NORTHERN UTILITIES, INC.

DIRECT TESTIMONY OF

RICK AHLIN

New Hampshire Public Utilities Commission

Docket No. DG 15–121

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Rick Ahlin. My business address is 325 West Road, Portsmouth, New Hampshire.

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

A. I am the System Operations Supervisor for the New Hampshire Division of Northern Utilities, Inc. ("Northern" or the "Company"). My primary responsibilities are the supervision of the operation and maintenance of Northern's gas pressure regulating facilities in New Hampshire.

Q. **Please describe your professional background and qualifications.**

A. I possess more than 22 years of experience in the natural gas industry, focused primarily on distribution and pressure control. I joined the Company in 1992 as Streetman Apprentice. Since then, I have been promoted through jobs of increasing responsibility and was most recently promoted to my current position in 2008. I have attended numerous educational programs pertinent to pressure regulation, including the Emerson Controls Regulator Maintenance and Troubleshooting Courses, the Gas Technology Institute's Regulator Station Design Course, the Northeast Gas Association's Operations Course, and the Appalachian Gas Measurement Short Course. I also serve as member of the General Committee for the Appalachian Gas Measurement Short Course.

I am currently Operator Qualified in 49 Covered Tasks, including those that relate directly to pressure regulation and the operation and maintenance of regulator facilities.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the events that occurred at the New Hampshire Avenue regulator station during an inspection performed by the New Hampshire Commission's Safety Staff on June 25, 2014. I will also provide background on the procedures typically used by the Company to adjust the set points for monitor and worker regulators for the Company's regulator stations.

II. JUNE 25, 2014 INSPECTION OF NEW HAMPSHIRE AVENUE REGULATOR STATION

Q. Were you present during the New Hampshire Commission Staff's inspection of the New Hampshire Avenue regulator station on June 25, 2014?

A. Yes, I was. Commission Staff was performing an inspection of the Company on that day. Dave Burnell of the Commission's Staff was performing the inspection and he was accompanied by Glynn Blanton, who was representing the Pipeline and Hazardous Materials Safety Administration ("PHMSA"). It was my understanding from Mr. Burnell that Mr. Blanton was present to perform an evaluation of Mr. Burnell's performance with regard to the inspection.

The inspection lasted most of the day on June 25. During the morning, Mr. Burnell performed document review at the Company's engineering and operations facility on West Road in Portsmouth. Before the lunch break, Mr. Burnell explained to me that he wanted to perform an inspection of the New Hampshire Avenue regulator station after lunch. We made arrangements to meet there at approximately 1:00 PM.

Q. How did the inspection of the regulator station start?

A. The inspection started out with me providing a general overview of the regulator station and its various components. Among other things, I pointed out where gas enters the station from the Granite State Gas Pipeline system, the two regulator runs in the regulator station, the worker and monitor regulators in each run, and I explained the inlet pressure and outlet pressure of the station. The station is described in greater detail in the Direct Testimony of Chris LeBlanc and Jon Pfister.

Q. What happened after you provided an overview of the station?

A. As confirmed in the Staff's discovery responses, Mr. Burnell told me that he wanted to test the overpressure protection for the station and he directed the technician on site to fail the worker regulator on Run A.

The Unitil technician increased the set point on the worker regulator in Run A of the station to simulate its failure as directed. Before that adjustment was made, the set point of the worker in Run A was set at 52 psig, and the digital pressure gauge at the outlet of the station read 52 psig. As the technician increased the set point pressure on the Run A

worker regulator, I explained to Mr. Burnell that the pressure reading on the digital gauge would rise until the monitor regulator assumed control of pressure at the station. We watched the pressure increase on the gauge, and it exceeded the MAOP of 56 psig. Mr. Burnell saw this, and he stated that MAOP had been exceeded and he halted the first test. The technician then decreased the set point on the worker regulator until the pressure gauge at the outlet of the regulator station was brought back to 52 psig.

Q. Were you concerned that the distribution system was in an unsafe condition when the pressure on the digital gauge rose above MAOP during the simulation?

A. No. I understood that this buildup pressure was normal and I'm also aware that the steel piping in the regulator station is designed to handle pressures that far exceed the 56 psig MAOP rating of the distribution system.

Q. What happened after the station was brought back to 52 psig.?

A. I explained to Mr. Burnell that the monitor regulator is set at 55 psig, but there is a buildup pressure that occurs as an operational function when the monitor regulator takes control over system pressure and that buildup pressure was reflected in the pressure gauge at the regulator station. I explained that the monitor regulator would have eventually taken control over system pressure and brought the pressure back down to the monitor regulator's set point of 55 psig.

Q. Did Mr. Burnell seem satisfied with that explanation?

A. Yes, he did.

Q. What happened after you explained the buildup pressure to Mr. Burnell?

A. Mr. Burnell instructed us to perform the same simulated failure of the worker regulator, but this time on Run B.

Q. Prior to the start of the simulation on Run B, did Mr. Burnell express any concern about performing a simulation similar to that which was performed on Run A?

A. No, he did not.

Q. Please describe the simulation on Run B.

A. We moved over to Run B. Run B is configured similar to Run A with both a worker and monitor regulator. The Run B worker regulator is set at 50 psig and the monitor is set at 55 psig. Because Run A was controlling system pressure, Run B was in standby and there was no gas flowing through Run B. As with Run A, I directed the technician to increase the set point on the Run B worker regulator. The reading on the pressure gauge at the outlet of the station increased to around 57 psig. After a minute or so, the reading on the pressure gauge began to decrease as the monitor regulator assumed control from the worker regulator and the buildup pressure was relieved. The reading on the pressure gauge continued to decrease until it settled at 55 psig, which is the set point of the monitor regulator.

Q. You testified previously that a representative from PHMSA was present during Mr. Burnell's inspection of the regulator station. Did the PHMSA representative raise

any concerns during these simulations with regard to the pressure gauge readings at the regulator station?

A. No, the PHMSA representative did not.

Q. Although you observed the pressure gauge at the regulator station rise to approximately 57 psig during the simulations on Run B, are you aware of what the pressure was on other parts of the distribution system while the simulations were being performed?

A. Yes. The Portsmouth IP distribution system has pressure sensing devices that will trigger a "high" pressure alarm condition at Gas Control if pressure on the distribution system exceeds 55 psig. A "high-high" pressure alarm condition is triggered if system pressure exceeds 56 psig. I contacted the gas controller on duty in the Control Room after the simulations and was told that no alarms were triggered during the simulations on the Portsmouth IP system.

There two points on the Portsmouth IP system that are pressure monitored: the outlet of the Barberry Lane regulator station and at the inlet to the Marcy Street regulator station. Attachments A and B to my testimony show the pressures recorded on June 25, 2014 at these monitor points at the Barberry Lane and Marcy Street stations, respectively. The pressures recorded during that afternoon at the outlet of the Barberry Lane station fluctuated around 52-53 psig while at the inlet to Marcy Street station the pressure was around 51-53 psig. The recorded pressures were at all times well below the 56 psig MAOP for the Portsmouth IP system.

Q. How is it possible that the pressure gauge at the New Hampshire Avenue Station registered pressure that was above 56 psig during the simulations you have described, while the pressure records in Attachments A and B are in the 51-53 psig range?

A. The Portsmouth IP system was supplying gas to our customers who are served by that system, as well as customers on the low pressure system that are fed by the Portsmouth IP system. Each of those loads accounts for a pressure drop on the Portsmouth IP system, and there are also pressure drops due to friction as the gas moves through the distribution system. So, while the digital pressure gauge in the Portsmouth Avenue regulator station briefly read in excess of 56 psig during the two simulations, due to the normal operation of the system the downstream pressures recorded at the Barberry Lane and Marcy Street stations were well below 56 psig.

III. REGULATOR STATION MAINTENANCE AND ADJUSTMENT OF REGULATOR SET POINTS.

Q. In part II of your testimony, you described simulated failures of the worker regulators on Run A and Run B at the New Hampshire Avenue Station. Is the simulated failure of the worker regulator a procedure that Unitil uses when performing maintenance or testing of its pressure regulating stations?

A. No, it is not. The simulated failure is not how we maintain or test overpressure protection of our pressure regulating stations. The Company has an Operations and Maintenance Procedure 2-L, which it follows when performing periodic maintenance and testing of

pressure regulating stations. A copy of this procedure is Attachment J to the testimony of Messrs. LeBlanc and Pfister.

Q. How does the Company ensure that regulators are adjusted to the proper set point?

A. The procedure we use to set regulator set points in a worker-monitor configuration such as at the New Hampshire Avenue Station is as follows:

(1) The run is removed from service by closing both the inlet and outlet valves for the run; the run is then blown down to 0 psig.

(2) The pilot adjustment screw on the worker regulator is backed off completely while the monitor regulator pilot adjustment screw is turned in completely to allow the flow of gas to pass through the monitor regulator but not the worker.

(3) The inlet valve to the run is then opened to allow gas to flow to the worker regulator to be able to establish a bubble tight lock up. Bubble tight lock up is the term used to describe the regulator's ability to stop the flow of gas completely.

(4) The monitor regulator pilot adjustment screw is then turned out completely. The worker regulator pilot adjustment screw is then turned in allowing the gas to be evacuated between the worker and monitor regulators and allows the monitor regulator to be able to be checked for a bubble tight lockup.

(5) If no gas is passing through the monitor, then the outlet valve for the run is opened.

(6) The pilot adjustment screw on the monitor regulator is then turned in until the desired set point for the monitor regulator is reached.

(7) The pilot adjustment screw on the worker regulator is then turned out until the desired set point for the worker regulator is reached.

By following this procedure, the Company is able to confirm both the proper operation and set points for the monitor and worker regulators without exceeding MAOP.

Q. Does this conclude your testimony?

A. Yes, it does.