

STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

DG 08-048

In the Matter of:
Unitil Corporation and Northern Utilities, Inc.
Joint Petition For Approval of Stock Acquisition

Direct Testimony

of

Randall S. Knepper
Director – Safety Division

July 22, 2008

1 **Q. Please state your full name.**

2 A. Randall S. Knepper.

3 **Q. By whom are you employed and what is your business address?**

4 A. I am employed by the New Hampshire Public Utilities Commission as Director of the
5 Safety Division. My business address is 21 South Fruit Street, Suite 10, Concord, NH
6 03301-2429.

7 **Q. Please summarize your education and professional work experience.**

8 A. I have been the Director of Safety for the New Hampshire Public Utilities Commission
9 since December 2004. In addition, I serve on the New Hampshire State Energy Facility
10 Site Evaluation Committee. I serve on numerous national pipeline safety task groups,
11 including the National Association of Pipeline Safety Representatives: Data Integrity Task
12 Group, Service Line Inspection Group, and Common Ground Alliance Research and
13 Development Committee, as well as the National Regulatory Association of
14 Commissioners: Pipeline Safety Subcommittee. I have completed numerous industry
15 training courses at the Transportation Safety Institute, including Safety Evaluation of Gas
16 Pipeline Systems, LNG Safety Technology and Inspections, Joining of Pipeline Materials,
17 Gas Pressure Regulation and Over Pressure Protection, Pipeline Failure Investigation
18 Techniques, Operator Qualifications, and Safety Evaluations of Gas Pipeline Integrity
19 Management Programs. I received a Bachelor of Science in Mechanical Engineering from
20 the University of Rochester and a Master of Science in Civil Engineering from the
21 University of Massachusetts. I am a licensed Professional Engineer in the State of New
22 Hampshire, No. 9272. Prior to that I was an environmental consultant and Business
23 Development Manager at The Smart Associates, Environmental Consultants, Inc. of

1 Concord. Prior experience includes a number of business and operational roles at
2 EnergyNorth Natural Gas, Inc. in Manchester, including Key Account Executive,
3 Commercial & Industrial Sales Manager, Sales Engineer, Senior Engineer, Staff Engineer
4 and CAD Supervisor. For many of those years, I designed distribution systems,
5 recommended capital improvement projects and system expansions, wrote operations and
6 maintenance procedures, oversaw construction projects and maintained code compliance.
7 I also worked at Westinghouse Electric designing customized high voltage transmission
8 equipment as a project engineer. My professional work experience spans 23 years.

9 **Q. What is the Safety Division's interest in this docket?**

10 **A.** It is the Safety Division's responsibility to ensure that safe practices, in particular those
11 practices which involve natural gas pipeline safety, are strictly observed by the gas
12 pipeline system operator regardless of its ownership. In addition, the Safety Division
13 oversees the enforcement of New Hampshire's system for the prevention of damage to any
14 regulated utility's underground facilities, including natural gas pipelines. The Safety
15 Division is interested in ensuring that no degradation of existing levels of public safety
16 results from any corporate change and to advise the Commission of matters relating to
17 these subjects.

18 **Q. What is the purpose of your testimony in this proceeding?**

19 **A.** The purpose of this testimony is to point out that a transfer of ownership to Unitil
20 Corporation (Unitil) of the facilities currently owned by Northern Utilities, Inc. (Northern)
21 and Granite State Gas Transmission, Inc. (Granite) may lead to a reduction in safety in
22 those areas currently served by Northern.

1 **Q. Does the Safety Division have any interest in the outcome of Unitil's petition to**
2 **acquire ownership of Northern's gas distribution systems?**

3 **A.** Yes. The Division's primary interest is ensuring that the current levels of safety are either
4 maintained or improved. Our responsibilities require us to determine and enforce
5 appropriate and reasonable safety levels that benefit a large segment of the New
6 Hampshire population. These benefits include minimizing safety hazards for members of
7 the general public who are nearby or within the vicinity of gas facilities regardless of
8 whether they are gas customers or not, safety of employees, safety for first responders and
9 public officials and obviously meeting safety obligations for new and existing gas
10 customers. By nature, we are continuously cautious and concerned about any possible
11 degradation of safety levels or reliability levels provided. Our level of comfort is achieved
12 by understanding, scrutinizing, vigilantly monitoring, and continually inspecting the
13 respective gas operator. We routinely review design standards, construction practices,
14 testing protocols, corrosion control practices, operational and maintenance practices,
15 system changes, change in personnel, personnel experience levels and qualifications. We
16 also consider familiarity and relationships with local communities, changes in support
17 functions such as engineering and emergency response levels, amounts of capital
18 investment in infrastructure and other factors that are either directly or indirectly related to
19 public safety. These are all primary factors that contribute to and result in overall safety
20 compliance.

21 **Q. What safety related performances, policies, issues or other matter are referred to in**
22 **the petition?**

1 A. The petition does not provide extensive language concerning safety. Given the size of the
2 acquisition and many of the extensive pending issues associated with an acquisition, there
3 are many areas which Unitil has to focus upon. Specifically I could only find reference to
4 Mr. Meissner's testimony on pages 20 and 21 of Exhibit Unitil-TPM-1 and some general
5 statements indicating that they will meets all safety requirements. Mr. Meissner's
6 testimony does mention Unitil's intention for strong safety and operational practices.
7 Since my focus is on safety, I find it extremely important never to assume that transition of
8 one ownership to another will automatically be accompanied by the same level of safety
9 experienced previously.

10 **Q. What are the areas that the Safety Division is focusing on or have the most concerns**
11 **with? Are there any areas that cause apprehension? If so, specifically what are**
12 **they?**

13 A. This testimony will focus on the following concerns:

- 14 • General Scope and Size of Integration
- 15 • Bare Steel Replacement Program
- 16 • Maintaining or Improving Emergency Response Times
- 17 • Technical Management of Operating Centers
- 18 • Coordination of Service Work
- 19 • Exploring the traditional functions and integral needs that exist between Granite and
20 Northern and examining whether a better configuration exists that would enhance
21 safety.

22 **Q. What is the concern as it relates to general scope and integration?**

1 **A.** Acquiring and absorbing companies is a difficult and complex undertaking and
2 unanticipated problems will occur. It is not just a transferring of data, assets and people, it
3 is a transferring of decades of employee knowledge, experience, decision making, policies
4 and practices in a relatively short time frame. Unutil's schedule for acquisition is very
5 aggressive for financial reasons that benefit both the buyer and seller. Unutil's Business
6 Integration Plan has described over 56 Functional Task Teams overseeing the migration of
7 700 business processes, and greater than 7,000 subtasks to be transferred. As with many
8 companies involved in acquisitions, the transition is described as "smooth" or "seamless."
9 Transitions are typically abrupt and anything but smooth. Phrases such as "adoption of
10 best practices" does not give any comfort to the Safety Division.

11 **Q. Please elaborate.**

12 **A.** Three examples come to mind.

13 Example 1: One would think that a customer information system conversion would have
14 little to do with safety of distribution systems. We find the opposite to be true. Small
15 innocuous things, seemingly benign, can and have manifested themselves into factors that
16 affect safety compliance. Unfortunately these oversights often don't become apparent as
17 errors until well after the date of closing. Staff has found instances where critical safety-
18 related information was lost due to a failure by the acquiring entity to completely and
19 accurately transfer essential information contained in a field on customer screens. For
20 example, a line reading "dn r twp BWD # 492, 0105" may mean "down stairs bottom
21 right, penetrates cellar wall, beware of dog" perhaps an employees name or employee
22 number, and date of last visit," but this information is lost or misinterpreted. In this
23 example, inside gas meters are served by inside services which in turn require routine

1 atmospheric corrosion inspections as well as periodic leak survey inspections. These are
2 all done on specific cycles and routes. Inspections can be accomplished by meter
3 technicians, corrosion technicians, by service technicians, outside contractors or other
4 company personnel. Inspection cycles may or may not coincide with other meter reading
5 routes, billing cycles, routes for collections etc. Operational functions and customer
6 information systems often can be interrelated but for conversion purposes are segmented
7 for task accomplishment. Data integrity gets compromised and the result is that pipeline
8 service inspections don't get completed. A major contributing cause was how the
9 "conversion of systems was done" following the merger. Inspections were being
10 compromised and not being performed, which in turn compromised customer and public
11 safety. The result was a reduplication of past work and concentrated efforts to catch up to a
12 past level of safety compliance.

13 Example 2: The Commission's Gas & Water Division uncovered a technical and
14 operational conversion that affected EnergyNorth revenues following its acquisition by
15 KeySpan. A change in the unit of measurement from a "wet Btu" to a "dry Btu" resulted
16 in millions of dollars of overcharges to customers, which was not discovered until years
17 later and required an extensive investigation.

18 Example 3: The recent Fairpoint/Verizon merger has been accompanied by delays in
19 system conversions and troubleshooting and necessitated a third party overseeing the
20 process to minimize customer impact. Customer impacts are felt that would not have
21 existed absent the merger.

22 The point is transitions often have unintended consequences that affect operations despite
23 the company's best intentions.

1 **Q. Do you believe Unitil has prepared plans to minimize problems that may arise?**

2 **A.** Yes. I believe it is Unitil's firm belief and intention that they can minimize transition
3 problems. They have openly shared and been very transparent as to how this will get
4 accomplished. It is a daunting task for a company of this size. It is a very aggressive plan
5 with tight time frames. Unitil's plan appears to minimize but cannot guarantee that no
6 disruption in business processes will occur.

7 **Q. Please summarize Northern's capital investment regarding its Bare Steel**
8 **Replacement Program.**

9 **A.** Northern's Bare Steel Replacement Program can be summarized by the attached graphs in
10 RSK Attachment 1 and RSK Attachment 2. RSK Attachment 1 depicts a 17 year history
11 from 1990 to 2007 that indicates the end-of-the-year amount of Bare Steel mains
12 remaining within Northern's New Hampshire distribution plant. As can be seen from the
13 graph, the amount of Bare Steel Mains that has been replaced with more modern materials
14 (typically consisting of polyethylene piping and fittings) or retired or abandoned has
15 decreased from approximately 127 miles remaining in 1990 to a little less than 40 miles in
16 2007. This reinvestment in capital infrastructure results in a safer and more reliable
17 system. RSK Attachment 2 reveals a corresponding 17 year overall reduction in overall
18 annual leaks requiring repair and in particular a reduction in corrosion leak history from
19 1990 to 2007. It is quite evident that the continual replacement of older bare steel mains
20 has yielded an increased level of safety. The geologic conditions and locations of gas
21 pipelines within the seacoast service territory subject bare steel to detrimental
22 characteristics of extremely moist, coastal, corrosive environments of New Hampshire and
23 Maine and require appropriate reinvestments in existing infrastructure.

1 **Q. Are there any other benefits associated with the Bare Steel Replacement Program**
2 **beside safety and reliability?**

3 A. Yes, it reduces unaccounted for gas, which given the record high cost of natural gas can
4 result in substantial savings to customers. There are other peripheral benefits of replacing
5 bare steel mains as well. First, often times older and obsolete fittings that would not meet
6 current design and construction standards can be replaced or upgraded with newer
7 materials. Secondly, substandard compacted soils and fill materials that often surround
8 pipelines can be replaced with those better suited for protection and support. Often
9 shallow mains are discovered that can be replaced with ones that have more cover,
10 yielding a safer installation and less likelihood of third party damage. Lastly, asset records
11 can be improved by better recording of detailed documentation, such as depth
12 measurements, clearances from other utilities, taking GPS readings for exact location, and
13 integrating of data into GIS systems, all of which leads to better future capital planning
14 and more efficient maintenance and quicker emergency repairs.

15 **Q. Please comment on the 17 year historical average of bare steel replacement and the**
16 **commitments Unitil has made in continuing that trend.**

17 A. This was specifically asked in Staff Data Request 3-139 and unfortunately the response
18 was non-specific. It did not address the rate of replacement other than that Unitil has had
19 replacement programs similar to those of Northern. Nor was any commitment made. The
20 problem with looking at programs that rely primarily on leak history is that they are
21 reactive in nature. In addition, they are adjustable based upon budget constraints and
22 altered weighting factors, and we have experience in New Hampshire that replacements
23 are not made until the corrosion is often so severe that it would be mandated by Code

1 anyway. Northern is nearing the finish line of a systematic program removing some of the
2 last remaining segments of leak prone and worn pipe within its system and the Safety
3 Division recommends that this project be completed within a specified time frame and not
4 suffer any delays.

5 **Q. What is the concern as it relates to emergency response times?**

6 A. My concern with the emergency response times is that those customers in the Plaistow,
7 Salem, and Atkinson areas will see increases in delays to emergency leak response and
8 odor complaints. This area includes approximately 2,000 customers or 10% of Northern's
9 New Hampshire customers. Currently the customers in these towns are serviced by Bay
10 State's closer and more immediate local field office in Lawrence, Massachusetts which I
11 assume will no longer be available with personnel to be used for response. Since these
12 towns are not contiguous with the remaining seventeen communities situated on the
13 seacoast, travel times are anticipated be longer from Portsmouth resulting in delayed
14 response. Seconds and minutes make the difference between controlling a gas hazard and
15 a non-hazardous situation. This is one of the benefits that Bay State's closer operating
16 system provides. At best, there will be a loss in efficiency of operations and at worst
17 emergency response times will deteriorate.

18 **Q. What other peripheral factors need to be considered with not having the Lawrence**
19 **Division so close?**

20 A. Close proximity of a work center to the areas to be served allows more efficient
21 warehousing of parts for replacement items, and avoids the loss of familiarity with town
22 officials and knowledge of the immediate and local system, all of which are factors that
23 contribute to a reliable and safe system. Construction monitors that oversee outside work

1 crews will now have a more difficult time covering crews in Salem and Portsmouth
2 simultaneously. Unitil has maintained separate electric work centers for its capital area
3 and seacoast operations (reference page 15 of Exhibit Unitil-TPM-1 of the petition) and
4 has stated that local supervision and management at work centers is important. This area
5 comprising these three towns may prove problematic since it is may be not of enough scale
6 and activity to warrant a separate work center. Mr. Meisner in his testimony states there
7 will only be an operating work center located in Portsmouth with local management and
8 supervision.

9 **Q. Do you believe Unitil has the managerial and technical experience associated with**
10 **operating Granite?**

11 **A.** I do have some concerns. While Unitil has stated they will be bringing over some of the
12 field employees (6 employees of Granite), the supporting technical and engineering
13 expertise is certainly not coming with this acquisition. Unitil's primary gas expertise is
14 with Fitchburg Gas and Electric which acts as a distribution operator. Proper technical
15 expertise includes areas such as regulatory compliance including Integrity Management.

16 **Q. What is the basis of those concerns?**

17 **A.** While it is true that distribution pipelines and transmission pipelines both contain gas and
18 serve customers, there are particular nuances that require distinct skill sets more in line
19 with each classification. If you consider pipelines on a behavioral spectrum, transmission
20 lines operate at one end and distribution lines operate at the other end. There are occasions
21 where there is overlap but for the majority of situations they behave at their respective
22 ends. For instance, most distribution pipelines are plastic requiring a knowledge base
23 more centered on plastic materials and joining methods, whereas transmission pipelines

1 are entirely steel. Distribution lines often contain older materials such as cast iron, or
2 wrought iron. The transmission engineer requires a more in depth knowledge of high
3 strength steel materials, pipeline compression techniques, steel pipeline milling, extrusion
4 and manufacturing processes. Welding inspection processes are more intense and
5 inspection techniques are different for transmission lines. A transmission pipeline requires
6 an increased level of corrosion protection and coating knowledge, and transmission line
7 operators have departments dedicated to Integrity Management. Transmission lines
8 operate at high stress levels and SMYS levels that are nearly 2, 3, 4 and sometimes 500
9 times that of a typical distribution line. Transmission lines require virtually no knowledge
10 of technical distribution related areas of joining plastic materials, static electricity control
11 and placement of meters although this is important to the distribution engineer.

12 Transmission lines operate in typically narrower rights of way and at far higher pressures
13 in order to move large quantities of gas over longer distances and are built in a series type
14 layout. Distribution pipelines operate at or nearer customer level pressures, are built more
15 in loops and rarely require knowledge of compression techniques, sizing, associated noise
16 levels, and intelligent line inspection devices. Pipeline failure mechanisms differ in that
17 failures of transmission lines tend to be sudden bursts. Distribution lines often tend to be
18 older and failures are more from third party damage since they are in crowded public
19 rights of ways. Distribution companies need to focus on emergency response more
20 intensely and have closer relations with community officials since they are in closer
21 proximity to customers. If this is likened to transportation for motor vehicles, a local road
22 agent would not design a super highway structure and conversely the road agent may be
23 more versed in applying road salts and culvert repairs. Unitil must recognize that in the

1 electric industry transmission and distribution are given particular segmentation and
2 required support.

3 **Q. Do you think this can be overcome?**

4 **A.** With time, yes. Until indicates if they don't have the expertise they will hire or use
5 consultants. This is not to short change the importance of the 6 field workers coming with
6 the transition. Their attention to detail and maintenance of systems is equally important.
7 The combination of the two with proper managerial levels and support and proper
8 employee empowerments with inputs is what makes for a good operator.

9 **Q. Please characterize the relationship of Northern's distributions systems and Granite
10 transmission system from a jurisdictional, operational and dependency perspective.**

11 **A.** First I will give a historical perspective showing the pipeline has undergone many changes
12 through out its life. This is my understanding based on the documents provided during this
13 acquisition.

14 During the 1950's the Granite pipeline was built, extending approximately 40 miles from
15 the Tennessee Gas Pipeline metering point in Haverhill, MA to Dover, NH. The pipeline
16 operated at transmission line levels (presumably with pressures near 500 psig), crossed one
17 state line (Massachusetts) and was regulated entirely by the NH PUC for rates. There was
18 no safety jurisdiction or safety oversight established on either a state or federal level since
19 oversight programs started in 1971. Granite's pipeline had many of the same regulator
20 stations and metering points that exist today in New Hampshire. It operated as a large
21 trunk line.

22 In 1965 the Granite pipeline was extended by converting and leasing a 180 mile oil
23 pipeline running from Canada through Vermont and northern New Hampshire to Portland,

1 Maine. Also in 1965 during the same transaction Granite extended its pipeline 47 miles to
2 connect Portland, Maine and Dover, New Hampshire. It was at this time that a Federal
3 Power Commission (FERC's predecessor) certificate was applied for and based on a
4 determination of need, public interest, and crossing of international and multiple state
5 borders, a certificate was formally granted.

6 Between 1965 and 1985 lease agreements of 20 years and 10 years were renewed to keep
7 the natural gas pipeline operating instead of flowing oil. Granite's pipeline had the ability
8 to transfer gas from the Canadian border to Haverhill, Massachusetts, although the
9 majority of the flow went from south to north.

10 In 1971 the federal Office of Pipeline Safety was created and is now named the Pipeline
11 Hazardous Material Safety Administration (PHMSA), which has safety oversight of all
12 interstate transmission lines certificated by FERC. Similarly, the New Hampshire Public
13 Utilities Commission created a safety division that had oversight of all intrastate pipelines
14 including transmission and distribution.

15 In 1979 Northern became a wholly owned subsidiary of Bay State Gas. (BayState Gas
16 was previously formed in 1974 by merging Lawrence Gas, Brockton & Taunton Gas,
17 Springfield Gas Light and North Hampton Gas Light.)

18 Between 1998 -2001 the northernmost section of Granite was discontinued and PNGTS
19 built a larger gas pipeline that went from Canada to Westbrook, ME. It no longer went
20 through Vermont and the remaining gas pipeline was converted back to oil. The
21 Maritimes pipeline, built a year after the PNGTS pipeline, transported gas from Nova
22 Scotia to Westbrook and continued to Dracut, Massachusetts. The Maritimes pipeline

1 operates at higher pressures (soon to be 1600 psig) and has 4 times the flow capacity of
2 PNGTS and eight times the flow capacity of the remaining 87 mile Granite pipeline.

3 In 1998 Northern, Granite and BayState Gas were acquired by NIPSCO Industries, Inc.
4 (now NiSource, Inc.)

5 **Q. What are the salient points of this history and relationship?**

6 **A.** 1. Portions of Granite were not always under FERC jurisdiction.

7 2. Granite's pipeline has changed both in function and need which are two of the main
8 criteria used to determine a FERC certificate. The pipeline has been reduced by 2/3 of the
9 length that it originally was certificated for. Its operational pressures have not kept up
10 with those of nearby pipelines and operate at 1/3 of pressures of nearby Maritimes and
11 PNGTS. Granite operates at only 2/3 of the pressure of Tennessee Gas Pipeline.

12 3. Granite's pipeline is interwoven so tightly with Northern's distribution system that for
13 all practical purposes it acts as a trunk line.

14 4. The Maritimes pipeline and PNGTS pipeline interconnections with the regional New
15 England gas pipeline system diminish the interstate importance of Granite.

16 5. No New Hampshire interstate transmission operators other than Granite provide
17 regulation, overpressure protection and corrosion protection for downstream local
18 distribution companies. All others except Granite provide clear demarcation lines and
19 responsibilities as outlined in their tariffs.

20 **Q. Do you believe local jurisdiction of Granite's rates and safety-related matters is more**
21 **in the public interest than FERC authority and PHMSA authority? Why?**

22 **A.** Yes, I do. Since the downstream operator is so dependent upon the Granite pipeline, its
23 level of safety and reliability is inherently dependent upon Granite's. FERC and PHMSA

1 are two distinct agencies based out of Washington that do not have the close relationships
2 that exist within the departments of the State Commissions. Since the Commissions are
3 closer and more in tune with the consequences and repercussions of any approvals,
4 investments, policy changes, operations, reliability, etc., I firmly believe local jurisdiction
5 is in the public interest. Both Maine and New Hampshire have experienced safety related
6 problems over the last few years that were rooted in the relationship between Northern and
7 Granite. PHMSA has a single inspector to cover nearly eight states in the Northeast and
8 does not spend nearly as many inspection days on Granite as the Maine and New
9 Hampshire safety jurisdictions would.

10 **Q. Do you have any examples of this?**

11 **A.** RSK Attachments 3, 4, and 5 highlight safety areas of Granite that local jurisdiction would
12 improve. RSK Attachment 3 depicts a stack of large, recently cut logs dangerously close
13 to blow off valves near a gate station. This practice would not be allowed to exist with
14 local jurisdiction. RSK Attachment 4 shows a valve that has been painted shut, indicating
15 that the valve has not been operated on an annual basis to determine its condition. RSK
16 Attachment 5 shows inadequate materials used within a transfer (gate station).

17 **Q. Do you believe that is a subject area that is relevant to this petition?**

18 **A.** I believe that the Commission should consider the implications of Granite and Northern
19 and the resulting control by Unitil if the transaction is approved. Presently Unitil is
20 developing business practices, operations, corporate structures, and personnel choices to
21 mimic those in place of the existing configuration. It makes sense to examine the needs
22 and implications of those decisions as part of the potential acquisition.

1 **Q. Does the immediate docket and procedural schedule allow for the Commission to**
2 **determine if the public interest is better served by having Granite under State, rather**
3 **than Federal, jurisdiction?**

4 **A.** No. Further review and analysis is needed to make that determination and involves Maine
5 as well as New Hampshire.

6 **Q. How might the Commission condition approval of the acquisition to allow time to**
7 **determine the public interest and effect the necessary changes?**

8 **A.** Approval should require Granite to file for an exemption from FERC and PHMSA
9 regulation within one year, subject to a Maine and New Hampshire Public Utilities
10 Commission finding that State regulation is in the public interest. Such a condition would
11 allow for the appropriate analysis and review for a public interest determination and how
12 best to effect the change to ensure all parties are kept whole or benefit from the change in
13 regulatory authority.

14 **Q. How does your testimony relate to that submitted by Staff witness Robert Wyatt?**

15 **A.** My testimony is written with a particular focus in mind, safety and reliability. Each of
16 Staff is reviewing certain aspects and providing input to the Commission from his or her
17 own perspectives and contexts. I understand Mr. Wyatt's testimony regarding Granite is
18 referring to Granite "operations" in the context of Gas Control, Gas Dispatch and Supply
19 Planning functions, which is something I have not commented on.

20 **Q. Does this conclude your testimony?**

21 **A.** Yes.