

JK

CHAIRWOMAN  
Dianne Martin

COMMISSIONERS  
Kathryn M. Bailey  
Michael S. Gialmo

EXECUTIVE DIRECTOR  
Debra A. Howland



PUBLIC UTILITIES COMMISSION  
21 S. Fruit St., Suite 10  
Concord, N.H. 03301-2429

TDD Access: Relay NH  
1-800-735-2964

Tel. (603) 271-2431

FAX No. 271-3878

Website:  
www.puc.nh.gov

34

February 24, 2020

His Excellency, Christopher T. Sununu  
and the Honorable Council  
State House  
Concord, New Hampshire 03301

### REQUESTED ACTION

Authorize the New Hampshire Public Utilities Commission (Commission) to **RETROACTIVELY** amend the **SOLE SOURCE** contract with The Brattle Group, Inc. (Brattle) (VC#308315) by expanding the scope of services and increasing the price limitation by \$100,060.00 from \$99,940.00 to \$200,000.00 for consulting services to the Commission regarding the distribution rate case filed by Liberty Utilities (Granite State Electric) Corp. d/b/a/ Liberty Utilities (Liberty Utilities or the Company). The original contract was fully executed on August 12, 2019. Funding is 100% Other Funds (Public Utility Assessment).

Funds will be available, pursuant to RSA 365:37, II, in account:

02-81-81-810010-52160000-046-500464

FY2020  
\$200,000

### EXPLANATION

The Commission respectfully requests a **RETROACTIVE, SOLE SOURCE** amendment to expand the scope of services and increase the budget for the existing and expanded scope of services. The amendment expands the scope of services to allow Brattle to continue supporting the Commission during Liberty Utilities' distribution rate case beyond the discovery and pre-hearing phases to include participation in technical sessions regarding Brattle testimony and data responses, review of rebuttal testimony and development of data requests related to rebuttal testimony, participation in settlement discussions, review of settlement proposals, assisting in developing cross examination questions, and serving as Staff's witnesses at hearings.

On March 27, 2019, Liberty Utilities filed a notice of intent to file a temporary distribution rate increase on or about April 26, 2019. This filing opened docket DE 19-064. On April 30, 2019, Liberty Utilities filed the temporary and permanent rate increase request and supporting testimony, including testimony by one of the leading witnesses on cost of service analysis. At about the same time, certain Commission Staff, who historically supported rate cases, including marginal cost of service analysis and rate design, announced imminent retirements. While I was not the agency head at that time, Commission Staff has informed me that

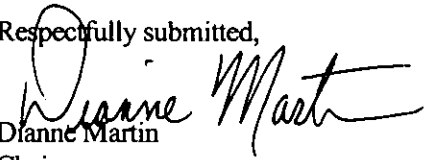
they realized the need for an outside expert to assist with the marginal cost of service analysis and rate design issues and, knowing the expertise of Brattle and the hastened need for assistance, Staff began discussions with Brattle, one of the preeminent firms in marginal cost of service analysis and rate design.

On July 17, 2019, Brattle submitted a scope of work to assist the Commission Staff with the rate case filed by Liberty Utilities. On August 12, 2019, the contract with Brattle, including the original scope of work, was fully executed. The original scope of services included pre-hearing services, including review of the Company's marginal cost of service study and rate designs, preparation of interrogatories and participation in other discovery activities, preparation and submission of direct testimony, and preparation of responses to interrogatories.

On January 17, 2020, the Commission received revised invoices for September 2019 and October 2019, and, for the first time, a complete invoice through November 2019. These invoices were brought to my attention shortly thereafter, and the vendor was subsequently instructed to stop work until authority could be requested from the Governor and Council for additional work. Since Brattle drafted its testimony and conducted a significant amount of work in December, Commission Staff also realized that the initial budget would not be sufficient to complete the initial scope of services and requested this amendment. In addition, given the complexity of the case, Commission Staff realized the need for Brattle's assistance until the end of the rate case, including for potential settlement discussions and additional consultation, preparation, and testimony in the event this case goes to hearing. The expanded scope of work provides for these additional services.

I am available to answer any questions you may have. Thank you very much for your consideration of this request.

Respectfully submitted,

  
Dianne Martin  
Chairwoman

**AMENDMENT NO. 1  
PROFESSIONAL SERVICES CONTRACT**

Now comes the New Hampshire Public Utilities Commission (the Agency) and The Brattle Group, Inc. (the Contractor), and pursuant to an agreement between the parties which was fully executed by the parties on August 12, 2019, and hereby agree to modify same as follows:

1. Item 1.8, Price Limitation, of said agreement is hereby modified from \$99,940.00 to \$200,000.00.
2. Exhibit A, Scope of Services is hereby modified to reference the revised Draft Scope of Work dated January 27, 2020, which is hereto attached. The Scope of Services is hereby modified to also include the following additional projects that the Contractor could be assigned:
  - a. Participation in technical sessions,
  - b. Participation in settlement discussions,
  - c. Review of rebuttal testimony and development of data requests,
  - d. Participation in settlement discussions,
  - e. Assistance with decoupling proposals,
  - f. Review of settlement proposals,
  - g. Help prepare cross examination questions, and
  - h. Serve in person as Staff's witness at hearings.
3. Exhibit B, Item 2. Price Limitation of said agreement is hereby modified from \$99,940.00 to \$200,000.00.
4. This amendment shall take effect upon approval of the Governor and Executive Council, retroactive to December 1, 2019.
5. All other provisions of the contract remain in effect.

This modification of an existing agreement is hereby incorporated by reference to the existing agreement by the parties and must be attached to said agreement.

IN WITNESS WHEREOF, the parties hereto have set their hands on this 20 day of February, 2020.

THE STATE OF NEW HAMPSHIRE  
Public Utilities Commission

By: *Dianne Martin* 2/24/20  
Dianne Martin, Chairwoman

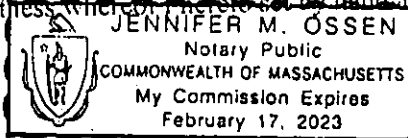
THE BRATTLE GROUP, INC.

By: *Beth DiVecchia*  
Beth DiVecchia, Treasurer

COMMONWEALTH OF MASSACHUSETTS  
COUNTY OF SUFFOLK

On this the 20<sup>th</sup> of February, 2020, before me personally appeared Beth DiVecchia, who acknowledged herself to be the individual who executed the forgoing instrument for the purposes therein contained.

In witness whereof, the parties set by hand and official seal.



By: *[Signature]*  
Notary Public/Justice of the Peace

Approved as to form, substance, and execution by the Attorney General this 25<sup>th</sup> day February, 2020.

By: J.D. LAVALLEE *J.D. Lavallee*

Title: ATTORNEY, N.H. DEPT. OF JUSTICE, OFFICE OF  
THE ATTORNEY GENERAL.

# **Assistance with Marginal Cost of Service Study Review and Implications for Rate Design**

## **Revised Scope of Work**

January 27, 2020

We appreciated the opportunity to discuss with New Hampshire Public Utilities Commission (“Commission”) a scope of work that involves the review of marginal cost of service (MCOS) study undertaken by Liberty Utilities. This scope will include assisting the Commission with the review of MCOS study, assessing the implications of these studies for rate design, supporting the Commission during the discovery phase, and filing testimony on our assessment of MCOS and rate design studies.

We assembled a team that offers extensive experience in marginal cost of service studies (including locational MC studies), fully allocated cost of service studies, distribution system analysis, and rate design. In addition to the expertise in utility cost studies, we have supported a number of clients, including utilities, through a variety of contentious state and federal filings from the submission of testimony through the negotiation of final settlements.

In this proposal, we lay out our proposed scope of work, our team and qualifications, and proposed budget.

### **I. Proposed Scope of Work**

#### **TASK 1: PROJECT KICK-OFF**

We propose to initiate this project with a kick-off meeting, which can be held in person or via teleconference. In this meeting, we will discuss various administrative/logistical matters and finalize the overall project scope. More specifically, we will:

- Discuss the role of core team members and division of labor between Brattle and the NH PUC team
- Establish communication channels and protocols
- Finalize the project scope, discuss a tentative timeline, and determine major milestones and associated deliverables
- Set up periodic project update conference calls

At the conclusion of this meeting, we will draft a brief memo that recaps the kick-off meeting discussion.

## **TASK 2. REVIEW OF LIBERTY'S MARGINAL COST OF SERVICE STUDIES AND ASSISTANCE WITH THE DISCOVERY PROCESS**

In this task, we will review Liberty's marginal cost of service study to assess the robustness of the data and methodology used, and review final marginal cost calculations. In addition to reviewing the testimonies by Company experts, we will request live models that were used in the development of the MCOS values. We will work closely with the Commission to review the existing information submitted by Liberty and assist in the discovery process. This will involve drafting data requests, reviewing and assess the completeness of responses to the submitted data requests, and participating in conference calls and meetings if needed. Throughout Task 2, close coordination with the Commission is essential to ensure that the project hours allocated to Task 2 are utilized in the most productive manner.

Deliverable: i) A memo summarizing our assessment of the marginal cost studies for Liberty; ii) questions/information requests to be developed during the discovery process.

## **TASK 3: REVIEW AND ASSESSMENT OF RATE DESIGNS DEVELOPED BY LIBERTY**

In this task, we will review the rate designs developed by Liberty using the marginal costs derived from the MCOS study. We will assess the reasonableness of these rate designs and evaluate their conformity to the principles of modern rate design (economic efficiency, equity, bill stability, revenue stability, and customer satisfaction). When rates are developed based on the MCOS studies, they sometimes under- or over-recover the revenue requirement derived from the fully allocated cost of service study. We will review the reasonableness of the adjustments undertaken by Liberty while designing marginal cost based rates.

Deliverable: i) A memo summarizing our assessment of the rate designs developed by Liberty; ii) questions/information requests to be developed during the discovery process.

## **TASK 4: DEVELOP PRE-FILED TESTIMONY**

In this task, we will prepare written testimony to present our assessment of Liberty's MCOS and rate design studies. The testimony will describe the theoretical foundation and approach for calculating marginal distribution costs (demand and customer related) and the relationship to distribution rate design, and evaluate Liberty's analysis relative to well-established principles in MCOS and rate design. To the extent they become relevant, we will include potential insights to inform rate design (especially distributed energy resources) and potential limitations or refinements associated with developing a sub-system level MCOS.

## **TASK 5: POST TESTIMONY FILING ASSISTANCE**

In this Task, The Brattle team will be prepared to assist the NHPUC Staff with the following tasks, if called upon by the Staff:

- Preparation of responses to interrogatories
- Participation in technical sessions
- Review of rebuttal testimony and development of data requests
- Participation in settlement discussions
- Assistance with responding to decoupling proposals
- Review of settlement proposals
- Help prepare cross examination questions
- Serve in person as Staff's witness at hearings

**Deliverable:** Responses to interrogatories and written input on each of the above tasks, if required by the Staff.

## **II. Our Team**

Based on our understanding of your needs, we have assembled a core team of cost study experts to lead this potential engagement. The Brattle Team will be led by Brattle Principals Dr. Sanem Sergici and Dr. Augie Ros. These two Brattle Principals bring to the engagement extensive experience in developing marginal costs and rate designs and will be responsible for all of the deliverables from Brattle's activities. Supporting the two lead experts will be Brattle Associate Dr. Pearl Donohoo-Vallett, who has worked extensively with similar engagements in the past. Other junior team members will be selected from those who have been actively involved in recent cost study projects. Finally, Mr. Bruce Tsuchida will serve as an expert advisor to this core team and provide critical peer review to the study approach, assumptions, and conclusions. Short bios of these core team members and references are included in the next section.

**Dr. Sanem Sergici will provide expertise on rate design and will be the NH PUC's point of contact.** Dr. Sergici is a Principal in The Brattle Group's Boston office specializing in rate design, program design, evaluation, and big data analytics in the areas of energy efficiency, demand response, smart grid, and time-varying pricing. She regularly supports electric utilities, regulators, law firms, and technology firms on matters related to retail rate design, grid modernization, and alternative utility business and regulatory models.

Dr. Sergici has been at the forefront of the design and impact analysis of innovative retail pricing, enabling technology, and behavior-based energy efficiency pilots and programs in North America. She led numerous studies in these areas that were instrumental in regulatory approvals of Advanced Metering Infrastructure (AMI) investments and smart rate offerings for electricity customers. She also has significant expertise in resource planning, development of load forecasting models, and energy litigation. Dr. Sergici has led the development of a variety of traditional and emerging performance incentive metrics in the

context of performance-based regulation for various U.S. utilities. Dr. Sergici was one of the instructors for the cost of service study and rate design workshop for NH PUC staff in 2016

Dr. Sergici is a frequent presenter on the economic analysis of distributed energy resources and regularly publishes in academic and industry journals. She received her Ph.D. in Applied Economics from Northeastern University in the fields of applied econometrics and industrial organization. She received her M.A. in Economics from Northeastern University and her B.S. in Economics from Middle East Technical University (METU), Ankara, Turkey.

**Dr. Augie Ros will provide expertise on cost of service studies.** Dr. Ros, a Principal in our Boston office, has 25 years of consulting and agency experience in regulatory and public utilities economics in network industries, particularly energy and telecommunications. He specializes in costing and demand analysis, cost of service and performance-based ratemaking, competition analysis and disputes, damages, and econometric modelling. He has provided dozens of expert reports before agencies in the United States, Canada and more than a dozen countries and before the International Chamber of Commerce Arbitration Panel. He has appeared as an expert witness in oral hearings in five instances.

Dr. Ros is an Adjunct Professor at the International Business School at Brandeis University, where he teaches a course on regulatory and global antitrust economics. He previously taught a similar course at Northeastern University. His agency experience includes work at the Illinois Commerce Commission, the Federal Communications Commission, and the Mexican Competition Commission.

**Dr. Pearl Donohoo-Vallett will serve as the lead Associate and is responsible from day-to-day execution of project tasks.** Dr. Donohoo-Vallett is an Associate in The Brattle Group's Washington, D.C. office. She provides transmission and distribution companies strategic support on the increasing overlap of retail and wholesale regulatory and policy issues. Her work for utilities, merchant transmission developers, and regulators focuses on performance based and alternative ratemaking, distributed energy resources, clean energy policy, economic impacts of infrastructure projects, and transmission planning.

Dr. Donohoo-Vallett earned her Ph.D. from MIT in the field of Technology, Management and Policy; her doctoral dissertation explored transmission planning under uncertainty. She earned her S.M. from the Technology and Policy Program at MIT and a B.S. in Mechanical Engineering from the Franklin W. Olin College of Engineering.

**Mr. T. Bruce Tsuchida will serve as an expert advisor to our team.** Mr. T. Bruce Tsuchida, a Principal at Brattle with more than 25 years of experience in utility operation and market analysis, specializes in assessing market structure changes, new technology (such as renewable resources or storage and their operations), and their impacts on utilities' operations and business models. His experience spans a wide range of utility consulting projects, including the analysis of operations for power markets, ranging from

integration studies for intermittent resources such as wind and solar power, ancillary service studies, operational logic studies, to market change related cost benefit studies, such as impacts of market liberalization or the impacts of an utility joining an RTO, and associated analyses required for regulatory proceedings. These studies range from large interconnected systems to small island systems and provide insights from the higher system level down to the rate-payer level. Prior to joining Brattle, Mr. Tsuchida was a principal at Charles River Associates, following a decade working at the Tokyo Electric Power Company.

Our team will be assisted by Brattle Research Analysts who are experienced in the areas of rate design and cost of service studies.

### **III. Representative Experience**

**Consolidated Edison:** Brattle developed a new distribution capacity marginal cost model for Consolidated Edison at the area substation level. The development of the 10-year forward-looking model required the balancing of model granularity with the availability of historical and projected investment data for each level of the distribution network across the six region of Consolidated Edison's service territory. The final marginal costs represent groupings of area-substations to reflect the availability of data as well as underlying investment requirements. Brattle presented model architecture and trade-offs with stakeholder groups and New York Public Service Commission staff as well as reviewing Commission comments on other proposed models.

**Pacific Gas and Electric:** Brattle developed a modeling suite used for purposes of cost allocation and development of rates. Brattle worked closely with the client team to understand the theoretical, empirical, and implementation bases of the models they had in place, and developed a new model architecture. In addition to redesigning software that had been in place since the early 1990s, Brattle embarked in a complex data collection and validation effort that spanned over 17 different departments and over 30 data providers. Brattle built a set of databases, models, and accompanying documentation that greatly simplified the data collection and processing requirements for cost allocation efforts in the general rate case filing. The new software followed best practices in modeling, leveraging a modular design to make the models highly adaptable to changes in data sources, new output requirements, and the introduction of new rate designs. Brattle reviewed previous rate case filings to understand model weaknesses and arguments of interveners, validated the theoretical underpinnings of the cost allocation and rate design model suite, and developed insights that were implemented into the model framework. With a more flexible and transparent model structure, the utility was in a stronger position to defend the results of their cost allocation study and subsequent development of rates.

**Dominion Virginia Power:** Brattle performed a marginal cost/avoided cost study to be used in evaluating its demand-side management energy efficiency programs, demand responsive rates, and seasonal and time-



of-use rates. The study included geographic-specific assessment of marginal distribution and transmission costs.

**New Hampshire Public Utilities Commission:** A team from Brattle conducted Electric Rate Design Training for the New Hampshire PUC staff in 2016. The two-day training included the theoretical background for marginal cost studies; calculation approaches for generation, transmission, distribution, and customer marginal costs; and reconciling marginal cost based rates with revenue requirements as well as additional ratemaking topics.

**For a gas utility in the eastern United States,** Brattle conducted the company's embedded COSS, assisted in rate design, and submitted supporting testimony before the relevant regulatory entity. Our work also included a benchmarking study on the company's financial metrics, and an analysis to support changes to the company's weather normalization methodology.

**For an electric utility in the mid-Atlantic,** Brattle performed a marginal cost/avoided cost study to be used in evaluating its demand-side management energy efficiency programs, demand responsive rates, and seasonal and time-of-use rates. This included a geographic-specific assessment of marginal distribution and transmission costs.

**For a large utility in the southern United States,** Brattle prepared an expert report investigating alternative cost allocation approaches for generation capacity, fuel, and DSM costs, both through a review of the methods, surveys of practice, as well as the financial impacts on the utility. The cost allocation assessment included cost allocation across jurisdictions as well as within a jurisdiction.

**For a Midwestern utility,** members of The Brattle Group provided expert testimony related to cost allocation and rate design before the state commission. We assisted in the development of company witnesses' rationale for the choice of cost of service allocation method, developed benchmarks for the rate increase against similarly situated utilities (as well as for other commodities' escalations), and evaluated proposed demand-side management programs and rate options.

**For the New York State Energy Research and Development Authority (NYSERDA) and the New York Public Service Commission (NYPSC),** Brattle analyzed the impact that DERs will have upon the utility financial performance of electric distribution utilities as well as the overall viability of their business models. Brattle's work on this project involved the comprehensive modeling of distribution utility cost and revenue structures and the analysis of impacts that various levels of distributed generation, storage and aggregated demand resources will have upon utility delivery sales, operations and CapEx requirements.

**Assisted Six Joint Utilities of New York with Rate Design Efforts in High DER Environment:** Brattle Team assisted Joint Utilities of New York in their efforts to identify alternative rate design options that meet utility cost recovery objectives, lead to economically efficient technology adoption, and meet customer

expectations. We benchmarked alternative rate designs, provided evidence on customer response and acceptance and presented ways to transition to the ideal tariff. We presented our results in a working group organized by the NY DPS staff.

**Review rate design strategy for a Southern Utility:** Brattle team has reviewed a Southern utility’s short-term and long-term rate design strategy to benchmark them to those of several other utilities with innovative rate design practices. We carried out a “gap analysis” for this utility and presented our recommendations.

**Analysis and support for new residential rate options:** For Westar Energy in Kansas, Brattle provided analysis and testimony in support of the utility’s proposal to offer new rate choices to its residential customers. In addition to the standard rate, Westar proposed to offer two new rate options: a rate with an increased fixed charge and a lower volumetric charge (“Residential Stability Plan”) and a three-part rate with a demand charge (“Residential Demand Plan”). These two options would be the two rate options available to DG customers. Our work included bill impact analysis and simulations of the likely adoption and revenue impacts of the various rate options. The rate proposal was withdrawn in settlement but will be revisited through a generic docket.

#### IV. Budget Proposal

We expect to complete the requirements of Tasks 1 through 5 for a budget not-to-exceed \$200,000. Table 1 reports projected staff hours by task.

**Table 1: Staff Hours and Proposed Budget for Liberty Analysis**

		Hourly Billing Rate	Task 1: Kick-off meeting	Task 2: Review of MCOSS and Assistance with Discovery Process	Task 3: Review and Assessment of Rate Designs Developed by Utilities	Task 4: Develop Prefiled Testimony	Task 5: Post-Testimony Assistance	Total Hours	Total Dollars
<b>Brattle Staff</b>									
Principal	S.Sergici	\$ 450	4	10	30	20	30	94	\$42,300
Principal	A. Ros	\$ 550	4	30	10	20	20	84	\$46,200
Associate	P.Donohoo-Vallett	\$ 365	4	60	40	44	44	188	\$68,620
RA	Various	\$ 260	0	60	30	20	55	165	\$42,900
<b>TOTAL LABOR</b>			<b>12</b>	<b>160</b>	<b>110</b>	<b>100</b>	<b>149</b>	<b>531</b>	
<b>TOTAL COST</b>			<b>\$ 460</b>	<b>\$ 58,500</b>	<b>\$ 41,400</b>	<b>\$ 39,800</b>	<b>\$ 54,860</b>		<b>\$ 200,020</b>

Thank you for giving us the opportunity to submit this proposal. If you have any questions, please feel free to contact me directly by phone at 617 234 5674 or at [sanem.sergici@brattle.com](mailto:sanem.sergici@brattle.com).

Sincerely,

Sanem Sergici, Ph.D.  
Principal

# State of New Hampshire

## Department of State

### CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that THE BRATTLE GROUP, INC. is a Massachusetts Profit Corporation registered to transact business in New Hampshire on May 25, 2016. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: 745213

Certificate Number: 0004549934



IN TESTIMONY WHEREOF,

I hereto set my hand and cause to be affixed  
the Seal of the State of New Hampshire,  
this 11th day of July A.D. 2019.

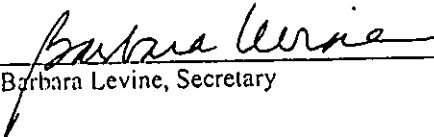
A handwritten signature in black ink, appearing to read "William M. Gardner".

William M. Gardner  
Secretary of State

**CERTIFICATE OF AUTHORITY**  
(Corporation with Notary Seal)

I, Barbara Levine, do hereby certify that:

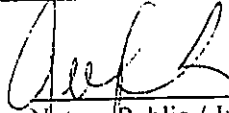
1. I am a duly elected Secretary of The Brattle Group, Inc. (the "Corporation").
2. Beth DiVecchia is the duly elected Treasurer of the Corporation, authorized by the Corporation's by-laws to sign contracts made, accepted or endorsed by the Corporation.

  
\_\_\_\_\_  
Barbara Levine, Secretary

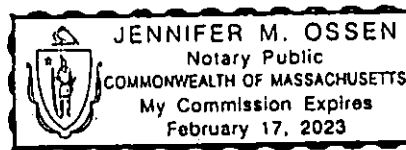
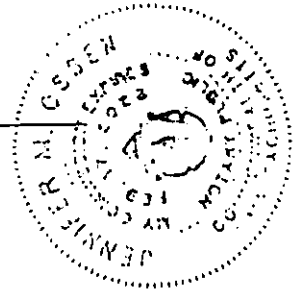
COMMONWEALTH OF MASSACHUSETTS  
County of Suffolk

The foregoing instrument was acknowledged before me this 20th day of February, 2020, by Jennifer M. Ossen.

(NOTARY SEAL)

  
\_\_\_\_\_  
Notary Public / Justice of the Peace

Commission Expires: February 17, 2023





# CERTIFICATE OF LIABILITY INSURANCE

BRATTGRO1

DATE (MM/DD/YYYY)  
7/18/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Commercial Lines - (617) 330-1005 USI Insurance Services LLC 855 Boylston Street, 8th Floor Boston, MA 02116	<b>CONTACT NAME:</b>		<b>FAX (A/C, No):</b> (866) 597-9827
	<b>PHONE (A/C, No, Ext):</b>		
	<b>E-MAIL ADDRESS:</b>		
	<b>INSURER(S) AFFORDING COVERAGE</b>		
<b>INSURED</b> The Brattle Group Inc. One Beacon Street Suite 2600 Boston MA 02108	<b>INSURER A:</b> Continental Insurance Company		<b>NAIC #</b> 35289
	<b>INSURER B:</b> Valley Forge Insurance Company		20508
	<b>INSURER C:</b>		
	<b>INSURER D:</b>		
	<b>INSURER E:</b>		
	<b>INSURER F:</b>		

**COVERAGES**      **CERTIFICATE NUMBER:** 14432911      **REVISION NUMBER:** See below

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDITIONAL INSURED	SUBROGATION	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:			6076425180	03/27/19	03/27/20	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000	
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$	
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED      RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$	
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			6076467476	03/27/19	03/27/20	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER	
B			N/A	6076467462	03/27/19	03/27/20	E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
 Certificate holder is named as additional insured as it relates to general liability in accordance with the terms and conditions of the policy.

<b>CERTIFICATE HOLDER</b>  State of New Hampshire Public Utilities Commission 21 South Fruit St., Ste 10 Concord, NH 03301	<b>CANCELLATION</b>  SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  

The ACORD name and logo are registered marks of ACORD © 1988-2015 ACORD CORPORATION. All rights reserved.

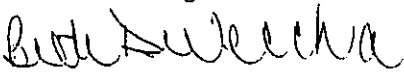
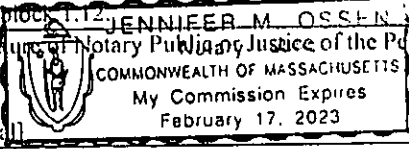
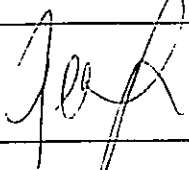
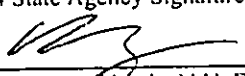
**Notice:** This agreement and all of its attachments shall become public upon submission to Governor and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the agency and agreed to in writing prior to signing the contract.

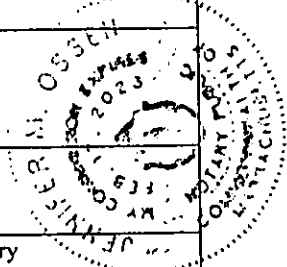
**AGREEMENT**

The State of New Hampshire and the Contractor hereby mutually agree as follows:

**GENERAL PROVISIONS**

**I. IDENTIFICATION.**

1.1 State Agency Name Public Utilities Commission		1.2 State Agency Address 21 South Fruit Street, Concord NH 03301	
1.3 Contractor Name The Brattle Group, Inc.		1.4 Contractor Address One Beacon Street, Suite 2600, Boston, MA 02108	
1.5 Contractor Phone Number 617-864-7900	1.6 Account Number 52160000 / 500464	1.7 Completion Date December 31, 2020	1.8 Price Limitation \$99,940.00
1.9 Contracting Officer for State Agency Tom Frantz		1.10 State Agency Telephone Number 603-271-2431	
1.11 Contractor Signature 		1.12 Name and Title of Contractor Signatory Beth DiVecchia, Treasurer, The Brattle Group, Inc.	
1.13 Acknowledgement: State of <u>MA</u> County of <u>SUFFOLK</u> On <u>August 9<sup>th</sup>, 2019</u> before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public/Justice of the Peace  			
1.13.2 Name and Title of Notary or Justice of the Peace <u>Jennifer M. Ossen, Notary of MA</u>			
1.14 State Agency Signature 		1.15 Name and Title of State Agency Signatory <u>Martin Hanzburg, Chair</u> Date: <u>8/14/19</u>	
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: _____ Director, On: _____			
1.17 Approval by the Attorney General (Form, Substance and Execution) (if applicable) By: _____ On: _____			
1.18 Approval by the Governor and Executive Council (if applicable) By: _____ On: _____			



**2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED.** The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

**3. EFFECTIVE DATE/COMPLETION OF SERVICES.**

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

**4. CONDITIONAL NATURE OF AGREEMENT.**

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

**5. CONTRACT PRICE/PRICE LIMITATION/PAYMENT.**

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

**6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.**

6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

**7. PERSONNEL.**

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this

Contractor Initials BD  
Date 8/4/19

Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

#### 8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

#### 9. DATA/ACCESS/CONFIDENTIALITY/PRESERVATION.

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. **TERMINATION.** In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. **CONTRACTOR'S RELATION TO THE STATE.** In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. **ASSIGNMENT/DELEGATION/SUBCONTRACTS.** The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. **INDEMNIFICATION.** The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

#### 14. INSURANCE.

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.



14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

**15. WORKERS' COMPENSATION.**

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A ("*Workers' Compensation*").

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference.99 The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

**16. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

**17. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

**18. AMENDMENT.** This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no

such approval is required under the circumstances pursuant to State law, rule or policy.

**19. CONSTRUCTION OF AGREEMENT AND TERMS.**

This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

**20. THIRD PARTIES.** The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

**21. HEADINGS.** The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

**22. SPECIAL PROVISIONS.** Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

**23. SEVERABILITY.** In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

**24. ENTIRE AGREEMENT.** This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

Contractor Initials BD  
Date 8/9/19

Exhibit A

SCOPE OF SERVICES

The Brattle Group, Inc. (hereinafter referred to as "the Contractor") will provide consulting services to the New Hampshire Public Utilities Commission (NHPUC) on the Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities (the Company) rate case filed with the NHPUC. See NHPUC Docket No. DE 19-064.

The Contractor will conduct work on a broad range of marginal cost, allocated cost, distribution system analysis, and rate design-related assignments as more fully described, and in the manner described, in Contractor's Draft Scope of Work dated July 17, 2019, which is incorporated as if set forth herein. This Exhibit A is a summary and is not intended to limit the scope of work described in that document. Among other things, projects assigned to the contractor could include:

Review of the Company's marginal cost of service study and rate designs  
Preparation of interrogatories and participation in other discovery activities  
Preparation and submission of direct testimony  
Preparation of responses to interrogatories

The Contractor will complete the above work within the time set by procedural schedule in Docket No. DE 19-064 as may be amended from time to time by the Commission.

Contractor Initials BD  
Date 8/9/19

EXHIBIT B

BUDGET, LIMITATION ON PRICE, AND PAYMENT

1. **Estimated Budget:** The Contractor will charge for professional consulting services for time involved and expenses incurred for an amount not to exceed \$99,940.00. Services will be provided at the hourly rates specified in Contractor's Draft Scope of Work dated July 17, 2019.

\*The asterisked names below are team members to be devoted to this project. Others may be assigned to assist as needed.

Labor Category	Name
Principal Consultant <i>Project Co-Manager</i>	Dr. Sanem Sergici
Principal Consultant <i>Project Co-Manager</i>	Dr. Augie Ros
Sr. Associate Consultant	Dr. Pearl Donohoo-Vallett
Principal Consultant	Mr. T. Bruce Tsuchida

2. **Price Limitation:** The contract shall not exceed \$99,940.00.
3. **Method of Payment:** Payment to be made on completion of work on the basis of monthly invoices which are supported by a summary of activities that have taken place in accordance with the terms of the contract, along with a detailed listing of expenses incurred. Invoices will provide adequate back-up including the dates and hours worked per individual during the month and the service provided during those hours. Invoices will be submitted to: Business Office, New Hampshire Public Utilities Commission, 21 South Fruit Street, Suite 10, Concord, New Hampshire 03301-2429.

Payments hereunder are contingent upon the availability of funds assessed pursuant to RSA 365:37,II. The Commission will assess the costs of the contract to the appropriate party(ies) and upon payment of the assessment, will process payment to the Contractor. General Funds will not be requested to support this contract

Contractor Initials DS  
Date 8/4/19

EXHIBIT C

SPECIAL PROVISIONS

1. Paragraph 14.1.2 is hereby waived.
2. Paragraph 14.3 is amended and restated as follows:

14.3. The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Contractor will provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation of the policy or reduction in coverage, and no less than ten (10) days prior written notice if the cancellation is due to nonpayment.

3. The Public Utilities Commission may unilaterally amend this Agreement to include additional projects including but not limited to answering data requests, evaluating settlement proposals, submitting rebuttal testimony, and appearing at hearing to testify in person ("Additional Projects"), if sufficient funding remains available under the Price Limitation specified in Block 1.8 of Form P37, provided however that if the amendment requires an extension beyond 2020, the amendment shall include an adjustment to the then-applicable hourly billing rates of the Contractor. If additional funding is required to amend the Agreement, then the Public Utilities Commission may unilaterally amend to include Additional Projects at the hourly rates specified in Contractor's Draft Scope of Work dated July 17, 2019, subject to the approval of Governor and Council, if such approval is required. If the term of the Agreement is extended beyond 2020, the amendment shall include an adjustment to the then-applicable hourly billing rates of the Contractor. In any event, the Contractor shall cooperate in providing the documentation necessary to accomplish the amendment.

Contractor Initials BD  
Date 8/9/19

# Assistance with Marginal Cost of Service Study Review and Implications for Rate Design

## Draft Scope of Work

July 17, 2019

We appreciated the opportunity to discuss with New Hampshire Public Utilities Commission (“Commission”) a scope of work that involves the review of marginal cost of service (MCOS) study undertaken by Liberty Utilities. This scope will include assisting the Commission with the review of MCOS study, assessing the implications of these studies for rate design, supporting the Commission during the discovery phase, and filing testimony on our assessment of MCOS and rate design studies.

We assembled a team that offers extensive experience in marginal cost of service studies (including locational MC studies), fully allocated cost of service studies, distribution system analysis, and rate design. In addition to the expertise in utility cost studies, we have supported a number of clients, including utilities, through a variety of contentious state and federal filings from the submission of testimony through the negotiation of final settlements.

In this proposal, we lay out our proposed scope of work, our team and qualifications, and proposed budget.

### I. Proposed Scope of Work

#### TASK 1: PROJECT KICK-OFF

We propose to initiate this project with a kick-off meeting, which can be held in person or via teleconference. In this meeting, we will discuss various administrative/logistical matters and finalize the overall project scope. More specifically, we will:

- Discuss the role of core team members and division of labor between Brattle and the NH PUC team
- Establish communication channels and protocols
- Finalize the project scope, discuss a tentative timeline, and determine major milestones and associated deliverables
- Set up periodic project update conference calls

At the conclusion of this meeting, we will draft a brief memo that recaps the kick-off meeting discussion.

## **TASK 2. REVIEW OF LIBERTY'S MARGINAL COST OF SERVICE STUDIES AND ASSISTANCE WITH THE DISCOVERY PROCESS**

In this task, we will review Liberty's marginal cost of service study to assess the robustness of the data and methodology used, and review final marginal cost calculations. In addition to reviewing the testimonies by Company experts, we will request live models that were used in the development of the MCOS values. We will work closely with the Commission to review the existing information submitted by Liberty and assist in the discovery process. This will involve drafting data requests, reviewing and assess the completeness of responses to the submitted data requests, and participating in conference calls and meetings if needed. Throughout Task 2, close coordination with the Commission is essential to ensure that the project hours allocated to Task 2 are utilized in the most productive manner.

Deliverable: i) A memo summarizing our assessment of the marginal cost studies for Liberty; ii) questions/information requests to be developed during the discovery process.

## **TASK 3: REVIEW AND ASSESSMENT OF RATE DESIGNS DEVELOPED BY LIBERTY**

In this task, we will review the rate designs developed by Liberty using the marginal costs derived from the MCOS study. We will assess the reasonableness of these rate designs and evaluate their conformity to the principles of modern rate design (economic efficiency, equity, bill stability, revenue stability, and customer satisfaction). When rates are developed based on the MCOS studies, they sometimes under- or over-recover the revenue requirement derived from the fully allocated cost of service study. We will review the reasonableness of the adjustments undertaken by Liberty while designing marginal cost based rates.

Deliverable: i) A memo summarizing our assessment of the rate designs developed by Liberty; ii) questions/information requests to be developed during the discovery process.

## **TASK 4: DEVELOP PRE-FILED TESTIMONY**

In this task, we will prepare written testimony to present our assessment of Liberty's MCOS and rate design studies. The testimony will describe the theoretical foundation and approach for calculating marginal distribution costs (demand and customer related) and the relationship to distribution rate design, and evaluate Liberty's analysis relative to well-established principles in MCOS and rate design. To the extent they become relevant, we will include potential insights to inform rate design (especially distributed energy resources) and potential limitations or refinements associated with developing a sub-system level MCOS.

## II. Our Team

Based on our understanding of your needs, we have assembled a core team of cost study experts to lead this potential engagement. The Brattle Team will be led by Brattle Principals Dr. Sanem Sergici and Dr. Augie Ros. These two Brattle Principals bring to the engagement extensive experience in developing marginal costs and rate designs and will be responsible for all of the deliverables from Brattle's activities. Supporting the two lead experts will be Brattle Associate Dr. Pearl Donohoo-Vallett, who has worked extensively with similar engagements in the past. Other junior team members will be selected from those who have been actively involved in recent cost study projects. Finally, Mr. Bruce Tsuchida will serve as an expert advisor to this core team and provide critical peer review to the study approach, assumptions, and conclusions. Short bios of these core team members and references are included in the next section.

Dr. Sanem Sergici will provide expertise on rate design and will be the NH PUC's point of contact. Dr. Sergici is a Principal in The Brattle Group's Boston office specializing in rate design, program design, evaluation, and big data analytics in the areas of energy efficiency, demand response, smart grid, and time-varying pricing. She regularly supports electric utilities, regulators, law firms, and technology firms on matters related to retail rate design, grid modernization, and alternative utility business and regulatory models.

Dr. Sergici has been at the forefront of the design and impact analysis of innovative retail pricing, enabling technology, and behavior-based energy efficiency pilots and programs in North America. She led numerous studies in these areas that were instrumental in regulatory approvals of Advanced Metering Infrastructure (AMI) investments and smart rate offerings for electricity customers. She also has significant expertise in resource planning, development of load forecasting models, and energy litigation. Dr. Sergici has led the development of a variety of traditional and emerging performance incentive metrics in the context of performance-based regulation for various U.S. utilities. Dr. Sergici was one of the instructors for the cost of service study and rate design workshop for NH PUC staff in 2016

Dr. Sergici is a frequent presenter on the economic analysis of distributed energy resources and regularly publishes in academic and industry journals. She received her Ph.D. in Applied Economics from Northeastern University in the fields of applied econometrics and industrial organization. She received her M.A. in Economics from Northeastern University and her B.S. in Economics from Middle East Technical University (METU), Ankara, Turkey.

Dr. Augie Ros will provide expertise on cost of service studies. Dr. Ros, a Principal in our Boston office, has 25 years of consulting and agency experience in regulatory and public utilities economics in network industries, particularly energy and telecommunications. He specializes in costing and demand analysis, cost of service and performance-based ratemaking, competition analysis and disputes, damages, and

econometric modelling. He has provided dozens of expert reports before agencies in the United States, Canada and more than a dozen countries and before the International Chamber of Commerce Arbitration Panel. He has appeared as an expert witness in oral hearings in five instances.

Dr. Ros is an Adjunct Professor at the International Business School at Brandeis University, where he teaches a course on regulatory and global antitrust economics. He previously taught a similar course at Northeastern University. His agency experience includes work at the Illinois Commerce Commission, the Federal Communications Commission, and the Mexican Competition Commission.

Dr. Pearl Donohoo-Vallett will serve as the lead Associate and is responsible from day-to-day execution of project tasks. Dr. Donohoo-Vallett is an Associate in The Brattle Group's Washington, D.C. office. She provides transmission and distribution companies strategic support on the increasing overlap of retail and wholesale regulatory and policy issues. Her work for utilities, merchant transmission developers, and regulators focuses on performance based and alternative ratemaking, distributed energy resources, clean energy policy, economic impacts of infrastructure projects, and transmission planning.

Dr. Donohoo-Vallett earned her Ph.D. from MIT in the field of Technology, Management and Policy; her doctoral dissertation explored transmission planning under uncertainty. She earned her S.M. from the Technology and Policy Program at MIT and a B.S. in Mechanical Engineering from the Franklin W. Olin College of Engineering.

Mr. T. Bruce Tsuchida will serve as an expert advisor to our team. Mr. T. Bruce Tsuchida, a Principal at Brattle with more than 25 years of experience in utility operation and market analysis, specializes in assessing market structure changes, new technology (such as renewable resources or storage and their operations), and their impacts on utilities' operations and business models. His experience spans a wide range of utility consulting projects, including the analysis of operations for power markets, ranging from integration studies for intermittent resources such as wind and solar power, ancillary service studies, operational logic studies, to market change related cost benefit studies, such as impacts of market liberalization or the impacts of an utility joining an RTO, and associated analyses required for regulatory proceedings. These studies range from large interconnected systems to small island systems and provide insights from the higher system level down to the rate-payer level. Prior to joining Brattle, Mr. Tsuchida was a principal at Charles River Associates, following a decade working at the Tokyo Electric Power Company.

Our team will be assisted by Brattle Research Analysts who are experienced in the areas of rate design and cost of service studies.



### III. Representative Experience

**Consolidated Edison:** Brattle developed a new distribution capacity marginal cost model for Consolidated Edison at the area substation level. The development of the 10-year forward-looking model required the balancing of model granularity with the availability of historical and projected investment data for each level of the distribution network across the six region of Consolidated Edison's service territory. The final marginal costs represent groupings of area-substations to reflect the availability of data as well as underlying investment requirements. Brattle presented model architecture and trade-offs with stakeholder groups and New York Public Service Commission staff as well as reviewing Commission comments on other proposed models.

**Pacific Gas and Electric:** Brattle developed a modeling suite used for purposes of cost allocation and development of rates. Brattle worked closely with the client team to understand the theoretical, empirical, and implementation bases of the models they had in place, and developed a new model architecture. In addition to redesigning software that had been in place since the early 1990s, Brattle embarked in a complex data collection and validation effort that spanned over 17 different departments and over 30 data providers. Brattle built a set of databases, models, and accompanying documentation that greatly simplified the data collection and processing requirements for cost allocation efforts in the general rate case filing. The new software followed best practices in modeling, leveraging a modular design to make the models highly adaptable to changes in data sources, new output requirements, and the introduction of new rate designs. Brattle reviewed previous rate case filings to understand model weaknesses and arguments of interveners, validated the theoretical underpinnings of the cost allocation and rate design model suite, and developed insights that were implemented into the model framework. With a more flexible and transparent model structure, the utility was in a stronger position to defend the results of their cost allocation study and subsequent development of rates.

**Dominion Virginia Power:** Brattle performed a marginal cost/avoided cost study to be used in evaluating its demand-side management energy efficiency programs, demand responsive rates, and seasonal and time-of-use rates. The study included geographic-specific assessment of marginal distribution and transmission costs.

**New Hampshire Public Utilities Commission:** A team from Brattle conducted Electric Rate Design Training for the New Hampshire PUC staff in 2016. The two-day training included the theoretical background for marginal cost studies; calculation approaches for generation, transmission, distribution, and customer marginal costs; and reconciling marginal cost based rates with revenue requirements as well as additional ratemaking topics.

For a gas utility in the eastern United States, Brattle conducted the company's embedded COSS, assisted in rate design, and submitted supporting testimony before the relevant regulatory entity. Our work also included a benchmarking study on the company's financial metrics, and an analysis to support changes to the company's weather normalization methodology.

For an electric utility in the mid-Atlantic, Brattle performed a marginal cost/avoided cost study to be used in evaluating its demand-side management energy efficiency programs, demand responsive rates, and seasonal and time-of-use rates. This included a geographic-specific assessment of marginal distribution and transmission costs.

For a large utility in the southern United States, Brattle prepared an expert report investigating alternative cost allocation approaches for generation capacity, fuel, and DSM costs, both through a review of the methods, surveys of practice, as well as the financial impacts on the utility. The cost allocation assessment included cost allocation across jurisdictions as well as within a jurisdiction.

For a Midwestern utility, members of The Brattle Group provided expert testimony related to cost allocation and rate design before the state commission. We assisted in the development of company witnesses' rationale for the choice of cost of service allocation method, developed benchmarks for the rate increase against similarly situated utilities (as well as for other commodities' escalations), and evaluated proposed demand-side management programs and rate options.

For the New York State Energy Research and Development Authority (NYSERDA) and the New York Public Service Commission (NYPSC), Brattle analyzed the impact that DERs will have upon the utility financial performance of electric distribution utilities as well as the overall viability of their business models. Brattle's work on this project involved the comprehensive modeling of distribution utility cost and revenue structures and the analysis of impacts that various levels of distributed generation, storage and aggregated demand resources will have upon utility delivery sales, operations and CapEx requirements.

**Assisted Six Joint Utilities of New York with Rate Design Efforts in High DER Environment:** Brattle Team assisted Joint Utilities of New York in their efforts to identify alternative rate design options that meet utility cost recovery objectives, lead to economically efficient technology adoption, and meet customer expectations. We benchmarked alternative rate designs, provided evidence on customer response and acceptance and presented ways to transition to the ideal tariff. We presented our results in a working group organized by the NY DPS staff.

**Review rate design strategy for a Southern Utility:** Brattle team has reviewed a Southern utility's short-term and long-term rate design strategy to benchmark them to those of several other utilities with innovative rate design practices. We carried out a "gap analysis" for this utility and presented our recommendations.

**Analysis and support for new residential rate options:** For Westar Energy in Kansas, Brattle provided analysis and testimony in support of the utility's proposal to offer new rate choices to its residential customers. In addition to the standard rate, Westar proposed to offer two new rate options: a rate with an increased fixed charge and a lower volumetric charge ("Residential Stability Plan") and a three-part rate

with a demand charge ("Residential Demand Plan"). These two options would be the two rate options available to DG customers. Our work included bill impact analysis and simulations of the likely adoption and revenue impacts of the various rate options. The rate proposal was withdrawn in settlement but will be revisited through a generic docket.

#### IV. Budget Proposal

We expect to complete the requirements of Tasks 1 through 4 for a budget of \$100,000. This budget estimate does not include potential efforts that would be required beyond filing the testimony. Table 1 reports projected staff hours by task.

Table 1: Staff Hours and Proposed Budget for Liberty Analysis

Brattle Staff		Hourly Billing Rate	Task 1: Kick-off meeting	Task 2: Review of MCOSS and Assistance with Discovery Process	Task 3: Review and Assessment of Rate Designs Developed by Utilities	Task 4: Develop Prefiled Testimony	Total Hours	Total Dollars
Principal	S.Sergici	\$ 450	2	10	20	14	46	\$20,700
Principal	A. Ros	\$ 550	2	20	5	14	41	\$22,550
Associate	P.Donohoo-Vallett	\$ 365	2	36	10	40	88	\$32,120
RA	Various	\$ 260	0	56	30	9	95	\$24,570
<b>TOTAL LABOR</b>			<b>6</b>	<b>122</b>	<b>65</b>	<b>77</b>	<b>270</b>	
<b>TOTAL COST</b>			<b>\$ 2,730</b>	<b>\$ 43,200</b>	<b>\$ 23,200</b>	<b>\$ 30,810</b>		<b>\$ 99,940</b>

Thank you for giving us the opportunity to submit this proposal. If you have any questions, please feel free to contact me directly by phone at 617 234 5674 or at [sanem.sergici@brattle.com](mailto:sanem.sergici@brattle.com).

Sincerely,

Sanem Sergici, Ph.D.  
Principal

# State of New Hampshire

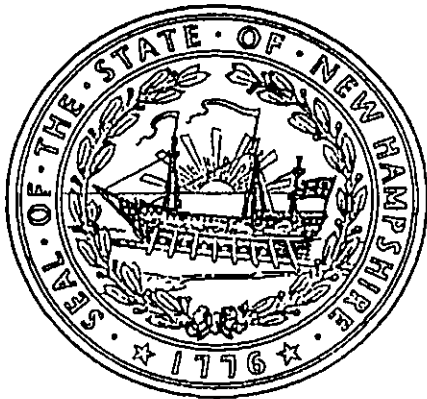
## Department of State

### CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that THE BRATTLE GROUP, INC. is a Massachusetts Profit Corporation registered to transact business in New Hampshire on May 25, 2016. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: 745213

Certificate Number: 0004549934



IN TESTIMONY WHEREOF,  
I hereto set my hand and cause to be affixed  
the Seal of the State of New Hampshire,  
this 11th day of July A.D. 2019.


A handwritten signature in cursive script, appearing to read "William M. Gardner".

William M. Gardner  
Secretary of State

**CERTIFICATE OF AUTHORITY**  
(Corporation with Notary Seal)

I, Barbara Levine, do hereby certify that:


1. I am a duly elected Secretary of The Brattle Group, Inc. (the "Corporation").
2. Beth DiVecchia is the duly elected Treasurer of the Corporation, authorized by the Corporation's by-laws to sign contracts made, accepted or endorsed by the Corporation.

  
\_\_\_\_\_  
Barbara Levine, Secretary

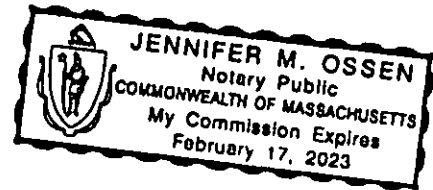
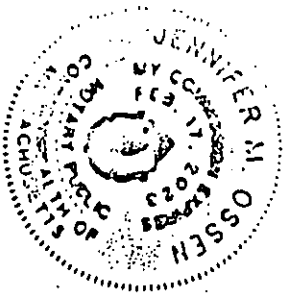
COMMONWEALTH OF MASSACHUSETTS  
County of Suffolk

The foregoing instrument was acknowledged before me this 9<sup>th</sup> day of  
August, 2019, by Barbara Levine.

(NOTARY SEAL)

  
\_\_\_\_\_  
Notary Public / Justice of the Peace

Commission Expires: February 17, 2023





BRATTGRO1

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
7/18/2019

**THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.**

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

<b>PRODUCER</b> Commercial Lines - (617) 330-1005 USI Insurance Services LLC 855 Boylston Street, 8th Floor Boston, MA 02116	<b>CONTACT NAME:</b> PHONE (A/C, No, Ext): E-MAIL ADDRESS: FAX (A/C, No): (866) 597-9827														
<b>INSURED</b> The Brattle Group Inc. One Beacon Street Suite 2600 Boston MA 02108	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">INSURER(S) AFFORDING COVERAGE</th> <th style="text-align: left;">NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: Continental Insurance Company</td> <td>35289</td> </tr> <tr> <td>INSURER B: Valley Forge Insurance Company</td> <td>20508</td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Continental Insurance Company	35289	INSURER B: Valley Forge Insurance Company	20508	INSURER C:		INSURER D:		INSURER E:		INSURER F:	
INSURER(S) AFFORDING COVERAGE	NAIC #														
INSURER A: Continental Insurance Company	35289														
INSURER B: Valley Forge Insurance Company	20508														
INSURER C:															
INSURER D:															
INSURER E:															
INSURER F:															

**COVERAGES** **CERTIFICATE NUMBER: 14432911** **REVISION NUMBER: See below**

**THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.**

INSR LTR	TYPE OF INSURANCE	ADDITIONAL INSURED	SUBRINDED	WYD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:				8076425180	03/27/19	03/27/20	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AOG \$ 2,000,000 \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY							COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$							EACH OCCURRENCE \$ AGGREGATE \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				6076467476	03/27/19	03/27/20	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER
B	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) if yes, describe under DESCRIPTION OF OPERATIONS below			N/A	6076467462	03/27/19	03/27/20	E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)**

Certificate holder is named as additional insured as it relates to general liability in accordance with the terms and conditions of the policy.

<b>CERTIFICATE HOLDER</b> State of New Hampshire Public Utilities Commission 21 South Fruit St., Ste 10 Concord, NH 03301	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE <div style="text-align: center; font-size: 2em; font-family: cursive;">Todd</div>
---	---

The ACORD name and logo are registered marks of ACORD © 1988-2015 ACORD CORPORATION. All rights reserved.