THE STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

DG 18-____

NORTHERN UTILITIES, INC.

DIRECT TESTIMONY OF

CHRISTOPHER J. LEBLANC AND KEVIN E. SPRAGUE

EXHIBIT CLKS-1

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I. INTRODUCTION

Q. Mr. LeBlanc, please state your names and business addresses.

A. My name is Christopher J. LeBlanc and my business address is 325 West Road, Portsmouth, New Hampshire.

Q. Mr. LeBlanc, for whom do you work and in what capacity?

A. I am Vice President of Gas Operations for Unitil Service Corp., which is a subsidiary of Unitil Corporation ("Unitil") that provides managerial, financial, regulatory and engineering services to Unitil's principal utility subsidiaries, including Northern Utilities, Inc. d/b/a Unitil ("Northern" or the "Company"). In this capacity I am responsible for managing all gas operations for Northern and Unitil's other subsidiaries, including the safe, reliable, and efficient production, transportation and delivery of natural gas service to customers.

Q. Mr. LeBlanc, please summarize your professional and educational background.

A. I have more than 20 years of experience in the utility industry and an extensive background in the operation, maintenance and construction of natural gas distribution systems. I have been Operator Qualified in 84 covered tasks and have had formal industry specific training at the Gas Technology Institute in Gas

Distribution Operations, Transmission Operations, Pipeline Design and Construction Practices and Regulator Station Design.

I joined Unitil in 2000 as a Field Technician and since then have progressed through several positions of increasing responsibility including Project Leader in 2002, Manager, Gas Operations in 2003, and Director, Gas Operations in 2008. I was promoted to my current position of Vice President of Gas Operations in January 2017. Prior to joining Unitil, I was employed for nine years at R.H. White Construction Co., Inc., where I was responsible for leading and directing field crews in construction and installation of underground utility infrastructure.

I hold a Bachelor of Arts degree in Business Administration from Assumption College and a Master's degree in Business Administration from the same institution. Additionally, I have completed civil engineering course work at the University of Massachusetts, Lowell.

Q. Have you previously testified before the Commission or other regulatory agencies?

A. Yes, I have testified before the Commission on numerous issues related to gas safety and operations, including the replacement of cast iron and other leak-prone infrastructure, and have provided testimony on operational issues as needed during the Company's base rate and other regulatory proceedings. In addition to the New

Hampshire Commission, I have also testified before the Massachusetts Department of Public Utilities and the Maine Public Utilities Commission on issues related to gas safety and operations.

Q. Mr. Sprague, would you please state your name and business address?

A. My name is Kevin E. Sprague. My business address is 6 Liberty Lane West, Hampton, New Hampshire 03842.

Q. What is your position and what are your responsibilities?

A. I am Director of Engineering for Unitil Service Corp., which is a subsidiary of Unitil. In this capacity, I manage all of Northern's engineering functions, including electric engineering, gas engineering, computer-aided design and drafting, Geographic Information Systems (GIS), and management of utility-owned land and property.

Q. Please describe your business and educational background.

A. I have been employed by Unitil Service Corp. for over 20 years. I was originally hired as an Associate Engineer in the Distribution Engineering group. I have held the positions of Engineer, Distribution Engineer and Manager of Distribution Engineering. I accepted the Director of Engineering position in November of 2007. I hold a Bachelor of Science in Electric Power Engineering from Rensselaer

Polytechnic Institute and a Master of Business Administration from the University of New Hampshire.

Q. Do you have any licenses that qualify you to speak to issues related to engineering?

A. Yes. I am a registered Professional Engineer in the State of New Hampshire and the Commonwealth of Massachusetts.

Q. Have you previously testified before the Commission, or other regulatory agencies?

A. Yes, I have testified on previous occasions before the Commission, the Maine Public Utilities Commission and the Massachusetts Department of Public Utilities. I testified in Unitil Energy Systems' Least Cost Integrated Resource Plan proceeding in DE 16-463, UES Distribution Base Rate Case proceeding in DE 16-384, as well as participating in many of the technical sessions related to the Grid Modernization proceeding, IR 15-296, and the most recent amendment to the Puc 300 Rules, DRM-13-090. Most recently, I testified in Northern's Distribution Rate Case, DG 17-070.

Q. What is the purpose of your testimony and how is it organized?

A. The purpose of the testimony is to explain the design and construction activities associated with the Epping expansion. Section II of this testimony provides a

description of Northern's distribution system in New Hampshire. Section III describes the implementation plan for the Epping expansion. Section IV describes how the cost estimates were prepared for the project. Section V provides a description of the construction associated with the Epping expansion. Finally, Section VI provides other considerations with respect to the project.

II. DESCRIPTION OF THE GAS DISTRIBUTION SYSTEM

Q. Would you please provide an overview of the Company's gas distribution system in New Hampshire?

A. The Company's distribution system consists of a network of just over 530 miles of natural gas mains and approximately 23,000 gas services that provide service to the following communities in New Hampshire: Salem, Plaistow, Atkinson, East Kingston, Kensington, Hampton Falls, Seabrook, Hampton, North Hampton, Exeter, Brentwood, Stratham, Greenland, Portsmouth, Newington, Dover, Madbury, Durham, Somersworth, Rochester, and Rollinsford.

The gas distribution main network is subdivided into 46 separate distribution systems that operate at a variety of Maximum Allowable Operating Pressures ("MAOPs") that range from the low pressure (MAOP approximately 0.5 psig) system in Dover to the remaining systems operating at a variety of intermediate and high pressure MAOPs that range from 30 to 397 psig that provide service

throughout the communities served by Northern. The majority of these systems are supplied from the Granite State Gas Transmission ("GSGT") interstate natural gas transmission pipeline system.

Q. Please describe the distribution system that will serve Epping?

A. The Company plans to serve Epping off of the existing Exeter-Brentwood system (System 61) which is served from the GSGT transmission line by the Epping Road station. The main for the Exeter-Brentwood system leaves the station and heads westerly along Route 27 to Pine Road and then southerly on Pine Road (which is approximately one mile away from the Epping town line). There is just shy of 4.5 miles of gas mains currently installed in this system, most of which were installed in the early 2014. The system consists of predominantly 8" high density polyethylene ("HDPE") pipe and operates at an MAOP of 99 psig.

Q. Can you describe the areas of Epping that have been identified to be served by the proposed expansion?

A. There are two targeted areas that have been identified within the Town of Epping. The first area is identified as "Zone 1" and is the area along Route 27 from Pine Road to Route 125, including the area along Route 125 from Route 27 to Fresh River Road. The second area, identified as "Zone 2," is the area along Route 125 from Fresh River Road south to the Brentwood town line. A map showing these areas is provided as Exhibit CCDC-3.

Q. Does the Epping Road regulator station have capacity for expansion?

A. Yes. Engineering network analysis has been completed to size the new mains and review the capacity of the Epping Road regulator station. Engineering analysis has identified that the Epping Road regulator station has more than sufficient capacity to serve the proposed expansion into Epping. In addition, the Company's network will have sufficient capacity to serve additional customers should the Company identify additional economic opportunities for franchise expansion beyond Epping.

III. IMPLEMENTATION OF THE EPPING EXPANSION

Q. Please describe the route that Northern has chosen for this project?

A. As noted above, Northern plans to extend its existing System 61 Exeter-Brentwood that has an MAOP of 99 psig. Northern will extend the 8" HDPE Exeter-Brentwood main westerly along Route 27 for about a mile through Brentwood to the Epping town line. The Company plans to cross into Epping and install about 3.5 miles of main: (1) westerly along Route 27 to the Rail Trail; (2) westerly along the Rail Trail to Route 125; and (3) north along Route 125 to the intersection with Route 27 and south along Route 125 crossing under Route 101 to serve customers on the south side of Route 101.

Q. Was this the only route that was evaluated?

A. No. The Company also considered extending gas mains along Route 27 all of the way to Route 125. The Company believes that the proposed path along the Rail Trail will be a more cost effective route. Among other things, construction along the Rail Trail avoids horizontal directional drills ("HDDs") that would be required along Route 27.

Q. Does the Company require any special approvals to use the Rail Trail?

A. Yes. The Company is currently working with the New Hampshire Department of Transportation and the New Hampshire Department of Natural and Cultural Resources (formerly New Hampshire Department of Resources and Economic Development) for approval to install gas mains within the rail trail. If this route is not successful, the Company will install the gas mains along Route 27 all of the way to Route 125.

Q. How will the actual gas main construction build-out be implemented in Epping?

A. The Company's engineering group has developed a comprehensive design for the implementation of the Epping expansion. The design includes the installation of primary feeds (which will transport the majority of the gas) and secondary feeds (which will supply gas to each of the side streets in the area). The engineering plan anticipates a complete build-out in each proposed phase of the project.

However, the actual construction will require flexibility to coincide with customer demand and municipal projects along the route.

Q. How will the actual gas service construction build-out be implemented?

A. Gas services will only be installed after the customer has contracted for service with the Company. The Company requires the customer to sign a contract, which requires the customer to take service within an agreed upon period after the contract has been signed.

Q. Will the Company be installing service stubs?

A. No. A gas service, including the service line and tapping tee, will only be installed after a customer has contracted for service.

Q. Are there any system reinforcements required at this time?

A. No. At this time it is anticipated that the expansion can occur without the need for other reinforcements.

Q. What timeline does the Company plan for construction of the Epping expansion?

A. The Company is currently in the design phase of the project. The Company plans to complete construction of Zone 1 in 2019 and Zone 2 in 2020.

IV. ESTIMATED COST FOR THE EPPING EXPANSION

Q. What is the estimated cost for the main installation for the Epping expansion?

A. Detailed cost estimates for the two zones of gas main construction are provided as CONFIDENTIAL Exhibit CLKS-2. The estimated total incremental project cost ("IPC")[1] of the Epping expansion is $2,736,300.

Q. What is proposed scope of work for the main installation?

A. As discussed above, Northern plans to extend its existing main for about a mile through Brentwood, plus an additional 3.5 miles through Epping. The proposed main installations by pipe size and zone are shown in Table 1.

[1] IPC refers to base cost plus direct overheads and is the cost used for the Company's internal rate of return calculations. The IPC does not include general construction overheads. All cost estimates referenced in this testimony were performed on an IPC basis.

Table 1

	Epping Expansion Scope of Main Work					
	Gas Main Diameter					
	2"		4"		8"	
	Lf	mi	Lf	mi	Lf	mi
Zone 1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Zone 2	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]	25,333	4.56

Q. How were the cost estimates for the gas mains developed?

A. The Company's engineering group designed a comprehensive and detailed installation program, which corresponds to the zones in Epping. From these design packages a detailed project scope was developed that quantified the work to be performed. Main footages by size and material, number of tie-ins and pavement restoration quantities were identified. Next, unit costs were derived from material and contract prices, coupled with historical data on replacement projects. The unit costs were then applied to the scope of work to develop detailed cost estimates for both zones of the project. Northern estimates that the total cost for main installation will be $2,034,555.

Q. Please provide the assumptions used in preparing these cost estimates.

A. The Company has field experience associated with the recent mains extension it completed along Route 27. This field experience was used to develop the

assumptions for the Epping expansion. The assumptions are included in CONFIDENTIAL Exhibit CLKS-2.

Q. How were the cost estimates for services developed?

A. Cost estimates for services were developed for a typical generic service installation as expected for this project. Separate estimates were performed for residential services ($[redacted] per service), G40/G41 services ($[redacted] per service) and G42 services ($[redacted] per service).

Q. What is the total estimated cost for service installations associated with the Epping expansion?

A. The total estimated cost for service installations is $751,744. Services will only be installed after the customer has contracted for new service. Therefore, the total cost for service installations will depend on actual conversion rates. This analysis is provided in the joint testimony of Ms. Carroll and Mr. Chong.

Q. Is the Company guaranteeing that construction costs will match the Company's estimates?

A. No. The Company has prepared reasonable cost estimates based on the information reasonably known to it. The actual construction costs will be higher

or lower than the Company's estimates based on the actual field conditions encountered during construction.

V. CONSTRUCTION OF THE EPPING PROJECT

Q. What construction technique will be utilizeded for the pipe installation?

A. Since the Epping expansion is a system expansion initiative we will utilize traditional open cut construction for the majority of the construction.

Q. Will HDD be utilized?

A. Yes. There will be certain areas where we expect an HDD will be required. Detailed engineering of these HDDs is ongoing.

Q. Will the Company be utilzing contract resources to complete this work?

A. Yes. The Company typically utilizes contractors for large projects of new or replaced mains and services. The Company has an existing contract with NEUCO and we anticipate using this established contractor to perform this work.

Q. Are there contractor resource concerns with the planned Epping expansion?

A. No. Utilizing our existing NEUCO contract and our current complement of NEUCO crews it is anticipated that this work can be integrated into our work

plans. In addition, the Epping program is scalable to meet rising or falling workloads.

Q. How will the Company monitor the quality of the work performed?

A. The Company has implemented a robust quality assurance and quality control program ("QA/QC"), which includes construction inspectors that must perform daily crew inspections for all construction projects. In addition, Unitil's Manager, Gas Compliance oversees a quality audit program that includes comprehensive field audits of all construction activities. All identified deficiencies are recorded and must be reported to Unitil's local Gas Operations Manager, Unitil's Director, Gas Operations, and various NEUCO personnel, including the company president. Corrective action is implemented immediately and recorded.

Q. How will the Company monitor performance?

A. As with all capital construction, the Epping expansion project will be part of the Company's annual Capital Budgeting Process, where each project must be fully scoped, estimated and justified. An approved capital budget project does not authorize or approve spending; each project must be further authorized before any spending can occur. A construction authorization must be prepared, submitted and approved before the commencement of work. Each project has an assigned supervisor who is directly responsible for managing the project and held directly

accountable for controlling the scope and cost of the project. These established controls are the foundation for monitoring the performance for capital projects.

VI. OTHER CONSIDERATIONS

Q. Are there any other approvals that you will require from the Commission?

A. Yes. The identified route will cross the Piscassic River, which is listed on the New Hampshire Department of Environmental Services Official List of Public Waters. Northern will file a petition with the Commission Pursuant to RSA 371:17 for a license to construct and maintain a natural gas pipeline under and across the public waters of the Piscassic River in Epping. Northern is currently completing the engineering diagrams showing construction details and plans to submit the petition promptly upon completion of all necessary work.

Q. Does this conclude your testimony?

A. Yes, it does.