BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

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Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Electric Service — Case 17-E-____

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Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service — Case 17-G-____

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DIRECT TESTIMONY OF THE GAS SAFETY PANEL

July 28, 2017

DIRECT TESTIMONY OF THE GAS SAFETY PANEL

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I. INTRODUCTION

Q. Please state the names of the members of the Gas Safety Panel ("Panel").

A. Our names are Lawrence R. Cambalik, Karl E. Reer and Lenore Clarke.

Q. Mr. Cambalik, please state your current employer and business address.

A. I am employed by Central Hudson Gas & Electric Corporation ("Central Hudson" or the "Company") and my business address is 284 South Avenue, Poughkeepsie, New York 12601.

Q. Mr. Cambalik, in what capacity are you employed by Central Hudson and what is your scope of responsibilities?

A. I am Manager of Gas and Mechanical Engineering. In that capacity, I am responsible for the supervision of professionals who provide engineering plans, designs, standards, and operational engineering support for Central Hudson's gas transmission and distribution system. In addition, my team is responsible for overseeing the Company's compliance with the relevant codes and standards associated with the operation and maintenance of the gas transmission and distribution system.

Q. Mr. Cambalik, what is your educational background and professional experience?

A. I graduated from State University of New York at Buffalo with a Bachelor of Engineering in Electrical Engineering. I joined Central Hudson in 1984 as an Engineer in the Customer Services Group - Transmission and Distribution. In 1991, I was promoted to Operations Assistant - Transmission and Distribution. I transferred to Gas and Mechanical

Engineering in 1997. In this position, I was responsible for gas standards development, material specifications, and gas transmission and regulator station design. In 2006, I was promoted to the position of Gas Operating Supervisor for the Mid- and Upper-Hudson Divisions, and had responsibility for the operation, maintenance, and construction of the Company's gas transmission and distribution facilities in those respective districts. In 2010, I was promoted to the position of Section Engineer in the Electric System Planning Division. In this position, I was responsible for electric distribution engineering as well as electric standards and material specifications. In March 2014, I was named to my current position of Manager of Gas and Mechanical Engineering. I am currently a registered Professional Engineer in the State of New York.

Q. Mr. Cambalik, have you previously testified before the New York State Public Service Commission ("PSC" or the "Commission")?

A. Yes, I testified in Case 14-G-0319.

Q. Mr. Reer, please state your current employer and business address.

A. I am employed by Central Hudson and my business address is 284 South Avenue, Poughkeepsie, New York 12601.

Q. Mr. Reer, in what capacity are you employed by Central Hudson and what is your scope of responsibilities?

A. I am Director of Gas Distribution Engineering and Standards. In that capacity, I am responsible for the supervision of professionals who provide operations engineering support, standards, and program management for

damage prevention, leak survey, planning and construction inspection for Central Hudson's gas distribution system.

Q. Mr. Reer, what is your educational background and professional experience?

A. I graduated from Union College in 1984 with a Bachelor of Science in Mechanical Engineering and again in 1989 with a Master in Business Administration. I am a Licensed Professional Engineer in the State of New York. I joined Central Hudson in 1984 as an Engineer in the Customer Services Group – Customer Relations. In 1987, I was transferred to the position of Operations Coordinator – T&D Staff and responsible for Company code compliance and Operating and Maintenance Procedure adherence and updates. In 1990, I was transferred to and became part of an engineering team doing design/build of the 16 inch MPI/MPR gas transmission line project. In this capacity I was responsible for the design and install of corrosion protection systems, lightning and impressed current protection, and welding inspection. In 1994, I was assigned the Gas Operations Engineer position in Customer Services, providing operations engineering support for the Fishkill and Newburgh operating districts. In 2006, I was promoted to Section Leader, Gas Operations Engineers and, in 2009, was promoted again to Section Engineer, Gas Operations. In 2012, I was promoted to Director, Distribution Engineering and Standards, the position that I currently hold.

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Q. Mr. Reer, have you previously testified before the Commission?

A. No, I have not.

Q. Ms. Clarke, please state your current employer and business address.

A. I am employed by Central Hudson and my business address is 284 South Avenue, Poughkeepsie, New York 12601.

Q. Ms. Clarke, in what capacity are you employed by Central Hudson and what is your scope of responsibilities?

A. In Gas & Mechanical Engineering, I am the Section Engineer of Gas System Safety and Compliance. In that capacity, I am responsible for the supervision of professionals who oversee the Operational & Maintenance Plans, Pipeline Integrity Programs and Cathodic Protection of the gas transmission and distribution system. Additionally, I monitor compliance activities relating to the safe operation of the gas facilities in accordance with both Federal and State regulations.

Q. Ms. Clarke, what is your educational background and professional experience?

A. I graduated from Drexel University of Philadelphia, Pennsylvania with a Bachelor of Engineering in Mechanical Engineering. Before joining Central Hudson, I was employed for 22 ½ years at Philadelphia Gas Works ("PGW"), the municipal-owned gas distribution company that serves the City of Philadelphia. After graduating from college, I started with PGW as an Engineering Assistant in the Customer Service Department. I remained in that department for 16 years, holding various

engineering positions before being transferred to the Distribution Department to become the Manager of New Business. In that position, I was responsible for the design and cost estimating of all requests for gas service for residential, commercial and industrial customers. After holding that position for 7 years, I resigned from PGW to pursue employment with Central Hudson. I joined the Company in the New Business Division of the Customer Service Department. In that position, I was responsible for processing all new electric and gas service requests from Commercial, Industrial and Large Users. After serving in that position for the duration of a year, I was promoted to my current position.

Q. Ms. Clarke, have you previously testified before the Commission?

A. No, I have not.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of the Panel's testimony in these proceedings?

A. The Panel discusses Central Hudson's ongoing concern for the integrity of its gas system and its impact on public safety. Past Company performance of established gas safety metrics will be reviewed. Where applicable, modifications to existing metrics or programs will be identified to enhance the safety of the Company's gas system. The Company will also introduce a number of new programs and initiatives such as residential methane detectors, an additional damage prevention patroller, and a non-pipes alternative pilot program. These initiatives focus on enhancing the safety and efficiency of the Company's natural gas system.

Q. Is the Panel sponsoring any exhibits in support of its testimony?

A. No.

III. COMPANY CONCERN FOR GAS SAFETY

Q. How would you describe Central Hudson's concern for the safe operation of its natural gas transmission and distribution system?

A. Gas safety is of the utmost concern to Central Hudson and the Company takes gas safety very seriously. Central Hudson continually strives to improve the safety and integrity of its natural gas transmission and distribution system. Through its gas transmission and distribution integrity management programs the Company continually analyzes potential threats to the system and identifies programs to mitigate their effects.

Q. What are the Transmission Integrity Management Program ("TIMP") and Distribution Integrity Management Program ("DIMP")?

A. These two programs utilize historical pipeline performance data such as leak history and main condition surveys to identify potential threats to the facilities and identify programs to mitigate those threats.

Q. Please provide examples of improvements made through the TIMP and DIMP.

A. One example of the Company's continuous improvement was the institution of an annual leak prone pipe ("LPP") leakage survey in 2012. This annual survey is performed at a higher frequency than required by both state and federal code (every 3 years) to proactively identify and respond to gas leaks. Also, a second or semi-annual transmission leak

survey was added to the Company's maintenance program. This program, in addition to leak identification, allows for the identification of threats due to encroachments into the gas transmission line corridor, weather related erosion or washouts as well as unreported excavation activities. Another example of Central Hudson's commitment to enhancing gas system safety is the aggressive replacement of LPP. While the June 17, 2015 Order Adopting the Joint Proposal in Cases 14-E-0318 and 14-G-0319 ("2015 Rate Plan") called for the elimination of 13 miles of LPP in 2016, the Company eliminated a total of 18 miles, 5 miles more than its target. The elimination of LPP, which has the highest incidence of gas leakage per unit length, will have a profound impact on the safe operation of the Company's natural gas distribution system. Another example of the Company's commitment to enhancing gas safety for the general public is its "Stop, Go, Let Us Know" public awareness campaign. The campaign was initiated in response to findings from gas incidents in other parts of New York State which indicated a general complacency in the public's actions when they detected an odor of natural gas. The "Stop, Go, Let Us Know" catchy tune clearly provides the public with direction on responding to a gas odor.

Q. Do you believe there are other opportunities for Central Hudson to improve gas and, ultimately, public safety?

A. While we have implemented a number of programs in the past, it is important to continually improve in these critical areas. The Company

continues to evaluate threats to the transmission and distribution systems and implement programs to mitigate the risk associated with each threat, as recommended by Company subject matter experts.

IV. LEAK MANAGEMENT

Q. Does Central Hudson have a gas leak management program?

A. Yes.

Q. How does Central Hudson define leak management?

A. The Company defines leak management as a system wide program to identify, respond to and mitigate underground gas leaks in a safe and cost effective manner. Gas leaks result from unplanned releases of natural gas from the Company's transmission and distribution infrastructure. The causes for these releases may include damage by excavation activities or outside forces such as flooding, obsolete joint designs such as those associated with cast iron gas mains and obsolete construction practices such as the installation of bare steel gas mains and services.

Q. Please describe the Company's Safety Metrics for leak management.

A. The Company has both a Total Gas Leak Backlog target and a Hazardous (used interchangeably with "Repairable") Gas Leak Backlog target.

Q. What is the Total Gas Leak Backlog Performance Measure?

A. The Total Gas Leak Backlog Performance Measure is one indicator of Central Hudson's gas leak management performance. This measure tracks the total number of active leaks, including Hazardous Leaks, at year-end.

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Q. What is the Hazardous Gas Leak Backlog Performance Measure?

A. This is similar to the Total Gas Leak Backlog measure, but this measure tracks only the total number of Hazardous Leaks at year end.

Q. Are certain leaks excluded from the total leaks reported at the end of the year for the Total Gas Leak Backlog Performance Measure and the Hazardous Gas Leak Backlog Performance Measure?

A. Yes. Leaks eliminated during the year, those that have been repaired but are awaiting confirmation of the repair in 14 to 30 days, and above grade leaks are excluded from the total leaks reported at the end of the year for these measures.

Q. Are all gas leaks considered “hazardous”?

A. No. The PSC’s regulations, at 16 NYCRR Part 255, codify which leaks are considered hazardous. Pursuant to this code, leaks are assigned a classification of Type 1, 2A, 2 or 3. These leaks are monitored and re-evaluated at regular intervals. Hazardous or potentially hazardous leaks are classified as a Type 1, 2A, or 2 and have a set repair timeframe ranging from immediate for a Type 1 to within 12 months for a Type 2. Type 3 leaks do not have an associated repair timeframe and are considered to be “non-hazardous”. Type 3 leaks are re-evaluated during the next required leakage survey or annually, whichever is sooner, to verify the leak hazard level has not changed.

Q. Please describe Central Hudson's leak management program.

A. As leaks are identified through the Company's inspection program or by the public, Central Hudson prioritizes and schedules the repair by severity. Typically, all hazardous leaks are repaired until eliminated. For those non-hazardous leaks, the Company will attempt a minimum of two repairs. Central Hudson utilizes both Company and contractor resources to maintain an overall leak backlog at or below the targets established in the 2015 Rate Plan of 16 Repairable (Hazardous) leaks and 200 Total Leak backlog.

Q. Are there any factors outside the Company's control that can impact Central Hudson's performance with respect to these metrics?

A. Yes. External factors such as extreme cold may increase the total number of leaks identified or found in a given year. The Company experienced this type of weather event during the winters of 2013/2014 and 2014/2015, where the extreme cold resulted in an increase of found leaks by 20% over those found during the winter of 2012/2013.

Q. Please discuss the Company's recent performance with respect to the leak management metrics.

A. Over the time period from 2014 to 2016, the Company was able to reduce the total leak backlog from 197 leaks to 102 leaks. Over that same period of time, year-end Hazardous Leak totals remained relatively stable, ranging from 3 to 6 leaks. The reduction in total leak backlog was accomplished through a combination of repair to and replacement of

existing gas facilities. The Company utilizes the feedback of its field crews in determining whether a gas facility should be repaired or replaced. If the Gas Operations field crews determine the condition of the gas facility has deteriorated to a point where continued leakage will occur, the facility is scheduled for replacement. For those leaking gas services which are considered LPP, the service is replaced in its entirety with a plastic service. If the meter set is located indoors, it will be relocated to the outside, unless doing so creates more of a safety threat to the facility.

Q. What are the Company's current leak management targets and how has Central Hudson performed relative to those targets?

A. As identified previously, the targets established in the 2015 Rate Order for Total Leak backlog and Repairable Leak backlog are 200 and 16, respectively. In 2016, the Company met these targets with year-end backlogs of 102 and 3, respectively.

Q. Does Central Hudson propose changes to the Gas Leak Backlog Performance Measure target?

A. Yes. Central Hudson proposes to lower the target for Total Leak backlog by 25% to 150 Total Leak backlog at year-end effective 2018. Similarly, the Company proposes to reduce the Hazardous Leak backlog by 25% to a total of 12 hazardous leaks at year-end effective 2018. The Company also proposes the definition of year-end for these purposes to be the time period between December 15th and 31st. If the backlog of active leaks on

any day during that time period is less than the established target, Central Hudson would be recognized as meeting the annual target.

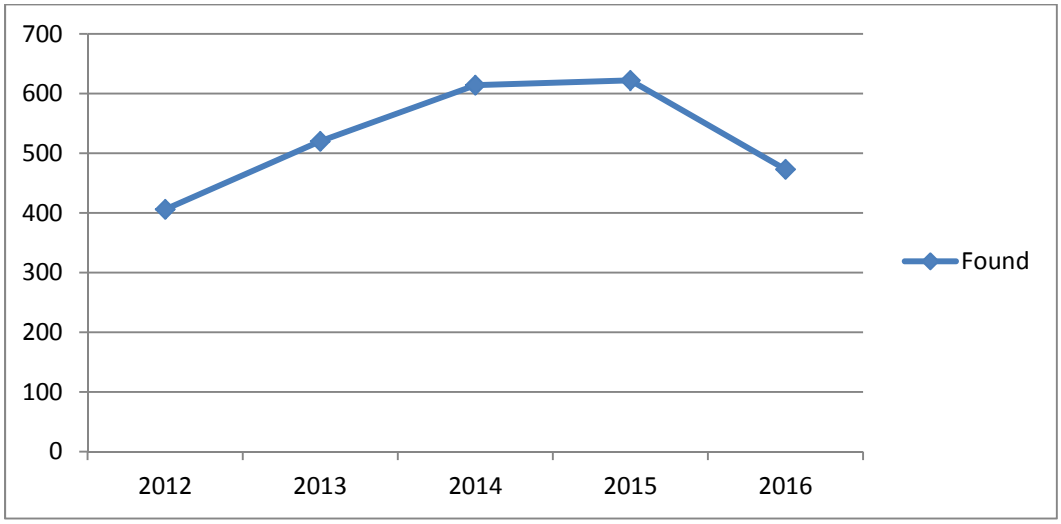
Q. Why are you proposing to define year-end in this fashion?

A. This definition mitigates the negative impact a potential surge in gas leaks could have on the Company's performance during the last week of the year when Company or contractor resources are typically at their lowest levels and early winter storms may occur. Staffing limitations and storms can both hamper the Company's ability to address the influx of leaks and maintain the level of leak backlog below target levels.

Q. Regarding leak backlog, why are you proposing a new Total Leak backlog of 150 when the Company's Total Leak backlog has been below that?

A. While Central Hudson was successful in reducing the Total Leak backlog from 2014 to 2016 and achieving a backlog level lower than the target during that period, the number of leaks found over each of the past three years has not seen an identifiable downward trend. In 2014 and 2015, the Company saw an uptick in leaks found by over 15% of the five year average (2012-2016), while in 2016 the leaks found showed a 10% decrease primarily due to a mild winter. Please refer to the chart below.

Chart 1: Leaks Found



This fluctuation indicates that many factors such as weather, pipe replacement, and rate of material aging all have a significant impact on the number of leaks found in a given year. Over the past 3 years the average number of leaks found annually was 570 with a standard deviation of 84 or 15%.

Q. Is Central Hudson seeing a reduction in leaks found due to the LPP elimination program?

A. As part of the 2015 Rate Order, Central Hudson was tasked with eliminating LPP at a rate of 13, 14, and 15 miles in calendar years 2016, 2017, and 2018, respectively. Over the past three years (2014-2016), the Company experienced an average leakage rate for LPP of 1.16 leaks per mile. Applying this rate to a LPP elimination program of 15 miles per year would equate to a reduction of approximately 17 leaks annually.

Q. Do you anticipate the same level of leaks per mile eliminated in the future?

A. The number of leaks found annually is projected to drop off by approximately 17 leaks per year as a result of the LPP replacement program. This rate of reduction in number of leaks found is only about 20% of the standard deviation of 84 leaks found annually based on recent historical actuals. The impacts of weather and other factors can have far more influence in leak numbers over the short term and can easily mask the anticipated reductions of the LPP program.

Q. Are there any Negative Revenue Adjustments ("NRAs") associated with the leak management targets?

A. Yes. Central Hudson is subject to NRAs of 16 basis points for failing to meet the Repairable Leak Backlog target and 12 basis points for failing to meet the Total Leak Backlog target.

Q. Are you proposing any change in the NRAs associated with these performance measures?

A. The Company recommends that current gas safety NRAs for Total Leak Backlog and Hazardous Leak Backlog be adjusted to the statewide levels of 8 and 4 pre-tax basis points for Hazardous Leak backlog and Total Leak Backlog, respectively, in recognition of the Company's continued steadfast gas leak management performance.

Q. Are you proposing any other changes to these performance measures?

A. Yes. We are proposing 1) a deferral mechanism to recover costs associated with expense leak repairs in excess of the level used to set the

allowance for gas leak repairs to expense and 2) an incentive to lower the Type 3 leak backlog.

Q. Please describe your proposed deferral mechanism.

A. Historically, the number of leaks found in a given year is driven by a number of factors, including materials, third party damages and weather. Extreme cold and multiple freeze-thaw periods significantly increase the number of leaks found. As an alternative to incorporating leak repair costs in rates for those years where there is a significant increase in the number of leaks found due to abnormal events such as extreme weather, Central Hudson is proposing deferral treatment to recover the excess expense leak repair costs when the total number of leaks repaired that are charged to expense in a given year exceeds the level forecasted and included in the determination of revenue requirements by 25 leaks. For example, in the rate year, 405 expense leak repairs are forecasted. If the actual expense leak repairs completed is 465, the Company can defer the cost of the leak repairs to expense associated with 35 [465-(405+25)] leak repairs. This mechanism puts the Company at risk for the first 25 expense leak repairs above the 405 level assumed in setting rates and allows the Company to defer costs above that level (i.e., 430 expense leak repairs). This mechanism will prevent the backlog of leaks from increasing due to unforeseen circumstances, since the Company will have the financial recovery in place to address the unanticipated leak repairs. The total projected number of expense leak repairs provided to the Revenue

Requirements Panel and incorporated into delivery rates will serve as the benchmark for determining when and if the deferral mechanism will be applied. The deferral cost recovery for the additional leak repair will be at the estimated cost per leak repair of $6,910 per leak (contract labor and other expenses) that was provided to the Revenue Requirements Panel and was used in calculating the requested rate allowance.

Q. Please summarize the Company's leak repair experience by expense and capital leak repair.

A. The following table provides a five year summary of leak repairs broken out by expense and capital.

Table 1: Annual Leak Repairs: Capital & Expense

Calendar Year	Total Leaks Repaired	Leaks Repaired to Capital	Leaks Repaired to Expense
2012	424	126	298
2013	515	126	389
2014	592	120	472
2015	682	134	548
2016	503	126	377

Q. Please describe your proposal for an incentive to reduce the Type 3 leak backlog.

A. As previously noted, Type 3 leaks are considered by code to be non-hazardous and do not require repair. However, the ongoing leakage of natural gas (primarily composed of methane gas) from Type 3 leaks contributes to New York State's overall greenhouse gas emissions. To reduce Central Hudson's contribution to greenhouse gas emissions, the

Company proposes to incentivize the reduction of existing Type 3 leaks. For a minimum decrease of 10 Type 3 gas leaks at year-end from the gas leak inventory at the start of the calendar year, assuming the Total Leak backlog at the beginning of the year is at or below the target, the Company will be entitled to a positive revenue adjustment ("PRA") of 3 pre-tax basis points. Every leak repaired thereafter would be eligible for a PRA on a prorated basis. For example, if the backlog of Type 3 leaks at the beginning of the year was 100 and at the end of the year was 91 the Company would not be eligible for the PRA. If the year-end total was 85, the Company would be eligible for a PRA of 3 + 1.5 = 4.5 pre-tax basis points. Operating pressure and age of leaks would be considered in the prioritization of Type 3 leaks repaired.

V. DAMAGE PREVENTION

Q. What is Damage Prevention?

A. Damage Prevention is programmatic action taken to increase public safety by minimizing damage to underground facilities (in the case of Central Hudson, gas and electric facilities) caused by excavation activities. Central Hudson's damage prevention activities are in accordance with 16 NYCRR Part 753, best practices identified by the Common Ground Alliance, and industry surveys conducted by the Company. Central Hudson is a member of DigSafely NY which provides "811" call center services and processes customer and contractor requests for the markout of underground facilities. DigSafely NY is a provider of public awareness

programs and excavator training programs. In addition to DigSafely NY public awareness campaigns, Central Hudson also conducts public awareness campaigns on excavator safety.

Q. How is the effectiveness of Central Hudson's Damage Prevention program currently measured?

A. The effectiveness of the Company's Damage Prevention program is measured by metric performance in the following three categories:

1) Mismark Damages;
2) Company & Company Contractor Damages; and
3) Total Damages.

The performance for each category is normalized on a per-1,000 locate ticket request basis for markout of underground facilities in municipalities where Company owned natural gas facilities are present. Based on a three year (2014-2016) average locate request count of 20,887 tickets, each damage to the Company's gas facilities represents a contribution of approximately 0.05 to its damage prevention metrics on a 1,000 locate request ticket basis. For Central Hudson, the magnitude of each damage's contribution to the damage prevention metrics represents four to nine times the level of a single damage's contribution when compared to other New York State utilities, based on data found in the State of New York Department of Public Service 2016 Gas Safety Performance Measures Report (Case 17-G-0245).

Q. Does an underground natural gas facility have to be leaking to be considered "damaged"?

A. No. Any damage to a below grade natural gas facility that requires a repair is considered a damage. For example, this would include damage to the protective coating on steel pipe even though there was no damage that resulted in a gas leak.

Q. What is a "Mismark Damage"?

A. A "Mismark Damage" is any damage to an underground facility that occurs as a result of no marking or an inaccurate marking, typically caused by the lack of facility records due to the timeframe (early 1900s) the facility was installed or human error on the part of the individual performing the markout.

Q. What has been Central Hudson's performance over the past three years in relation to Mismark Damages?

A. For the period from 2014 through 2016, Central Hudson experienced 10, 10, and 14 damages, which equated to performance measures of 0.53, 0.47 and 0.62, respectively. The main driver for this metric is unrecorded service stubs on LPP installed prior to 1940.

Q. Are all utilities required to have records of all below grade facilities?

A. Yes, current regulations require all utilities to have records of all below grade facilities, but what was recorded in the early 1900s is much less complete when compared to records of more recent installations. With Central Hudson in the midst of an extensive accelerated LPP replacement

program, of which many of the installations occurred in the early 1900s, it is apparent that this will be an ongoing issue for a number of years and, if this performance measure continues to be reduced, it is very unlikely that it will be met.

Q. Are there technologies currently available to aid in identifying these "unrecorded facilities"?

A. Central Hudson has evaluated various technologies in the field, including ground penetrating radar, ultrahigh frequency pipeline locators, and inline pipe camera systems. The results of these field evaluations indicate that the technologies have not matured to a point where they are effective in all cases for field applications.

Q. Please define "Company and Company Contractor Damages."

A. Company and Company Contractor Damages ("CCCD") are defined as below grade facility damages that are not the result of incorrectly located facilities and which result from excavation damage by either employees of the Company or those of a contractor performing work for the Company.

Q. What has been Central Hudson's performance in relation to the established targets for this metric?

A. For years 2014 to 2016, the Company experienced 4, 13, and 9 CCCD, respectively, which equated to performance measures of 0.21, 0.62 and 0.40 damages per 1,000 markout requests. In 2015 and 2016, Central Hudson failed to meet its target of 0.25, and the targets established in the 2015 Rate Plan are reduced even further in calendar years 2017 and 2018

to 0.20 and 0.10, respectively. As previously detailed, any damage contributes approximately 0.05 to each metric. Applying this estimate to the 2018 target equates to no more than two total damages from CCCD in order to remain within the target level. With the target for LPP elimination now at a level of almost three times the level when this metric was first implemented, it will be nearly impossible to meet the 2015 Rate Plan performance measure target due to the three fold exposure in excavation activity.

Q. Are there technologies currently available to aid in excavation and reducing the risk of damages?

A. Yes, vacuum excavation is an available option. However, as part of the LPP elimination program requirements in the 2015 Rate Plan, a maximum cost per mile eliminated was established. The implementation of vacuum excavation in place of traditional excavation practices would significantly increase the cost per mile for the replacement or elimination of LPP.

Q. Has Central Hudson taken any steps short of instituting full vacuum excavation for excavation activities?

A. Yes. In 2016, the Company assembled a group of both Company and contractor professionals to identify best practices across New York's local distribution companies ("LDCs") in the area of CCCD prevention. From this study, the following actions were identified by the group and have been, or are in the process of being implemented:

- Many LDCs provide hard copy records of all known gas facilities in a work area to crews prior to the start of the project. Starting in 2017, hard copy records of all gas facilities have been provided to Company and contract crews performing LPP elimination projects in excess of 100 feet.
- A number of LDCs have probe bar procedures in place calling out minimum distances from gas locate marks, as well as maximum depths for driving probe bars during leak classification and pinpointing operations. These procedures are currently under development.
- Most LDCs utilize air lances or other 'soft dig' equipment such as vacuum excavation on a much greater frequency than Central Hudson. Central Hudson has recently mandated the use of soft dig techniques for its contractors at gas tie-in points and previously exposed piping. The Company is currently developing these procedures and the cost of implementation for Central Hudson personnel.

Q. Are "Total Damages" defined as all other damages not classified as either Mismark or CCCD?

A. No. Total Damages include both Mismarks and CCCD, in addition to those caused by an excavator not following the notification requirements ("No Call") or not following industry accepted safe excavation practices ("Excavator Error") as required by 16 NYCRR Part 753.

Q. How has Central Hudson performed compared to the established rate plan targets over the past three years?

A. Overall, the total numbers of damages from 2014 to 2016 were 33, 50, and 49, respectively. On a per facility markout request basis, this equates to 1.74, 2.37, and 2.18 damages per 1,000 requests. The established rate plan targets were 2.4, 2.4, and 2.2 per 1,000 tickets for the same time period.

Q. Has Central Hudson taken any steps to improve its performance relative to Total Damages?

A. During 2016, Central Hudson initiated a Damage Prevention Patroller program to conduct field visits of excavations to verify compliance with 16 NYCRR Part 753 and provide onsite excavators with focused damage prevention training on an as needed basis. This program targets both "No-Calls" and "Excavator Error" damage prevention. Initially, the program called for the patroller to make random stops at excavation sites throughout the service territory. Starting in 2017, in addition to these assignments, the patroller is also provided with a list of locations where excavation activities are planned within 15 feet of Company gas facilities. The patroller visits these sites on the planned excavation start date to ensure compliant excavation practices are taking place. This patroller program was modelled after similar programs at other gas utilities. In May of this year, the Company expanded this program to two patrollers in order to enhance public awareness and education on excavation damage

prevention. Having two patrollers allows for one patroller on either side of the service territory to visit and check on excavation activities while reducing unproductive drive time.

Q. What are the current targets associated with gas Damage Prevention?

A. The table below depicts the targets established in the 2015 Rate Plan for calendar years 2016 – 2018.

Table 2: 2015 Rate Plan Damage Prevention Targets

	2016	**2017**	**2018**
Gas Total Damage	2.20	2.05	1.90
Mismark Damages	0.45	0.40	0.36
Company & Company/Contractor Damage	0.25	0.20	0.10

Q. Does Central Hudson propose any changes to the Damage Prevention performance metrics that are currently in place?

A. Yes. The Company proposes: 1) a single total damage metric; 2) the ability to use a three year average of performance if the metric is missed in a given year in the assessment of an NRA; and 3) the implementation of a dead band when measuring the target.

Q. Pleased describe your proposal for a single Total Damage performance measure.

A. As previously discussed, a damage that occurs has much more of an impact on the Company's performance measures since its annual markout request total is significantly less than the majority of New York State LDCs. In other words, for those large LDCs with sizable annual markout requests, a slight variation in the number of damages does not result in a

significant swing in their Damage Performance measures. Having a single Total Damages measure allows the LDC to examine the program in its entirety and implement targeted programs to address those areas of the program they determine would have the greatest impact on Damage Prevention performance. Currently, Total Damages include both Mismarks and CCCD; therefore, the single Total Damage metric would allow for historical comparison of performance. In essence, the Company could not allow either Mismark or CCCD performance to degrade since they contribute to the overall Total Damages metric.

Q. Please describe your proposal to utilize a three year average in determining whether an NRA should be applied if the calendar year Total Damage metric is not met.

A. Due to the impact that a single damage has on those companies with small markout request counts such as Central Hudson, the Company proposes an annual target with the ability to use the most recent three year average performance if the annual target is exceeded in any given year. Utilization of a three-year average when a single year's target is exceeded minimizes the impact of single damages to the overall measure while ensuring the Company's performance is not eroding over time.

Q. Please describe your proposal to implement a bandwidth to measure Total Damages.

A. The annual Total Damage target should contain a bandwidth where only performance outside the bandwidth would be considered for a revenue

adjustment, either positive or negative. For example, if the target was established at 2.4 damages per 1,000 markout requests, no revenue adjustment would be applied in the bandwidth of 2.3-2.5. This would eliminate the impact of a single damage resulting in the target being missed.

Q. Do you propose any changes to the current NRA associated with Total Damages?

A. The basis points under consideration for the NRA for Total Damages should remain the same, and the NRA for both Damages due to Mismark and Company or Company Contractor Damages should be eliminated. In addition, a PRA should be instituted to incentivize the Company to improve performance. The goal of a PRA is to stimulate innovative ideas which will drive the metric to increased levels of performance with the opportunity to be rewarded for it.

Q. What are you proposing for the Total Damages target and associated revenue adjustments?

A. Central Hudson is proposing a Total Damages target of 2.1 damages per 1,000 markout requests with a bandwidth of +/- 0.1. If the Company's performance is less than 2.0 damages per 1,000 markout requests, the Company will be eligible for a 4 pre-tax basis point PRA. If the Company's Total Damage performance exceeds 2.2, the Company will be penalized with a 4 pre-tax basis point NRA.

VI. EMERGENCY RESPONSE

Q. What does Emergency Response Time measure?

A. Emergency Response Time gauges the Company's ability to respond promptly to reports of gas odors, suspected carbon monoxide exposures and other gas emergencies.

Q. How is Emergency Response Time measured?

A. Emergency Response Time is the elapsed time between the Company receiving a report of gas odor call and a Company representative's arrival at the communicated location of the emergency. The Company's performance in Emergency Response Time is measured by the percentage of calls responded to in less than 30 minutes, less than 45 minutes, and less than 60 minutes. Reports from Company personnel or its agents are excluded from the metric calculation.

Q. What is the current target and associated NRA for each time period?

A. The emergency response goals are: respond to 75% of calls within 30 minutes, 90% within 45 minutes, and 95% within 60 minutes. The NRAs associated with each timeframe are 8, 4 and 1 basis points (pre-tax), respectively.

Q. How has Central Hudson performed over the past three years?

A. Over the past three years, the Company has met each target on an annual basis.

Q. Are you proposing any changes to the targets?

A. No. While the Company has met the annual targets, it did experience a couple of months where the targets were exceeded. Central Hudson took swift action in adjusting employees' shift schedules to ensure adequate resources were in place to drive the response times to the target levels. These targets are reasonable considering the increase in public awareness initiatives on reporting gas odors (Stop, Go, Let Us Know) which could lead to an increase in calls.

Q. Are you proposing any change in the NRA associated with this performance measure?

A. As part of the Commission's June 26, 2013 Order Authorizing Acquisition Subject to Conditions in Case 12-M-0192, NRAs were doubled to insure Central Hudson's gas safety performance would not worsen over time. Central Hudson's gas safety performance since the time of the merger has not degraded. Therefore, we recommend that current Emergency Response Time NRAs be adjusted to the statewide levels of 6, 4, and 2 pre-tax basis points in recognition of the Company's continued steadfast safety performance.

VII. NON-COMPLIANCE WITH PIPELINE SAFETY REGULATIONS

Q. Please provide a brief description of the Non-Compliance with Pipeline Safety Regulations performance measure?

A. The Non-Compliance with Pipeline Safety Regulations performance metric is intended to measure an LDC's compliance with the Commission's gas

safety regulations. Each year an LDC undergoes an audit of the records that document the completion of code required gas facility inspections as well as a field audit of construction and maintenance activities performed by Company or Company contractor personnel. If an inspection or code requirement is missed it is considered an occurrence of a violation and noted in the audit. Multiple missed inspections under a specific requirement of code are considered multiple occurrences of the same code violation. Each occurrence carries a financial penalty. The amount of the penalty is based on the risk rating of the code requirement and the number of occurrences. Code requirements have been classified as "High Risk" or "Other" based on a list established by the Commission.

Q. What are Central Hudson's targets associated with Gas Safety Violations?

A. The target is zero occurrences or violations of code requirements. Any occurrence will result in a NRA penalty. The following table summarizes the violation and penalty structure.

Table 3: Central Hudson Gas Violation Targets and NRAs

Gas Violations Per Calendar Year	Occurrences	Basis Points Per Occurrence
High Risk Violation	1-25	1/2
	26+	1
Other Risk Violation		
	1-25	1/9
	26+	1/3

Q. How has the Company performed relative to these targets?

A. The Company recently received final determination letters from the Commission for the 2013, 2014, and 2015 field and records audits. For the time period from 2013-2015, Department of Public Service Staff ("Staff") identified a total of 14, 20, and 11 high risk violations and 3, 45, and 3 other risk violations. The final determinations assessed NRAs of $57,500, $291,667, and $87,500 respectively for each year from 2013 to 2015.

Q. What steps has Central Hudson taken to reduce the likelihood that Central Hudson will violate a code requirement?

A. Central Hudson is very concerned with any code violations and strives for 100% compliance. Over the past two years, the Company has strengthened its code compliance activities through the establishment of embedded compliance personnel in the Gas Operations and Customer Account Services groups. These employees report directly to the manager of each area. These compliance groups are in addition to the existing compliance group located in Gas & Mechanical Engineering. The three groups work collaboratively to identify deficiencies in code compliance and develop actionable steps to reduce the probability of future non-compliance.

Q. Based on the audit findings received from Staff, are you proposing changes for this safety metric?

A. Central Hudson believes this metric has merit if administered in a constructive manner. Both Central Hudson and Staff have the same goal of increasing gas safety. Based on the findings, the Company sees little benefit in citing Central Hudson for a violation of a specific code section and also a violation of the Company's operating and maintenance program if multiple occurrences are identified.

Q. Please describe how this is applied in more detail.

A. Each LDC is required to establish and submit to Staff a set of operating and maintenance procedures in accordance with 16 NYCRR Part 255.603(d), which also states that "Each operator shall satisfactorily conform to the program submitted." Typically these operating and maintenance procedures include requirements such as frequency of inspections, and leak classification taken directly from the various parts of 16 NYCRR 255 or 261. In past audit results for instances of multiple occurrences, Staff cited Central Hudson a single instance of non-code compliance for both a violation of 16 NYCRR Part 255.603(d) (since it was included in the Company's operating and maintenance procedure) as well as for violating a specific section of 16 NYCRR Part 255 or 261. One example of this is 16 NYCRR Part 255.723(b)(1), which requires a leakage survey of the gas distribution system located in a business to be conducted each calendar year at an interval not exceeding 15 months. As

required by 16 NYCRR Part 255.603(d), the Company must satisfactorily conform to their filed operating and maintenance procedures. The Company's leakage survey operating and maintenance procedure sets forth the same inspection frequency requirement as that of 16NYCRR Part 255. 723(b)(1). If six sections of main were missed, the Company will receive five violations of 16 NYCRR Part 255.723(b)(1) and one violation of 16 NYCRR Part 255.603(d). This becomes more concerning when the specific section of code is classified as "Other Risk" which has a lower NRA and the violation of the Company's O&M procedure (16 NYCRR Part 255.603(d)) is classified as "high risk" which has a higher NRA. To correct this issue, any violation of the Company's O&M procedure should be classified (either high risk or other risk) consistent with the specific section of code that was cited.

Q. Is the Company proposing any other changes to how this metric is administered and measured?

A. Central Hudson is continually updating its records to ensure they accurately reflect what is installed in the field. As a result of this continuous improvement, the Company has been cited in the past for violations for missed inspections when a record has been corrected or added. The Company sees no benefit in being penalized for striving to improve the accuracy of its records. Any violations associated with map corrections should not be included in violations counting to the NRA.

Q. Are you proposing any other changes to this metric?

A. Yes, we propose the implementation of a standardized sampling methodology to be used across all LDCs in the state.

Q. Why is a change to the sampling methodology required?

A. The Company believes the current record sampling methodology unfairly results in a larger number of records being reviewed during the records audit. Staff recognizes Central Hudson as having five gas operating headquarters. Other than gas leaks and warning tags, the number of records selected is based on each operating headquarters' total number of records. For companies like Central Hudson with multiple operating headquarters and small record counts, the number of records audited on a percentage basis is much higher than a large utility with one or two operating headquarters in order to achieve a 95% confidence level in the audit result. Central Hudson proposes to mitigate the inequity caused by varying number of operating headquarters per LDC by applying a normalization factor derived from the average number of customers served per LDC operating district divided by the statewide average per operating headquarter. This factor would be multiplied by the total basis points associated with non-compliance and the result would yield the NRA. Based on currently available LDC customer counts and operating headquarters the multiplier for Central Hudson would be 0.15.

Q. Are you recommending any changes related to the calculation of NRAs for this gas safety measure?

A. The Company proposes that violations of specific sections of code be capped at 10 Company-wide. A total of 10 violations for a specific section of code would be indicative of a systemic issue throughout the Company and would be addressed through the compliance action plan process.

Q. Does the Company have any recommendations for how any assessed NRAs can be utilized to further gas safety?

A. The most beneficial change would be to apply the NRA to fund improvements to the safety measure it is associated with. For example, Central Hudson proposes to apply any NRA for code related non-compliance to fund a residential methane detector program. Central Hudson would look to provide an instant rebate funded through the negative revenue adjustment to customers who purchase these devices. Additionally, the code related non-compliance NRA could be used to expand the gas Quality Assurance-Quality Control ("QAQC") program to provide additional oversight of inspections and maintenance activities. Another program could apply NRAs associated with damage prevention to fund an additional damage patroller (above the two patrollers assumed in the determination of revenue requirements) to enhance public outreach by providing education and training to on-site excavators. The Company would work collaboratively with Staff in applying any assessed NRAs to programs that enhance gas safety.

VIII. INFRASTRUCTURE ENHANCEMENT

Q. How does Central Hudson define “Infrastructure Enhancement” in the context of Gas Safety?

A. Central Hudson defines Infrastructure Enhancement in the context of this testimony as the installation, modification or elimination of existing gas infrastructure that may negatively impact the safe operation of the Company’s gas transmission and distribution system.

Q. Are there any Infrastructure Enhancement programs currently in place?

A. The largest Infrastructure Enhancement program currently in progress is the elimination of LPP. While this program has been in place for a number of years, it was accelerated beginning in 2016 as part of the 2015 Rate Plan.

Q. What is LPP?

A. For Central Hudson, LPP is pipe materials with a significantly higher level of leakage per unit length than plastic or cathodically protected steel pipe. At the present time, Central Hudson classifies LPP as cast iron, wrought iron, and unprotected steel pipe.

Q. What is unprotected steel pipe?

A. Unprotected steel pipe is pipe that is either bare or ineffectively coated which cannot be cost effectively protected from corrosion.

Q. Please provide a summary of the LPP requirements associated with Case 14-G-0319 under the 2015 Rate Plan.

A. Case 14-G-0319 resulted in a three year rate agreement which contained the following requirements:

- 2016: eliminate 13 miles of LPP at a cost not to exceed $1.4 million per mile;
- 2017: eliminate 14 miles of LPP at a cost not to exceed $1.5 million per mile; and
- 2018: eliminate 15 miles of LPP at a cost not to exceed $1.6 million per mile.

In addition, the prioritization of identified projects must take pipe risk into account.

Q. Did Central Hudson meet these requirements in 2016?

A. Central Hudson achieved the total mileage target by eliminating a total of 18 miles of LPP from its Pipeline and Hazardous Materials Safety Administration ("PHMSA") reported inventory. The average cost per planned mile of LPP eliminated in 2016 came in slightly higher than the target cost metric, averaging $1.5 million per mile. This cost reflects industry 'best practices' such as increasing average project size to 2 miles to minimize mobilization costs, planning and coordinating elimination projects with municipalities to reduce restoration costs and performing necessary reinforcement and system modifications such as increased valve installations at the time of the project.

Q. How was the cost of $1.5 million per mile calculated?

A. After discussions with Staff, the cost was calculated based on planned (identified the previous year) Neighborhood LPP elimination and infrastructure projects. Emergent type replacement projects associated with road rebuilds, cast iron undermines, and gas leak repairs were excluded from the calculation. The incremental cost for system reinforcement (i.e., increasing the existing pipe size by 2 inches or more of diameter or looping the system) was excluded, as well as the cost to bypass existing short sections of plastic pipe due to maximizing the efficient installation of the new gas facilities. These short sections of plastic pipe were abandoned since the cost to pressure test and tie-in the new pipe to the existing would result in higher overall project costs.

Q. Are there any negative or positive revenue adjustments associated with the elimination of LPP?

A. Yes. There is an NRA of 8 pre-tax basis points if the total mileage target to be eliminated is not met in a given year. There is a PRA of 2 pre-tax basis points for every mile eliminated above the target, up to a maximum of 5 miles or 10 basis points.

Q. How many years will it take Central Hudson to eliminate the remaining LPP from its gas distribution system?

A. Based on the targets approved in the 2015 Rate Plan and projecting out a continued target of 15 miles per year with a 5 mile incentive, it is estimated that all LPP main will be eliminated from the Company gas system in

approximately 10 years. This projection assumes that no additional piping materials other than cast iron, wrought iron, and unprotected steel will be classified as leak prone.

Q. Are leak prone gas services being replaced at the same time as the main?

A. Yes. Leak prone gas services are being replaced during the main replacement.

Q. Are you proposing any changes to the LPP elimination targets?

A. The Company proposes to continue the current replacement rate of 15 miles per year along with the existing NRAs and PRAs. However, the Company proposes that it be granted the ability to petition the PSC for relief from the established mileage target and any resulting NRA should unforeseen circumstances arise. Such circumstances may include but are not limited to, loss of contract resources, material availability or work stoppage. The Company will have the ability to file for relief from the minimum LPP mileage elimination target without having to meet the Commission's traditional three part test.

Q. What is the capital expenditure on a cost per mile basis for elimination or replacement of LPP for 2018 assumed in the 2015 Rate Plan versus calendar year 2018 reflected in this filing?

A. The 2015 Rate Plan calls for capital expenditures for the replacement or elimination of LPP at a cost of $1.6 million per mile in 2018. The capital plan supported by Company Witness Haering in this filing for the same

time period reflects capital expenditures for planned projects to achieve the annual target of 15 miles at a cost per mile of $1.725 million.

Q. What is the basis for the increase of $125,000 for planned projects?

A. As part of any LPP elimination project the Company takes the opportunity to incorporate any required system reinforcements, bypassing of existing plastic pipe or looping of mains to improve the load serving capability of the system as well as increase its reliability. These costs are included in the cost per mile expenditures for planned LPP projects. Based on past experience, the change will add on average $125,000 per mile to the LPP elimination cost.

Q. Does the $1.725 million per mile apply to all LPP projects?

A. No. The $1.725 million per mile does not reflect the cost for emergent projects. As discussed previously, these projects include replacement projects associated with road rebuilds, cast iron undermines, and gas leak repairs that are typically not under the control of the utility and as such usually have a much higher average cost per mile.

Q. For what purpose does the Company plan to use the $1.725 million per mile cost?

A. The Company proposes to continue to report on an annual basis its expenditures as they relate to planned projects and, in 2018, to compare those actuals costs with the $1.725 million target.

Q. Does this cost per mile also apply to 2019?

A. No, the capital plan as set forth by Company Witness Haering includes an annual increase to the cost per mile for planned projects of $100,000. As such, in 2019, the Company proposes to report its expenditures for planned projects against a target of $1.825 million.

Q. Why do you propose the continuation of the $100,000 annual capital expenditure increase in the cost per mile for planned LPP projects?

A. Since the Company's accelerated elimination program is relatively early in its life cycle large pockets of LPP remain in the Company's gas system allowing for the wholesale elimination of large portions of LPP (two miles or greater neighborhood projects). As the number of these large projects decrease with smaller projects making up more of the project mix, the cost of mobilizing and de-mobilizing resources will significantly impact the LPP elimination cost per mile. In addition, municipalities are requiring more and more extensive pavement restoration due to dwindling financial resources. Typically restoration costs account for 25-35% of the total project cost.

Q. Is the Company proposing any changes in the deferral accounting for the incremental miles of LPP eliminated beyond 15 miles?

A. Yes. Effective with calendar year 2018, Central Hudson proposes to eliminate the cost per mile cap. Instead, the Company proposes that it be entitled to recover all elimination costs, including incremental operating and maintenance costs, such as tax liability, and return on (carrying costs)

and of (depreciation) the capital associated with the "incremental miles." The deferral will be based on the average LPP eliminated cost per mile for all LPP eliminated. This average will be calculated based on the total annual LPP elimination expenditures (both main and service) divided by the total miles eliminated. The deferral will be recorded at year-end.

Q. Are there any other "Infrastructure Enhancements" that Central Hudson is proposing?

A. Central Hudson has included in its capital budget program the programmatic replacement of existing manually operated mainline transmission line valves with remotely operable valves. In the event of a pipeline incident that results in gas leakage, the section of the pipeline can be quickly isolated through the operation of these valves. In addition, as part of the valve replacement installation, accommodations for the insertion of an inline inspection robot will be included. Central Hudson has been an active member in the NYSEARCH-sponsored development of the Pipetel inline inspection robot. The robot has been used successfully on various pipe diameter transmission lines throughout the Company's transmission system. In the past, the robot has identified a number of pipe anomalies such as dents and coating defects that, if not addressed, would have a negative impact on the integrity of the gas transmission system.

IX. GAS SAFETY ENHANCEMENT PROGRAMS

Q. Does Central Hudson propose any gas safety enhancement programs?

A. Yes. In response to the change in the Commission's service line definition (Case 15-G-0244), which expanded LDC jurisdictional piping to the outlet of the meter for those meters located inside a building, the Company will be required to perform additional atmospheric and leakage surveys on this piping. The frequency of inspection depends on location and is one year for those located in a business district or three years for meters located outside of the business district.

Q. Please describe the impacts on the Company.

A. The Company's current population of indoor meter sets is approximately 13,650 of which 960 are currently located in business districts. Based on a pilot project performed in 2015, the resultant cost per location was $155. Using this cost as well as applying efficiencies yielded a per service cost of $95. Annually the inside inspection costs will be approximately $91,000 for those inside meter sets located in the business districts and $407,000 for those outside of the business district. These additional maintenance costs were provided to the Revenue Requirements Panel and are included in the element of expense identified as "Pipeline Integrity and Inspection." Projected costs in RY3 of the 2015 Rate Plan will be deferred in accordance with the 2015 Rate Plan under the government mandate provision. The main cost driver was the time and effort required to gain access to the meter location. Past programs, such as the installation of

ERT modules on inside gas meters, have changed the customer's expectation regarding inside access to Company owned equipment. As a result, customers no longer provide unfettered access to inside gas meter installations as easily as they did in the past. While every attempt is being made to move meters outside when performing LPP elimination projects or service replacements, in some instances leaving the meter inside results in a lower hazard risk than moving it outside. An example of this would be an urban area where driveways are located on either side of the structure and the sidewalk abuts the front of the building.

Q. Is the number of inside meters expected to decrease?

A. The number of inside meter sets is expected to drop as part of the LPP elimination program; however, it is anticipated the business district inspection costs will remain relatively constant due to the inability to relocate meters from inside to outside in continuously paved areas. The non-business district inside meter locations are expected to decline over the course of the LPP elimination period (10-12 years); however, they will not all be eliminated. It is estimated that upon completion of the LPP elimination program, 25% of the current population of indoor meter sets outside of the business district will remain inside the building.

Q. Is the Company proposing any additional gas safety enhancements?

A. In order to safely operate and maintain a natural gas system Central Hudson strives to have a trained and qualified workforce. With the ever changing qualifications, regulations and work environment the ability to

field a thoroughly qualified workforce becomes more and more challenging. In an effort to meet the changing demands placed on Company and Company contractor personnel, Central Hudson is proposing to construct a training facility which enables scenario-based training. This facility will have both classroom and hands-on areas for training of Company and Company contractor personnel and first responders. Dedicated instructors will teach and evaluate the workers' skills to ensure they are adequately trained to perform the required tasks as well as being able to respond to abnormal operating conditions. Currently, Central Hudson personnel provide on-site first responder training. The training center will provide for centralized training with hands-on equipment drills and the ability to train under mock emergency simulations. Recent operator qualification issues have brought to light the need for robust testing and evaluation protocols. This new training center will be outfitted with a modern and secure testing facility along with evaluation areas for demonstration of knowledge, skills and abilities. Further information on the training center can be found in the testimony of the Company's Training and Development Panel.

Q. Is there pending gas safety legislation that may result in incremental operating and maintenance costs?

A. There are a number of pending code additions and modifications in various stages of rulemaking. The Safety of Gas Transmission & Gathering Lines Rule, if enacted in its current form, will have a significant

impact on the maintenance and operation of Central Hudson's gas transmission system. We have estimated the incremental expense at $250,000 in anticipation of the timing and requirements of the rule and provided the Revenue Requirements Panel this information. Future annual costs are anticipated to grow as required testing and inspection requirements are implemented. The Plastic Pipe Rule with its tracking and traceability requirements will impose significant costs for implementation. Central Hudson requests cost deferral authority for these and other operating and maintenance costs resulting from legislative changes in excess of amounts provided for in gas delivery rates.

Q. Are there any other areas where gas maintenance costs are projected to increase above the level incurred during the historic year ended March 31, 2017?

A. Yes. The Company utilizes contract resources to perform required system-wide gas leakage surveys. The timing of when this work is performed is dependent upon weather, so it can vary from one twelve month period to the next. The level of work performed during the historic year is not reflective of the normal level associated with the inspection and surveying work that is performed on an annual basis. As a result, we informed the Revenue Requirements Panel that a normalization adjustment of $58,000 was required to accurately reflect the annual expense of doing this work.

Q. Does the rate allowance included in the revenue requirements provide adequate funding for the work that needs to be performed?

A. No. The normalization reflects an adjustment for the level of activity that needs to be performed, but does not include an adjustment for the anticipated change in cost to complete the work. The existing three year contract for this work expires at the beginning of 2018, and discussions with current contractors reveal that future costs will be higher than current costs trended at inflation. Underlying reasons for the increase are labor and benefit costs, as well as new operator qualification requirements. The contract is currently going through the RFP process, and a new contract is expected to be in place during the pendency of this case. As such, the Company requests update for this expense item at the time of Brief on Exceptions.

X. NON-PIPES ALTERNATIVE DEMONSTRATION PROJECT

Q. Please describe the Central Hudson Gas Distribution Pipeline System.

A. Central Hudson delivers gas to customers via a 1,275 mile distribution pipeline system operating at pressures ranging from utilization pressure to 120 psig. The pipe network is comprised of 86 gas pressure systems. System loads are typically winter peaking, driven by use of natural gas as a heating fuel.

Q. How does Central Hudson monitor the loads on these systems and assure that adequate capacity exists to deliver gas to its customers during the coldest weather patterns?

A. Central Hudson monitors the ability of its pipeline system to deliver gas via electronic gas pressure recording charts and by simulating and analyzing each of its gas pressure systems on a regular basis.

Q. How does Central Hudson analyze its distribution gas pressure systems?

A. Central Hudson uses a software package called Synergee by DNVGL, its ESRI ARC GIS data and mapping system, and its use and billing records to construct highly detailed computer models of its gas distribution system. These computer models are used to project loads, pipe flows, and available pressure under various weather conditions. Planning engineers use these computer models, coupled with knowledge of construction practices and regulation station operating characteristics, to study gas pressure systems. The resulting analysis is specifically used to assure that adequate volumes of gas are available to supply all of Central Hudson's customers served at firm rates during the coldest anticipated weather patterns; 70 Heating Degree Days.

Q. How does Central Hudson use its volumetric use information to estimate maximum coincident flow rates?

A. Central Hudson uses flow curves to relate coincident maximum flow for each customer to average 24 temperatures.

Q. How accurate are these curves and are the curves used by Central Hudson unique to its service territory?

A. At the macro level the curves are generally accurate. Planning engineers use pressure recording chart information to adjust and calibrate flow model information at the micro level during each pressure system analysis. This is done to correct flow pipe flow coefficients such as efficiency as well as the flow curves.

Q. What is a Non-Pipes Alternative ("NPA")?

A. NPA refers to programs intended to increase gas system capacity or reduce demand by installing micro-compressors, convert natural gas fired equipment to other energy sources, or implement energy efficiency programs or other technologies to increase the system load factor in order to defer or eliminate the need for load growth related projects.

Q. What is Central Hudson proposing with respect to NPA?

A. Central Hudson is currently planning to develop a project funded through Research and Development ("R&D") to evaluate the potential of non-pipes alternatives and how they could be utilized to allow for the deferral or elimination of traditional gas system reinforcements. The project will identify two gas distribution systems that, based on current load growth, will likely require future reinforcement through the installation of additional piping or regulator stations. The R&D project would identify the potential load reduction solutions and anticipated performance that may be utilized. These could include thermostat set point adjustment or alternate heating

sources such as electric or other technologies not yet identified to reduce overall demand on the gas distribution system. The R&D project would also identify what additional metering would need to be installed at the gas regulator station to develop load curves, calculate system load factors, and measure the effectiveness of the implemented demand reduction methodologies. Once the R&D project is completed, it is anticipated that the implementation of this program will be targeted for 2018 and 2019. The proposed recovery mechanism for any NPA implementation costs is covered in the testimony of the DSP Panel.

Q. Is the Company proposing to share any benefit realized from the NPA projects with its customers?

A. Yes. To the extent that a NPA solicitation passes the BCA analysis the Company is proposing a sharing of the savings and incentive mechanism similar to what is in place for our NWA program established in Case 14-E-0318. The details of the benefits sharing and incentive are included the testimony of the DSP Panel.

Q. Does this conclude your direct testimony?

A. Yes, it does.