads: "The Department shall hold either a special public hearing or combine an investigation with an ongoing four-year review conducted in accordance with section 16-19a or with a general rate hearing conducted in accordance with subsection (a) of this section on the need for an interim rate decrease (1) when a public service company has, for six consecutive months, earned a return on equity which exceeds the return authorized by the department by at least one percentage point,"

- 5) Customer complaint log; and
- 6) Calculation of its earned return on equity for the previous twelve months on a rolling twelve month basis.

These forms, accompanied by narrative and optional additional exhibits, shall be completed and submitted to the Department by the applying company. The accompanying narrative shall detail the benefit to ratepayers of the proposed project(s) and, where applicable, a cost/benefit analysis. The narrative should also address the applicability of newer technologies to the project(s).

A company's updated WICA-01, while being an update to inventory based on completed projects, is also an opportunity for a company to propose new projects for consideration. After the initial IAR, project proposals will be included in the SAFR. Changes to the project prioritization section of WICA-01 (Section 2) shall be clearly noted and provide justification for the change. Aquarion, states that projects not identified as priorities in an IAR should not preclude WICA recovery if circumstances require that a project be moved up in the replacement/rehabilitation queue due to unforeseen circumstances. Aquarion Written Exceptions, p. 3. The Department reiterates that an updated WICA-01, as part of the SAFR process, is the opportunity to present new projects to a company's project priority list.

Aquarion also takes issue with the Department's review of projects in that such review may hinder programmatic investment such as hydrant or service line replacement. Aquarion states that, in a WICA filing, it would become unwieldy to attempt to identify and specify upfront which specific hydrants and service lines will be replaced or rehabilitated. Aquarion Written Exceptions, p. 3. The Department expects there to be an ongoing capital improvement program for items that are among other things, not suitable or fall within the framework of the WICA application process. The Department cautions against utilities trying to fit all future capital investment within the WICA program and expects items such as programmatic investment to go forward to go forward.

c. Annual Reconciliation Report

The Annual Reconciliation Report (ARR) shall be completed by a company and submitted to the Department on or before February 28th of each year to reconcile the WICA charges or credits applied to customer bills in the prior year. Upon receipt of the ARR, the Department shall conduct an administrative proceeding.

The minimum filing requirements for an ARR are:

1) WICA-05: Annual Reconciliation Report;

2) WICA-06: Surcharge Reconciliation; and

3) WICA-07: Revenue Allocation Adjustment

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Direct Testimony of Rubin Samples of all form templates are appended to this Decision. At its distretionant SJR-7 the Department may, from time to time, modify or alter these templates. The latest versions of these form templates are available at the Department's website: http://www.state.ct.us/dpuc.

3. WICA Calculation

Section 2(a) of the Act enables the Department to authorize a water company to impose a WICA surcharge or credit for eligible projects completed and in service for the benefit of customers. The method by which the WICA surcharge or credit is calculated is set forth in Section 2(f) of the Act, which reads:

The WICA adjustment shall be calculated as a percentage, based on the original cost of completed eligible projects multiplied by the applicable rate of return, plus associated depreciation and property tax expenses related to eligible projects and any reconciliation adjustment calculated pursuant to subsection (j) of this section as a percentage of the *retail water revenues* approved in its most recent rate filing for the regulated activities of said water company. (Emphasis added.)

While the Act is silent on what constitutes retail water revenues, the Department has generally recognized that a company's retail water revenues are its total annual revenues less revenues from sales for resale and miscellaneous charges, most recently in the Decision dated March 26, 2008, in Docket No. 06-07-08PH02, <u>Application of The Connecticut Water Company to Amend Rate Schedules - Adjustment to Annual Revenues</u>. More accurately, retail water revenues consist of revenues generated by a water company's metered rates (meter service charges and commodity charges) and fire protection charges, and, if applicable, unmetered service rates (flat rates and/or fixture charges).

In anticipation of WICA applications, the Department has sought to clearly denote a given company's approved level of retail water revenues, beginning with recent rate case decisions issued since the passage of the Act. By and large, however, the last rate case decisions for most companies determine what the approved level of annual revenues is, but not the approved level of retail water revenues. Therefore, the Department shall require, at least for each company's first SAFR filing, an exhibit that demonstrates the company's calculation of retail water revenues for the purposes of determining the applicable WICA surcharge or credit.

An approved WICA surcharge (or credit) for eligible projects would be imposed on customers' bills at intervals of not less than six months. These intervals must commence on either January 1st, April 1st, July 1st or October 1st in any year. Generally, the WICA surcharge or credit should be applied across-the-board for all customers in all divisions of a company. The burden of timely filing to meet the billing intervals is the responsibility of the applicant. As mentioned in Section 2.b. of this Decision, the Department may extend the time frame for rendering a decision in a SAFR administrative proceeding to sixty days.

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Aquarion commented that it should be at the company's discretion after it the prior SJR-7 approved IAR whether to impose the WICA adjustment in any calendar quarter, or to accumulate a reasonable amount of eligible projects before imposing the WICA, provided the amount requested does not exceed 5% in any calendar year or 7.5% between rate cases. Aquarion Written Comments, p. 8. The Department does not put a requirement on the frequency of filing WICA adjustments. The parameters of the filing are clearly stated in the Act. When determining the frequency of WICA filings, the Department expects a company to weigh the work involved with filing for a WICA surcharge with the associated WICA surcharge sought.

4. Calculation of Return

Section 2(f) of the Act requires that the WICA surcharge percentage calculations be based upon the applicable rate of return, plus associated depreciation and property tax expenses related to eligible projects. In their written comments, the Participants universally interpreted the applicable rate of return as a company's most recent Allowed Return on Rate Base, i.e., the Weighted Average Cost of Capital (WACC). A company-specific allowed WACC is determined by the Department in each company's rate case proceeding assuming a company files with the Rate Base Methodology. CWC and Aquarion addressed this computation in their written comments for Issue #5. Both companies also suggested that the final worksheets used to calculate the WICA surcharge should include a separate computation for the Income Tax on Equity Component. CWC Written Comments; Aquarion Written Comments. The concern regarding the income tax component is reiterated by CWC, Aquarion and CWWA in their respective responses to Interrogatory WA-26. These three Participants suggested the following computation:

Income Tax on Equity Component:

Component	(a)	(b)	(c)	(d)=(c)-(a)
	Weighted	Tax	Pre-tax	Tax Gross Up
	Cost	Multiplier	Cost	
Debt			0.00%	0.00%
Equity			0.00%	0.00%
	0.00%		0.00%	0.00%

Source: CWC Written Comments, Issue #5-Schedule 2 and Aquarion Written Comments, WICA Schedule 2.

The Department concurs with their position that the income tax on equity component is necessary. It was inadvertently omitted by the Department in its initial request for Written Comments. The Department has incorporated the Income Tax on Equity Component in the attached WICA worksheets (Appendix B, Section 2).

There are several companies from the smaller Class B and Class C categories whose last rate case was not promulgated using the Rate Base Methodology. A few Class B companies used the Department's Net Income Approach in their last rate case. In the Net Income Approach, the Department establishes an allowed Net Income by

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granting a an allowed ROE, but does not clearly establish an allowed capital structment SJR-7 Hence the WACC, which is necessary for the WICA computation is not explicitly determined. In the event a non-Rate Base company applies for WICA, the Department believes a reasonable approach is to use that company's latest allowed ROE from its last rate case and use an assumed capitalization mix of 50% long-term debt to 50% common equity to determine a WACC that can be used for the purposes of WICA calculation.

There are some Class C companies whose rates were determined prior to the establishment of the Net Income Approach. These companies do not have an allowed ROR or an allowed capitalization mix. If a company does not have an allowed ROE, then the Department will use the 50% Long-term Debt to 50% Common Equity mix convention and review the allowed ROE on a case by case basis.

Certain calculations for the purpose of WICA rate adjustments are made based on consideration of the weighted cost of capital of the applying company based on its most recent general rate case. In instances where the company does not have a weighted cost of capital established in a rate filing (Net Income Method), the Department will typically assume a capital structure of 50/50 debt/equity for the purposes of WICA calculation.

5. Interest Rate for Refunds of Any Overcollection

Section 2(j) of the Act reads, in part:

If upon completion of the review of the annual reconciliation report the [D]epartment determines that a water company overcollected or undercollected the WICA adjustment, the difference between the revenue and costs for eligible projects will be recovered or refunded, as appropriate, as a reconciliation adjustment over a one-year period commencing on April first. *The company shall refund the customers with interest for any overcollection* but shall not be eligible for interest for any undercollection. (Emphasis added.)

The interest rate is undefined by the Act, so the Department asked for recommendations from participants on what method to use to determine the interest rate to be applied to any overcollection.

The OCC advocates using a water company's last allowed overall rate of return when applying interest to any overcollection. OCC Response to Interrogatory WA-24. The OCC believes this is consistent with the interest rate applied to any under- and overcollection in adjustment clause proceedings involving energy utilities. OCC Response to Interrogatory WA-24; Tr. 1/23/08, pp. 37-38.

Alternatively, Aquarion, CWC and CWWA support using a method similar to the standard method provided under Conn. Gen. Stat. §16-262j(d). Aquarion, CWC and CWWA Responses to Interrogatory WA-24; Tr. 1/23/08, p. 37. Conn. Gen. Stat. §16-262j(d) reads:

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The deposit index for each calendar year shall be equal to the averagettachment SJR-7 rate paid on savings deposits insured by commercial banks as last published in the Federal Reserve Board bulletin in November of the prior year. The Banking Commission shall determine the deposit index for each calendar year and publish such index in the Department of Banking news bulletin no later than December 15th of the prior year. For purposes of this section, "Federal Reserve Bulletin" means the monthly survey of selected deposits published as a special supplement to the Federal Reserve Statistical Release Publication H.6 published by the Board of Governors of the Federal Reserve System or, if such bulletin is superseded or becomes unavailable, a substantially similar index or publication.

CWC states that it applies the resulting interest rate under this method when it refunds security deposits to customers. CWC Response to Interrogatory WA-24, Tr. 1/23/08, p. 37. It is the Department's understanding that other water companies similarly do so.

CWC argues that any overcollection would only be on a short-term basis; therefore, CWC believes that the applicable interest rate should be a short-term rate. Tr. 1/23/08, p. 37. CWC considers an interest rate equivalent to a company's overall rate of return is more of a long-term rate. <u>Ibid</u>.

The Department, for purposes of WICA, views any overcollection as being similar to a borrowing by the Company. As such, the rate to be applied to a surcharge overcollection shall be the borrowing rate approved in its previous rate case. As the WICA process evolves, the Department may revisit the interest rate issue.

B. CUSTOMER SERVICE

1. Customer Notice

CWC proposes that companies should provide advanced notice to municipal officials in the event they receive inquiries from their residents. Response to Interrogatory CSU-06. The Department agrees with CWC that this outreach to municipalities is necessary and is a consumer friendly initiative. Therefore, companies applying for WICA shall provide a special notice to the municipal officials in its service areas. A copy of the municipal notification shall be filed with the Company's IAR.

All of the Companies that responded agreed that customer notification of the WICA charges require notification through a bill insert or other direct means of correspondence when an adjustment is initially applied and that the charge appear on a customer's bill as a separate item on the bill.

Section 2(h) of the Act reads:

Water companies shall notify customers through a bill insert or other direct communications when the adjustment is first applied and the WICA charge or credit shall appear as a separate item on customers' bills. The first notice to customers shall be sent upon Departmental approval of a

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Company's specific IAR. The Department will require that the notice **ô**ttachment SJR-7 the Department's approval of a WICA charge(s) provide an overview of the associated statute with an explanation of its benefits. The notice shall be a direct mailing or bill insert depending on a Company's capability. The notice should also be posted on company websites, newsletters or press releases. It should provide an example of the impact to customers by applying a hypothetical WICA adjustment to a typical customer's bill. The customer notice shall include information on where to obtain additional information on the WICA surcharge.

The second notice will be sent to consumers 30 days prior to the implementation of WICA. The 30-day notice can also be a separate mailing or a bill insert. Additionally, the Act specifies that the WICA adjustment appear as a separate item on customers' bills. The message will need to be tailored to meet the individual ability of each utility. Depending on a company's capability, the notices should also be posted on company websites, newsletters or press releases. The companies are directed to file copies of its notices and bill inserts and any educational pamphlets, etc. for the Department's review and approval.

Pursuant to Section 2(d) of the Act, the Department may hold a hearing to solicit input from customers on an individual company's IAR. Should a hearing be scheduled, the Department will require the company to provide its customers with advance notification. Due to the uncontested nature of WICA proceedings, company's may coordinate with the Department with respect to distribution of the customer notice. This notice shall follow the same guidelines as the notice requirements for a rate case proceeding as provided in Conn. Gen. Stat. §16-19(a). The notice should include the date, time and location of the hearings and the Company's website address where applicable. The notice shall also reference the docket number. The notice shall also include the Department's website, toll free telephone number and email address, an overview of the statutory requirements with a hypothetical adjustment to a typical residential customer's bill.

2. Bill Form

The charges associated with WICA shall be a separate line item on a customer's bill indicating the charges, a brief explanation of the charges and any changes. Companies are ordered to submit samples of a bill form as part of the IAR approval (see IAR filing requirements). The bill form shall be submitted as if it were being sent to a typical residential customer.

3. Training

The Companies all agreed that special training would be necessary to inform customer service staff of the WICA charges. The companies will be required, as part of the IAR, to produce talking points for staff including at what point in a customer inquiry a call would be escalated should customers request additional information regarding WICA. The companies are also required to file complaints and calls that the companies receive from customers regarding the WICA charges as part of the SAFR (refer to SAFR filing requirements).

IV. CONCLUSION

The WICA program is intended to increase the level of spending on and accelerate the rate of infrastructure replacement and rehabilitation and conservation measures beyond the level in the company's existing practices. This Decision outlines a program and process to allow a water company to apply to the Department for consideration under the WICA program for system developments and improvements.

In order to enable prudent and thoughtful planning, the Department shall require the development of a relevant, standardized, and complete inventory of existing infrastructure by each company applying for WICA. While the Department recognizes the challenges that may exist due to a lack of historical record keeping in the industry, the development and improvement of infrastructure inventory is necessary to the success of the WICA program.

Contained within the Decision is the process by which water utilities shall file for eligibility in the WICA program. While the Department has compiled information and made determinations regarding engineering, finance, accounting, rates and customer service issues, actual experience with the program may lead to alterations in the future. This Decision is adopted by the following Commissioners:

John W. Betkoski, III

Anne C. George

Donald W. Downes

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Department of Public Utility Control, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.

ouise 6. Rickard

May 1, 2008

Date

Louise E. Rickard Acting Executive Secretary Department of Public Utility Control

DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

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WATER INFRASTRUCTURE & CONSERVATION ADJUSTMENT WATER INFRASTRUCTURE ASSESSMENT REPORT DPUC WICA-01 WICA PART 2 (REV 3/08) STATINGE-085 Aquarion Permanent Rate Case CONNECTICUT Direct Testimony of Rubin DEPARTMENT OF PUBLIC UTIAttachment SJR-7 CONTROL

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To be updated with each subsequent SAFR

DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

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DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

* * PER INFRASTRUCTURE ASSESSM	ENT		
REPORT			

DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

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6		DPUC	Depr	Type of		Date in	Date of	Eligible		Depreciation	Property	Mill	Prop. Tax
	Description of Project	Acct	Rate	Project*	Met**	Service	1st Filing	Capital Costs	Retirements	Expense	Tax Factor	Rate	Expense
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21											∌ -		\$

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DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

22			\$	\$
23				
			-	
24			\$	\$
25			\$	\$
26		\$	\$ \$	\$
27		to Exhibit 2,	to Exhibit 2,	to Exhibit 2.
28		line 2	line 22	line 24
	To be recoverable, property taxes must have been billed by the taxing authority			
30	Depreciation rates must be those approved by the Department in the Company's most recnt rate case			
ļ	* Type of Project (designations will be given for various types of projects)			
32	** Criteria (designations will be given to particular driving factors for improvement/replacement)			
33				
34				

DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

WICA-04

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT CALCUATION OF SURCHARGE

Lin	9	Schedule Ref.	
1	Total Investment through XX/XX/XX	1 - Col 7 Ln 26	-
3 4	Allowed Return on Rate Base		0.00%
5 6	Allowed Return on Investment (Line 2 times Line 4)		\$
7 8 9	Income Tax on Equity Component		-
10 11	(a) (b) (c) (d) Weighted Tax Pre tax Tax Gross Up		
12 13	Cost Multiplier Cost Col (c) - Col (a)		
14 15	Debt 0.00% 0.00% Equity 0.00% 0.00%		
16 17 18	0.00% 0.00% 0.00% Total Eligible Investment (Line 2 -		
19 20	above) Income Tax Expense (Line 16 (d) times Line 18)		\$
21 22	Depreciation Expense	1 - Col 9 Ln 26	\$
23 24	Property Tax Expense	1 - Col 12 Ln 26	- \$
25 26	Reconciliation Shortfall(Surplus) from prior period	3 - Ln 23	\$
27 28	Adjustment: Annual Revenues Allowed (Lines 6 through 26)	••••	\$
29 30 31 32 33 34 35 36	Base Revenues on which Adjustment will be applied Revenues allowed last rate case Misc Charges not subject to WICA SALES for RESALE	_	\$
37 38	Surcharge Percent (Line 28 divided by Line		

36)

		TRUCTURE &				STATE OF CONNECTICU		Attachme
		N ADJUSTMEN	1			DEPARTMENT		
	ICA ANNUAL	VARAA					OF PUBLIC (JHLITY
	CONCILIATIO	N REPORT				CONTROL	- <u>1</u>	
	ICA-05 (REV)8)							
	REPORT PE Year	RIOD: Enter						
	Report for y December 3				Report filing February 28			
	L CTION 1: WA							
	COMPANY	NAME	10		T	<u> </u>	1	T
- -	STREET A		0					
	CITY:		0		STATE:	0	ZIP CODE:	In
·	CLASS A,		DOCKET NI	IMPER OF	1	IA	0	<u> </u>
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	* PER MOS RATE FILIN		-					
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	TION 2: LIST							
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#	PROJEC	T NAME	DATE PROJECT	ACTUAL	WICA CHARGES	ACTUAL WICA		WICA REFUND /
			COMPLETED; IN SERVICE, USED AND USEFUL	COST	APPLIED IN REPORT			RECOVERY AMOUNT
╌┤					YEAR		40 (6 1 1 1 2001	
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DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment \$JR-7

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	ER INFRASTRUCTURE AND CONSERVATIO	N AD UISTMENT
• • • • • • • • • • • • • • • • • • •	CHARGE RECONCILIATION	
JUNC		
Line		•
1		
2	Surcharge Period: January to March	
3		
4	Annual Surcharge Revenues Allowed	
5	Factor	Schedule 4, Line 25
6	3 Month Surcharge Revenues Allowed	-
7		
8	Surcharge Period: April to September	
9		
10	Annual =Surcharge Revenues Allowed	
11	Factor	Schedule 4, Line26
12	6 Month Surcharge Revenues Allowed	
13		
14	Surcharge Period: October to December	
15		
16	Annual =Surcharge Revenues Allowed	
17	Factor	Schedule 4, Line27
18	3 Month Surcharge Revenues Allowed	
19		
20		
21	12 Month Surcharge Revenues Allowed	-
22	12 Month Surcharge Revenues Achieved	
23	Surcharge Shortfall(Surplus)	
24		to Schedule 2, Ln 26
	J	

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DW 12-085 Aquarion Permanent Rate Case Direct Testimony of Rubin Attachment SJR-7

				Direct Testi
WICA	-07			Atta
WATE	ER INFRAS	RUCTURE AND C	ONSERVAT	ION ADJUSTMENT
REVE	NUE ALLO	CATION ADJUSTM	ENT	
Line				
1				
2	Month	Base Revenues		
3	Jan-08		0.0%	
4	Feb-08		0.0%	
5	Mar-08		0.0%	
6	Apr-08		0.0%	
7	May-08		0.0%	
8	Jun-08		0.0%	
9	Jul-08		0.0%	
10	Aug-08		0.0%	
11	Sep-08		0.0%	
12	Oct-08		0.0%	
13	Nov-08		0.0%	
14	Dec-08		0.0%	
15			0.0%	
16				

DW 12-085 Aquarion Permanent Rate Case

AQUARION WATER COMPANY OF NEW HAMPSHIRE

Direct Testimony of Rubin Attachment SJR-8

DW 12-085

Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012	Date of Response: October 10, 2012
Request No.: OCA 2-1	Witness: T. Dixon
Page I of 3	

- REQUEST: Reference Proposed tariff Second Revised Page 11 (Bates pages 8-9 of 171) proposing a "missed appointment" fee.
 - a. Please provide a workpaper showing the development of the proposed \$44 "missed appointment" fee.
 - b. Is the Company proposing a comparable credit to the customer when the Company fails to keep an appointment in a timely manner? If so, please provide tariff language related to such credit. If not, why not?
 - c. Please provide a copy of the notice that the Company proposes to provide to customers making appointments that a "missed appointment" fee can be levied, and state the timing, method(s), and procedure(s) by which the customer would receive the notice.
 - d. Do any affiliates of the Company levy a "missed appointment" fee in any other jurisdictions? If so, please provide the tariff language in each such jurisdiction, including any language relating to a credit when the Company misses an appointment.
- RESPONSE: a. The "missed appointment" and "collection at the door" fees were based on the reconnection fee approved in the last general rate case, DW 08-098. The calculation of the reconnection fees is set forth below. The Company believes it is appropriate to charge the same fee because the resources involved and the time spent on these tasks is similar.

Assumptions:	
Field Worker Hourly Rate	\$ 22.35
Customer Svc/Billing Hourly Rate	\$ 19.29
Calculated Fee at Cost:	
Field Worker Labor (45 min.)	\$ 16.76
Customer Svc/Billing Labor (15 min.)	\$ 4.82
Benefits and Payroll Taxes (75.08%)	\$ 16.21
Subtotal	\$ 37.79
Misc. Materials, Vehicle Time (15%)	\$ 5.67
Total Cost	\$ 43.46

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AQUARION WATER COMPANY OF NEW HAMPSHIRE

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b. This fee is proposed to cover the cost incurred by the Company when customers fail to keep a previously scheduled appointment without contacting the Company in advance to cancel it. In the event a customer does not contact the Company prior to arrival of a Company representative for a scheduled appointment, and they do not keep the appointment, our service technician wastes time and resources (vehicle time and gasoline) traveling to and waiting for the customer. The customer receives a reminder phone call the day before the scheduled appointment. The technician will, generally, wait for 10 minutes, and if the customer does not arrive, the technician will continue on to the next appointment. The technician will typically have to return to the customer address in the future to perform the work that the Company could not perform as a result of the missed appointment. Therefore, the Company believes that adding a \$44 "Missed Appointment" fee to its miscellaneous rate schedule is reasonable.

The Company has not proposed a comparable credit to customers because the Company does not experience a savings or reduction in costs in the situation described in the question, and the only purpose of such a credit would be as a penalty to the Company. The only situation in which a Company representative is likely to miss or be late for an appointment is where the need to provide service to another customer delays the representative.

c. The information will be provided over the phone at the time of the scheduling of the appointment. Customers will be referred to the Company's complete tariff schedules on the Company's website.

e. The Company's Connecticut affiliate levies a comparable "missed appointment" fee of \$52. The tariff language reads:

"Missed Appointment Fee to Customers. A customer who schedules an appointment will be charged a "missed appointment" fee as stated in Aquarion's miscellaneous charges when (a) the customer has scheduled the appointment at least 48 business hours prior to the date of the appointment; (b) the service person has arrived on-time during the 4-hour appointment window; (c) the customer is not home when the service person arrives, or the service person is otherwise denied access; and (d) the customer has not called the Company in advance of the 4-hour appointment window."

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"Missed Appointment Credit to Customers. Aquarion is committed to providing on-time appointments and will meet the agreed-upon appointment time set with our customer or automatically credit the customer's account with a "missed appointment" fee as stated in Aquarion's miscellaneous charges when (a) the customer has scheduled the appointment at least 48 business hours prior to the date of the appointment; (b) the service person does not arrive for the appointment within the prescribed 4-hour appointment window; and (c) the service person or other company delegate does not call in advance of the 4-hour appointment window to cancel or reschedule the appointment.

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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Aquarion Water Company's Responses to OCA Data Requests-Set 2

Data Request Received: September 26, 2012 Request No.: OCA 2-7 Date of Response: October 10, 2012 Witness: T. Dixon

- REQUEST: Reference Dixon testimony, Bates pages 89-90 of 171, concerning miscellaneous revenues.
 - a. Please provide a workpaper showing the revenue the Company expects to collect from the proposed "missed appointment" fee.
 - b. Please provide a workpaper showing the revenue the Company expects to collect from the proposed "collect at the door" fee.
 - c. Please provide the number of "missed appointments" during each year from 2009 through 2011 that would have resulted in the "missed appointment" fee being levied if it had been in effect.
 - d. Please provide the number of "collect at the door" events during each year from 2009 through 2011 that would have resulted in the "collect at the door" fee being levied if it had been in effect.
- RESPONSE: a. & b. As Mr. Dixon states in his testimony, the Company does not intend or expect to generate material revenues from either of the proposed charges. Therefore, the Company has not reflected any revenues associated with these charges in its rate design.

c. & d. The Company does not currently track missed appointments or collect at the door events.

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