Exhibit KRR-1

Karl R. Rábago

Rábago Energy LLC
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Nationally recognized leader and innovator in electricity and energy law, policy, and regulation. Experienced as a research and development manager, utility executive, business builder, sustainability leader, senior government official, consultant, and advocate. Highly proficient in advising, managing, and interacting with government agencies and committees, the media, citizen groups, and business associations. Successful track record of working with U.S. Congress, state legislatures, governors, regulators, city councils, business leaders, researchers, academia, and community groups. National and international contacts through experience with Pace Energy and Climate Center, Austin Energy, AES Corporation, US Department of Energy, Texas Public Utility Commission, Jicarilla Apache Tribal Utility Authority, Cargill Dow LLC (now NatureWorks, LLC), Rocky Mountain Institute, CH2M HILL, Houston Advanced Research Center, Environmental Defense Fund, and others. Skilled attorney, negotiator, and advisor with more than twenty-five years of experience working with diverse stakeholder communities in electricity policy and regulation, emerging energy markets development, clean energy technology development, electric utility restructuring, smart grid development, and the implementation of sustainability principles. Extensive regulatory practice experience as an expert witness. Nationally recognized speaker on energy, environment, and sustainable development matters. Managed staff as large as 250; responsible for operations of research facilities with staff in excess of 600. Developed and managed budgets in excess of $300 million. Law teaching experience at Pace University Elisabeth Haub School of Law, University of Houston Law Center, and U.S. Military Academy at West Point. Post-doctorate degrees in environmental and military law. Military veteran.

Employment

RÁBAGO ENERGY LLC

Principal: July 2012—Present. Consulting practice dedicated to providing expert witness and policy formulation advice and services to organizations in the clean and advanced energy sectors. Prepared and submitted testimony in more than 20 states and 60 electricity regulatory proceedings. Recognized national leader in development and implementation of award-winning "Value of Solar" alternative to traditional net metering. Additional information at www.rabagoenergy.com.

PACE ENERGY AND CLIMATE CENTER, PACE UNIVERSITY SCHOOL OF LAW

Executive Director: May 2014—Present.

Leader of a team of professional and technical experts and law students in energy and climate law, policy, and regulation. Secure funding for and manage execution of research, market development support, and advisory services for a wide range of funders, clients, and stakeholders with the overall goal of advancing clean energy deployment, climate responsibility, and market efficiency. Provide learning and development opportunities for law students. Additional activities:

- Chairman of the Board, Center for Resource Solutions (1997-present). CRS is a not-for-profit organization based at the Presidio in California. CRS developed and manages the Green-e Renewable Electricity Brand, a nationally and internationally recognized branding program for green power and green pricing products and programs. Past chair of the Green-e Governance Board.
- Director, Interstate Renewable Energy Council (IREC) (2012-present). IREC focuses on issues impacting expanded renewable energy use such as rules that support renewable energy

and distributed resources in a restructured market, connecting small-scale renewables to the utility grid, developing quality credentials that indicate a level of knowledge and skills competency for renewable energy professionals.

- Co-Director and Principal Investigator, Northeast Solar Energy Market Coalition (2015-2017). The NESEMC was a US Department of Energy's SunShot Initiative Solar Market Pathways project. Funded under a cooperative agreement between the US DOE and Pace University, the NESEMC seeks to harmonize solar market policy and advance best policy and regulatory practices in the northeast United States.
- Director, Alliance for Clean Energy – New York (2018-present).

AUSTIN ENERGY – THE CITY OF AUSTIN, TEXAS

Vice President, Distributed Energy Services: April 2009—June 2012. Executive in 8th largest public power electric utility serving more than one million people in central Texas. Responsible for management and oversight of energy efficiency, demand response, and conservation programs; low-income weatherization; distributed solar and other renewable energy technologies; green buildings program; key accounts relationships; electric vehicle infrastructure; and market research and product development. Executive sponsor of Austin Energy's participation in an innovative federally-funded smart grid demonstration project led by the Pecan Street Project. Led teams that successfully secured over $39 million in federal stimulus funds for energy efficiency, smart grid, and advanced electric transportation initiatives. Additional activities included:

- Director, Renewable Energy Markets Association. REMA is a trade association dedicated to maintaining and strengthening renewable energy markets in the United States.
- Membership on Pedernales Electric Cooperative Member Advisory Board. Invited by the Board of Directors to sit on first-ever board to provide formal input and guidance on energy efficiency and renewable energy issues for the nation's largest electric cooperative.

THE AES CORPORATION

Director, Government & Regulatory Affairs: June 2006—December 2008. Government and regulatory affairs manager for AES Wind Generation, one of the largest wind companies in the country. Manage a portfolio of regulatory and legislative initiatives to support wind energy market development in Texas, across the United States, and in many international markets. Active in national policy and the wind industry through work with the American Wind Energy Association as a participant on the organization's leadership council. Also served as Managing Director, Standards and Practices, for Greenhouse Gas Services, LLC, a GE and AES venture committed to generating and marketing greenhouse gas credits to the U.S. voluntary market. Authored and implemented a standard of practice based on ISO 14064 and industry best practices. Commissioned the development of a suite of methodologies and tools for various greenhouse gas credit-producing technologies. Also served as Director, Global Regulatory Affairs, providing regulatory support and group management to AES's international electric utility operations on five continents.

JICARILLA APACHE NATION UTILITY AUTHORITY

Director: 1998—2008. Located in New Mexico, the JANUA was an independent utility developing profitable and autonomous utility services that provide natural gas, water utility services, low income housing, and energy planning for the Nation. Authored "First Steps" renewable energy and energy efficiency strategic plan with support from U.S. Department of Energy.

HOUSTON ADVANCED RESEARCH CENTER

Group Director, Energy and Buildings Solutions: December 2003—May 2006. Leader of energy and building science staff at a mission-driven not-for-profit contract research organization based in The Woodlands, Texas. Responsible for developing, maintaining and expanding upon technology development, application, and commercialization support programmatic activities, including the Center for Fuel Cell Research and Applications, an industry-driven testing and evaluation center for near-commercial fuel cell generators; the Gulf Coast Combined Heat and Power Application Center, a state and federally funded initiative; and the High Performance Green Buildings Practice, a consulting and outreach initiative. Secured funding for major new initiative in carbon nanotechnology applications in the energy sector. Developed and launched new and integrated program activities relating to hydrogen energy technologies, combined heat and power, distributed energy resources, renewable energy, energy efficiency, green buildings, and regional clean energy development. Active participant in policy development and regulatory implementation in Texas, the Southwest, and national venues. Frequently engaged with policy, regulatory, and market leaders in the region and internationally. Additional activities:

- President, Texas Renewable Energy Industries Association. As elected president of the statewide business association, leader and manager of successful efforts to secure and implement significant expansion of the state's renewable portfolio standard as well as other policy, regulatory, and market development activities.
- Director, Southwest Biofuels Initiative. Established the Initiative acts as an umbrella structure for a number of biofuels related projects, including emissions evaluation for a stationary biodiesel pilot project, feedstock development, and others.
- Member, Committee to Study the Environmental Impacts of Windpower, National Academies of Science National Research Council. The Committee was chartered by Congress and the Council on Environmental Quality to assess the impacts of wind power on the environment.
- Advisory Board Member, Environmental & Energy Law & Policy Journal, University of Houston Law Center.

CARGILL DOW LLC (NOW NATUREWORKS, LLC)

Sustainability Alliances Leader: April 2002—December 2003. Founded in 1997, NatureWorks, LLC is based in Minnetonka, Minnesota. Integrated sustainability principles into all aspects of a ground-breaking biobased polymer manufacturing venture. Responsible for maintaining, enhancing and building relationships with stakeholders in the worldwide sustainability community, as well as managing corporate and external sustainability initiatives. NatureWorks is the first company to offer its customers a family of polymers (polylactide – "PLA") derived entirely from annually renewable resources with the cost and performance necessary to compete with packaging materials and traditional fibers; now marketed under the brand name "Ingeo."

- Successfully completed Minnesota Management Institute at University of Minnesota Carlson School of Management, an alternative to an executive MBA program that surveyed fundamentals and new developments in finance, accounting, operations management, strategic planning, and human resource management.

ROCKY MOUNTAIN INSTITUTE

Managing Director/Principal: October 1999–April 2002. In two years, co-led the team and grew annual revenues from approximately $300,000 to more than $2 million in annual grant and consulting income. Co-authored "Small Is Profitable," a comprehensive analysis of the benefits of distributed energy resources. Worked to increase market opportunities for clean and distributed

energy resources through consulting, research, and publication activities. Provided consulting and advisory services to help business and government clients achieve sustainability through application and incorporation of Natural Capitalism principles. Frequent appearance in media at international, national, regional and local levels.

- President of the Board, Texas Ratepayers Organization to Save Energy. Texas R.O.S.E. is a non-profit organization advocating low-income consumer issues and energy efficiency programs.
- Co-Founder and Chair of the Advisory Board, Renewable Energy Policy Project-Center for Renewable Energy and Sustainable Technology. REPP-CREST was a national non-profit research and internet services organization.

CH2M HILL

Vice President, Energy, Environment and Systems Group: July 1998–August 1999. Responsible for providing consulting services to a wide range of energy-related businesses and organizations, and for creating new business opportunities in the energy industry for an established engineering and consulting firm. Completed comprehensive electric utility restructuring studies for the states of Colorado and Alaska.

PLANERGY

Vice President, New Energy Markets: January 1998–July 1998. Responsible for developing and managing new business opportunities for the energy services market. Provided consulting and advisory services to utility and energy service companies.

ENVIRONMENTAL DEFENSE FUND

Energy Program Manager: March 1996–January 1998. Managed renewable energy, energy efficiency, and electric utility restructuring programs for a not-for-profit environmental group with a staff of 160 and over 300,000 members. Led regulatory intervention activities in Texas and California. In Texas, played a key role in crafting Deliberative Polling processes. Initiated and managed nationwide collaborative activities aimed at increasing use of renewable energy and energy efficiency technologies in the electric utility industry, including the Green-e Certification Program, Power Scorecard, and others. Participated in national environmental and energy advocacy networks, including the Energy Advocates Network, the National Wind Coordinating Committee, the NCSL Advisory Committee on Energy, and the PV-COMPACT Coordinating Council. Frequently appeared before the Texas Legislature, Austin City Council, and regulatory commissions on electric restructuring issues.

UNITED STATES DEPARTMENT OF ENERGY

Deputy Assistant Secretary, Utility Technologies: January 1995–March 1996. Manager of the Department's programs in renewable energy technologies and systems, electric energy systems, energy efficiency, and integrated resource planning. Supervised technology research, development and deployment activities in photovoltaics, wind energy, geothermal energy, solar thermal energy, biomass energy, high-temperature superconductivity, transmission and distribution, hydrogen, and electric and magnetic fields. Developed, coordinated, and advised on legislation, policy, and renewable energy technology development within the Department, among other agencies, and with Congress. Managed, coordinated, and developed international agreements for cooperative activities in renewable energy and utility sector policy, regulation, and market development between the Department and counterpart foreign national entities. Established and enhanced partnerships with stakeholder groups, including technology firms, electric utility companies, state and local governments, and associations. Supervised development

and deployment support activities at national laboratories. Developed, advocated and managed a Congressional budget appropriation of approximately $300 million.

STATE OF TEXAS

Commissioner, Public Utility Commission of Texas. May 1992–December 1994. Appointed by Governor Ann W. Richards. Regulated electric and telephone utilities in Texas. Laid the groundwork for legislative and regulatory adoption of integrated resource planning, electric utility restructuring, and significantly increased use of renewable energy and energy efficiency resources. Co-chair and organizer of the Texas Sustainable Energy Development Council. Vice-Chair of the National Association of Regulatory Utility Commissioners (NARUC) Committee on Energy Conservation. Member and co-creator of the Photovoltaic Collaborative Market Project to Accelerate Commercial Technology (PV-COMPACT). Member, Southern States Energy Board Integrated Resource Planning Task Force. Member of the University of Houston Environmental Institute Board of Advisors.

LAW TEACHING

Professor for a Designated Service: Pace University Law School, 2014-present. Non-tenured member of faculty. Courses taught: Energy Law. Supervise a student intern practice program that engages in a wide range of advocacy, analysis, and research activities in support of the mission of the Pace Energy and Climate Center.

Associate Professor of Law: University of Houston Law Center, 1990–1992. Full time, tenure track member of faculty. Courses taught: Criminal Law, Environmental Law, Criminal Procedure, Environmental Crimes Seminar, Wildlife Protection Law. Provided *pro bono* legal services in administrative proceedings and filings at the Texas Public Utility Commission.

Assistant Professor: United States Military Academy, West Point, New York, 1988–1990. Member of the faculty in the Department of Law. Honorably discharged in August 1990, as Major in the Regular Army. Courses taught: Constitutional Law, Military Law, and Environmental Law Seminar. Greatly expanded the environmental law curriculum and laid foundation for the concentration program in law. While carrying a full time teaching load, earned an LL.M. in Environmental Law. Established a program for subsequent environmental law professors to obtain an LL.M. prior to joining the faculty.

LITIGATION

Trial Defense Attorney and Prosecutor, U.S. Army Judge Advocate General's Corps, Fort Polk, Louisiana, January 1985–July 1987. Assigned to Trial Defense Service and Office of the Staff Judge Advocate. Prosecuted and defended more than 150 felony-level courts-martial. As prosecutor, served as legal officer for two brigade-sized units (approximately 5,000 soldiers), advising commanders on appropriate judicial, non-judicial, separation, and other actions. Pioneered use of some forms of psychiatric and scientific testimony in administrative and judicial proceedings.

NON-LEGAL MILITARY SERVICE

Armored Cavalry Officer, 2d Squadron 9th Armored Cavalry, Fort Stewart, Georgia, May 1978–August 1981. Served as Logistics Staff Officer (S-4). Managed budget, supplies, fuel, ammunition, and other support for an Armored Cavalry Squadron. Served as Support Platoon Leader for the Squadron (logistical support), and as line Platoon Leader in an Armored Cavalry Troop. Graduate of Airborne and Ranger Schools. Special training in Air Mobilization Planning and Nuclear, Biological and Chemical Warfare.

Formal Education

LL.M., Environmental Law, Pace University School of Law, 1990: Curriculum designed to provide breadth and depth in study of theoretical and practical aspects of environmental law. Courses included: International and Comparative Environmental Law, Conservation Law, Land Use Law, Seminar in Electric Utility Regulation, Scientific and Technical Issues Affecting Environmental Law, Environmental Regulation of Real Estate, Hazardous Wastes Law. Individual research with Hudson Riverkeeper Fund, Garrison, New York.

LL.M., Military Law, U.S. Army Judge Advocate General's School, 1988: Curriculum designed to prepare Judge Advocates for senior level staff service. Courses included: Administrative Law, Defensive Federal Litigation, Government Information Practices, Advanced Federal Litigation, Federal Tort Claims Act Seminar, Legal Writing and Communications, Comparative International Law.

J.D. with Honors, University of Texas School of Law, 1984: Attended law school under the U.S. Army Funded Legal Education Program, a fully funded scholarship awarded to 25 or fewer officers each year. Served as Editor-in-Chief (1983–84); Articles Editor (1982–83); Member (1982) of the Review of Litigation. Moot Court, Mock Trial, Board of Advocates. Summer internship at Staff Judge Advocate's offices. Prosecuted first cases prior to entering law school.

B.B.A., Business Management, Texas A&M University, 1977: ROTC Scholarship (3–yr). Member: Corps of Cadets, Parson's Mounted Cavalry, Wings & Sabers Scholarship Society, Rudder's Rangers, Town Hall Society, Freshman Honor Society, Alpha Phi Omega service fraternity.

Karl R. Rábago

Selected Publications

"Achieving very high PV penetration – The need for an effective electricity remuneration framework and a central role for grid operators," Richard Perez (corresponding author), Energy Policy, Vol. 96, pp. 27-35 (2016).

"The Net Metering Riddle," Electricity Policy.com, April 2016.

"The Clean Power Plan," Power Engineering Magazine (invited editorial), Vol. 119, Issue 12 (Dec. 2, 2015)

"The 'Sharing Utility:' Enabling & Rewarding Utility Performance, Service & Value in a Distributed Energy Age," co-author, 51st State Initiative, Solar Electric Power Association (Feb. 27, 2015)

"Rethinking the Grid: Encouraging Distributed Generation," Building Energy Magazine, Vol. 33, No. 1 Northeast Sustainable Energy Association (Spring 2015)

"The Value of Solar Tariff: Net Metering 2.0," The ICER Chronicle, Ed. 1, p. 46 [International Confederation of Energy Regulators] (December 2013)

"A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation," co-author, Interstate Renewable Energy Council (October 2013)

"The 'Value of Solar' Rate: Designing an Improved Residential Solar Tariff," Solar Industry, Vol. 6, No. 1 (Feb. 2013)

"A Review of Barriers to Biofuels Market Development in the United States," 2 Environmental & Energy Law & Policy Journal 179 (2008)

"A Strategy for Developing Stationary Biodiesel Generation," Cumberland Law Review, Vol. 36, p.461 (2006)

"Evaluating Fuel Cell Performance through Industry Collaboration," co-author, Fuel Cell Magazine (2005)

"Applications of Life Cycle Assessment to NatureWorks™ Polylactide (PLA) Production," co-author, Polymer Degradation and Stability 80, 403-19 (2003)

"An Energy Resource Investment Strategy for the City of San Francisco: Scenario Analysis of Alternative Electric Resource Options," contributing author, Prepared for the San Francisco Public Utilities Commission, Rocky Mountain Institute (2002)

"Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size," co-author, Rocky Mountain Institute (2002)

"Socio-Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado," with Thomas E. Feiler, Colorado Public Utilities Commission and Colorado Electricity Advisory Panel (April 1, 1999)

"Study of Electric Utility Restructuring in Alaska," with Thomas E. Feiler, Legislative Joint Committee on electric Restructuring and the Alaska Public Utilities Commission (April 1, 1999)

"New Markets and New Opportunities: Competition in the Electric Industry Opens the Way for Renewables and Empowers Customers," EEBA Excellence (Journal of the Energy Efficient Building Association) (Summer 1998)

"Building a Better Future: Why Public Support for Renewable Energy Makes Sense," Spectrum: The Journal of State Government (Spring 1998)

"The Green-e Program: An Opportunity for Customers," with Ryan Wiser and Jan Hamrin, Electricity Journal, Vol. 11, No. 1 (January/February 1998)

"Being Virtual: Beyond Restructuring and How We Get There," Proceedings of the First Symposium on the Virtual Utility, Klewer Press (1997)

"Information Technology," Public Utilities Fortnightly (March 15, 1996)

"Better Decisions with Better Information: The Promise of GIS," with James P. Spiers, Public Utilities Fortnightly (November 1, 1993)

"The Regulatory Environment for Utility Energy Efficiency Programs," Proceedings of the Meeting on the Efficient Use of Electric Energy, Inter-American Development Bank (May 1993)

"An Alternative Framework for Low-Income Electric Ratepayer Services," with Danielle Jaussaud and Stephen Benenson, Proceedings of the Fourth National Conference on Integrated Resource Planning, National Association of Regulatory Utility Commissioners (September 1992)

"What Comes Out Must Go In: The Federal Non-Regulation of Cooling Water Intakes Under Section 316 of the Clean Water Act," Harvard Environmental Law Review, Vol. 16, p. 429 (1992)

"Least Cost Electricity for Texas," State Bar of Texas Environmental Law Journal, Vol. 22, p. 93 (1992)

"Environmental Costs of Electricity," Pace University School of Law, Contributor–Impingement and Entrainment Impacts, Oceana Publications, Inc. (1990)

Exhibit KRR-2

Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, or through Rábago Energy LLC

(as of 11 November 2018)

Date	Proceeding	Case/Docket #	On Behalf Of:
Dec. 21, 2012	VA Electric & Power Special Solar Power Tariff	Virginia SCC Case # PUE 2012 00064	Southern Environmental Law Center
May 10, 2013	Georgia Power Company 2013 IRP	Georgia PSC Docket # 36498	Georgia Solar Energy Industries Association
Jun. 23, 1203	Louisiana Public Service Commission Re examination of Net Metering Rules	Louisiana PSC Docket # R 31417	Gulf States Solar Energy Industries Association
Aug. 29, 2013	DTE (Detroit Edison) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U 17302	Environmental Law and Policy Center
Sep. 5, 2013	CE (Consumers Energy) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U 17301	Environmental Law and Policy Center
Sep. 27, 2013	North Carolina Utilities Commission 2012 Avoided Cost Case	North Carolina Utilities Commission Docket # E 100, Sub. 136	North Carolina Sustainable Energy Association
Oct. 18, 2013	Georgia Power Company 2013 Rate Case	Georgia PSC Docket # 36989	Georgia Solar Energy Industries Association
Nov. 4, 2013	PEPCO Rate Case (District of Columbia)	District of Columbia PSC Formal Case # 1103	Grid 2.0 Working Group & Sierra Club of Washington, D.C.
Apr. 24, 2014	Dominion Virginia Electric Power 2013 IRP	Virginia SCC Case # PUE 2013 00088	Environmental Respondents
May 7, 2014	Arizona Corporation Commission Investigation on the Value and Cost of Distributed Generation	Arizona Corporation Commission Docket # E 00000J 14 0023	Rábago Energy LLC (invited presentation and workshop participation)
Jul. 10, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case	North Carolina Utilities Commission Docket # E 100, Sub. 140	Southern Alliance for Clean Energy
Jul. 23, 2014	Florida Energy Efficiency and Conservation Act, Goal Setting FPL, Duke, TECO, Gulf	Florida PSC Docket # 130199 EI, 130200 EI, 130201 EI, 130202 EI	Southern Alliance for Clean Energy
Sep. 19, 2014	Ameren Missouri's Application for Authorization to Suspend Payment of Solar Rebates	Missouri PSC File No. ET 2014 0350, Tariff # YE 2014 0494	Missouri Solar Energy Industries Association
Aug. 6, 2014	Appalachian Power Company 2014 Biennial Rate Review	Virginia SCC Case # PUE 2014 00026	Southern Environmental Law Center (Environmental Respondents)

Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, or through Rábago Energy LLC

(as of 11 November 2018)

Aug. 13, 2014	Wisconsin Public Service Corp. 2014 Rate Application	Wisconsin PSC Docket # 6690 UR 123	RENEW Wisconsin and Environmental Law & Policy Center
Aug. 28, 2014	WE Energies 2014 Rate Application	Wisconsin PSC Docket # 05 UR 107	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 18, 2014	Madison Gas & Electric Company 2014 Rate Application	Wisconsin PSC Docket # 3720 UR 120	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 29, 2014	SOLAR, LLC v. Missouri Public Service Commission	Missouri District Court Case # 14AC CC00316	SOLAR, LLC
Jan. 28, 2016 (date of CPUC order)	Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs, etc.	California PUC Rulemaking 14 07 002	The Utility Reform Network (TURN)
Mar. 20, 2015	Orange and Rockland Utilities 2015 Rate Application	New York PSC Case # 14 E 0493	Pace Energy and Climate Center
May 22, 2015	DTE Electric Company Rate Application	Michigan PSC Case # U 17767	Michigan Environmental Council, NRDC, Sierra Club, and ELPC
Jul. 20, 2015	Hawaiian Electric Company and NextEra Application for Change of Control	Hawai'i PUC Docket # 2015 0022	Hawai'i Department of Business, Economic Development, and Tourism
Sep. 2, 2015	Wisc. PSCo Rate Application	Wisconsin PSC Case # 6690 UR 124	ELPC
Sep. 15, 2015	Dominion Virginia Electric Power 2015 IRP	VA SCC Case # PUE 2015 00035	Environmental Respondents
Sep. 16, 2015	NYSEG & RGE Rate Cases	New York PSC Cases 15 E 0283, 0285	Pace Energy and Climate Center
Oct. 14, 2015	Florida Power & Light Application for CCPN for Lake Okeechobee Plant	Florida PSC Case 150196 EI	Environmental Confederation of Southwest Florida
Oct. 27, 2015	Appalachian Power Company 2015 IRP	VA SCC Case # PUE 2015 00036	Environmental Respondents
Nov. 23, 2015	Narragansett Electric Power/National Grid Rate Design Application	Rhode Island PUC Docket No. 4568	Wind Energy Development, LLC
Dec. 8, 2015	State of West Virginia, et al., v. U.S. EPA, et al.	U.S. Court of Appeals for the District of Columbia Circuit Case No. 15 1363 and Consolidated Cases	Declaration in Support of Environmental and Public Health Intervenors in Support of Movant Respondent Intervenors' Responses in Opposition to Motions for Stay

Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, or through Rábago Energy LLC

(as of 11 November 2018)

Dec. 28, 2015	Ohio Power/AEP Affiliate PPA Application	PUC of Ohio Case No. 14 1693 EL RDR	Environmental Law and Policy Center
Jan. 19, 2016	Ohio Edison Company, Cleveland Electric Illuminating Company, and Toledo Edison Company Application for Electric Security Plan (FirstEnergy Affiliate PPA)	PUC of Ohio Case No. 14 1297 EL SSO	Environmental Law and Policy Center
Jan. 22, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case	Indiana Utility Regulatory Commission Cause No. 44688	Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case Settlement Testimony	Indiana Utility Regulatory Commission Cause No. 44688	Joint Intervenors Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Comments on Pilot Rate Proposals by MidAmerican and Alliant	Iowa Utility Board NOI 2014 0001	Environmental Law and Policy Center
May 27, 2016	Consolidated Edison of New York Rate Case	New York PSC Case No. 16 E 0060	Pace Energy and Climate Center
June 21, 2016	Federal Trade Commission: Workshop on Competition and Consumer Protection Issues in Solar Energy	Invited workshop presentation	Pace Energy and Climate Center
Aug. 17, 2016	Dominion Virginia Electric Power 2016 IRP	VA SCC Case # PUE 2016 00049	Environmental Respondents
Sep. 13, 2016	Appalachian Power Company 2016 IRP	VA SCC Case # PUE 2016 00050	Environmental Respondents
Oct. 27, 2016	Consumers Energy PURPA Compliance Filing	Michigan PSC Case No. U 18090	Environmental Law & Policy Center, "Joint Intervenors"
Oct. 28, 2016	Delmarva, PEPCO (PHI) Utility Transformation Filing Review of Filing & Utilities of the Future Whitepaper	Maryland PSC Case PC 44	Public Interest Advocates
Dec. 1, 2016	DTE Electric Company PURPA Compliance Filing	Michigan PSC Case No. U 18091	Environmental Law & Policy Center, "Joint Intervenors"
Dec. 16, 2016	Rebuttal of Unitil Testimony in Net Energy Metering Docket	New Hampshire Docket No. DE 16 576	New Hampshire Sustainable Energy Association ("NHSEA")
Jan. 13, 2017	Gulf Power Company Rate Case	Florida Docket No. 160186 EI	Earthjustice, Southern Alliance for Clean Energy, League of Women Voters Florida

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(as of 11 November 2018)

Jan. 13, 2017	Alpena Power Company PURPA Compliance Filing	Michigan PSC Case No. U 18089	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Indiana Michigan Power Company PURPA Compliance Filing	Michigan PSC Case No. U 18092	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Northern States Power Company PURPA Compliance Filing	Michigan PSC Case No. U 18093	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Upper Peninsula Power Company PURPA Compliance Filing	Michigan PSC Case No. U 18094	Environmental Law & Policy Center, "Joint Intervenors"
Mar. 10, 2017	Eversource Energy Grid Modernization Plan	Massachusetts DPU Case No. 15 122/15 123	Cape Light Compact
Apr. 27, 2017	Eversource Rate Case & Grid Modernization Investments	Massachusetts DPU Case No. 17 05	Cape Light Compact
May 2, 2017	AEP Ohio Power Electric Security Plan	PUC of Ohio Case No. 16 1852 EL SSO	Environmental Law & Policy Center
Jun. 2, 2017	Vectren Energy TDSIC Plan	Indiana URC Cause No. 44910	Citizens Action Coalition & Valley Watch
Jul. 28, 2017	Vectren Energy 2016 2017 Energy Efficiency Plan	Indiana URC Cause No. 44645	Citizens Action Coalition
Jul. 28, 2017	Vectren Energy 2018 2020 Energy Efficiency Plan	Indiana URC Cause No. 44927	Citizens Action Coalition
Aug. 11, 2017	Dominion Virginia Electric Power 2017 IRP	VA SCC Case # PUR 2017 00051	Environmental Respondents
Aug. 18, 2017	Appalachian Power Company 2017 IRP	VA SCC Case # PUR 2017 00045	Environmental Respondents
Aug. 25, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	NY PSC Case # 17 E 0238, 17 G 0239	Pace Energy and Climate Center
Sep. 15, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	NY PSC Case # 17 E 0238, 17 G 0239	Pace Energy and Climate Center
Oct. 20, 2017	Missouri PSC Working Case to Explore Emerging Issues in Utility Regulation	MO PSC File No. EW 2017 0245	Renew Missouri
Nov. 21, 2017	Central Hudson Gas & Electric Co. Electric and Gas Rates Cases	NY PSC Case # 17 E 0459, 0460	Pace Energy and Climate Center

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(as of 11 November 2018)

Jan. 16, 2018	Great Plains Energy, Inc. Merger with Westar Energy, Inc.	Missouri PSC Case # EM 2018 0012	Renew Missouri Advocates
Jan. 19, 2018	U.S. House of Representatives, Energy and Commerce Committee	Hearing on "The PURPA Modernization Act of 2017," H.R. 4476	Rábago Energy LLC
Jan. 29, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Mass. D.P.U. Case No. 17 140	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)
Feb. 21, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Mass. D.P.U. Case No. 17 140 Surrebuttal	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)
Apr. 6, 2018	Narragansett Electric Co., d/b/a National Grid Rate Case Filing	RI PUC Docket No. 4770	New Energy Rhode Island ("NERI")
Apr. 25, 2018	Narragansett Electric Co., d/b/a National Grid Power Sector Transformation Plan	Rhode Island PUC Docket No. 4780	New Energy Rhode Island ("NERI")
Apr. 26, 2018	U.S. EPA Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Stories: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017) "Clean Power Plan"	U.S. EPA Docket No. EPA HQ OAR 2016 0592	Karl R. Rábago
May 25, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	NY PSC Case Nos. 18 E 0067, 18 G 0068	Pace Energy and Climate Center
Jun. 15, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	NY PSC Case Nos. 18 E 0067, 18 G 0068 Rebuttal Testimony	Pace Energy and Climate Center
Aug. 10, 2018	Dominion Virginia Electric Power 2018 IRP	VA SCC Case # PUR 2018 00065	Environmental Respondents
Sep. 20, 2018	Consumers Energy Company Rate Case	Michigan PSC Case No. U 20134	Environmental Law & Policy Center
Nov. 7, 2018	DTE Detroit Edison Rate Case	Michigan PSC Case No. U 20162	Natural Resources Defense Council, Michigan Environmental Council, Sierra Club

Exhibit KRR-3

BEFORE THE
ALABAMA PUBLIC SERVICE COMMISSION

ALABAMA POWER COMPANY	)	**Docket No. U-4226**
	)	
In re Rate Rider RGB (Supplementary,	)	
Back-Up, or Maintenance Power)	)	

RESPONSE OF ALABAMA POWER COMPANY
TO INTERVENORS FIRST SET OF INTERROGATORIES
AND REQUESTS FOR PRODUCTION OF DOCUMENTS

Alabama Power Company ("Alabama Power" or "Company"), by and through its undersigned counsel, hereby responds to the first set of interrogatories and requests for production of documents by intervenors James Bankston, Ralph Pfeiffer, and Gasp, Inc. ("Intervenors") in this docket.

GENERAL OBJECTIONS

1. Alabama Power objects to the "Instructions and Definitions" insofar as they purport to impose requirements on Alabama Power inconsistent with the Rules of Practice of the Alabama Public Service Commission.

2. Alabama Power objects to each and every discovery request to the extent they seek information or documents protected by the attorney/client privilege, work product doctrine or other applicable privilege.

3. Alabama Power objects to each and every discovery request to the extent they seek any confidential information, including but not limited to confidential information that is proprietary to Alabama Power or reflects the confidential information of other Alabama Power customers.

4. Alabama Power objects to each and every discovery request to the extent they call for the production, development or performance of analyses, calculations or studies that have not been performed.

5. Alabama Power objects to each and every discovery request to the extent they seek information and/or documents not within the possession, custody, control or knowledge of Alabama Power.

6. Alabama Power objects to each and every discovery request to the extent they fail to describe the requested information or documents with reasonable particularity, fail to define the terms or are otherwise vague, unreasonably broad, unduly burdensome or lacking in specificity.

7. Alabama Power objects to each and every discovery request to the extent they seek disclosure of documents or information that is unreasonably cumulative or duplicative or that is publicly available.

8. Alabama Power objects to each and every discovery request to the extent they call for the production or identification of information or documents that are not relevant to the subject matter of the proceeding for which Intervenors have been granted intervenor status, are beyond the scope of permissible discovery Intervenors have been authorized to pursue in said proceeding, or are not reasonably calculated to lead to the discovery of admissible evidence.

9. Alabama Power's responses and objections are based on information now available to it, as determined after reasonable diligence. Alabama Power reserves the right to amend, modify, or supplement its objections if it obtains additional pertinent information during the course of investigation or discovery. Except as otherwise indicated, Alabama Power has limited its responses to information pertaining to the Company's June 2018 modifications to

Rate Rider RGB. To the extent no information is provided in response to a question (or question subpart) that is reasonably related to the subject of the above-captioned docket, the Company has determined that existing responsive information is not within its possession and control.

10. Alabama Power does not waive any protections, rights or privileges by responding to this discovery. All responses stated below incorporate the above stated objections and are provided subject to and without waiving any of the objections stated above. The fact that Alabama Power has not repeated the foregoing objections for each specific discovery request shall not waive any of the above-stated objections.

11. Alabama Power specifically reserves the right to supplement its responses to Plaintiffs' discovery requests upon discovery of new information.

SPECIFIC OBJECTIONS AND RESPONSES

1-1: Please provide all documents in the Company's possession pertaining to Rate Rider RGB, in both its original form and as revised, including but not limited to documents provided to or received from the Alabama PSC concerning Alabama Power's Dec. 2012 and June 2018 requests for revisions to Rate Rider RGB.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 2, 3, 6, 7 and 8. Subject to and without waiving these objections, reference is made to Attachment 1-1.

1-2: Please describe in detail the facts and circumstances that motivated Alabama Power in December 2012 to propose revisions its Rate Rider RGB to assess a capacity reservation charge against self-generating customers taking service under Rates FD, LPS, RTA and SCH.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 6 and 8. Subject to and without waiving these objections, reference is made to the testimony of Ms. Natalie Dean, page 2, lines 10-21.

1-3: Please identify all persons employed or retained by Alabama Power and/or Southern Company who participated in the analysis and development of the capacity reservation charge and other revisions to Rate Rider RGB that apply to self-generating customers taking service under Rates FD, LPS, RTA and SCH.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 2, 3, and 6. Subject to and without waiving these objections, the following Alabama Power personnel supported the Company's June 2018 request for revisions to Rate Rider RGB: [redacted].

1-4: Please provide all documents utilized by Alabama Power in the development of the annual Jurisdictional Separation Study relied on by the Company to develop both the 2012 revisions and the 2018 proposed modifications to Rate Rider RGB.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 6 and 8. Subject to and without waiving these objections, Alabama Power references [redacted], which includes the following information: [redacted]

1-5: Please provide the Company's most recent cost of service study for all classes of customers, in Xcel format, including the following:

(a) Average monthly and annual electricity usage for each customer class;

(b) Average monthly and annual consumption for each customer class; and

(c) Average monthly and annual electricity bills for each customer class.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, and 8. Subject to and without waiving these objections, reference is made to Attachment 1-4. Records requested by question 1-5(c) are not maintained in the ordinary course by the Company.

1-6: Please provide a list of residential, small commercial and school customers (those on rates FD, LPS, RTA and SCH) who are or who have been subject to Rate Rider RGB. Customer information can be anonymized if necessary.

(a) For each such customer please describe which general rate they are on, the generating technology each customer uses, the nameplate capacity of their systems, and date of interconnection.

(b) For each such customer, please also describe:

i. whether Alabama Power provides supplementary power, back-up power (and whether firm or short term), or maintenance power;

ii. whether such customer is subject to the Capacity Reservation Charge under I.B.;

iii. whether such customers are subject to the alternative to the Capacity Reservation Charge in I.B.2.; and

iv. all payments made by each self-generating customer to the Company to date under Rate Rider RGB.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, 6 and 8. Subject to and without waiving these objections, reference is made to [redacted].

1-7: With respect to self-generating customers identified in Discovery Request 1-6, please provide the following additional information (with customer information anonymized if necessary):

(a) Aggregated average monthly and annual electric bill charges, credits and payments of self-generating customers, before and after installing self-generation equipment;

(b) Consumption profiles of self-generating customers, including total and net monthly and annual energy consumption, before and after interconnecting self-generation equipment;

(c) Average percentage of on-site monthly energy use that is met by on-site generation, along with the data used to develop the calculation;

(d) Average monthly and annual electricity usage and average electricity bills of self-generating customers;

(e) Any documents pertaining to self-generating customers' self-generation and consumption during peak and off-peak times;

(f) Individual customer load data for the past two years in the following categories:

i Non-netted deliveries from the Company to the customer (i.e., all delivered energy over the shortest time period over which energy flows are recorded without accounting for flows of energy the Company received from the customer);

ii. Non-netted receipt of energy exports from the customer to the Company on the same time basis as deliveries;

iii. From these data, please provide a census of customer data or, if a census is unavailable, a statistically significant sample of individual customer data. If neither a census nor a statistically significant sample of individual customer data is available, please provide aggregate class data.

(g) Whether self-generating customers have on-site electrical storage, such as batteries;

(h) The amount of any excess generation and the amount of compensation or credit to self-generating customers, for each month from January 2012 through the most current month for which data is available.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, 6 and 8. Subject to and without waiving these objections, reference is made to Attachment 1-7(b), the load profile data included with Attachment 1-27 (which comprise the load profiles depicted in Exhibits ND-2, ND-3 and ND-5), and Attachment 1-7(h).

1-8: Please provide, separated by customer class, individual customer load data for the Company's residential small commercial, and school customers (those on rates FD, LPS, RTA and SCH) without on-site generation for the past two years on the same time basis as the load data produced in response to Discovery Request 1-7, above. From this data, please provide a census of customer data or, if a census is unavailable, a statistically significant sample of individual customer data. If neither a census nor a statistically significant sample of individual customer data is available, please provide aggregate class data and a detailed explanation as to why the requested data is unavailable.

Objection: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, 6 and 8.

1-9: Please provide records of all complaints (formal and informal) and all customer inquiries concerning Rate Rider RGB in the Company's possession. Customer information can be anonymized or redacted if necessary.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 6 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted]

1-10: Please state the total megawatts of customer-owned, distributed solar connected to the Company's system (1) as of December 2012 and (2) currently. If appropriate, this information can be separated into residential and commercial classes.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4 and 8. Subject to and without waiving these

objections, Alabama Power states that at present, there is approximately [redacted]

1-11: Please state the total megawatts of utility-scale solar connected to the Company's system to date.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 7 and 8. Subject to and without waiving these objections, Alabama Power states that at present, there is approximately 97 MW of utility-scale solar interconnected to the Company's system.

1-12: Referring to Rate Rider RGB, as currently in effect, how would the Company measure and/or calculate 6% of maximum integrated 15 minute kW demand, as described at section I.B, page 3? Please describe how the Company obtains source data.

Response: Performance of the referenced determination entails confirmation of the customer's maximum (i.e., peak) demand during the previous 11 months, as obtained through Company metered data, and comparison of same against the 25 kW threshold.

1-13: Referring to Rate Rider RGB; as currently in effect, how does the Company calculate a Customer's "actual capacity requirement" if nameplate capacity exceeds actual capacity needs, as described at section I.B.1., page 3? Have any customers asked Alabama Power to perform such a calculation? If so, please provide the number of customers who have asked for such a calculation and the results of any calculations performed by the Company. Customer information can be anonymized if necessary.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted]

1-14: Please explain how self-generating customers are metered when interconnected to Alabama Power's grid and identify all data that the Company collects and stores with respect to self-generating customers. For example, if interval metering is used, describe the time interval used to track energy exports, the technology used, the point of metering, and the methods for calculating gross and/or net use.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 6 and 8. Subject to and without waiving these

objections, Alabama Power states that [redacted]

1-15: Please provide the solar generation profile data used by the Company for the purposes of Rate Rider RGB. Please describe the assumed relationship between the profile data and actual customer production and consumption data, the basis for the assumption(s), and steps taken to modify the rate based on differences between actual and profile data for specific customers.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 6 and 7. Subject to and without waiving these objections, reference is made to the response to question 1-24. See also testimony of Ms. Natalie Dean, page 15, lines 7-22.

1-16: Does the solar generation profile data used for Rate Rider RGB differ from the solar generation profile data used for other purposes, including but not limited to integrated resource planning, solar procurement, and any calculation of solar value or solar avoided cost for projects considered or approved under Docket 32382? If so, please explain those differences and the bases for them.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, 6 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted].

1-17: Please provide the total revenue collected under Rate Rider RGB to date. Please explain how the Company accounts for revenues collected from self-generating customers under Rate Rider RGB and provide any related documents, including an explanation of what costs are offset by the revenues. Please provide a detailed explanation for the accounting treatment of Rate Rider RGB revenues.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted]

1-18: Please state the retail peak demand for the Company's service territory.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3 and 8. Subject to and without waiving these objections, reference is a made to the response to question 1-4.

1-19: Please provide the Company's reserve margins (the actual value, not the required value) for each of the past five years, and anticipated reserve margins for each of the next five years.

Objection: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4 and 8.

1-20: Please explain how Alabama Power defines "peak capacity needs" and "peak capacity costs," as these terms are used in developing rates, estimating costs, and/or calculating charges such as Rate Rider RGB.

Response: "Peak Capacity Needs" represent the customer's peak (i.e., highest) load requirement, regardless of when it may occur in a single year. "Peak Capacity Costs" represent the costs associated with the Company having generation available to serve the customer's peak capacity need.

1-21: Please provide the calculation and any supporting documents used by Alabama Power to develop the 35% "credit" referenced in Natalie Dean Testimony, page 17 lines 13-16, found in the June 15, 2018, filing by Alabama Power in Docket U-4226, Testimony of Natalie Dean on Behalf of Alabama Power Company.

Response: Reference is made to Attachment 1-1b, page 3.

1-22: In determining the 35% "credit," what assumption(s) did Alabama Power make regarding the forced outage rate of customer-sited solar installations across its service territory? Did the Company make any distinction between forced outage rates occurring during system peak versus those occurring during non-peak times?

Response: Assumptions respecting the operability of the solar systems were inherent in the NREL PVWATTS tool and the weather zones modeled, but Alabama Power understands those assumptions to be consistent with the requirements of PURPA. See also the testimony of Ms. Natalie Dean, page 17, lines 5-11.

1-23: Please identify and provide supporting documentation for each instance that a customer's solar system in Alabama Power's service territory stopped producing electricity due to weather events, maintenance issues or other reasons.

Objection: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 4, 5, 6 and 8.

1-24: Please describe precisely how the Company used the NREL PVWATTS tool to develop an average residential solar profile for the Alabama Power Service Territory, as described on referenced on page 15 of Ms. Dean's testimony and shown on Exhibit ND-3. Specifically, please provide:

(a) The system information inputs for module type, array type, system losses, tilt, azimuth, and advanced parameter inputs for DC to AC size ration, inverter efficiency and ground coverage.

(b) The locations to derive sample data for each of the three weather zones.

(c) The daily and/or hourly results, in Excel format, used by the Company to develop the representative profiles.

Response: Reference is made to Attachment 1-24.

1-25: Please provide all workpapers, in electronic, machine-readable format, used to develop the values shown on Exhibit ND-4, along with a step-by-step explanation of how the variable energy and fixed capacity cost components shown there were derived.

Response: Reference is made to the testimony of Ms. Natalie Dean, page 16, lines 1-23, and Attachments 1-1b, page 2, 1-1e and 1-1f.

1-26: Referring to Exhibit ND-4, in addition to the information provided, please calculate and provide the cost of service (including variable energy and fixed capacity cost components) for the average residential customer, and produce all workpapers, in electronic, machine-readable format, used to perform such calculations.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to item 4. Subject to and without waiving this objection, the Company states that the requested information was not developed as part of the 2018 modifications to Rate Rider RGB.

1-27: Please provide all workpapers, in electronic, machine-readable format, used to develop the values shown in the "FD Billing" columns found in Dean Testimony Exhibit ND-6, along with a step-by-step explanation of how the variable energy and fixed capacity cost components shown there were derived.

Response: Reference is made to Attachment 1-27. For step-by-step information, reference is made to the response to question 1-25.

1-28: Please refer to Dean Exhibit ND-6. In addition to the information provided, please provide the monthly billed kWh and FD Billing for the average residential customer, and produce all workpapers, in electronic format, used to perform such calculations.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to item 4. Subject to and without waiving this objection, Alabama Power states that the Company did not calculate an average residential customer's FD billing or monthly billed kWh as part of the analysis supporting the 2018 modifications to Rate Rider RGB. Rather, the Company utilized a representative profile for a subset of the Rate FD customer population likely to interconnect on-site generation and require firm back-up power. Reference also is made to the response to question 1-27 and the testimony of Ms. Natalie Dean, page 18, line 6 through page 19, line 8.

1-29: Please provide all workpapers, in electronic, machine-readable format, used to develop the values in the "RTA Billing" columns found in Natalie Dean Testimony Exhibit ND-7, along with a step-by-step explanation of how the variable energy and fixed capacity cost components shown there were derived.

Response: Reference is made to the response to question 1-27.

1-30: Please provide the following information concerning Alabama Power's coincident and non-coincident class peak demand data:

(a) The date, hour, and level of the Company's winter and summer system peaks (for each month) during each of the last ten (10) years;

(b) The date, hour, and level of the non-coincident peak for each customer class during each of the last ten (10) years;

(c) Average winter and summer load curves and accompanying data for each customer class during each of the last ten (10) years; and

(d) To the extent that the Company's last cost-of-service study allocates costs based on system peak (at any level of the system), multiple coincident peaks (i.e., 3CP, 4CP or 12CP), and/or class non-coincident peaks, please provide the date, time (hour ending), and level of each such peak and/or non-coincident peak for each class.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 4, 6 and 8. Subject to and without waiving these objections, for 1-30(a), reference is made to Attachment 1-30. For 1-30(c) and 1-30(d), reference is made to the response to 1-4. The information requested in 1-30(b) was not developed as part of the 2018 modifications to Rate Rider RGB.

1-31: Please explain what, if any, capacity value or capacity credit Alabama Power attributes to solar generation, including but not limited to capacity value associated with solar projects in

Docket 32382. Provide all related documents, including those explaining how these values are derived and applied.

Objection: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 6 and 8.

1-32: Please provide all documents in the Company's possession related to any analyses of solar generation value done by Southern Company, Alabama Power, or any other utility, trade organization, or other organization, including but not limited to any "value of solar" or "value of renewable" analyses, cost-benefit studies, avoided cost calculations, and assessments of contributions of distributed solar generation to the utility's system. Please include any policy or advocacy positions relating to these analyses, and identify the organizational level at which these analyses were conducted.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 2, 3, 5, 6, 7 and 8. Subject to and without waiving these objections, Alabama Power states that it did not rely on any of the referenced items as part of the 2018 modifications to Rate Rider RGB.

1-33: Please identify any self-generating solar customers who are not subject to Rate Rider RGB or any of its provisions, due to receiving grandfathering, waiver or other circumstances, and indicate the basis for their exclusion.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3 and 6. Subject to and without waiving these objections, Alabama Power states that all customers with interconnected on-site generation that require back-up power are subject to Rate Rider RGB. However, the Company has exempted customers from the capacity reservation charge if they had existing on-site generation or an interconnection request pending at the time of the effectiveness of Revision Fifth. Reference is made to Attachment 1-33. The Company does not propose or intend to exempt any customers currently paying the charges under Rate Rider RGB Part B from the incremental price changes proposed with the 2018 modifications filed in Docket No. U-4226.

1-34: Please provide data concerning how much solar generation is currently in operation on Alabama Power's system, including a breakdown of whether this generation is related to self-generating customers; whether it is being transmitted to Alabama Power's system (and if so, whether the Company is procuring all of the generation or only a portion of it); what, if any, price Alabama Power is paying for this generation; and whether, and at what price, Alabama Power sells this generation or the environmental attributes associated with the generation to other customers.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 4, 6 and 8. Subject to and without waiving these

objections, reference is made to the responses to questions 1-10 and 1-11. Purchases of excess energy are made in accordance with Rate PAE and Rate CPE, as applicable. For utility-scale solar projects, purchases are governed by the terms and conditions of the arrangements in place for such projects. Retail sales of renewable energy certificates associated with utility-scale solar projects are priced in accordance with Rate OPS or, with respect to the LaFayette facility (in Chambers County), pursuant to an arrangement with the supporting customer Walmart under the authorization in Docket No. 32382. From time to time, the Company also will make wholesale sales of renewable energy certificates associated with utility-scale solar projects at a negotiated market price.

1-35: Please provide all documents related to the cost to serve other subsets of the residential class, including but not limited to (1) those who deploy measures other than solar PV to reduce electrical costs such as energy efficiency measures; passive solar technologies; and natural gas, propane or diesel self-generation; and (2) second home owners; and (3) rural customers.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 4, 6 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted]

1-36: Please identify all intra-class subsidies that the Company believes exist within the residential, small commercial, and school customer classes, and provide any documents related to these subsidies.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to item 6. Subject to and without waiving the foregoing objections, the effective rates for electric service within the identified classes were not designed to facilitate or accomplish any "intra-class subsidies." Rate design is intended to facilitate cost recovery across an entire group of customers associated with a given rate. While it is theoretically possible to assign costs and design a rate for every customer within a group, such an undertaking would be wholly impractical. Rate designers instead endeavor to identify and group customers with comparable expected service characteristics and design a corresponding rate to achieve cost recovery. Within each customer grouping, there will be some variability in the individual load characteristics of the group members, which in turn will ultimately result in some variability in the actual costs recovered from each customer within the group. Nevertheless, across the entirety of the group, and even with the prospect for some variability, cost recovery is effectively accomplished.

1-37: Please provide all documents relating to the Company's valuation and/or avoided cost analyses of projects submitted to the Alabama Public Service Commission in connection with Docket 32382, including the solar projects at Fort Rucker and the Anniston Army Depot, and the 72 MW Chambers County solar project.

Objection: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 2, 3, 6 and 8.

1-38: Please provide documents related to solar generation being utilized at the Company's microgrid project at Reynolds Landing in Hoover, Alabama project, and describe whether participating customers are subject to Rate Rider RGB or any other rates, fees or charges based on the presence of on-site solar generation.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3, 6 and 8. Subject to and without waiving these objections, Alabama Power states that [redacted].

1-39: Please provide the most recent Commission-approved resource plan, including the Company's most recent load forecast and capacity need projections.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 3 and 8. Subject to and without waiving these objections, reference is made to https://www.alabamapower.com/our-company/how-we-operate/regulation/integrated-resource-plan.html.

1-40: Please provide any documents that Alabama Power reviewed or relied upon pertaining to capacity reservation charges in effect in other states.

Response: Alabama Power objects to this request for the reasons stated in the General Objections, including but not limited to items 2, 6 and 8. Subject to and without waiving these objections, reference is made to Attachment 1-1h.

Attorney for Alabama Power Company

OF COUNSEL:

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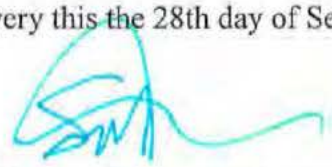
CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing on the following counsel of record in this public proceeding by hand delivery this the 28th day of September, 2018.



OF COUNSEL

Exhibit KRR-4

VERITEXT
LEGAL SOLUTIONS

Deposition of:

Natalie Dean

October 29, 2018

In the Matter of:

Bankston, James H. Vs. Alabama Power Co

Freedom Court Reporting
800.808.4958 | calendar-freedom@veritext.com | 205-397-2397

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION

DOCKET NO. U-4226

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR.,
Intervenors,
vs.
ALABAMA POWER CO.,
Petitioner

IN RE: RATE RIDER RGB (SUPPLEMENTARY, BACK-UP, OR MAINTENANCE POWER)

DEPOSITION OF NATALIE DEAN

S T I P U L A T I O N

IT IS STIPULATED AND AGREED, by and between the parties through their respective counsel that the deposition of NATALIE DEAN, may be taken before Allison Miller, Commissioner, at Southern

Environmental Law Center, Birmingham, Alabama, on the 29th day of October, 2018, beginning at approximately 9:50 a.m.

IT IS FURTHER STIPULATED AND AGREED that the reading of and signature to the deposition by the witness is NOT waived, said deposition to have the same force and effect as if full compliance had been had with all laws and rules of court relating to taking of depositions.

IT IS FURTHER STIPULATED AND AGREED that it shall not be necessary that any objections be made by counsel to any questions, except as to form or leading questions, and that counsel for the parties may make objections and assign grounds at the time of the trial, or at the time said deposition is offered in evidence, or prior thereto.

IT IS FURTHER STIPULATED AND AGREED that notice of filing of the deposition by the Commissioner is waived.

In accordance with Rule 5(d)

of The Alabama Rules of Civil Procedure, as Amended, effective May 15, 1988, I, Allison Miller, am hereby delivering to Keith Johnston/Kurt Ebersback, Esq., the original transcript of the oral testimony taken on the 29th day of October, 2018, along with exhibits.

Please be advised that this is the same and not retained by the Court Reporter, nor filed with the Court.

I N D E X

APPEARANCES

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APPEARING ON BEHALF OF ALABAMA POWER CO.

Mr. Scott Grover
Mr. Dan McCrary
Balch & Bingham
1710 Sixth Avenue North
Birmingham, Alabama 35203-2015

[redacted]

Q. So the analysis of all these people is reflected in your testimony?

A. That's correct.

Q. And you stand by what the findings they made that support your testimony?

A. Yes, I reviewed all analysis as well as all calculations and find them to be accurate.

Q. [redacted]

[redacted]

A. [redacted]

Q. That's going to be good to have that with your testimony close by because we'll be looking at various parts of it as we go along. Ms. Dean, would you agree that rate design is the process of translating a utility's revenue requirements into the prices

paid by customers?

A. Generally speaking, yes. I would say it's translating the cost to serve our customers into a rate recovery mechanism.

Q. So are the prices paid by customers, are they for services rendered by utility?

A. That's correct.

Q. And here specifically is for provision of electricity?

A. That's correct.

Q. Do you agree as a basic principle that customers should pay for power supply and grid services based on how much they use and when they use it?

MR. GROVER: Objection.

A. Can you repeat the question, please?

Q. Do you agree that customers should pay for power supply and grid services based on how much they use and when they use it?

A. I believe that customers should pay for the costs associated with serving

[redacted]

[redacted]

[redacted]

A. [redacted]

Q. [redacted]

A. [redacted]

Q. [redacted]

[redacted]

[redacted]

A. I haven't done that calculation.

Q. But we could add up that capacity and we could divide it and --

A. You could do that, yes.

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

A. [redacted]

Q. Do you understand that because the Proposed Fifth Revisions were filed on December 20th and approved by the Commission on January 10th, that many customers had no

anytime, just ask. It's not meant to be an endurance contest.

A. Okay.

Q. I want to get in now to how y'all derive the charge and just a few questions that we have about that. First, let me just ask you a few questions about it and this is how I understand it. So just tell me if this is wrong.

The capacity reservation charge does not vary with the level or pattern of customer's usage; is that correct?

A. The capacity reservation charge is based on -- you mean how it's applied to customers?

Q. Does it vary at all with the level or pattern of the customer's usage?

A. No.

Q. Is it based on any meter data from customer premises?

A. No.

Q. Is it impacted by the extent to which the customer reduces or contributes to

system demand?

A. Can you repeat that, please?

Q. Is the charge impacted by the extent to which the customer reduces or contributes to system demand?

A. The capacity reservation charge itself?

Q. Yes.

A. Yes, sir, we are just talking about the capacity reservation charge, or are we talking about --

Q. Just capacity reservation charge?

A. No, it does not.

Q. Do you agree it applies to every interconnected solar customer regardless of their actual system size?

A. It applies to all interconnected customers that have interconnected generation, not just solar.

Q. Right, but of any size?

A. Of any size, that's correct.

Q. So a customer with five kilowatts of solar capacity with very low use and a high

level of exports during system peak will pay the same capacity reservation charge as a customer with five kilowatts of solar capacity very high use and a low level of exports during system peak?

A. If you're -- the charge is based on the installed capacity.

Q. So if a five kilowatt --

A. I wouldn't necessarily say that they pay the same. If they have the same size generator, then they would pay the same.

Q. Right. So two solar customers each have a five kilowatt system, they're going to pay the same charge regardless of their usage patterns?

A. Correct.

Q. Now, as you discussed in your testimony, the rate design process starts with the cost of service study; correct?

A. That's correct.

Q. And that's how you started here?

A. That's correct.

Q. You relied on the 2016 so-called

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

A. [redacted]

[redacted]

[redacted]

Q. So is that statement saying that for every ten megawatts of customer-sited non-utility interconnected solar the Company must hold six and a half enough megawatts in reserve?

A. I would say that the -- for every ten megawatts of installed solar that the Company needs to stand ready to serve six and a half megawatts at any given point in time.

Q. Now, just disregarding the sixty-five percent, I will call it the non credit, whatever you want to call it, let's go back to your analysis before that was applied.

As I understand it, the Company used the PV watts tool to develop the

indicative profile for a customer with one kilowatt solar?

A. That represented the actual solar production out of the solar facility.

Q. As you mentioned before, you looked at the three weather zones that make up your territory and then you weighted the profile to come up with a single representative profile?

A. That's correct.

Q. For solar production?

A. For solar production; correct.

Q. You have noted in the written responses, but that tool has certain built-in assumptions; correct?

A. Yes, it does.

Q. Such as weather variances?

A. Correct. That's my understanding that that tool has weather data associated with it, yes.

Q. And it also incorporates assumptions about system losses and converter efficiency?

A. That's my understanding, correct.

Q. [redacted]

[redacted]

A. [redacted]

[redacted]

Q. So based on what is shown in Exhibit ND3, that represent a customer never reaches a full kilowatt; is that right?

A. Yes, based on what's represented in ND3, it does not reach one kilowatt.

Q. [redacted]

[redacted]

A. [redacted]

[redacted]

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

[redacted]

Q. All I'm trying to figure out, just take us back to the original question. When you talk about annual utilization of being or connected on-site generation, there's a factor in determining that thirty-five percent credit, can you point me anywhere in the record we have that -- where that number came from?

A. I don't have a number that represents what we're talking about. I don't have a -- when you're saying where what number came from, which number are you talking about?

Q. Thirty-five percent credit you said you took into account various factors, this was one of them?

A. Yes, that was one factor.

Q. So was it a numerical representation of that factor?

A. It was not a numerical representation. It was based on the company's judgment.

Q. How about expected outfitted

system peak, which perhaps that's more relevant to what we were just discussing?

A. That is a consideration that the Company utilized. Not a specific number.

Q. So you're not necessarily looking at the thirty-five percent during system peak that we talked about before?

A. It's not necessarily just during one system peak.

Q. Okay. So is this the same as what annual utilization that you are not necessarily looking at any particular numbers, you are making more of a judgment call?

A. I would say based on knowledge that the Company has, I would say yes, it's based on the Company's judgment.

Q. How about incremental capacity equivalent, what do you mean by that?

A. Incremental capacity equivalent is basically the -- it's meant to represent the output of the facility as it relates to a similar type gen -- or as it relates to a generation type that would be on all the

time. So it's -- I guess it's putting it on the same basis, trying to put it on the same basis. So if I had a hundred KW of, say, a generating unit that was available and producing a hundred percent of the time what would be the basis for the same equivalent capacity related to this type of generation.

Q. Is it essentially the same as capacity factor?

A. Not necessarily. I mean, it's -- it could be close, but not necessarily the same thing.

Q. But here is it that you're not looking at the system peak hour, you're looking at the year, is that fair?

A. Yes, or -- yes, that's based on -- well, I would go back and say based on my knowledge of that. I don't perform those calculations, but based on my knowledge of really, to the best of my knowledge, that's what it's meant to represent.

Q. So let me ask the same question here about this factor. To your knowledge,

was there a set of figures that you or someone else consulted, or is it more of the Company exercising its judgment?

A. The Company exercising its judgment.

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

A. [redacted]

[redacted]

[redacted]

Q. So the good news we're making good time.

MR. EBERSBACH: Y'all want to take a quick break and I will get my stuff more organized?

Q. That fluctuations in output of the system is a more common phenomena than the system going out all together?

A. I don't have specific knowledge of the operation of solar systems and what causes their output to change. I can certainly tell you there are factors to consider, not just reduction in output.

Q. So I want to try to figure out what y'all mean when you use the term unscheduled outage. Let me just ask you this way. In coming up with the capacity reservation charge or the super peak charge, did the Company rely on any data relating to unscheduled outages of solar systems?

A. Unscheduled outages? Not that I recall. Are you talking about something that was in the testimony or related to a question that was asked of us?

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

Q. [redacted]

A. [redacted]

Q. All right. So supplemental -- I'm going to ask you some questions about supplementary power versus back-up. Would you agree that for the average residential customer who has solar but not storage, the system is unlikely to ever meet all their needs?

A. Say that one more time.

Q. For the average residential customer who has solar but not storage, would you agree the system is unlikely to ever meet all their needs, their solar system?

A. When you say all their needs, do you mean on an annual basis or at any given point in time?

Q. On an annual basis?

A. I would say on an annual basis the solar facility that does not have battery back-up is not sufficient to meet all of their needs.

Q. [redacted]

customers' needs?

A. Yes.

Q. And so when that happens, the Company steps in to varying degrees. Is that what you mean by supplementary power?

A. Yes, I think by definition supplementary power, we defined it in the rate as electric energy or capacity regularly used at the premises by a customer in addition to energy that is ordinarily generated by customers' own generation equipment.

Q. When you say what is ordinarily generated, do you mean based on the prediction that PV watts gives or what?

A. The rate itself is there to provide the means for the Company to provide supplementary and back-up power to a given customer at any given point in time. So the supplementary power refers to the consumption that's not produced by the generator.

Q. So what do y'all mean when you -- in Rate RGB when you have a definition of back-up power, you say unscheduled outages,

including experiencing periods of intermittent generation, do you see that language? It's the definition of back-up power.

A. Yes. It states back-up power -- well, back-up power is the electric energy or capacity available to replace energy used at the premises and ordinarily generated by customers' own generating equipment, generation equipment. Back-up power is not available when the customer requires maintenance power but is available only during unscheduled outages which can occur when a customer's own generation equipment is not producing energy or capacity or is experiencing periods of intermittent generation.

Q. What I'm trying to figure out is by experiencing periods of intermittent generation, do you mean normal fluctuations in production that all solar systems experience?

A. I would say it could be anything. It could be the solar panel failed. It could be that it's covered by snow or leaves. It's

not producing what it generally would produce.

Q. So it's a deviation from what is ordinarily generated?

A. I think that's what the definition says, yes.

Q. And you made no determination about how frequently that might occur; is that correct, for the representative solar customer?

A. No, we did not. That information is -- the Company does not have access to that information.

Q. So what I'm trying to figure out is how y'all draw the line between supplementary power and back-up power. And I have read the definitions. So I'm familiar with the verbiage, but a solar system would have an expected output in any given year, but it may not meet that because of weather or other factors. So you have variations in output throughout the day and throughout the year that you might say are expected based on what is ordinarily generated. So power supply

then is supplementary power; is that right?

MR. GROVER: Objection.

A. Say that one more time.

Q. I don't know if I can. By ordinarily generated, do you mean what a functioning solar system would generally be expected to produce in a given day or a given year?

A. I think generally speaking that's probably a fair statement. I mean, supplementary power is essentially the power that we're required to produce the customer that they're not generating by themselves. That's essentially what supplementary power represents.

Q. So specific example. Clouds come over my solar system, its output drops to zero. Company steps in. Is that supplementary power or back-up power?

A. I would say to the best -- to the best of my knowledge, I would consider if it's supposed to be producing and it's not producing, that would be back-up power.

Q. So that's the same as if the system was broken and wasn't functioning at all?

A. Yes. I mean, again, the one thing we have taken into consideration is whether power outages that do include some cloud cover when we looked at the different weather zones across the state.

Q. So sort of built into the representative solar customer's profile are those variations that would normally be expected to occur?

A. [redacted]

Q. And back-up power would be when the system fails to perform as expected?

MR. GROVER: Objection. That's not what she said.

MR. EBERSBACH: I'm just understanding her testimony.

MR. GROVER: I am, too.

A. I would say that back-up power is

the Company standing ready to serve, just as the definition says, it's standing ready to serve -- to serve in lieu of the generation ordinarily generated by that facility.

Q. Okay. But if I'm a solar customer and my solar output is fluctuating throughout the day and whenever that happens my needs are served by the Company, I'm buying those electrons and paying for both variable and fixed capacity costs through those purchases; is that right?

A. I would say the Company is being compensated for the service it provides both through the supplementary power rate. In this case it would be Rate FD as well as through the capacity reservation charge under Rate Rider RGB. The Company is recovering its costs through both of those components.

Q. The point is, you're recovering some fixed costs through the provision of self-made power which is why you're giving credit for it in the analysis?

A. I think we outlined that in the

testimony.

Q. And I think your testimony said something to the effect of you might overcharge the customer, or if you didn't recognize the fixed cost payments that were associated with the supplementary power purchases?

A. That's correct, under the design of Rate FD it is a two part rate. So we recover both fixed and variable costs associated with providing service to full requirements customers through the variable energy charge.

Q. Are you aware that the PURPA definition of back-up power differs from the Company's?

A. You'll have to show me what you're talking about.

Q. You have Rate Rider RGB; right?

A. I do.

Q. I'm handing you what we've marked as P-15.

(Whereupon, Exhibit Number P-15

Q. That sum arises because the solar customer is purchasing less electricity from Alabama Power?

A. I would state it a little bit differently. I would state that that cost is the cost of providing back-up to these customers.

Q. But the reason there's a -- the reason there's that difference between the solar customer and the non solar customer is because the solar customer is buying fewer kilowatt hours; is that right?

MR. GROVER: Objection.

A. Again, I believe I stated that. It represents the cost of providing back-up service.

Q. I understand that, but you derived at it by looking at the differences in kilowatt hour purchases between the two customers after applying the credits that you gave the solar customer?

A. I looked at -- I arrived at that based on analyzing what was recovered through

the supplementary power rate as well as the cost to serve that customer related to back-up service.

Q. So I take it you would disagree that the capacity reservation charge is based on lost revenues?

A. I would disagree with that.

Q. In your testimony you talk about Mr. Scribner. You understand he's a Gasp member who filed an affidavit?

A. Yes.

Q. Did you review his affidavit?

A. I did.

Q. So he has a solar plus battery system. Is it your understanding that in the absence of that system, both the solar and the battery, Mr. Scribner's entire load would be served by Alabama Power?

A. If he did not have a solar power or battery back-up?

Q. Yes.

A. Yes, it's my understanding, unless he had some other form of generation

MR. GROVER: Objection.

Q. It was a new cost to him?

A. It was a cost to Mr. Scribner, that's correct.

Q. Are the Company's costs to provide back-up service incremental in the same way?

A. I would say that the Company is focused on providing cost recovery for its embedded costs.

Q. Has the Company incurred any new costs? And by that I mean, capacity investments not already incurred specifically as a result of customer-sited solar penetration in its service territory?

A. Say that one more time.

Q. Has the Company incurred any new costs, and by that I mean capacity investments not already incurred specifically as a result of customer-sited solar penetration in its service territory?

A. So you're asking me has the Company incurred additional costs for capacity specifically because of solar penetration?

Q. Yes.

A. I personally am not aware of any costs associated with that solar penetration related to capacity that you are referring to.

Q. When you evaluated the representative customer with installed rooftop solar-generation, did you look at all at the coincident peak demand of that subset?

A. When I looked at the installed capacity? Say that one more time.

Q. When you are looking at the two customers, one with solar and one without, did you look at the coincident peak demand of that subset of customers, the solar customers?

A. When I'm looking at the costs associated with serving those customers?

Q. Or when you developed the charge, the capacity reservation charge?

A. Yes, actually we looked at the coincident peak associated with those customers.

Q. Did you compare the coincident

seventy-one cents during summer peak hours?

A. That's correct.

Q. Let me ask you about applicability. You said just a moment ago a number of times already that the Rate Rider applies to any form of non emergency on-site generation; is that right?

A. If it's interconnected to the Company's system.

Q. [redacted]

A. If any customer that is subject to the back-up power provisions of firm back-up under Part B.

Q. Yeah, let's say a Rate FD customer?

A. Okay, a rate FD customer.

Q. And you're not aware of any such customers at this point?

A. I am not aware of any such customers, correct.

Q. Is that a very likely scenario that someone would use fossil fuel generator for non emergency purposes?

A. It's possible. In my professional opinion, it's not likely.

Q. Generally that's going to be more expensive than buying the electrons from the Company?

A. I can't -- I would have to assume so for a small scale.

Q. Have you witnessed a diesel-fired home generator in action?

A. Have I witnessed one?

Q. Yes.

A. A diesel-fired, I have not.

Q. Or gasoline or any form of fossil fuel?

A. Have I witnessed one that's interconnected to the system?

Q. Operating? I guess what I'm getting at is they're noisy, have you heard

one before?

A. Yes, I have heard one before.

Q. And for that reason, too, that person is not likely to use that on a regular basis?

A. Probably not.

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

[redacted]

A. [redacted]

Q. [redacted]

A. [redacted]

Q. [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

A. [redacted]

Q. And as we've established today,

here today the information that I provided was more relative to understanding that a customer had options should they so choose or not want to pay the capacity reservation charge that there was an additional option available to them.

Q. The amount of detail that's in your testimony, would you agree that that wasn't publicly available prior to your filing of this testimony?

A. That's correct. It was not available.

Q. Now, I want to ask you about some specific language in Rate Rider RGB. I'm referring specifically to the back-up power provisions on page 3.

A. Okay.

Q. My question is about that first paragraph, paragraph -- my question is about paragraph B, 1-B.

A. Okay.

Q. The language specifically customers will be eligible to remain on their

current rate, et cetera. Do you see that language?

A. Yes.

Q. So I'm trying to figure out exactly how that works. So if -- would you agree that typical residential customers' peak demand ranges between three and four kilowatts?

A. A typical customer?

Q. Yes.

A. I can't speak to a typical customer. I think we provided some data in there based on the representative customer that we evaluated, and that sounds reasonable.

Q. So if we just say four kilowatts, for sake of argument, if my math is correct, six percent of that would be point two-four kilowatts?

A. Yes, that sounds right.

Q. And so is the way that this language works, you look at the nameplate capacity of the customer's system and you compare it to the lesser of two figures?

A. That's right.

Q. One of which is the six percent of maximum kilowatt demand, integrated fifteen minute kilowatt demand during the previous eleven months and the other figure is twenty-five kilowatts?

A. That's correct.

Q. So in the instance we just discussed, the lesser of those two figures would be six percent of the customer's peak demand?

A. That's correct.

Q. So does that mean that a customer with a peak demand of four kilowatts and a solar system with a nameplate capacity of four point three kilowatts wouldn't remain eligible to stay on Rate FD?

A. Say that again. You said a customer with --

Q. So a peak demand of four kilowatts and a solar system with nameplate capacity of four point three, which is the figure y'all used --

A. Right.

Q. -- that customer wouldn't remain eligible to stay on Rate FD?

A. No, the way this read, the customer -- so back-up power is available to customers on Rates FD, LPS, RTA and SCH with the following modifications to the terms and conditions of such rates outlined below in Sections 1 and 2. For customers that are not on FD, LPS, RTA and SCH, those customers will be eligible to remain on their current rate with the following modifications.

So a customer that is not -- that is subject to the capacity reservation charge that is not on FD, LPS, RTA or SCH could remain on their existing rate as long as they met these requirements.

Q. Okay. It seems like you supplied some language that's not there. I'm not saying you're representing it in the wrong way, but I don't -- we found this language confusing.

I mean, is it not a reasonable

reading, even if it's incorrect, that when you talk about customers, you are talking about the same customers in the previous sentence?

A. No, it's meant to be customers that are not already on those rates.

Q. So with this language about six percent, would that apply to any residential customer?

A. So we have other residential rates besides FD and RTA. So they could remain on that rate as long as they met these requirements.

Q. Can you give me an example of a residential rate other than FDR or RTA?

A. Yes, we have some additional rates that are not available for new customers, but we still have existing customers on those rates such as FDT or FDE. Those customers could remain on those rates as long as they're installed capacity -- their installed interconnected generation does not exceed six percent of their maximum integrated fifteen minute KW demand for the previous eleven

months.

Q. Let's say it's a rate -- was it RTD?

A. FDT.

Q. FDT, let's say a customer who is on a rate FDT has a peak demand of four kilowatts and a system that's four point three kilowatts, that customer wouldn't remain eligible to stay on their rate?

A. That's correct.

Q. For either supplementary or back-up service?

A. That's my interpretation of the rate, correct.

Q. So, then, what happens? Where do they go?

A. They would have to take service for supplementary service under one of the rates listed here, FD, LPS, RTA or SCH, and for residential that would be FD or RTA.

Q. And then their system size would be subject to the capacity reservation charge?

A. Don't misunderstand me. They're

still subject to the capacity reservation charge whether they remain on their rate or not. So if they're an FDT customer and they meet the threshold of the six percent, not exceeding the six percent, they still are required to be charged the capacity reservation charge.

Q. Do you know how y'all came about selecting the six percent, like why was that figure used?

A. It's meant to be -- to represent a de minimis installation of generation, meaning it's not a significant portion of the customer load.

Q. Right. It's going to cover just about everybody; right? We don't -- y'all don't have any customers who have only point two four six kilowatt system, do you?

A. I think we have some pretty small ones. I would have to go back and look at that list. We have an installation that is point six KW of solar.

Q. Okay.

A. And keep in mind -- and one that's point three eight as well. Keep in mind this clause is applicable to all of our rates. So you could have obviously an industrial commercial customer that would fall under that as well and still be able to remain on their rate.

Q. Just a few questions about other effected rate classes under Part B. So your testimony says y'all consider Rate FD as a conservative indication of cost of service for customers under Part B rates?

A. That's correct.

Q. What do you mean by conservative there?

A. [redacted]

with?

A. I can tell you we didn't utilize this information. We looked at, just like we do for all of our rates, the costs that are inherent to our business of providing certain electric service to our customers.

Q. So can you tell me whether you agree or disagree with this statement?

A. I don't -- I can't state personally what I believe related to this. I can tell you we didn't use it.

Q. And the Company in connection with these proposed rate revisions didn't perform any independent assessment of distributed solar costs and benefits to the Alabama Power system?

A. No, we did not. We provided an embedded cost of service analysis.

Q. Are you aware that in Georgia the analysis showed the total benefit of DG solar generation exceeded its total costs?

A. Is it in this document?

Q. No.

outlined in the testimony as well as the Data Responses.

Q. Does the Company attribute any capacity value to solar, distributed solar?

A. Customer owned facilities?

Q. Yes.

A. No, we do not.

MR. EBERSBACH: That may be all my questions. Let me just consult with them for a second.

(Brief recess.)

MR. EBERSBACH: Ms. Dean, those are all my questions. Thank you very much.

EXAMINATION BY MR. RAGSDALE:

Q. I have a few, Ms. Dean. I'm Clay Ragsdale. I represent Dr. Bankston and Dr. Pfeiffer that have intervened in this case. You may have read their affidavits that were attached to the complaint?

A. Yes.

Q. So you're familiar with who those gentlemen are?

A. Yes, sir, I have read their

[redacted]

Page 152 Line 14 Change FDR to FD

[redacted]

Natalie Dee

DEPONENT'S SIGNATURE

Sworn to and subscribed before me this 1st day of November, 2018.

Penny B. Cook

NOTARY PUBLIC / My Commission Expires: 5/23/2019

[redacted]

Page 7 Line 16 Change unredacted to as redacted

Reason for change

Page _____ Line _____ Change _____

_____

Reason for change _____

Natalie Dea

DEPONENT'S SIGNATURE

Sworn to and subscribed before me this 1st day of December, 2018.

Penny B. Cook

NOTARY PUBLIC / My Commission Expires: 5/23/2019

Exhibit KRR-5

Confidential Information

Account	Nameplate Capacity (kW)	Contract Rate	Type of Generator	RGB I.B.1	RGB I.B.2	Interconnection Date
1	[redacted]					
2						
3						
4						
5						
6						
7						
8						
9						
10						
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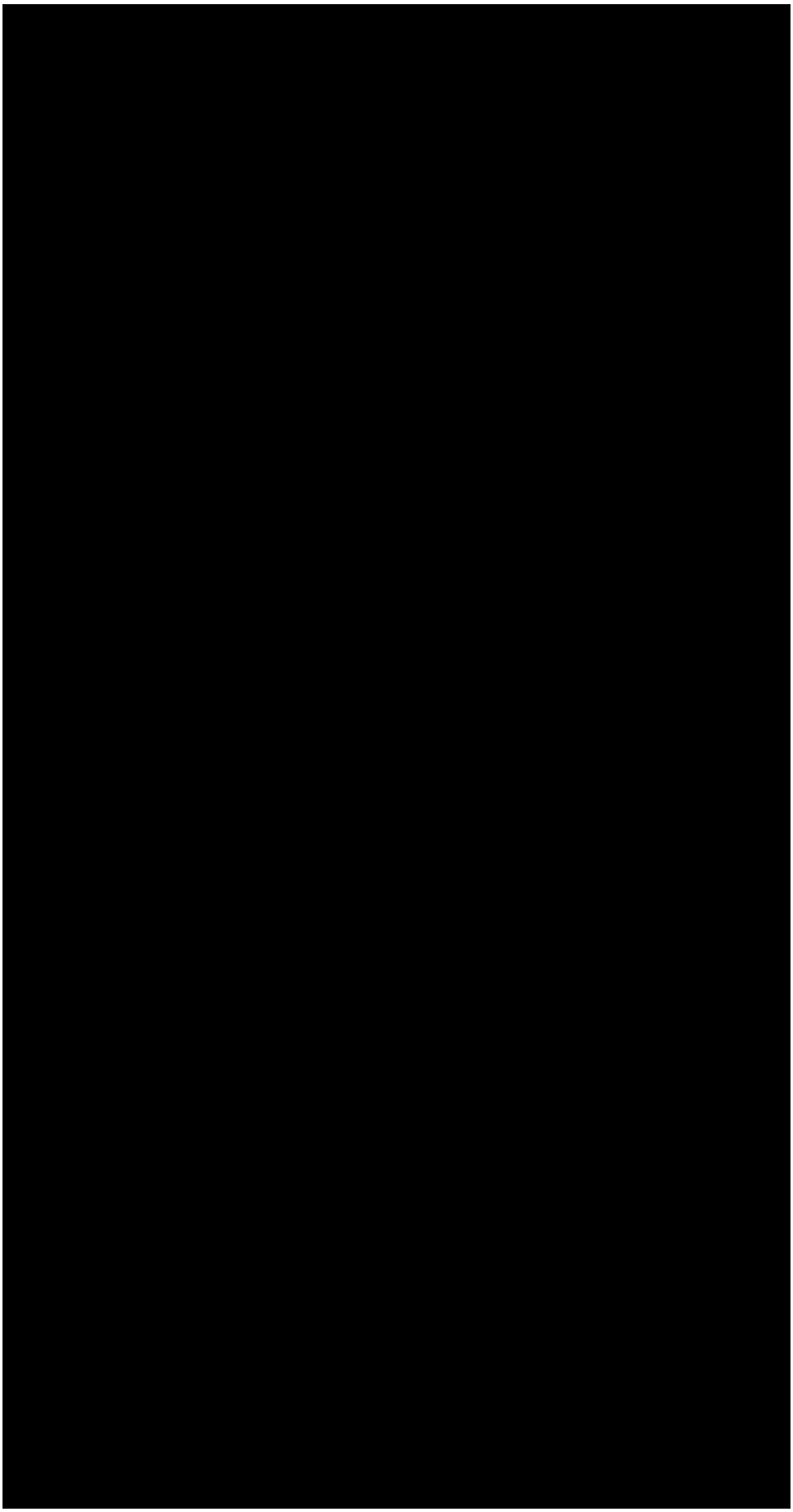


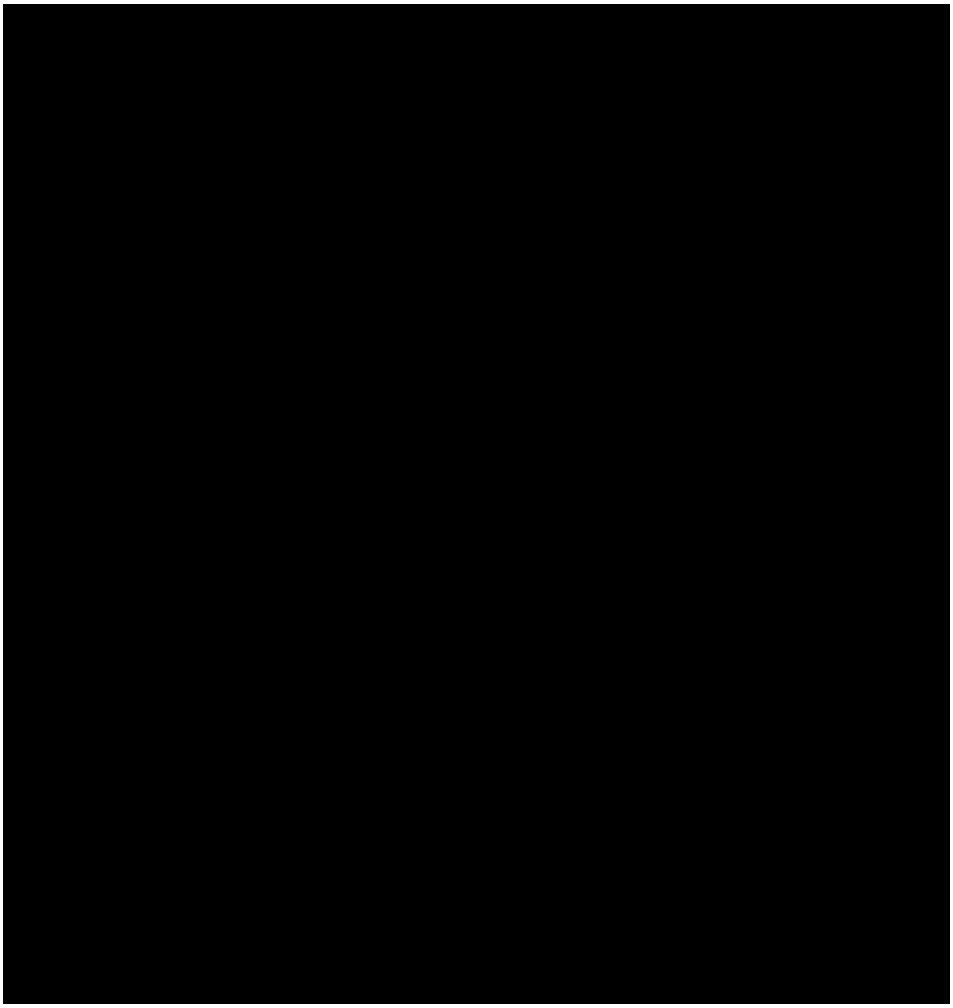
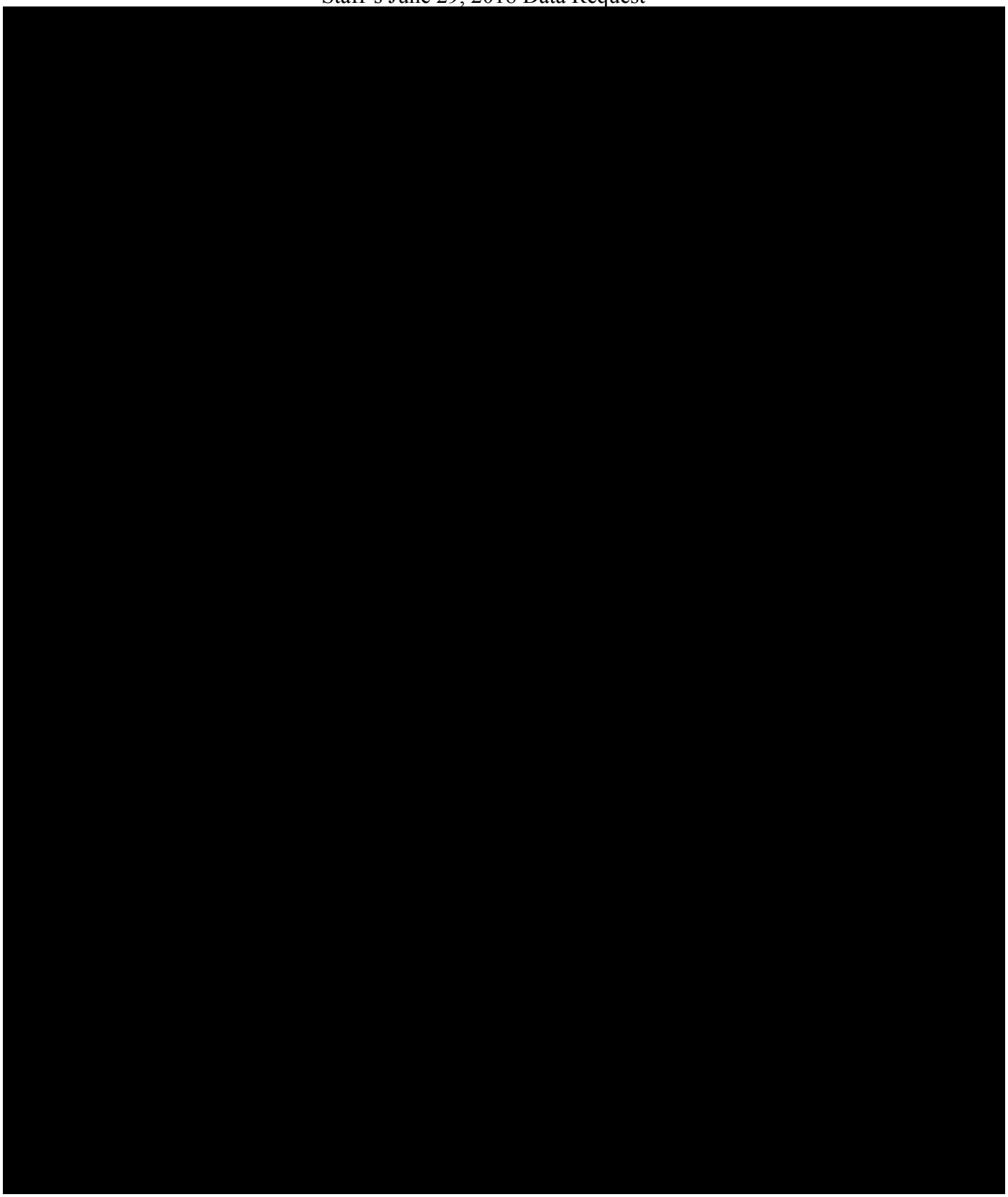


Exhibit KRR-6

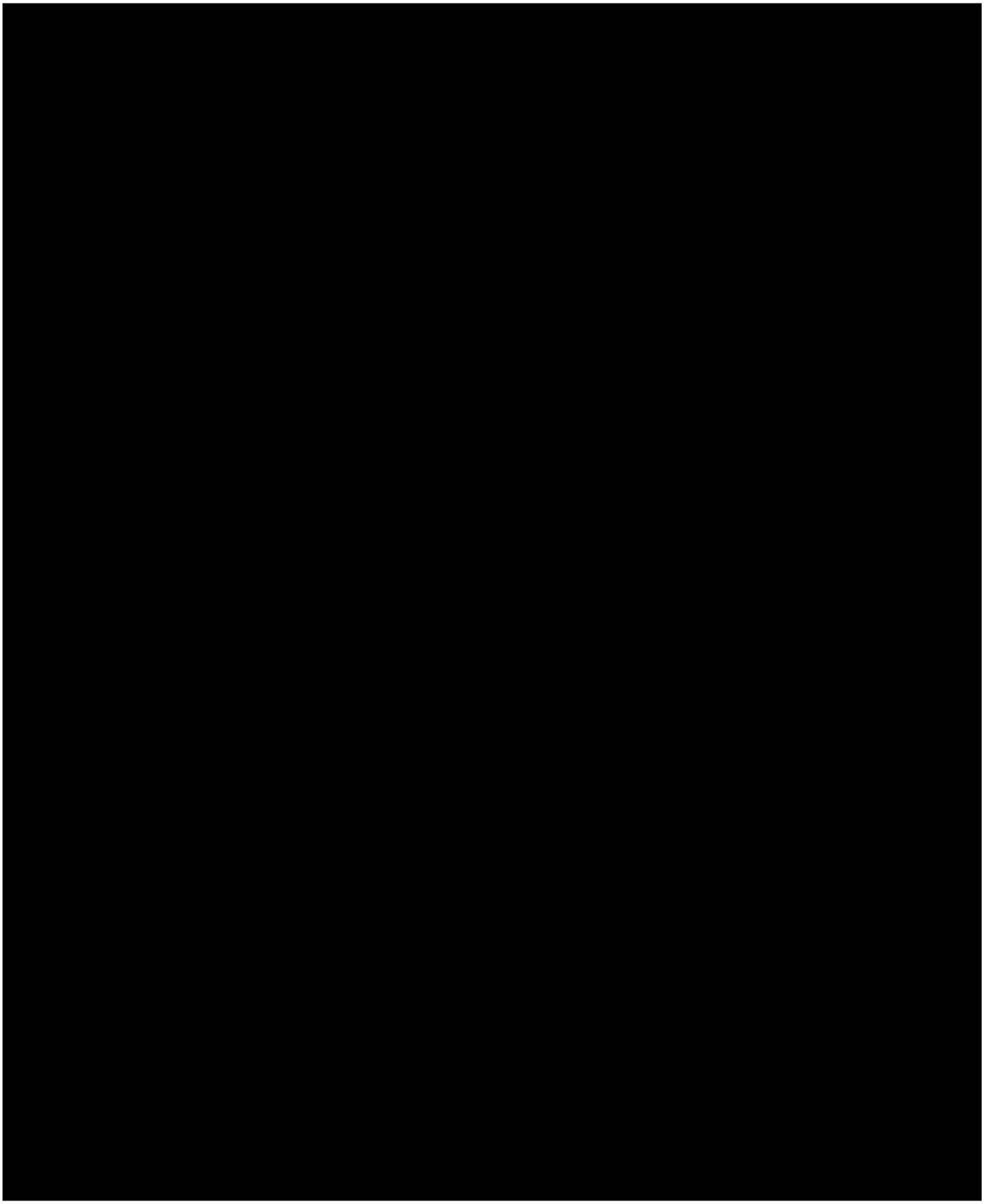
Responses of Alabama Power Company to

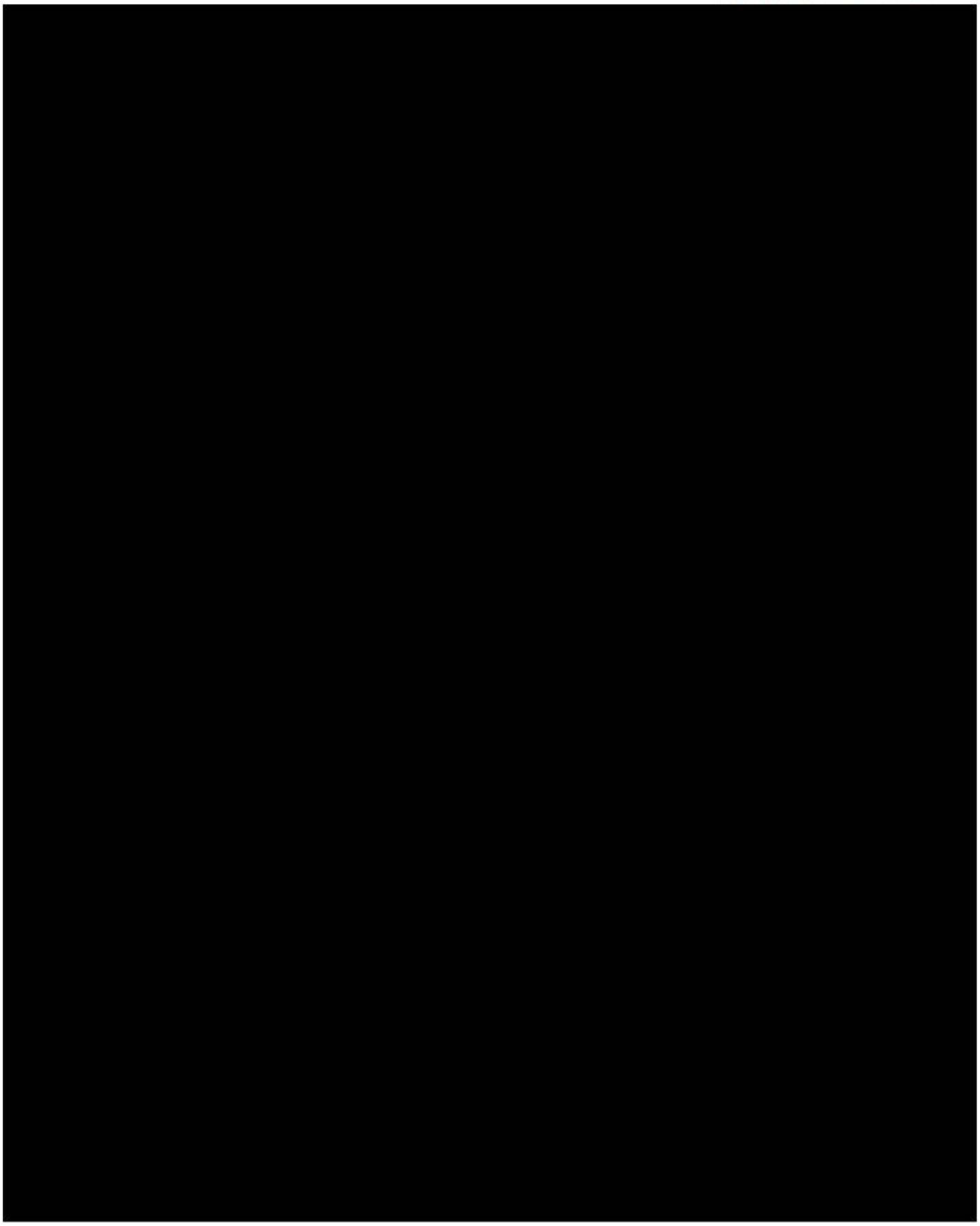
Staff's June 29, 2018 Data Request



[redacted]

[redacted]





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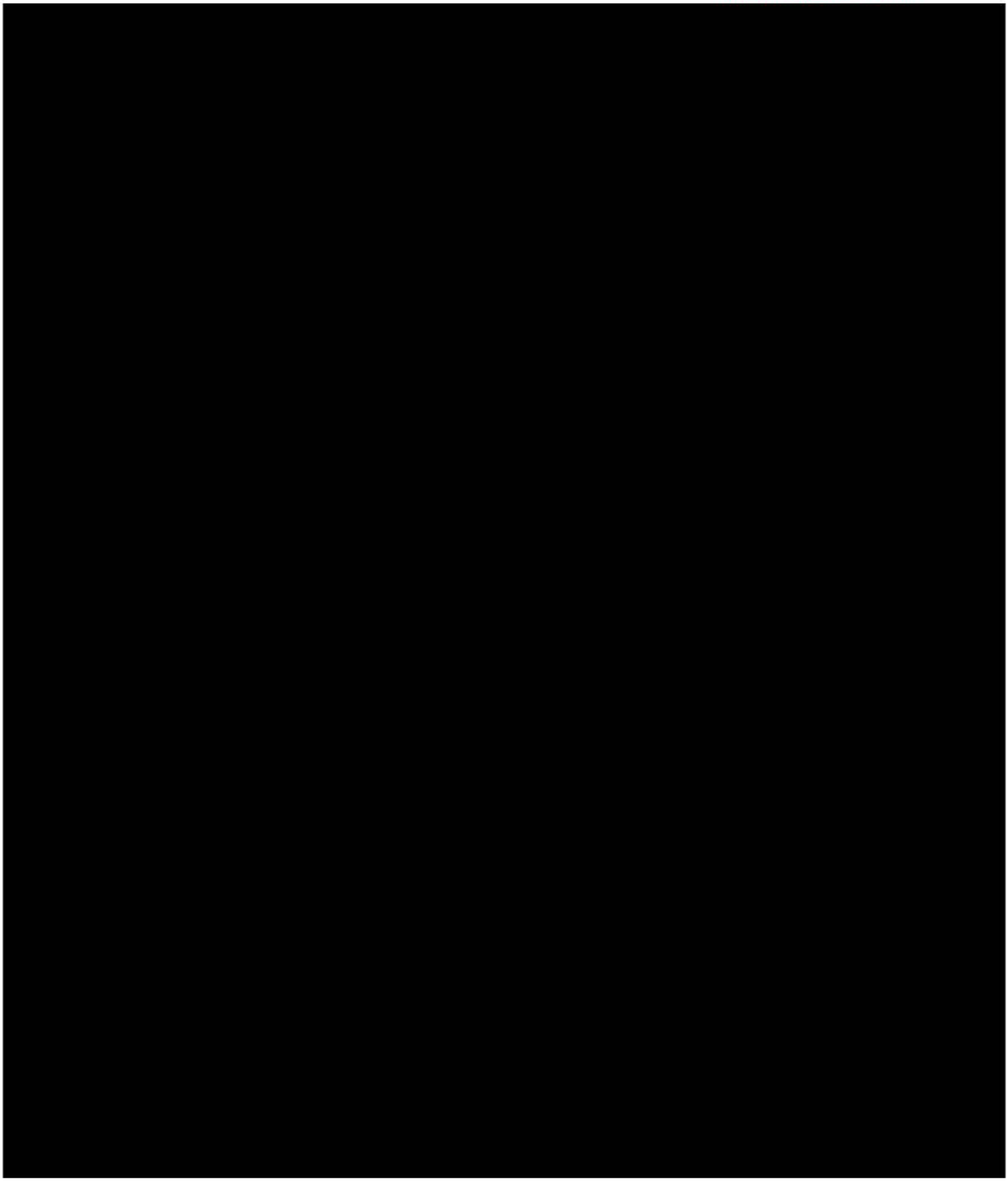

Exhibit KRR-7

ELECTRIC UTILITY COST ALLOCATION MANUAL

January, 1992

NATIONAL ASSOCIATION OF
REGULATORY UTILITY COMMISSIONERS

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Fax: (202) 898-2213
www.naruc.org

$25.00

CONTENTS

CHAPTER 2

OVERVIEW OF COST OF SERVICE STUDIES AND COST ALLOCATION

This chapter presents an overview of cost of service studies and cost allocation theory. It first introduces the role of cost of service studies in the regulatory process. Next, it summarizes the theory and methodologies of cost studies, with a comparison of accounting-based (embedded) cost methodologies and marginal cost methodologies. Finally, it introduces and briefly discusses the three major steps in the cost allocation process: the "functionalization" of investments and expenses, cost "classification", and the "allocation" of costs among customer classes.

I. COST OF SERVICE STUDIES IN THE REGULATORY PROCESS

Cost of service studies are among the basic tools of ratemaking. While opinions vary on the appropriate methodologies to be used to perform cost studies, few analysts seriously question the standard that service should be provided at cost. Non-cost concepts and principles often modify the cost of service standard, but it remains the primary criterion for the reasonableness of rates.

The cost principle applies not only to the overall level of rates, but to the rates set for individual services, classes of customers, and segments of the utility's business. Cost studies are therefore used by regulators for the following purposes:

- To attribute costs to different categories of customers based on how those customers cause costs to be incurred.
- To determine how costs will be recovered from customers within each customer class.
- To calculate costs of individual types of service based on the costs each service requires the utility to expend.
- To determine the revenue requirement for the monopoly services offered by a utility operating in both monopoly and competitive markets.

Statistical inference is not possible for data collected for judgmental or purposive samples because there is no statistical basis or theory for measuring the precision or reliability of results of judgmental sampling. Since one cannot objectively measure the precision of the demands calculated from judgmental sampling, judgmental sampling should not be used for load research studies. Therefore, this appendix will discuss only probability sampling. In probability sampling, all members of a class have a known, nonzero probability of selection into the sample. The nonzero probability of selection is a consequence of an objective, random procedure of selection.

I. DESIGN OF STUDY

A. Data to be Obtained

The first step in a load study is to determine the load data which must be obtained. The particular methodologies selected for allocating production, transmission and distribution plant will determine the specific load data needed for the cost of service study. In addition to its essential need for cost of service studies, load data is useful in (1) designing rates; (2) evaluating conservation measures; (3) forecasting system peaks; and (4) marketing research studies. Generally, the following data is of interest for cost allocation and design of rates.

1. **Coincident Demand (system peak hours).** This is the demand of a rate class at the time of a specified system peak hour(s).

2. **Class Noncoincident Demand (class peak).** This is the maximum demand of a rate class, regardless of when it occurs.

3. **Customer Noncoincident Maximum Demand (nonratcheted billing demand).** For an individual customer, this is simply the maximum demand during the month for that customer. For the rate class, it is the sum of the individual customer maximum demand regardless of when each customer's maximum demand occurs.

4. **Coincident Factor.** This is the ratio of the coincident demand of a class to either its customer summed noncoincident maximum demands or class noncoincident demand (class peak). It is the percent of class or customer maximum demand used at the time of the system peak. As defined, this can never be greater than unity.

5. **Diversity Factor.** This is the reciprocal of the coincidence factor and is not used as frequently in load study analysis as the coincidence factor. It reflects the extent to which customers or classes do not demand their maximum usage at the same time. As defined, this can never be less than one.

6. **On-peak and Off-peak Kilowatt-Hours.** These are defined as the kilowatt-hours of energy consumed by each class during the on-peak and off-peak periods. These energy values are necessary to allocate energy-related costs in a time-of-use cost of service study and to design time-of-use rates utilizing on-peak and off-peak energy prices.

7. **Load Factor.** This is the ratio of the average demand over a designated time period to the maximum demand occurring in that period. This term can refer to a customer, rate class or the total system. It is a measure of the energy consumed compared to the energy that would have been consumed if the group or customer had used power at its maximum rate established during the designated time period.

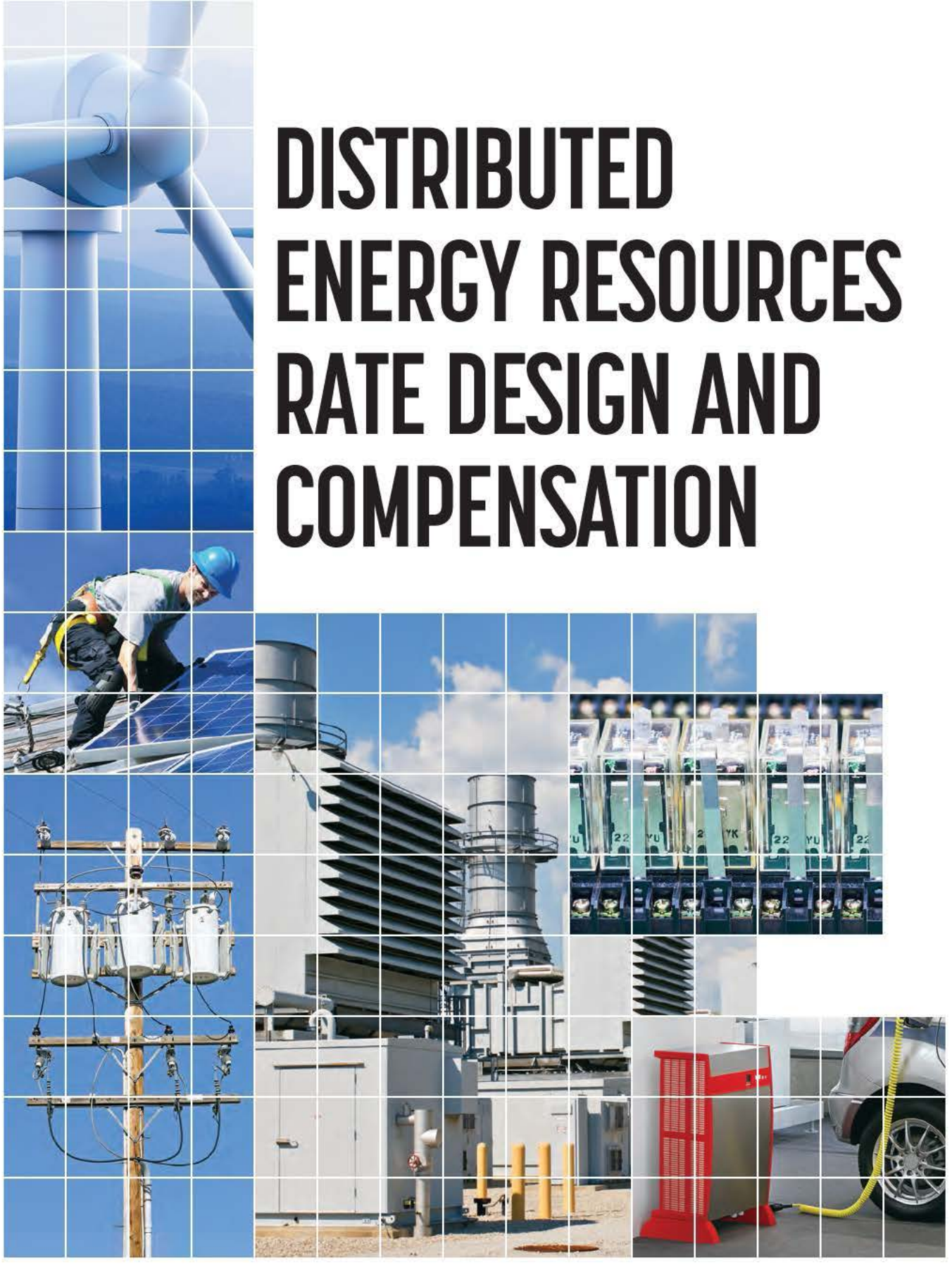
B. Selection of Design Precision

Precision expresses how closely the estimate from the sample is to the results that would have been obtained if measurements had been taken on all customers in the class. In order to assure perfect precision for each class demand determined in a load study, it would be necessary to meter individually every customer in every class. In spite of seeming far-fetched, metering every customer may be a desirable method for a class where the customers are large in size, limited in number and individually very different or highly variable. It is frequently practical, for example, to meter every customer over 800-1000 KW in maximum demand. Where large numbers of customers and smaller loads are involved, it becomes necessary to select a sample group of customers for each rate class to be studied.

Precision is the inverse of sampling error. Suppose you decide to select a sample of 275 customers from the residential class using a table of random numbers. The random numbers you use, and hence the customers you select, and the estimate you obtain will all vary with each application of the procedure. The variation this introduces into your sample-based estimate is called the sampling error of your estimate. The smaller the sampling error of your estimate, the closer the estimate is likely to be to the result that would have been obtained if measurements had been taken on the entire rate class. The size of the sampling error varies proportionately with the standard deviation of the population and inversely with the size of the sample. (The standard deviation is a measure of the variation in the population measurements on the variable under study.) Figure A-1 shows the relationships of the distribution of the customer demands (entire population) and the distribution of sample estimators of class demands.

Sampling error can be measured in standard errors. For example, if a simple random sample of 275 residential customers was taken from a population with a standard deviation of 2.23 kilowatts (KW), then the standard error of the per customer demand would be $2.23 \div \sqrt{275} = .13$. We could then say that approximately 68% of our esti-

Exhibit KRR-8



DISTRIBUTED ENERGY RESOURCES RATE DESIGN AND COMPENSATION

A Manual Prepared by the NARUC Staff Subcommittee on Rate Design

November 2016

NARUC Manual on Distributed Energy Resources Rate Design and Compensation

Prepared by the Staff Subcommittee on Rate Design

2016

NARUC, The National Association of Regulatory Utility Commissioners,
1101 Vermont Avenue NW, Suite 200, Washington, D.C. 20005, U.S.A.

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IV. DER Considerations, Questions, and Challenges

Often, discussions on DER are made more difficult due to the regulatory framework and utility incentives that have been in place for decades—or in some instances a century—being challenged by these new technologies. Traditional means of regulation, rate design, and planning largely assume the utility will meet all demand with large, central-station generation facilities. With the increase in DER and the recent lack of load growth, the current regulatory and utility models are a constraint to effectively address the growth of DER and its impacts on utility and regulatory frameworks. Identifying and understanding these challenges will assist the regulator in determining an appropriate rate design to implement for its utilities.

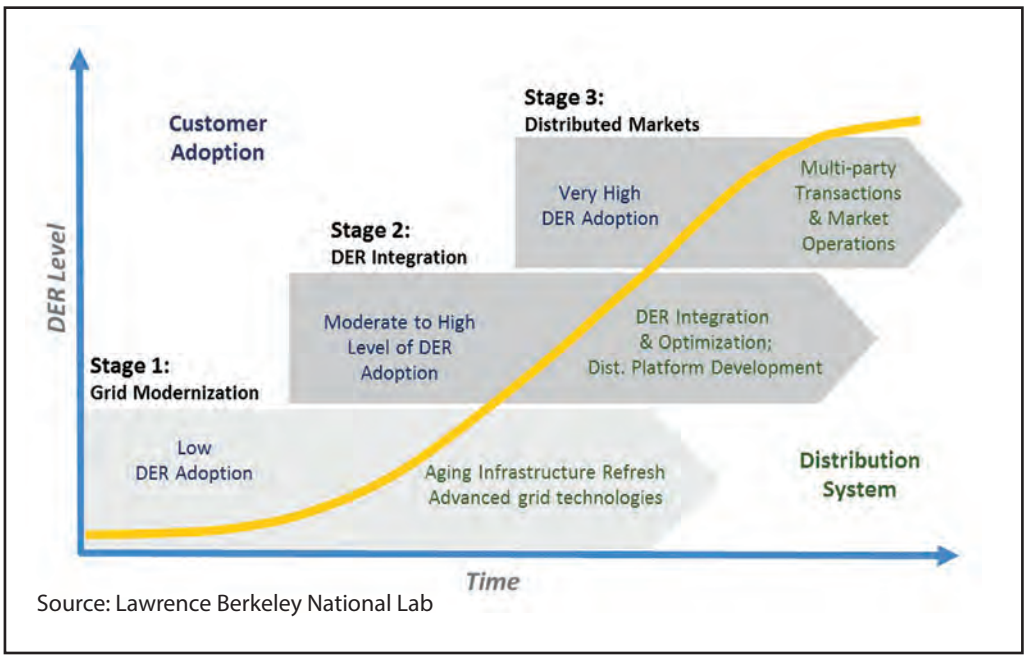
A. Ongoing Monitoring and Adoptions Rates

The level and pace of adoption of DERs in a system is important in the determination of what, if any, policy reforms are needed. The actual adoption levels of DER vary greatly across the country and even within the same jurisdiction. Since all electric systems are affected by DER increases differently, before a jurisdiction embarks on the journey to implement substantive reforms due to the growth of DER adoption, it should look closely at data, analyses, and studies from its particular service area before any such actions are taken. The impacts that are occurring in one jurisdiction due to higher DER adoptions may not necessarily be the same for another that is experiencing similar DER adoption levels.

In a report for LBNL's "Future Electric Utility Regulation" series, Paul DeMartini and Lorenzo Kristov outline a path for regulators and utilities to plan for future utility and regulatory roles.[80] In this paper, they include an adoption curve that points out the importance of monitoring adoption rates of

80 DeMartini and Kristov, *Distribution Systems.*

DER across a jurisdiction. Conceptually, the curve identifies three stages of activity: grid modernization, DER integration, and distributed markets. Each stage is identified with two characteristics: adoption of DER and installation of technology to support DER development. The majority of jurisdictions are still located in stage 1, where there is a low amount of DER adoption and utility investments in grid modernization are still underway. According to DeMartini and Kristov, the move into stage 2 occurs when DER adoption "reaches beyond about 5 percent of distribution grid peak loading system-wide."[81] Stage 3 occurs when a high amount of DER adoption occurs and regulators construct a system to allow for multi-sided transactions to occur between DER and the distribution utility, but also to and from customers. This means the development of policies to enable distribution-level markets, and determining the role of the distribution utility into a market facilitator role.[82] This process is depicted in the figure below.



Source: Lawrence Berkeley National Lab

81 *Id.*, 9.

82 *Id.*, 10.

This discussion is included here to provide regulators with a visual of a future for DER adoption and an awareness that decisions on DER rate design and compensation methodologies are not static determinations that can be made once and then left alone. Rate design and compensation decisions made in one year will likely need to be reviewed, modified, or changed over time as technology continues to develop, as customers adopt DER at greater (or slower) rates, and as needed to support economics. For example, a decision to adopt net energy metering (NEM) as the compensation methodology may be appropriate if a regulator decides to incentivize adoption rates of solar PV; however, as adoption rates increase, it may not be necessary to continue to provide such an incentive. As such, regulators should remain flexible in their decision making. To continue the example, NEM may result in clustering of solar PV, which may cause the utility to incur additional costs to shore up reliability; a regulator may want to consider an alternative compensation methodology to reflect the costs of solar PV at that location. Alternatively, should other technologies, such as storage or EVs, increase in adoption, a regulator may try to turn NEM into a technology-agnostic program, or may choose to implement an entirely new suite of compensation options. All the while, the regulator will need to also address how the compensation methodology is working with the existing rate design for those customers.

It is imperative that a regulator understand the tradeoffs in determining an appropriate compensation methodology, both in terms of technology adoption (does the methodology emphasize one technology over another; what does that mean to the market and the utility?) and over time (does the methodology encourage adoption of specific technologies in the short term as opposed to allowing a variety of technologies to develop over time to meet grid needs?). The availability of new technology can assist regulators in making these decisions. Hawaii, for example, has had significant adoption of solar PV, and the Hawaii Public Utilities Commission decided to close its NEM tariff altogether, deciding that other compensation methodologies and rate designs are more

appropriate for its jurisdiction.[83] Understanding and monitoring how DER is affecting the grid and utility rates is essential to fairly compensating DER. A jurisdiction must also be flexible enough to recognize when those methodologies and rate designs are no longer meeting its policy goals. At that time, it is appropriate to consider other means of determining compensation or other rate design options.

For jurisdictions with currently low DER adoption levels and with current policies not designed to spur DER growth, reforms may not be as time sensitive in contrast to the needs of jurisdictions with DER. For the jurisdictions with low DER adoption and growth, there is time to plan and take the appropriate steps and avoid unnecessary policy reforms simply to follow suit with actions other jurisdictions have taken. Reforms that are rushed and not well thought out could set policies and implement rate design mechanisms that have unintended consequences such as potentially discouraging customers from investing in DER or making inefficient investments in DER. That is not to say a jurisdiction should ignore the issue. Understanding how its existing rate design interacts with its compensation may be worthwhile to consider at any time. The important point is that a jurisdiction be situated to analyze, plan, and be prepared for its next steps before the market and customer adoption rates overtake its ability to respond.

To better identify locations for development of DER, a utility needs to understand the characteristics of its grid. Technologies like ADMS and DERMS can facilitate that. The end result of this modeling is a hosting capacity analysis of the distribution grid feeders. Hosting capacity helps the distribution utility assess the impacts of DER on its feeders, and identify available capacity on those feeders.[84] This analysis can determine where there is available capacity and where there is little available capacity; making this information available

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83 *Instituting a Proceeding to Investigate Distributed Energy Resource Policies,* Decision and Order No. 33258, Hawaii PUC, Docket No. 2014-192 (October 12, 2015).

84 EPRI, "Hosting Capacity Method," http://dpv.epri.com/hosting_capacity_method.html; EPRI, "Distribution Feeder Hosting Capacity: What Matters When Planning for DER?" (EPRI, Palo Alto, CA, April 2015).

to developers can assist DER developers in better locating potential DER. Currently, to the extent a utility is conducting a feeder-by-feeder hosting capacity analysis, the information is largely kept inside the utility. Without such information, DER developers have no visibility into the locations that can benefit utility planners, which can then delay ultimate construction of a resource by going through lengthy utility interconnection processes. With widespread adoption of DER and integration with utility distribution system planning efforts, the availability of hosting capacity analyses can also be paired with development of distribution LMPs to drive economic siting of DER, much the same way that transmission planning and transmission LMPs identify areas in need of additional resources to relieve congestion, for example.

B. Costs

The economic pressures that DER may put on the utility and non-DER customers within a rate class is one of the most challenging issues facing regulators today. These economic issues include revenue erosion and cost recovery issues as well as inter-class cost shifting apparent in traditional utility rate design and NEM discussions. These issues have been driving most of the investigations into NEM policies and searches for alternate ways to treat DER in rate making.

1. Revenue Erosion

A majority of utility costs are not variable in the short term. Traditionally, most utilities take in most of their revenue through a flat, volumetric charge coupled with a fixed or customer charge. This has been the simplest way to collect revenue, both for historical metering technology and customer understanding. Many businesses use a flat charge for their products or services to recover their costs, including fixed costs. For this type of rate design, revenue recovery is at risk from any reduction in usage (e.g., due to variation in weather or DER) unless there is a mechanism that decouples

Exhibit KRR-9

A Framework for Determining The Costs and Benefits of Renewable Resources in Georgia

Revised: 3/22/17

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SECTION 1 – EXECUTIVE SUMMARY

Introduction

When considering any generation technology, including renewable resources, it is crucial that all of the appropriate benefits and costs of such technology be determined and allocated in a way that ensures equitable treatment and continued reliability of the system. Such analysis is particularly important in light of the dramatic increase of renewable resources being deployed to serve customers. Additionally, there have been numerous "Value of Solar" (VOS) studies performed in the industry in recent years suggesting various benefits associated with solar generation. Over the same period, there has been increased activity by the solar industry at the various state regulatory agencies of the Southern Companies, some of which have suggested the need for a "Value of Solar" determination within those jurisdictions. As a result, the Southern Companies have established a Framework for Determining the Costs and Benefits of Renewable Resources on the Southern Company electric system ("Framework" or "RCB Framework"). The purpose of this document is to describe that Framework and how it will be used in determining the costs and benefits of renewable resources on the Southern Company electric system, specifically related to Georgia Power Company.

Limitations on the Scope of Analysis

When considering the costs and benefits of renewable resources (or any other technology), there are many possible views. Given the vertically integrated, state-regulated nature of Georgia Power, however, there are certain limitations regarding what can (and cannot) properly be considered in such analyses. This Framework is based on existing legal and regulatory requirements applicable to Georgia Power as well as industry standards. The overall value of solar generation to Georgia Power is sensitive to changes in such rules, regulations, and standards, but until any such changes are known with certainty, an analysis cannot be predicated upon them. Similarly, this Framework considers technology and supporting infrastructure, as they exist presently. Future technological developments may well have an impact on the costs and benefits of solar generation, but until such developments transpire, a practical analysis can only account for the current state of technology and infrastructure.

Components Included In Cost-Benefit Analysis

Upon reviewing various industry studies and reports related to the Value of Solar and comparing them to the Southern Companies' current generation evaluation methodologies, and based on our experience with actual renewable resources installed on the Southern Company system, the Southern Companies identified components that should be considered in calculating the costs and benefits of renewable resources on the Southern Company electric system. Among the studies reviewed are the following: "Minnesota Value of Solar: Methodology" (April 2014); "2014 Value of Solar at Austin Energy"

(October 2013); "The Benefits and Cost of Solar Distributed Generation for Arizona Public Service" (May 2013); "A Review of Solar PV Benefits & Cost Studies" (April 2013); "The Value of Distributed Solar Electric Generation to New Jersey and Pennsylvania" (November 2012); "The Integrated Grid: Realizing the Full Value of Central and Distributed Energy Resources" (February 2014); and "Maine Distributed Solar Valuation Study" (March 2015).

Due to the non-dispatchable, intermittent nature, the two primary types of renewable resources impacted by this Framework are wind and solar. For purposes of illustration, solar is utilized throughout this document. However, wind will yield similar impacts and results. Where needed for clarity, references may be made regarding the specific circumstances related to wind generation. For solar resources, the Southern Companies recognize five different categories of solar to differentiate the type of solar generation being evaluated. Those categories are as follows:

1. **Utility Scale-Transmission (US-T):** Central station solar generation facilities that are interconnected at the transmission level.
2. **Utility Scale-Distribution (US-D):** Central station solar generation facilities that are interconnected at the distribution level on a dedicated distribution feeder.
3. **Distributed-Greenfield (DG-G):** Central station solar generation facilities that are interconnected at the distribution level on an existing (non-dedicated) distribution feeder.
4. **Distributed-Metered (DG-M):** Solar generation at a customer's site where the solar generation is metered separately from the load.
5. **Distributed-Behind the Meter (DG-BM):** Solar generation at a customer's site where only a single bi-directional meter exists, with any generation in excess of load sold to the host utility in accordance with applicable laws and tariff requirements.

Appendix E contains representative single line diagrams for each of the above categories.

Table 1 shows the list of cost-benefit components included in this Framework and whether each component is a cost or a benefit. Each of these components is discussed further in Section 3.

Table 1: In Scope Renewable Cost Benefit Components

Component	Utility Scale	Distributed Generation
Avoided Fuel and Purchased Power Costs	Benefit	Benefit
Avoided Generation VO&M Costs	Benefit	Benefit
Avoided Environmental Compliance Costs	Benefit	Benefit
Deferred Generation Capacity Costs	Benefit	Benefit
Deferred Generation FO&M Costs	Benefit	Benefit
Reduced Transmission Losses (Energy Related)	Benefit	Benefit
Reduced Transmission Losses (Capacity Related)	(1)	Benefit
Deferred Transmission Investment	(1)	Benefit
Reduced Distribution Losses (Energy Related)	N/A	(2)
Distribution Operations Costs	N/A	Cost
Generation Remix Costs	Cost or Benefit	Cost or Benefit

Component	Utility Scale	Distributed Generation
Ancillary Services – Reactive Supply and Voltage Control	N/A	Cost
Ancillary Services – Regulation	Cost	Cost
Support Capacity (Flexible Reserves)	Cost	Cost
Bottom Out Costs	Cost	Cost
Long Term Service Agreement Maintenance Cost	Cost	Cost
Target Reserve Margin Cost	Cost or Benefit	Cost or Benefit
Program and Administration Costs	(See note 3)	

Notes:

(1) Determined on a case by case basis.

(2) Should be determined on a case by case basis for DG-G, but will be presumed as a discounted benefit in the aggregate. Represents a benefit for DG-M and DG-BM.

(3) Determined on an Operating Company specific basis.

Exhibit KRR-10

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, ET AL., **Intervenors/ Complainants,**	)	**Docket No. U-4226**
v.	)	
ALABAMA POWER CO., **Petitioner**	)	
and	)	
ALABAMA POWER CO., **Respondent**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF JAMES H. BANKSTON, JR.

I, James H. Bankston, Jr., a citizen of the United States of America, am over nineteen (19) years of age, and, after first being duly sworn, do hereby under oath say as follows:

1. I currently reside at 6408 Lake Vista Circle, Tuscaloosa, Alabama 35406.

2. I have lived at my current residence in Tuscaloosa, Alabama since 2012. I am married to Deidre and we have four children. I attended Duke University undergraduate and then went to UAB for medical school and residency training in radiology.

3. I am currently an Alabama Power customer.

4. I made the decision to install solar energy panels to minimize my monthly utility bills and because I wanted to do my part to protect our environment. I had always been

interested in science and new technologies, so solar energy had been an interest to me. When our heat pump needed to be replaced in 2015, I decided to install a system that included solar panels as a component to improve the heat pump efficiency. At that time, I did calculations to the best of my ability to estimate the expected payoff time for the panels I was installing, but I did not know of the Capacity Reservation Charge at that time. Based on my calculations at that time, I thought it was a financially reasonable decision to install the solar panels based on their cost and the expected pay off time.

5. I interconnected an on-site, self-generating solar system at my home with Alabama Power's grid on or about April 2016. The system has a nameplate capacity of 1.68 kilowatts.

6. Alabama Power provides my electric service under Rate Family Dwelling ("FD").

7. Since interconnecting my solar system in April 2016, I have been subject to surcharges assessed by Alabama Power under its revised Rate Rider RGB.

8. I am required to pay $8.40 each month in Capacity Reservation Charge fees and have paid approximately $260.00 in Capacity Reservation Charge fees as of the end of October 2018. The total value of the electricity generated by my small solar system during that time is only approximately $600 (assuming a value of 11.5 cents/kwh). So, the capacity reservation charge is taking back over 40% of the value from my solar system.

9. If the surcharge remains in place, I expect to pay approximately $3,000.00 in fees to Alabama Power due to this surcharge over the estimated 30-year life of my solar

system investment. With the Capacity Reservation Charge, I am not likely to recoup my investment in installing solar panels during the expected 30-year life of my system.

10. Alabama Power has proposed an increase to the capacity reservation charge from $5.00 to $5.42 per kilowatt per month. If the increase is approved this will increase the amount I have to pay per year from $100.08 to $109.27. Under the proposed rate increase, I would pay over $3,200 for the estimated 30-year life of my system.

11. In addition to the Capacity Reservation charge, I pay a fixed customer charge of $14.50 each month to receive service from Alabama Power, in accordance with the Rate FD.

12. Not only am I personally impacted because of the extra fees I have to pay to be connected to Alabama Power's grid, I am also concerned that the capacity reservation charge unfairly impacts all residential solar customers who have chosen to create their own electricity and also connect to the grid. I am also concerned that the capacity reservation charge discourages others from installing solar. I also find the language of the Rate Rider RBG to be complex and confusing. Furthermore, I am concerned about the impacts that continued reliance on fossil fuels, in lieu of greater reliance on clean fuels like solar energy, will have on my children and future generations.

13. I am challenging Alabama Power's rate charges for solar energy customers because I consider it to be unfair. People like me should not be punished financially for taking steps to limit their consumption of fossil-fuel based electricity. If the Commission

were to require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and encourage the expansion of solar around the state.

James H. Bankston, Jr.

STATE OF ALABAMA)

COUNTY OF Tuscaloosa)

Before me, the undersigned Notary Public in and for said County and State, personally appeared James H. Bankston, Jr. who after first being duly sworn, did depose and say that the information contained in the foregoing Affidavit is true and correct.

Done this the 10 day of November, 2018.

AMY NICOLE JOHNSON NOTARY PUBLIC ALABAMA STATE AT LARGE

NOTARY PUBLIC

My Commission Expires: 12-14-20

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Intervenors,**	)	
GASP, INC. **Intervenor**	)	
	)	**Docket No. U-4226**
v.	)	
ALABAMA POWER CO., **Petitioner**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF MICHAEL HANSEN

1. My name is Michael Hansen. I am a resident of Jefferson County, Alabama, am over the age of 19, and am competent to give this declaration. I have personal knowledge of the facts below.

2. I have been the Executive Director for Gasp, Inc. ("Gasp") since October 31, 2015. Gasp is an Alabama 501(c)(3) nonprofit organization headquartered in Birmingham, Alabama and is an Alabama Power customer. Gasp's business address is 2320 Highland Avenue South, Suite 270, Birmingham, Alabama 35205. Gasp seeks to improve the environment, economy and public health of Alabama. To fulfill its mission, Gasp works to improve air quality and promote renewable energy in the state, including solar power.

3. Presently, Gasp has over 700 members in Alabama, including members adversely affected by the unfair and unreasonable surcharges that Alabama Power levies against on-site solar generating systems.

4. Alabamians want solar policies and that do not limit their ability to install on-site solar generation. To date, approximately 275 people have signed Gasp's petition "Solar for All Alabamians," which advocates for the withdrawal of Alabama Power's $5 per kilowatt solar surcharge and supports solar for all Alabamians. This was our most successful petition to date, with 142 citizens signing the petition within the first 24 hours.

5. Solar Works is an initiative of Gasp that seeks to raise awareness of the benefits of solar energy in Alabama. The initiative provides educational information to the public about Alabama's potential solar capacity and policies. In 2017, Gasp released a white paper entitled "Network Use Charges for Rooftop Solar," which focuses on utility-imposed charges on customers with rooftop solar. It includes information about Alabama Power's surcharge on on-site solar generating systems.

6. Solar power in general is far and away the topic we hear about the most from our members and network of supporters, and Alabama Power's surcharge in particular is a source of frustration. Several Gasp members have said that they would be interested in investing in solar panels if Alabama Power did not have policies discouraging rooftop solar. Others have wondered why there was no public input or outrage when it was approved by the Public Service Commission. A common theme among people asking us about the charge is wondering why Alabama Power is punishing people for doing the right thing instead of incentivizing solar power like other states have done.

7. The economic, environmental and human health interests of Alabamians are adversely affected by policies that dissuade the use of clean, renewable solar power. Alabamians should not be punished for taking steps to limit their consumption of fossil fuel-based electricity.

FURTHER AFFIANT SAYETH NOT.

Michael Hansen

State of Alabama)

County of Jefferson)

I, Gina Harwell Lowry, a Notary Public, in and for said County and State, hereby certify that Michael Hansen, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, she executed the same voluntarily on the day the same bears date.

Given under my hand this 7th day of November, 2018.

Notary Public

My commission expires: May 10, 2022

NOTARY SEAL

GINA HARWELL LOWRY
Notary Public, Alabama State at Large
My Commission Expires May 10, 2022

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Intervenors,**	)	
GASP, INC. **Intervenor**	)	
	)	**Docket No. U-4226**
v.	)	
ALABAMA POWER CO., **Petitioner**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF MARK JOHNSTON

1. My name is Mark Johnston. I am a resident of Winston County, Alabama, and live at 16266 Highway 195, Double Springs, Alabama. I am over the age of 19 and am competent to give this declaration. I have personal knowledge of the facts below.

2. On April 23, 2018, I signed the affidavit attached herein as Attachment 1, which addresses my membership with Gasp, Inc., my decision to install a solar generating system, and the monthly capacity reservation charge that I must pay to Alabama Power.

3. I incorporate all paragraphs of my April 23, 2018 affidavit as if fully set out herein, and include the additional paragraphs below.

4. After a Complaint was filed with the Public Service Commission in April 2018 alleging that the charges in Rate Rider RGB were unjust and unreasonable, Alabama Power

proposed to *increase* the capacity reservation charge from $5.00/kW per month to $5.42/kW per month. This would increase the amount I must pay under the capacity reservation charge from $360/year to $390.24/year for my 6 kilowatt solar system. With the increased charge, I will have to pay over $11,500 for the estimated 30-year life of my solar generating system. Just as with the current capacity reservation charge, the proposed increase in the charge means that I may not be able to recoup my investment and leaves me less money to spend on other bills and needs. People like me should not be punished financially for choosing to produce our own renewable power and limit our consumption of fossil fuel-based electricity.

5. The current provisions of Rate Rider RGB as well as the proposed modifications are complex and confusing. I have a bachelor's degree and master's degree, and I have been the head of multiple businesses since I was 22. In addition, I have done business consulting for approximately the past 20 years. Rate Rider RGB is more complex than any government regulation I have dealt with. I find it impossible to understand.

6. I believe that additional residential solar systems in the state will lead to clean, renewable power. Anti-solar policies such as the charges levied under Rate Rider RGB substantially and adversely impact my economic, environmental and human health interests because they dissuade the use of clean, renewable solar power.

7. If the Commission were to reject Alabama Power's proposal to increase the capacity reservation charge, and require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and my interests.

FURTHER AFFIANT SAYETH NOT.

Mark Johnston

State of Alabama)

County of Walker)

I, Susan Dodd, a Notary Public, in and for said County and State, hereby certify that Mark Johnston, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, she executed the same voluntarily on the day the same bears date.

Given under my hand this 9th day of November, 2018.

Susan Dodd
Notary Public

My commission expires: March 16, 2020

NOTARY SEAL

Attachment 1

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Petitioners,**	)	
GASP, INC. **Petitioners,**	)	**Docket No. ____**
v.	)	
ALABAMA POWER CO., **Defendant.**	)	

AFFIDAVIT OF MARK JOHNSTON

1. My name is Mark Johnston. I am a resident of Winston County, Alabama, and live at 16266 Highway 195, Double Springs, Alabama. I am over the age of 19 and am competent to give this declaration. I have personal knowledge of the facts below.

2. I am a member of Gasp, Inc. ("Gasp"), a nonprofit membership corporation with a mission to protect the environment, economy and public health of Alabama and its citizens. I have been a member of Gasp since May of 2009, and I was the first board president of Gasp and held that position for approximately six years.

3. I joined and became a board member of Gasp because I support its mission, particularly its efforts to promote increasing renewable energy in the state, including solar power. I support its advocacy in favor of policies that are fair to solar customers.

4. I have lived at my current residence in Double Springs, AL, since November of 2000, the year I physically constructed my home. I am married to Maggie and have three sons and a stepdaughter who also reside in Alabama. I am a retired Episcopal minister and former Executive Director of Camp McDowell, the camp and conference center of the Episcopal Church

in the Diocese of Alabama. One of the camp programs I started while there is the McDowell Environmental Center, which I believe is the largest residential environmental education program in the southeast. It correlates to the Education Standards of Alabama and over 150,000 Alabama children have benefited from this nationally known program. Its mission is to connect people to their environment, teach respect for the Earth and its beings, and to promote a commitment to lifelong learning. In addition, we started an initiative at Camp McDowell to rely almost totally on renewable energy by approximately 2020, reducing our carbon footprint by approximately 78%

5. I am very involved in charitable work, contributing time, experience, and money to local, statewide and national groups. Since I graduated from college, I have actively pursued social justice issues in Alabama. In addition, I have been very involved in environmental issues, and I have worked for years to clean up pollution and illegal dumping in the watershed where I live and around the state. I have also served on the boards of the Alabama Rivers Alliance and the Alabama Environmental Council. Nationally, I have served on the board of the Institute for Conservation Leadership, and, regionally, on the American Rivers southeastern advisory board. I have also been recognized for my environmental and religious work. I was named Alabama's Outstanding Young Religious Leader in 1981, and I was the volunteer of the year for ARC (organization dedicated to helping people with disabilities) in 1983 because of my work with people who have disabilities. I started the West Alabama Food Bank in approximately 1983 and served as its board president for the first three years. It still distributes over 3 million pounds of food a year. I have had the honor of receiving the James Dockery Southern Environmental Leadership Award, River Hero award given by the Alabama Rivers Alliance, and the Sierra Club's Environmentalist of the Year award.

6. I have an approximately 6 kilowatt solar system next to my house. I have connected my solar system to Alabama Power's electric grid, and Alabama Power charges me $30/month due to the capacity reservation charge (or surcharge) levied on my solar system.

7. I decided to install a solar system on my home because I want to do my part to reduce the release of CO_2 in the atmosphere. I fear for the future of our children and grandchildren because of the potential impacts of climate change. I adamantly believe in conservation and protection of our environment. Increased use of renewable energy decreases the amount of air pollution created by the burning of fossil fuels and protects our planet. In 2014, the Pentagon declared that climate change is one of the top three threats to national security.

8. My 6 kilowatt solar system was installed in approximately March of 2017 and has been generating solar power for approximately 13 months. My home and solar generation system are connected to Alabama Power's electric grid, and I continue to buy power from Alabama Power every day. I do not have any batteries connected to my solar generation system, so any power that I do not use is sent onto the grid. Because my system is interconnected to Alabama Power's grid, I am subject to the capacity reservation charge. Therefore, I pay $30 a month under the capacity reservation charge. This $30/month in capacity reservation charges equates to $360 per year, and over an estimated 30-year life of my solar system, a total of $10,800. This fee is in addition to the $14.50 customer charge I pay monthly and the base charge for Rate PAE (Purchase of Alternate Energy). I have noticed that the capacity reservation charge increases my bill by approximately 50% per month which means it will take at least approximately 50% longer for me to recoup my investment. The capacity reservation

charge impacts my ability to recoup my investment and leaves me less money to spend on other bills and needs.

9. Not only am I personally impacted because I have to pay an extra $30 each month to be connected to Alabama Power's grid, I am concerned that the capacity reservation charge unfairly impacts all residential solar customers who have chosen to create their own electricity and also connect to the grid. I am also concerned that the capacity reservation charge discourages others from installing solar. Furthermore, I am concerned about the impacts that continued reliance on fossil fuels, in lieu of greater reliance on clean fuels like solar energy, will have on my child and grandchild, and on future generations.

10. Gasp and its members, me included, have a direct interest in the protection and enhancement of Alabama's natural environment and economy, and in the health of its citizens. I believe that additional residential solar systems in the state will lead to clean, renewable power, thereby decreasing the use of fossil fuels for electricity and improving air quality. Anti-solar policies such as the capacity reservation charge substantially and adversely impact these interests. My economic, environmental and human health interests are adversely affected by the capacity reservation charge because it dissuades the use of clean, renewable solar power.

11. The capacity reservation charge went into effect in May 2013. I did not see any public notice or opportunity to comment on the surcharge. Had I known about the proposed revisions being made that affect solar systems like mine, I would have voiced my opposition to the revisions in some way.

12. Gasp represents my interest in challenging the capacity reservation charge for solar systems, which I consider to be unfair. People like me should not be punished financially for taking steps to limit their consumption of fossil fuel-based electricity. If the Commission

were to require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and encourage the expansion of solar around the state.

FURTHER AFFIANT SAYETH NOT.

Mark Johnston

State of Alabama)

County of Jefferson)

I, E V McWilliams, a Notary Public, in and for said County and State, hereby certify that Mark Johnston, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, he executed the same voluntarily on the day the same bears date.

Given under my hand this 23rd day of April, 2018.

E V McWilliams
Notary Public

My commission expires:

Edward Vaughn McWilliams
Notary Public, Alabama State At Large
My Commission Expires Nov. 30, 2019

NOTARY SEAL

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, ET AL., **Intervenors/ Complainants,**	)	**Docket No. U-4226**
v.	)	
ALABAMA POWER CO., **Petitioner**	)	
and	)	
ALABAMA POWER CO., **Respondent**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF RALPH B. PFEIFFER, JR.

I, Ralph B. Pfeiffer, Jr., a citizen of the United States of America, am over nineteen (19) years of age, and, after first being duly sworn, do hereby under oath say as follows:

1. I currently reside at 3726 Dawes Road, Mobile, Alabama 36695.

2. I attended Tulane University undergraduate and then went to UAB for medical school and completed five year of surgical training at Parkland Memorial Hospital in Texas. I completed a subsequent vascular surgery fellowship at Norfolk General Hospital in Virginia. I currently work as vascular surgeon at Vascular Specialists of Mobile.

3. I am currently an Alabama Power Customer.

4. I made the decision to install solar energy panels to minimize my monthly utility bills and because I wanted to do my part to protect our environment. I diligently researched online and communicated with solar companies in California before I made my decision.

5. I interconnected an on-site, self-generating solar system at my home with Alabama Power's grid on or about April 2017, My system has a nameplate capacity of 3.36 kilowatts.

6. Alabama Power provides my electric service under Rate Family Dwelling ("FD").

7. Since interconnecting my solar system in April 2017, I have been subject to surcharges assessed by Alabama Power under its revised Rate Rider RGB.

8. I am required to pay $16.80 each month in Capacity Reservation Charge fees and have paid approximately $280.80 in Capacity Reservation Charge fees as of the end of October 2018.

9. If the surcharge remains in place, I expect to pay approximately $6,000.00 in fees to Alabama Power due to this surcharge over the estimated 30-year life of my solar system investment.

10. Alabama Power has proposed an increase to the capacity reservation charge from $5.00 to $5.42 per kilowatt per month. If the increase is approved this will increase the amount I have to pay per year from $201.60 to $218.53. Under the proposed rate increase, I would pay over $6,500.00 for the estimated 30-year life of my system.

11. In addition to the Capacity Reservation charge, I pay a fixed customer charge of $14.50 each month to receive service from Alabama Power, in accordance with the Rate FD.

12. Not only am I personally impacted because of the extra fees I have to pay to be connected to Alabama Power's grid, I am also concerned that the capacity reservation charge unfairly impacts all residential solar customers who have chosen to create their own electricity and also connect to the grid. I am also concerned that the capacity reservation charge discourages others from installing solar. I also find the language of the Rate Rider RBG to be complex and confusing. Furthermore, I am concerned about the impacts that continued reliance on fossil fuels, in lieu of greater reliance on clean fuels like solar energy, will have on my children and future generations.

13. I am challenging Alabama Power's rate charges for solar energy customers because I consider it to be unfair. People like me should not be punished financially for taking steps to limit their consumption of fossil-fuel based electricity. If the Commission were to require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and encourage the expansion of solar around the state.

Ralph B. Pfeiffer, Jr.

STATE OF ALABAMA)
COUNTY OF Mobile)

Before me, the undersigned Notary Public in and for said County and State, personally appeared Ralph B. Pfeiffer, Jr. who after first being duly sworn, did depose and say that the information contained in the foregoing Affidavit is true and correct.

Done this the 9th day of November, 2018.

Sandra Prescott
NOTARY PUBLIC

My Commission Expires: MY COMMISSION EXPIRES SEPTEMBER 18, 2021

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Intervenors,**	)	
GASP, INC. **Intervenor**	)	
v.	)	**Docket No. U-4226**
ALABAMA POWER CO., **Petitioner**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF CHARLES SCRIBNER

1. My name is Charles Scribner. I am a resident of Jefferson County, Alabama, and I live at 740 Montgomery Drive, Birmingham, Alabama. I am over the age of 19 and am competent to give this declaration. I have personal knowledge of the facts below.

2. On April 24, 2018, I signed the affidavit attached herein as Attachment 1, which addresses my membership with Gasp, Inc. and my decision to install a solar generating system and take most of my home off of Alabama Power's electric grid.

3. I incorporate all paragraphs of my April 24, 2018 affidavit as if fully set out herein, and include the additional paragraphs below.

4. After a Complaint was filed with the Alabama Public Service Commission in April 2018 alleging that the charges in Rate Rider RGB were unjust and unreasonable, Alabama Power proposed to *increase* the capacity reservation charge from $5.00/kW per month to

$5.42/kW per month. Just as with the current capacity reservation charge, I am concerned that the proposed increase in the capacity reservation charge will unfairly impact residential solar customers who have chosen to create their own electricity and connect to the grid. I am also concerned that the proposed increase will continue to discourage others from installing solar.

5. I believe that additional residential solar systems in the state will lead to clean, renewable power, thereby decreasing the use of fossil fuels for electricity and improving air and water quality. Anti-solar policies such as the charges levied under Rate Rider RGB substantially and adversely impact my economic, environmental and human health interests because they dissuade the use of clean, renewable solar power.

6. If the Commission were to reject Alabama Power's proposal to increase the capacity reservation charge, and require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and my interests.

FURTHER AFFIANT SAYETH NOT.

Charles Scribner

State of Alabama)

County of Jefferson)

I, Edward Vaughn McWilliams, a Notary Public, in and for said County and State, hereby certify that Charles Scribner, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, she executed the same voluntarily on the day the same bears date.

Given under my hand this 7th day of November, 2018.

Notary Public

Edward Vaughn McWilliams
Notary Public, Alabama State At Large
My Commission Expires Nov. 30, 2019

My commission expires:

NOTARY SEAL

Attachment 1

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Petitioners,**	)	
GASP, INC. **Petitioners,**	)	**Docket No. _____**
v.	)	
ALABAMA POWER CO., **Defendant.**	)	

AFFIDAVIT OF CHARLES SCRIBNER

1. My name is Charles Scribner. I am a resident of Jefferson County, Alabama, and live at 740 Montgomery Drive, Birmingham, Alabama. I am over the age of 19 and am competent to give this Affidavit. I have personal knowledge of the facts below.

2. I am a member of Gasp, Inc. ("Gasp"), a nonprofit membership corporation with a mission to protect the environment, economy and public health of Alabama and its citizens. I have been a member of Gasp for over seven years.

3. I joined Gasp because I support its mission, particularly its efforts to improve air quality and promote increasing renewable energy in the state, including solar power. I support its advocacy in favor of policies that are fair to solar customers.

4. I have lived at my current residence in Birmingham, AL, for over five years.

5. I am the Executive Director of Black Warrior Riverkeeper, a nonprofit organization with a mission to protect and restore the Black Warrior River and its tributaries.

6. I decided to install a solar energy generating system on my home because using renewable energy, such as solar, protects our environment and God's creation.

7. My 6.7-kilowatt solar generating system was installed on the south-facing roof of my home in July 2015 and began generating solar power in approximately August, 2015. To avoid paying Alabama Power's capacity reservation charge, I chose to take most of my home off of Alabama Power's electric grid. I invested in and installed a 6.7-kilowatt solar generating system and a bank of lead batteries. Most of my appliances, light fixtures and electric outlets are powered by the battery system, which is recharged by the solar panels daily. The batteries and associated equipment, such as charge controllers, represent roughly half of the cost of the entire system (which includes the panels, batteries, inverter and other equipment). Other appliances, including the air conditioner, dryer and oven, still use power from Alabama Power's grid, and I buy electricity from Alabama Power every day to run these appliances. If there were no capacity reservation charge, I would connect my solar generating system with Alabama Power's grid to sell excess energy back through the grid.

7. I am personally impacted by the capacity reservation charge because I spent a significant amount of money on a battery system to avoid paying the charge.

8. I am also concerned that the capacity reservation charge unfairly impacts all residential solar customers who have chosen to create their own electricity and also connect to the grid. I am also concerned that the capacity reservation charge discourages others from installing solar.

9. Furthermore, I am concerned about the impacts that continued reliance on fossil fuels, in lieu of greater reliance on clean fuels like solar energy, will have on future generations.

10. Gasp and its members, me included, have a direct and beneficial interest in the protection and enhancement of Alabama's natural environment and economy, and in the health of its citizens. I believe that additional residential solar systems in the state will lead to clean,

renewable power, thereby decreasing the use of fossil fuels for electricity and improving air and water quality. Anti-solar policies such as the capacity reservation charge substantially and adversely impact these interests. My economic, environmental and human health interests are adversely affected by the capacity reservation charge because it dissuades the use of clean, renewable solar power.

11. The capacity reservation charge went into effect in May 2013. I did not know about the charge until after it was approved by the Alabama Public Service Commission. Had I known about the proposed revisions being made, I would have voiced my opposition to the revisions in some way.

12. Gasp represents my interest in this complaint concerning the capacity reservation charge for solar systems, which I consider to be unfair. If the Commission were to require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would address the charge's adverse impacts on me and my interests.

FURTHER THE AFFIANT SAYETH NOT.

Charles Scribner

State of Alabama)

County of Jefferson)

I, Heather Miller Cover Notary Public, in and for said County and State, hereby certify that Charles Scribner, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, he executed the same voluntarily on the day the same bears date.

Given under my hand this 24 day of April, 2018.

Notary Public Heather Miller Cover

My commission expires: 10/1/2021

NOTARY SEAL

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Intervenors,**	)	
GASP, INC. **Intervenor**	)	
v.	)	**Docket No. U-4226**
ALABAMA POWER CO., **Petitioner**	)	
In re: Rate Rider RGB (Supplementary, Back-up, or Maintenance Power)	)	

AFFIDAVIT OF TERESA K. THORNE

1. My name is Teresa K. Thorne. I am a resident of Blount County, Alabama, and live at 193 Adamson Road, Springville, Alabama. I am over the age of 19 and am competent to give this declaration. I have personal knowledge of the facts below.

2. On April 24, 2018, I signed the affidavit attached herein as Attachment 1, which addresses my membership with Gasp, Inc., my decision to install a solar generating system, and the monthly capacity reservation charge that I must pay to Alabama Power.

3. I incorporate all paragraphs of my April 24, 2018 affidavit as if fully set out herein, and include the additional paragraphs below.

4. After a complaint was filed with the Public Service Commission in April 2018 alleging that the charges in Rate Rider RGB were unjust and unreasonable, Alabama Power proposed to *increase* the capacity reservation charge from $5.00/kW per month to $5.42/kW per

month. This would increase the amount I must pay under the capacity reservation charge from $240/year to $260.16/year. With the increased charge, I will have to pay over $7,500 for the estimated 30-year life of my solar generating system. Just as with the current capacity reservation charge, the proposed increase in the charge means that I may not be able to recoup the cost of my solar system before it needs to be replaced. People like me should not be punished financially for choosing to produce our own renewable power and limit our consumption of fossil fuel-based electricity.

5. The language of Rate Rider RGB is confusing. After I received a letter from Alabama Power in September 2015 informing me of Rate PAE and the capacity reservation charge, I called and spoke with Judy Ray at Alabama Power. She told me about the optional Rate RTA rate in lieu of the capacity reservation charge, which I did not know about. However, I chose not to go on Rate RTA because I did not know how many kilowatt-hours I would use during the 3-5 pm peak period and thus was not able to determine which plan was less onerous financially.

6. I believe that additional residential solar systems in the state will lead to clean, renewable power. Anti-solar policies such as the charges levied under Rate Rider RGB substantially and adversely impact my economic, environmental and human health interests because they dissuade the use of clean, renewable solar power.

7. If the Commission were to reject Alabama Power's proposal to increase the capacity reservation charge, and require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and my interests.

FURTHER AFFIANT SAYETH NOT.

Teresa K. Thorne

Teresa K. Thorne

State of Alabama)

County of Jefferson)

I, Gina Lowry, a Notary Public, in and for said County and State, hereby certify that Teresa K. Thorne, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, she executed the same voluntarily on the day the same bears date.

Given under my hand this 7th day of November, 2018.

Gina Lowry

Notary Public

My commission expires: May 10, 2022

NOTARY SEAL

GINA HARWELL LOWRY
Notary Public, Alabama State at Large
My Commission Expires May 10, 2022

Attachment 1

BEFORE THE ALABAMA PUBLIC SERVICE COMMISSION
MONTGOMERY, ALABAMA

JAMES H. BANKSTON, RALPH B. PFEIFFER, JR., **Petitioners,**	)	
GASP, INC. **Petitioners,**	)	**Docket No. _____**
v.	)	
ALABAMA POWER CO., **Defendant.**	)	

AFFIDAVIT OF TERESA K. THORNE

1. My name is Teresa K. Thorne. I am a resident of Blount County, Alabama, and live at 193 Adamson Road, Springville, Alabama. I am over the age of 19 and am competent to give this declaration. I have personal knowledge of the facts below.

2. I am a member of Gasp, Inc. ("Gasp"), a nonprofit membership corporation with a mission to protect the environment, economy and public health of Alabama and its citizens. I have been a member of Gasp for approximately six years.

3. I joined Gasp because I support its mission, particularly its efforts to improve air quality and promote increasing renewable energy in the state, including solar power. I support its advocacy in favor of policies that are fair to solar customers.

4. I have lived at my current residence in Springville, AL, for about 29 years. My husband and I live on approximately 40 acres, and have woods, pasture and a couple buildings on the property.

5. I worked for the Birmingham Police Department for over 20 years, and retired as a Captain in 1999. After retiring from the Police Department, I served as the Executive Director

of the City Action Partnership, a nonprofit organization that manages downtown Birmingham's business district for the property owners of downtown. Its mission is to keep downtown safe, clean and friendly. I am now retired from the City Action Partnership and am a full-time writer.

6. I actively pursue social justice issues in Alabama. I am a full-time writer, and I focus heavily on social justice issues in my writing. For instance, I wrote a book on the Birmingham 16th Street Baptist Church bombing investigation.

7. I decided to install a solar system on my home because using renewable energy, such as solar, protects our environment. I also hoped to reduce my monthly electricity bills.

8. My 4 kilowatt solar system was installed on the roof of my home and began generating solar power around September 2015. My home and solar generating system are connected to Alabama Power's electric grid, and I continue to buy power from Alabama Power every day. I do not have any batteries connected to my solar generating system, so any power that I do not use is sent onto the grid. Because my system is interconnected to Alabama Power's grid, I am subject to Rate Rider RGB and the capacity reservation charge. Therefore, I pay $20 a month under the capacity reservation charge. This $20/month in capacity reservation charges equates to $240 per year, and over an estimated 30-year life of my solar generating system, over $7,000. This fee is in addition to the $14.50 customer charge I pay monthly and the base charge for Rate PAE (Purchase of Alternate Energy). As a result of the charge, I may not be able to recoup the cost of my solar system before it needs to be replaced.

9. I did not think that the capacity reservation charge applied to my 4-kilowatt solar generating system when it was installed. I received a letter from Alabama Power in September 2015 notifying me that my system was sending electricity onto Alabama Power's grid. The letter informed me of Rate PAE and the capacity reservation charge. If I had thought that the capacity

reservation charge was applicable, I probably would not have installed my solar generating system.

10. Not only am I personally impacted because I have to pay an extra $20 each month to be connected to Alabama Power's grid, I am concerned that the capacity reservation charge unfairly impacts all residential solar customers who have chosen to create their own electricity and also connect to the grid. I am also concerned that the capacity reservation charge discourages others from installing solar. Furthermore, I am concerned about the impacts that continued reliance on fossil fuels, in lieu of greater reliance on clean fuels like solar energy, will have on future generations.

11. Gasp and its members, me included, have a direct and beneficial interest in the protection and enhancement of Alabama's natural environment and economy, and in the health of its citizens. I believe that additional residential solar systems in the state will lead to clean, renewable power, thereby decreasing the use of fossil fuels for electricity and improving air quality. Anti-solar policies such as the capacity reservation charge substantially and adversely impact these interests. My economic, environmental and human health interests are adversely affected by the capacity reservation charge because it dissuades the use of clean, renewable solar power.

12. The capacity reservation charge went into effect in May 2013. Had I known about the proposed revisions being made, I would have voiced my opposition to the revisions in some way.

13. Gasp represents my interest in challenging the capacity reservation charge for solar systems, which I consider to be unfair. People like me should not be punished financially for taking steps to limit their consumption of fossil fuel-based electricity. If the Commission

were to require Alabama Power to stop collecting the capacity reservation charge for solar energy generating systems, that would resolve the charge's adverse impacts on me and my interests.

FURTHER AFFIANT SAYETH NOT.

Teresa K. Thorne

Teresa K. Thorne

State of Alabama)

County of Blount)

I, Carla Monaghan a Notary Public, in and for said County and State, hereby certify that Teresa K. Thorne, whose name is signed to the foregoing Affidavit, and who is known to me, acknowledged before me on this day that being informed of the contents of said Affidavit, she executed the same voluntarily on the day the same bears date.

Given under my hand this 24th day of April, 2018.

Carla Monaghan

Notary Public

My commission expires: 10/20/19

NOTARY SEAL

CARLA MONAGHAN NOTARY PUBLIC ALABAMA STATE AT LARGE