SYSTEM CAPABILITIES AND CONSTRAINTS

Questar Gas System Overview

Questar Gas' system currently consists of nearly 19,000 miles of distribution and transmission mains serving approximately 998,000 customers. The system operates at pressures that range up to 1,000 psig and is separated into many subsystems in order to deliver the pressures and volumes that customers require. Questar Gas builds system models annually to determine when and to what extent system improvements will be required. Figure 4.1 shows the Questar Gas high-pressure (HP) system and service area.

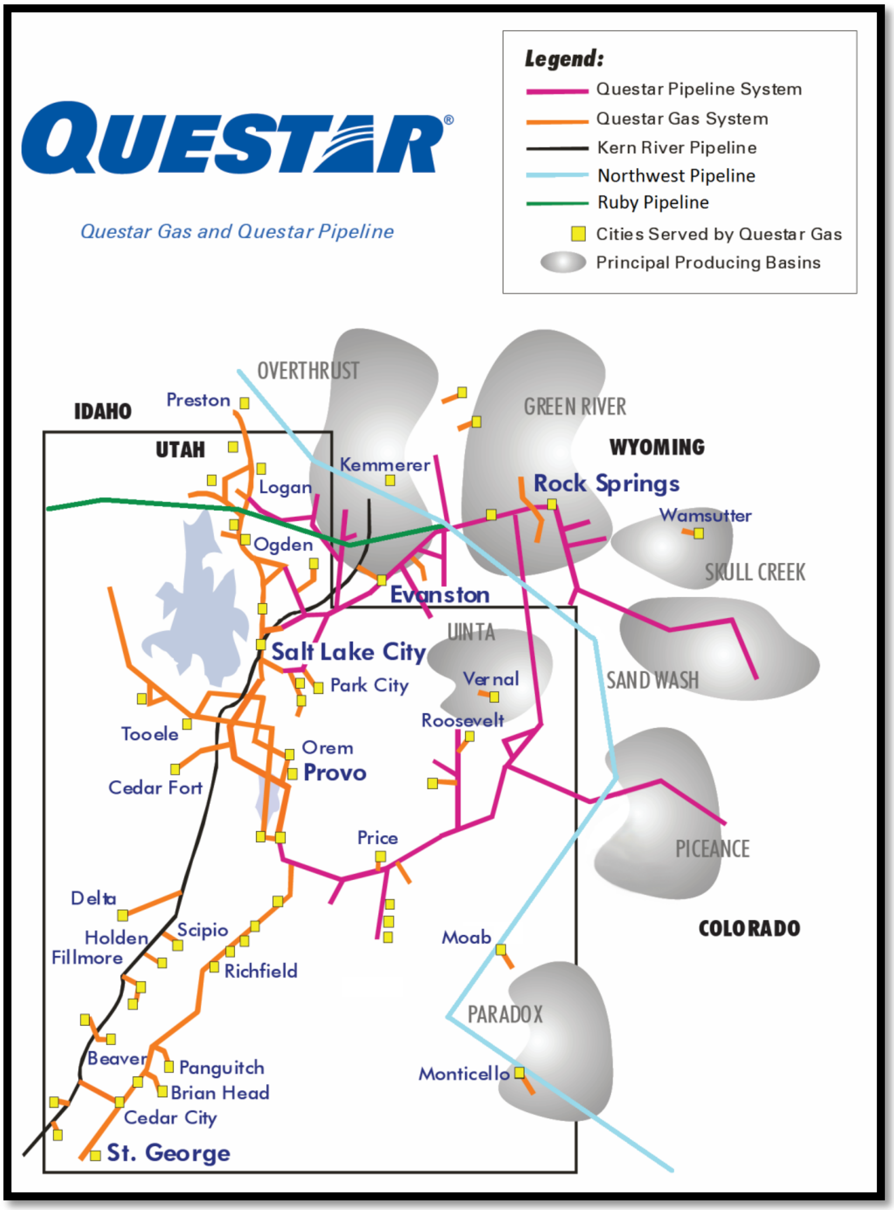

Figure 4.1: Questar Gas HP System

Ongoing and Future System Analysis Projects

Master Planning Models

Questar Gas creates Master Planning Models to more accurately predict impacts of system growth. The models are created using growth projections and anticipated growth from specific planned developments in each area. The benefit of using this data is that the resulting system pressures will reflect the impact of the specific growth centers and provide improved projections of system impacts during a peak event.

System Supply Analysis and Joint Operating Agreement (JOA)

Questar Gas analyzes its gas supply contracts each year to determine if they will meet the coming year's demands. The Company carefully considers the upstream (interstate transmission pipelines) constraints and capabilities as well as the ability to acquire gas to deliver to its system on a peak day. The purpose of this analysis is to determine the amount of gas required on a peak day and if the current contracts (sales and transportation) facilitate this required delivery.

Questar Gas and Questar Pipeline work together each year to update a Joint Operating Agreement (JOA) as part of this analysis. The JOA includes details regarding the pressures and flows available at the jointly operated gate stations, as well as operational and facilities responsibilities. One objective of this agreement is to ensure that the Company receives adequate inlet pressures to these stations in order to maintain system reliability. This is a complicated process that requires detailed collaboration due to the fact that the flows at these stations fluctuate through the day to match the changing demands on the Questar Gas system.

Interruption Analysis

A number of customers on the Questar Gas system have chosen to purchase service on an interruptible rate utilizing any available system capacity. While the system is not designed for these customers, it is important to understand the temperatures at which an interruption would be expected. The interruption analysis divides the system into interruption zones and determines the temperature at which interruption of a specific zone is appropriate to ensure reliable service to the surrounding firm customers.

Operational Models

Questar Gas prepares to respond to unforeseen scenarios by developing and maintaining operational models of the system. The Company maintains these models to represent current conditions that exist in the system. Questar Gas engineers review these models on an ongoing basis with Questar Gas' Gas Control, Gas Supply, Marketing, Operations, and Measurement and Control departments in order to inform them of expected system conditions.

System Modeling and Reinforcement

Questar Gas utilizes steady-state Intermediate High Pressure (IHP) gas network analysis (GNA) computer models to determine the required system improvements needed to maintain operational pressures throughout the distribution system. The Company uses these models to identify the required locations and sizing of new mains and/or regulator stations. Questar Gas also uses the models to compare the required flow from the regulator stations to the maximum delivery capacity of the existing regulator stations. This analysis provides Questar Gas with the information necessary to determine which reinforcements the Company should construct each year. Based on the modeling results, the Company constructs a number of IHP mains, new regulator stations and upgrades to existing regulator stations.

The HP system models have more variables than the IHP system models. Engineers consider gate station capacities, existing supply contracts, supply availability, line pack and the piping system in conducting HP analysis. Because HP projects typically take longer to complete than IHP projects, Questar Gas must identify the need for HP improvements earlier than would be required for IHP projects. Questar Gas and the interstate pipeline companies that supply its system, collaborate to identify potential constraints to ensure that Questar Gas' supply needs are met.

Model Verification

Questar Gas verifies the accuracy of the steady-state (24-hour period) GNA models using recorded pressure data and calculated demands. Questar Gas' engineers built steady-state models to represent the system conditions that were present on Wednesday December 30, 2015 using actual data from that day. Model settings were adjusted to match the actual temperatures and other conditions for this day. The model pressures were compared to actual pressures at 105 verification points and were found to be within 7% of the actual pressures on that day. Ninety-seven of the pressures in the verification model were within 5% of the actual pressure. Based on this analysis, Questar Gas has deemed the loads and infrastructure utilized in the GNA models are accurate, and the models can confidently be used for their intended purpose.

Questar Gas also compared the total modeled demand with the daily recorded deliveries (sendout) for the same verification day at the gate stations. The results of this analysis showed the demand predicted by the model was within approximately 4% of the actual deliveries for the verification day. The results of the comparisons confirm the accuracy of the calculated demand used in the steady-state models.

Questar Gas verifies the unsteady-state (hourly results for a 24-hour period) models in the same manner as the steady-state models. The temperatures, and the gate station flows and pressures are matched as closely as possible. The Central and Northern Regions are the largest of the Company's' connected HP systems with seven gate stations and two maximum allowable operating pressure (MAOP) zones. There are other smaller isolated systems which also require unsteady-state model analysis included in the results (Figures 4.3 – 4.8). The unsteady-state model minimum pressures were found to be within 7% of the actual minimum pressures at 101 verification points on that day. Ninety-one of the pressures in the verification model were within 5% of the actual pressure. The results of these comparisons confirm the accuracy of the unsteady-state models.

Gate Station Flows vs. Capacity

The Questar Gas system models must accurately emulate the physical pressure and flow limitations of each specific station. To ensure this, Questar Gas completed a capacity study for each of the gate stations on the system. The Company calculated hourly and daily flow capacities for each station based on facility limitations, set pressures and inlet pressures provided by the upstream pipelines. Some stations have specific minimum pressures based on contractual volumes. Other stations have fluctuating inlet pressures based on the changing flow on the Questar Gas system. For the stations with changing inlet pressures, this analysis was based on the inlet pressures included in the JOA.

In order to achieve the modeled system results, Questar Gas assumed the capacity at Hunter Park to be 300 MMcfd. The Company's facilities are able to flow at this capacity and Kern River Gas Transmission Company (Kern River) is currently upgrading the Hunter Park gate station to meet this capacity requirement. This project is discussed in greater detail below, in the DNG Action Plan section of this IRP.

System Pressures

Once Questar Gas verifies the GNA models and properly sets contractual obligations and station capacities, it uses the models to analyze the gas distribution system to verify that it has adequate pressures in order to supply Questar Gas customers. Questar Gas uses peak models for this analysis. Peak models include firm loads for sales and transport customers. Questar Gas uses the daily contract limits for applicable customers and assumes that interruptible demands are curtailed during the peak day.

Northern

The Northern Region includes the distribution system throughout Salt Lake City and northern Utah, including Box Elder, Cache, Davis, Morgan, Salt Lake, Summit, Tooele, Utah, Wasatch and Weber counties. Questar Gas serves this region through interconnects with Questar Pipeline at MAP 164 using the Hyrum, Little Mountain, Payson, Porter's Lane and Sunset stations. Questar Gas also serves the region through multiple smaller taps from Questar Pipeline (MAP 162) and Kern River at Eagle Mountain, Lake Side, Hunter Park and Riverton stations.

In the steady-state model, the calculated low point in the main portion of northern system is 265 psig, at the endpoint of FL 74 in Preston. The lowest steady-state pressure is in the Summit/Wasatch system, at Park City, which is 214 psig. These pressures remain higher than Questar Gas' minimum allowable design pressure of 125 psig.

The steady-state pressures at some of the key locations in the Questar Gas System are shown in Table 4.1. The locations on the system are shown in Figure 4.2. Questar Gas models these pressures on a peak day at system endpoints and low points in the area and important intersections. Questar Gas builds steady-state models using average daily flows that most closely represent average pressures for the peak day. The unsteady-state GNA models profile demands throughout the day, and represent the pressure fluctuations throughout the peak day.

Table 4.1: Questar Gas High Pressure System Steady-State Peak-Day Pressures

Location	Pressure (psig)
Endpoint of FL 29 – Plymouth	272
Endpoint of FL 36 – West Jordan	305
Endpoint of FL 48 – Stockton	325
Endpoint of FL 51 – Plain City	314
Endpoint of FL54 – Park City	214
Endpoint of FL 62 – Alta	291
Endpoint of FL 63 – West Desert	313
Endpoint of FL 70 – Promontory	279
Endpoint of FL 74 – Preston	265
Endpoint of FL 106 – Bear River City	295
Intersection of FL 29 & FL 23 – Brigham City	372

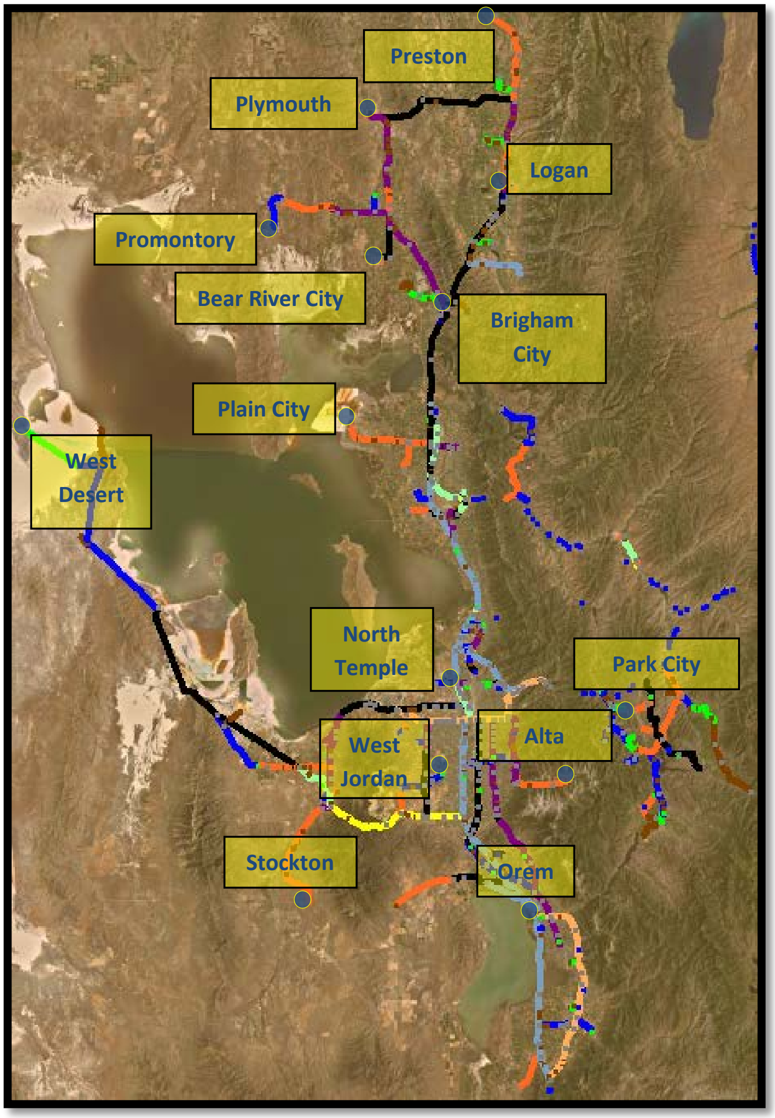

Figure 4.2: Northern Region Key Pressure Locations

The curves shown in Figure 4.3, Figure 4.4 and Figure 4.5 are the expected peak-day pressures for the Northern Region HP system. In the projected unsteady-state models, the low point in the Northern Region is Park City at 125 psig. The next lowest predicted pressure in the Northern Region is in Plain City at 139 psig.

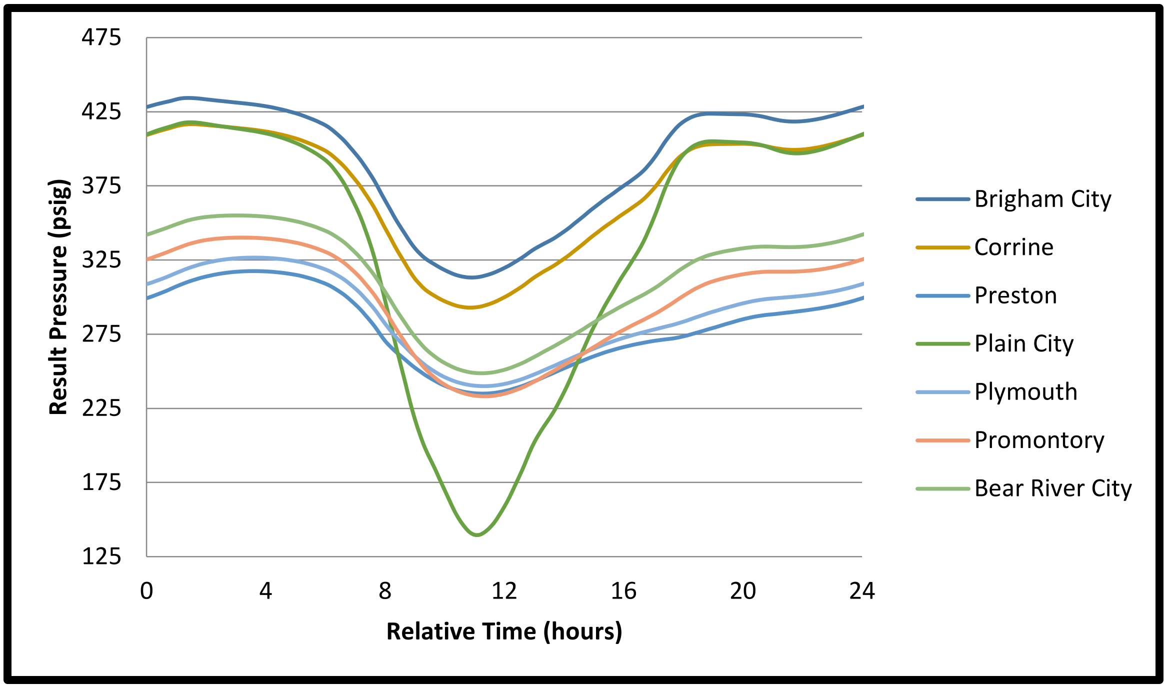

Figure 4.3: 2016-2017 Northern Unsteady-State Peak-Day Pressures (North of North Temple)

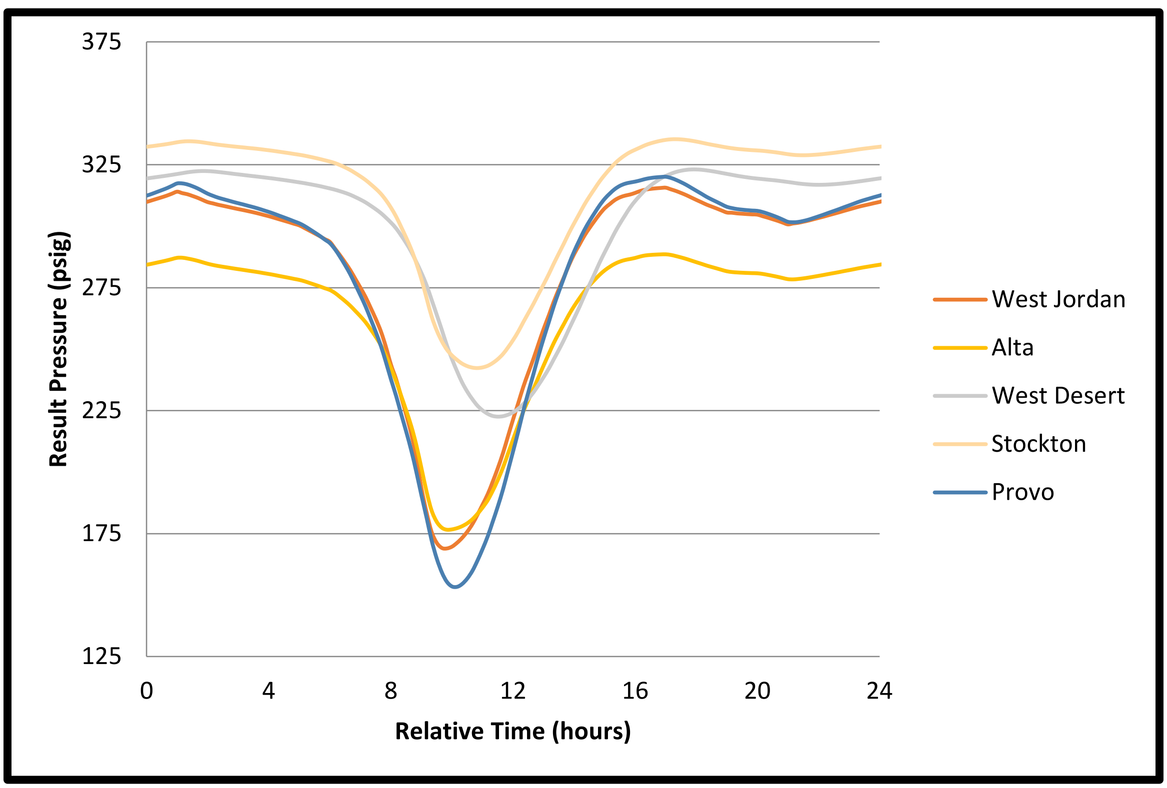

Figure 4.4: 2016-2017 Northern Unsteady-State Peak-Day Pressures (South of North Temple)

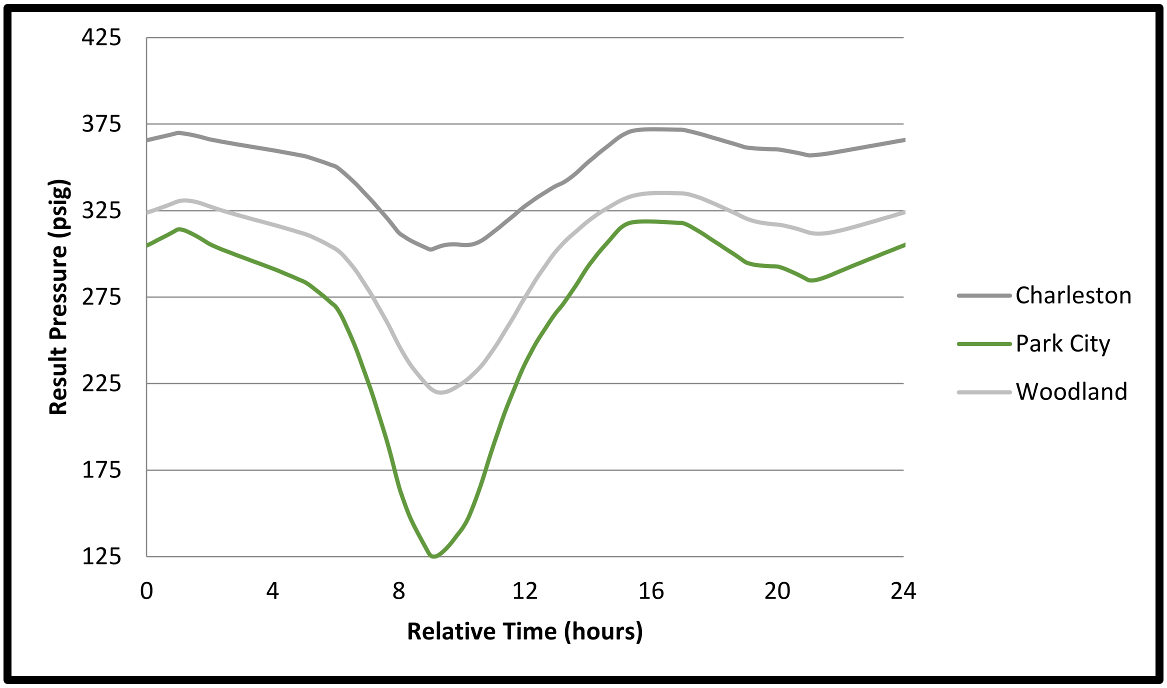

Figure 4.5: 2016-2017 Northern Unsteady-State Peak-Day Pressures (Summit and Wasatch Counties)

Eastern (North)

The Eastern (North) Region includes Duchesne, Uintah, Carbon and Emery counties, including the cities of Price and Vernal. The Vernal area is served from Questar Pipeline by two gate stations through MAP 163 and MAP 334. In 2016, Questar Gas will replace FL 89 between Island Park (the gate station on the east side of Vernal) and the Diamond Mountain regulator station. The improvement will increase both the pressure at the Vernal 1 regulator station as well as the take-away from Island Park. The results shown in Figure 4.6 reflect this improvement.

The system pressure in this area is decreasing due to growth in the Fort Duchesne area and the declining pressure must be remedied in the coming years. Currently, the minimum pressure at Fort Duchesne is 161 psig, well above the minimum operational pressure. However FL 43, the pipeline serving Fort Duchesne, is a 20-mile line composed of mostly 4-inch pipe. In order to maintain pressures, the Company must loop or replace the line. FL 43 is identified to be replaced as part of the Infrastructure Rate Adjustment Mechanism and will likely be scheduled for replacement in the next five years.

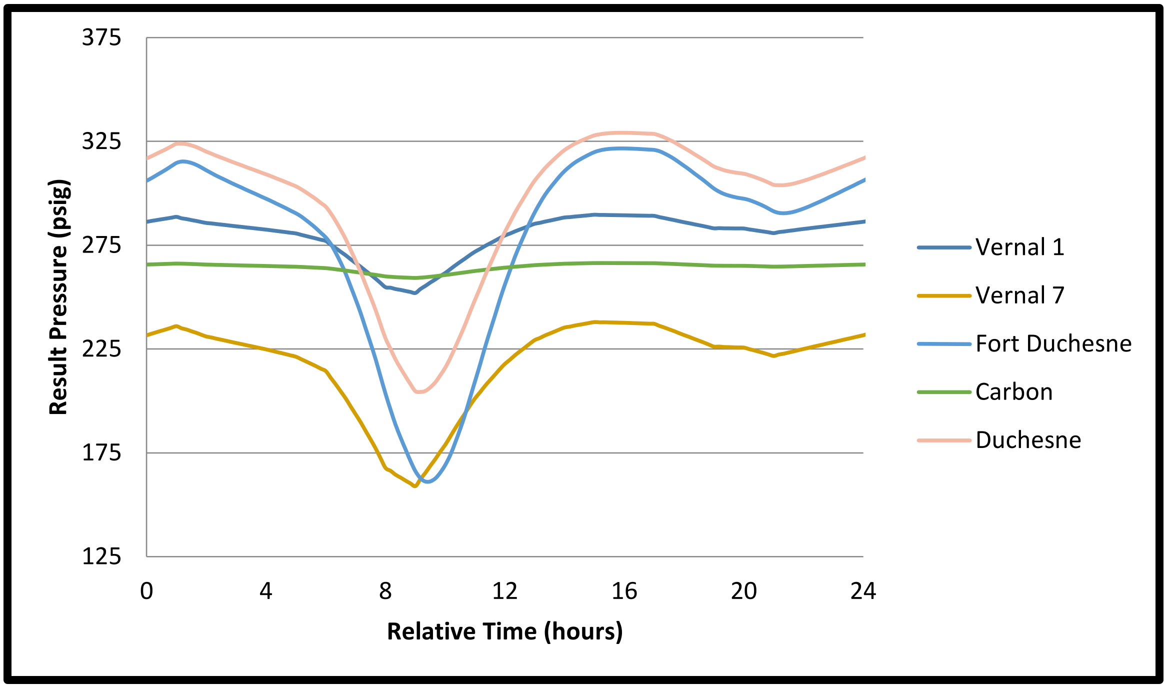

Figure 4.6: 2016-2017 Eastern (North) Unsteady-State Peak-Day Pressures

Eastern (Northwest Pipeline)

The Eastern (Northwest Pipeline) Region includes the cities of Moab, Monticello and Dutch John. Questar Gas serves these areas from Northwest Pipeline with two stations in Moab, one station in Monticello and one station in Dutch John.

The system in this area is made up of separate subsystems with individual gate stations connected to Northwest Pipeline. All of the segments in this area have adequate pressures and do not require any improvements to meet the demand for the 2016-2017 heating season.

While Monticello is able to meet peak day requirements, the pressures at the Monticello regulator station (MZ0001) drop below 125 psig in the unsteady-state analysis. In general the Company maintains 125 psig as the minimum pressure in HP systems, however, this system is different due to the fact that the MAOP of the Monticello line (FL98) is only 150 psig. The regulator station, MZ0001, has the required peak-day capacity at 107 psig, the minimum pressure expected on a peak day. Questar Gas Engineering is reviewing improvement options to accommodate growth in Monticello.

Southern (Main System)

The Southern (Main System) Region encompasses the areas served by the Indianola, Wecco and Central stations including Richfield, Cedar City and St. George. Questar Gas serves these areas from Questar Pipeline at Indianola station through MAP 166 and from Kern River at Central and Wecco stations.

Using the steady-state model, the lowest modeled pressure on a peak day is 432 psig at the Walmart Supercenter west of Hurricane. All segments in this area have adequate pressures and do not require any improvement to meet the existing demand.

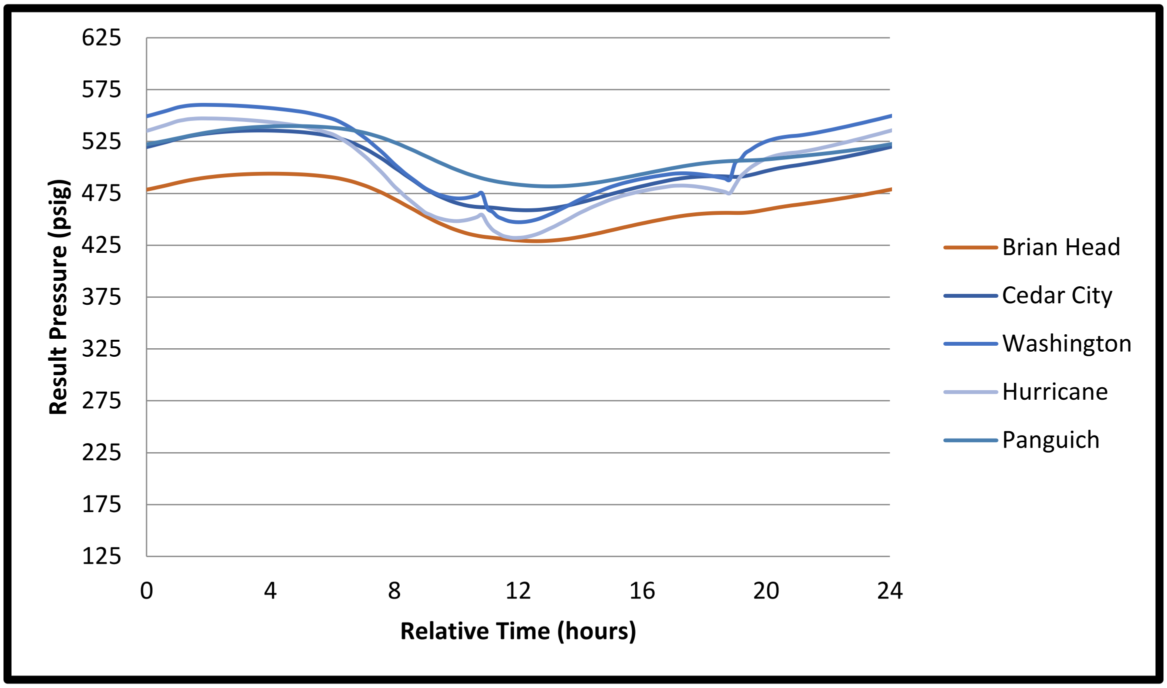

Figure 4.7: 2016-2017 Southern Unsteady-State Peak-Day Pressures

Southern (Kern River Taps)

The Southern Region includes towns in Juab, Millard, Beaver, Iron and Washington counties (all towns that are served south of the Payson Gate Station and are not part of the Indianola/Wecco/Central system). These areas are all single feed systems served by Kern River.

The system in this area is made up of separate subsystems with individual taps off Kern River. All segments in this area have adequate pressures and do not require any improvement to meet the existing demand.

Wyoming

The Wyoming Region includes Rock Springs, Evanston, Lyman, Kemmerer, Baggs and Granger. These areas are served from Questar Pipeline through MAP 168, MAP 169 and MAP 177 from CIG at Wamsutter and Rock Springs and from Williams Field Services (WFS) at La Barge and Big Piney.

The Rock Springs area is typically served by two regulator stations from Questar Pipeline. In the projected peak-day model, the HP system also requires supply from CIG's Foothill station in order to maintain operational pressure in the Reliance area at the end of FL 30. As discussed in the Gathering, Transportation and Storage section of this report, the Company is evaluating options for firm capacity on CIG to serve this station.

The Company projects that the 2016-2017 peak-day pressures in Reliance will be 137 psig (Figure 4.8) with the Foothill high-pressure station flowing with outlet pressures near MAOP. The Company will construct an extension of FL 111 to Reliance in future years to maintain adequate operating pressures.

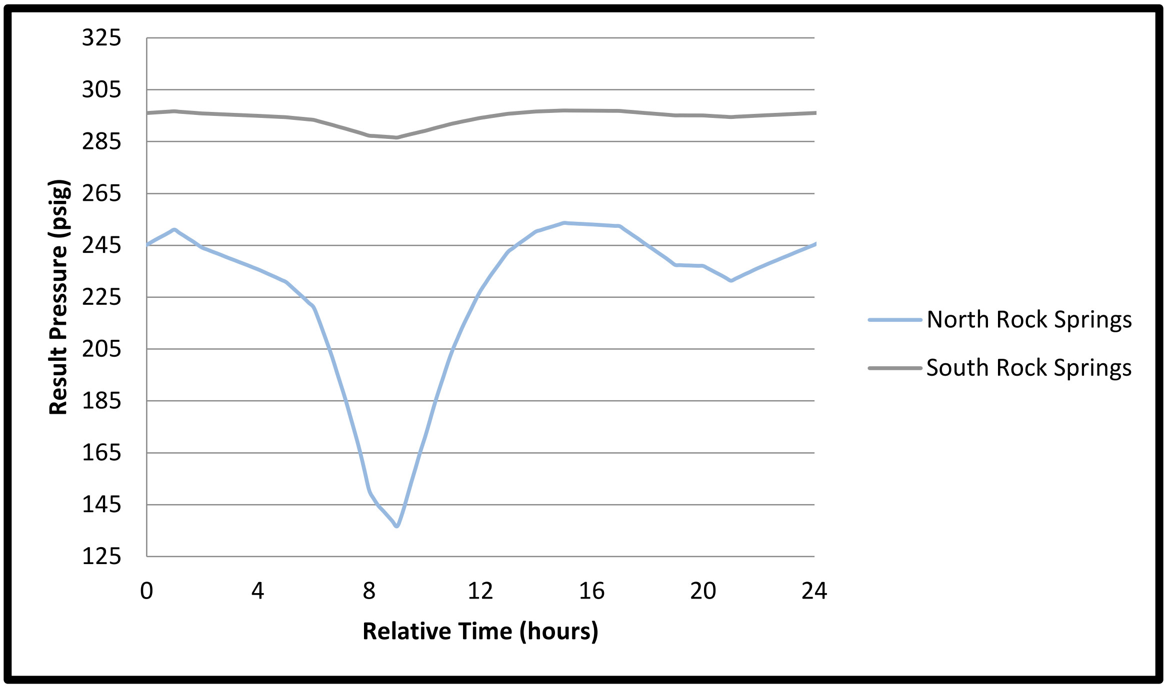

Figure 4.8: 2016-2017 Rock Springs Unsteady-State Peak-Day Pressures

System Capacity Conclusions

Questar Gas' HP feeder line system is capable of meeting the current peak-day demands with adequate supply and capacity in the system. This system assessment is based on the fact that the gate stations and feeder line systems have adequate capacity to meet average-daily and peak hourly demands and the supply contracts are adequate. All system models show that pressures do not drop below the design minimum of 125 psig. As discussed below, the Company has plans to address any areas with projected pressures near the 125-psig minimum. The system will continue to grow along with the demand and Questar Gas will conduct an analysis annually to ensure that the system continues to meet the peak day needs.

Questar Gas will discuss project options in the distribution action plan (DNG Action Plan) for these identified constraints and concerns:

- Increasing demand and limited supply in the Northern and Central Regions
- Low pressures at the endpoint of FL 51 near Plain City
- Low pressures along FL 54 in Park City
- Demand growth in the Summit/Wasatch Area

- Low pressures in the Vernal HP system
- Low pressures in Fort Duchesne
- Demand growth in Monticello
- Demand growth in Rock Springs

DNG Action Plan

Questar Gas is currently planning, designing and constructing several reinforcement and replacement projects on its system. The following is a brief description of the major projects that Questar Gas anticipates in 2016 and beyond.

High Pressure Projects:

Station Projects:

1. WG0003, District Regulator Station, St. George, Utah: The project was discussed in detail on page 4-13 of the 2015-2016 IRP. At the time of writing the 2015-2016 DNG Action plan, Questar Gas had not established a final location for the regulator station site.

   Questar Gas has since purchased a 100’ x 100’ parcel of ground at 2200 South and 3200 East, and is currently in the process of constructing a district regulator station in this location. In order to serve HP gas to the station, Questar Gas is constructing approximately 15,500 lf of 8-inch HP pipe along the route identified as Option A in the original 2015-2016 IRP analysis. Option A was selected because it was the only option that allowed for boring the Virgin River. The revised cost for this project is $3,730,000 with a first year revenue requirement of $520,000. Construction is scheduled to be completed in August of 2016.

2. NL0001 District Regulator Station, North Logan, Utah: This project was originally discussed on page 4-12 of the 2015-2016 IRP. Questar Gas finalized the purchase of property at 600 East and approximately 1600 North. As a result, the 8-inch HP tap line is slightly shorter than originally discussed. Additionally, the route changed and instead of running down 800 East, the line will be constructed along 600 East. The new route is approximately 6,000 lf.

   This project is scheduled to begin in June 2016 and completed in October 2016. The revised estimate for this project, including the station construction, is $2,826,000 with a first year revenue requirement of $395,000.

   Further planning of the project has also allowed the Company to develop a more detailed cost estimate. Since the 2015-2016 IRP, the cost estimate has increased as a result of permitting requirements imposed by the city of North Logan.

Specifically, North Logan will not permit road cuts in certain areas and Questar Gas must bore those locations at a significantly greater cost. Additionally, since the 2015-2016 IRP, Questar Gas procured property for the regulator station and, as a result, has been able to estimate the costs of constructing the station. Those costs have now been included in the estimate.

3. Hunter Park Gate Station: As mentioned above, Questar Gas has contracted to increase the capacity of the Kern River facilities at the Hunter Park gate station. In 2014, Questar Gas constructed improvements to increase capacity of the Questar Gas facilities at the Hunter Park gate station to 300 MMcfd with provisions that enable Questar Gas to increase the capacity to 400 MMcfd in the future. In 2016, Kern River will construct improvements to increase capacity on the Kern River side of the meter up to 400 MMcfd. Questar Gas opted to pay Kern River to increase its facilities above the 300 MMcfd capacity on the Questar Gas side of the facilities in order to allow flexibility for increased capacity in the future. The incremental cost to increase to 400 MMcfd instead of 300 MMcfd was significantly lower than paying the cost of increasing the capacity at a later date. When growth requires increased capacity at the Hunter Park gate station, Questar Gas will make the required improvements to its own facilities to allow 400 MMcfd to flow through the entire station.

   The estimated cost for this project is $4,370,000 with a first year revenue requirement of $630,000. Kern River anticipates project completion by November 2016.

4. SQ0003, District Regulator Station, Santaquin, Utah: This project was first discussed on page 4-14 of the 2015-2016 IRP. At that time, Questar Gas was still analyzing routes for the HP extension, as well as determining when the project should be constructed. Since the submittal of the 2015-2016 IRP, Questar Gas has determined that customer additions in the southwest corner of Santaquin require this project be constructed in 2017. The scope and analysis for this project are discussed below.

   Questar Gas analyzed several sites for the proposed regulator station. Due to constraints on available construction corridors within the city roads, Questar Gas considered the following two route options:

   A) Starting at Questar Gas' existing FL 100 termination point (SQ0001 station), the construction would move west along 100 North approximately 1,200 lf to 300 East. At that point the project would run north approximately 580 lf to 200 North. From this point the project would again run west, along 200 North and Lark Road, approximately 10,000 lf to the regulator station property.

B) Starting at Questar Gas' existing FL 100 termination point (SQ0001 station), the construction would move west along 100 North approximately 600 lf to 400 East, at that point the project would run south approximately 1,800 lf to 200 South. At 200 South the project would run west approximately 3,950 lf to 300 West. At 300 West the project would turn south and run approximately 1,630 lf to 500 South. At 500 South the project would run west approximately 7,400 lf to the regulator station property.

Based on analysis from Questar Gas' System Engineering department, the Company proposes an 8-inch line for either option.

After analysis, Questar Gas determined that Option A was the best alternative to reinforce the IHP system in Santaquin. Option A is substantially shorter and less expensive to construct than Option B, and offers similar system benefit. Additionally, Santaquin City did not favor the route for Option B. The city requested Questar Gas analyze Option A, and provided a site for the location of the regulator station. Lastly, the route for Option A may allow for gas service to eventually be extended to the town of Genola, Utah.

Questar Gas anticipates constructing this project in 2017. The estimated cost for the project, including station construction, is $3,040,000 with a first year revenue requirement of $425,000.

5. NO0001 District Regulator Station, North Ogden, Utah: Questar Gas discussed this project on page 4-13 of the 2015-2016 IRP and in the Fourth Quarter Variance Report (June 2015-August 2016). Since that time, Questar Gas has learned that the parcel of property necessary to construct the project is no longer viable due to permitting issues.

   As a result, Questar Gas has commenced design of a replacement project and is evaluating route and property options. The Company anticipates constructing this project in 2017. Questar Gas will continue to report on the progress of this project as part of the IRP Variance Report process.

6. LG0012 District Regulator Station, Nibley, Utah: This project is necessary to alleviate low pressures in the IHP system in Nibley, Utah. Due to the location of the load growth, the only method to improve pressures is to add a district regulator station in this area.

   Questar Gas conducted a study to look at the appropriate size for this tap line extension that would be required for this station. The study concluded that the appropriate diameter for the tap line extension was 8-inch. The Company will tap Questar Gas Feeder Line 23 near U.S. Highway 89 on 3200 South Street. The Company will construct the line east for approximately 13,200 lf from the tap location to the location of the new regulator station on 3200 South and Main Street.

This project is currently scheduled to begin construction in 2018. The estimated cost for this project, including the 8-inch tap line extension and new district regulator station, is $3,255,000 with a first year revenue requirement of $455,000.

7. Gate Station Projects: As mentioned in the 2015-2016 IRP, Questar Gas has been analyzing the available capacity to meet peak-day demand at several of its gate stations. Currently there are nine stations that are above 92% capacity. Those stations are: Altamont, Bluebell, Central, Island Park, Kemmerer, Little Mountain, Hyrum, Hunter Park and Riverton. Questar Gas is developing a plan to address capacity concerns at these stations. It is likely that some changes will be required prior to the 2018 heating season. This may include facility upgrades or greater utilization of facilities with excess capacity in order to reduce the utilization of some of the other stations. Questar Gas will continue to report on this issue as part of the IRP Variance Report process.

   Questar Gas is also evaluating options to provide additional gate station capacity in or order to meet future growth needs. Any projects to add additional station capacity will require multiple years to plan, design and construct. These projects will need to be started years before they are needed. Questar Gas will continue to report on these projects in the annual IRP.

Feeder Line Projects:

1. Heber City Reinforcement: Questar Gas discussed this project in detail in the 2011-2012 IRP. Questar updated the estimated cost for this project in the 2015-2016 IRP to $2,800,000 with a first year revenue requirement of $380,000. This project began construction in May 2016 and is scheduled to be completed in September of 2016.

2. Vernal Reinforcement: This project was initially discussed on page 4-16 of the 2015-2016 IRP. At the time Questar Gas was analyzing three alternatives for improvement in the area. After evaluation, Questar Gas chose what had been identified as Option A for reinforcement of the Vernal HP system.

   Option A consists of replacing approximately four miles of 4-inch and 6-inch HP pipe with approximately 21,200 lf of 8-inch HP pipe. Questar Gas will also replace the existing regulator station at Diamond Mountain with a medium capacity post-type regulator station. Construction on this project is currently scheduled to begin in July 2016. Questar Gas anticipates construction will run through October 2016.

The Company has included this project as part of the Feeder Line replacement program.

3. West Jordan Reinforcement: This project was first discussed on page 4-16 of the 2015-2016 IRP. At that time Questar Gas was analyzing how best to alleviate low HP system pressures on FL 36 in West Jordan. After analysis Questar Gas determined the most efficient way to reinforce the HP system is to tie the two portions of FL 36 together.

   There are currently two legs of FL 36. The eastern leg taps FL 34 on approximately 9800 South and Redwood Rd. It extends west from that point to a district regulator station located at approximately 2700 West and 9800 South. The western leg of FL 36 runs along Old Bingham Highway and connects with a regulator station at approximately 4000 West. The West Jordan Reinforcement project will tie both ends of FL 36 together.

   The scope for this project includes installation of approximately 15,000 lf of 6-inch HP pipe. The current estimated cost is $5,900,000 with a first year revenue requirement of $785,000. The project is scheduled to begin in May 2016 and tie-in is expected in December 2016.

4. Park City Reinforcement: This project was first discussed on page 4-16 of the 2015-2016 IRP. Questar Gas is currently in the design phase of the project and is evaluating route options. This project is currently scheduled for construction in 2017. Questar Gas will continue to report on the progress of this project as part of the IRP Variance Report process.

5. FL 111 Extension, Reliance, Wyoming: This project was initially discussed on page 4-16 of the 2015-2016 IRP. Questar Gas is currently in the design phase of the project and is evaluating route options. This project is currently scheduled for construction in 2018. Questar Gas will continue to report on the progress of this project as part of the IRP Variance Report process.

6. Feeder Line Replacement Program: Questar Gas continued its Feeder Line replacement program in 2016. Pursuant to the Utah Commission's Order approving the Settlement Stipulation in Docket No. 09-057-16, on November 15, 2015 the Company filed an infrastructure replacement plan detailing the planned projects, the anticipated costs and other relevant information.

Intermediate High Pressure Projects:

1. Belt Main Replacement Program: Questar Gas is continuing its Belt Main Replacement program in 2016 with replacements primarily in Salt Lake City. Pursuant to Settlement Stipulation and Utah Commission's Order Approving the Settlement Stipulation, in Docket No. 13-057-05, on November 15, 2015 the Company filed an infrastructure replacement plan detailing the planned projects, the anticipated costs and other relevant information.

2. Eastern Utah System Replacements: Questar Gas acquired the distribution systems in Moab, Vernal and Monticello from Utah Gas in 2001. After careful consideration and analysis, the Company determined that these systems were in need of replacement.

   In 2009, Questar Gas began a replacement program. The Company has completed replacements in Monticello and Moab and work is underway in Vernal. Questar Gas plans to complete the work as described below.

   Vernal Replacements: The Company will replace approximately 120,000 lf of main and 675 services in 2016. Of the 120,000 feet of main, about 80,000 lf will be replaced with 2-inch plastic pipe and about 20,000 lf will be replaced with 4-inch plastic pipe and about 20,000 lf will be replaced with 6-inch plastic pipe. The total estimated project cost for 2016 is $5,500,000 with a first-year revenue requirement of about $765,000. The Company plans to complete this project in 2017. There are no viable alternatives for this replacement.

3. Mountain View, Wyoming Replacement: Questar Gas began replacing significant portions of the Mountain View system in 2014. The system dates back to the 1950s and due to environmental factors is reaching the end of its useful life. In 2016, the Company will replace approximately 10,100 lf of main with 2-inch pipe. Additionally, the Company will replace 65 service lines. The footage of main and number of services required to be replaced have been reduced from the estimates in last year's IRP due to refinements in the design. The estimated project cost for 2016 is $700,000 with a first-year revenue requirement of $100,000. 2016 will be the final year of the Mountain View replacement project. There are no viable alternatives for this replacement.

Preliminary Timeline Summary:

High-Pressure Project Summary Table (Excluding Feeder Line Replacement)			
Year	Project	Estimated Cost	Revenue Requirement
2016	WG0003 District Regulator Station	$3,730,000	$520,000
	NL0001 District Regulator Station	$2,826,000	$395,000
	Hunter Park Gate Station	$4,370,000	$630,000
	Heber City HP Reinforcement	$2,800,000	$380,000
	West Jordan Reinforcement	$5,900,000	$785,000
2017	SQ0003 District Regulator Station	$3,040,000	$425,000
	NO0001 District Regulator Station	TBD	TBD
	Park City HP Reinforcement	TBD	TBD
2018	LG0012 District Regulator Station	$3,255,000	$455,000
	FL 111 Extension	TBD	TBD

Activities and Associated Costs for Transmission Lines and Distribution Systems

Transmission Integrity Overview

Questar Gas continues to implement integrity activities defined in its Transmission Integrity Management Plan for transmission lines as originally mandated by the “Pipeline Safety Improvement Act of 2002” and later codified in the Federal Regulations (49 CFR Part 192, Subpart O). The transmission integrity management regulations require Questar Gas to identify all high consequence areas (HCA) along the segments of feeder lines that are defined as transmission lines.[64]

[64] Transmission Lines are those feeder lines (or segments of feeder lines) that are operating (i.e. Maximum Allowable Operation Pressure (MAOP) at or above a pressure that produces a hoop stress of 20% of specified Minimum Yield Strength (SMYS)).

Once the Company identified these HCAs, it calculated a risk score for each segment located in the HCA. These risk scores established the initial priority for when the Company initially assessed each HCA. The Company verifies each HCA and calculates the risk score on an annual basis. Subsequent to this initial assessment, federal regulations require Questar Gas to reassess each HCA at intervals not to exceed seven calendar years from the initial or previous assessment, or sooner based on results of the previous assessment.

Additionally, Questar Gas is required by the transmission integrity rules to conduct additional ongoing preventive and mitigative measures on feeder lines in HCAs and in class 3 and 4 locations.[65] These additional measures include monitoring excavations (excavation standby) near these feeder lines and performing semi-annual leak surveys.

Distribution Integrity Overview

On December 4, 2009, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued the final rule titled: "Integrity Management Program for Gas Distribution Pipelines." This final rule became effective on February 12, 2010, with implementation required by August 2, 2011.

The distribution integrity management rule requires Questar Gas to develop, write and implement a distribution integrity management program with the following elements:

> Knowledge; identify threats; evaluate and rank risks; identify and implement measures to address risks; measure performance, monitor results, and evaluate effectiveness; periodically evaluate and improve program; and report results.

Questar Gas continues to implement activities defined in its Distribution Integrity Management Plan for the distribution system. It implements the activities to mitigate the threats that are identified in the plan.

Transmission Integrity Management

Costs

Table 4.3 details the anticipated costs associated with transmission integrity management.

Baseline Assessment Plan

[65] Class location as defined by 49 CFR Part 192 (§192.5).

The Baseline Assessment Plan prescribes the methods that the Company will use to assess the integrity of each HCA. The Company determines these methods based upon the known or anticipated threats to these segments. The most common threats on the pipeline include corrosion and third party damage. The Company has used multiple assessment methods in the past to address these threats, including external corrosion direct assessment (ECDA), internal corrosion direct assessment (ICDA), direct visual examination, pressure testing and inline inspection. The Company has completed the Baseline Assessment Plan for all segments of pipe.

External Corrosion Direct Assessment

ECDA is an assessment method that evaluates the integrity of the pipeline segments for the threat of external corrosion, including segments of cased gas transmission pipelines. Refer to Figure 4.10 for an overview of the ECDA process.

The ECDA methodology is a four-step process. The four steps of the process include:

Pre-Assessment - This step utilizes historic and current data to determine whether ECDA is feasible, identify appropriate indirect inspection tools, and define ECDA regions. ECDA regions are areas along the pipeline that have similar characteristics. There may be multiple regions along a single pipeline segment. Examples of ECDA regions include segments in casings or segments with different types of external coatings.

Indirect Inspection - This step utilizes above-ground inspection methods such as close interval survey, pipeline current mapper or DC voltage gradient survey, to identify and quantify the severity of coating faults and areas of diminished cathodic protection. The analysis of this data can help identify areas along the pipeline segment where corrosion may have occurred or may be occurring. The Company uses a minimum of two indirect inspection tools over the entire pipeline segment to provide improved detection reliability across the wide variety of conditions encountered along a pipeline right-of-way. The Company categorizes indications from indirect inspections according to severity. A third indirect inspection tool is required for initial assessments of the segment.

Direct Examination - This step includes excavations of the pipe for direct examination to determine if there is corrosion occurring on the pipeline. For initial assessments (i.e. first time assessments for an HCA), a minimum of two excavations are required for each ECDA region and a minimum of four excavations in total for the ECDA project. The ECDA project may contain more than one pipeline and more than one ECDA region. Reassessments require a minimum of one excavation per ECDA region and a minimum of two excavations in total for the ECDA project. The Company selects excavation sites based on a review of the data collected during the pre-assessment and the indirect surveys.

The Company uses this information to identify the areas on the pipeline within each region where external corrosion is most likely. The Company must also excavate at a location where it has not identified any indications. The Company uses the information gathered at this site to help validate the effectiveness of the ECDA process. When corrosion or other pipeline damage or coating damage is found during the direct examination step, the Company repairs the pipe or coating. The Company may select additional sites for examination based on the findings of the required direct examinations.

Post-Assessment - This step utilizes data collected from the previous three steps to assess the effectiveness of the ECDA process and determine reassessment intervals and provide feedback for continuous improvement.

Internal Corrosion Direct Assessment

ICDA is a process used to predict the most likely areas of internal corrosion, including those caused by chemical and microbiologically induced corrosion. ICDA focuses on directly examining locations at which internal corrosion is most likely to occur.

The basis of ICDA is the detailed examination of the most susceptible locations along a pipeline where liquids, if any, would first accumulate in the pipeline. If the locations most likely to accumulate liquids have no indications of internal corrosion, all other locations further downstream are considered to be free from internal corrosion. ICDA relies on the ability to identify locations most likely to accumulate liquids.

The ICDA methodology is a four-step process that is intended to assess the threat of internal corrosion in pipelines and assist in verifying pipeline integrity.

The initial baseline assessment plan included ICDA. The Company was able to eliminate internal corrosion as a threat of concern going forward based on the fact that internal corrosion was not found at the conclusion of completing ICDA on the entire pipeline system as well as the implementation of the Company's ongoing internal corrosion plan.

Visual Examination of Aboveground Pipe and Pipe in Vaults

The Company assesses aboveground piping (e.g. spans and valve assemblies) and piping in vaults by visual examination when the piping is located in an HCA and the Company cannot assess the pipe utilizing other methods.

Inline Inspection

When a pipeline has been constructed and configured, or retro-fitted in such a way to allow for inline inspection, the Company assesses the pipe using inline inspection tools commonly called "smart pigs." These tools are equipped with sensors that collect data as the tool travels through the pipeline and can reveal areas of wall loss and dents that may require repair or cutout. Questar Gas has 115 miles of transmission piping (14% of Questar Gas' transmission system) that can be inspected using smart pigs. As the Company replaces aging infrastructure, it designs and builds the new pipelines to accommodate inline inspection tools. Recent advancements in technology allow some limited application of inline inspection tools for non-piggable pipelines. Questar Gas has helped fund these advancements through its research and development program. The Company has used these advanced tools to assess locations of its system that it previously could not.

The inline inspection tools provide specific data on the condition of the pipeline segment being inspected. The Company analyzes data that it collects along the pipeline segment for defects and areas of concern (e.g. wall loss or dents) and excavates for further evaluation and repair or cut out, if necessary.

High Consequence Area Validation

Each year, Questar Gas conducts a field survey of all transmission line segments to validate the current HCA as well as identify any new potential sites that may trigger a new HCA. Sites that may trigger a new HCA include the following: office buildings, businesses, community centers, churches, day care centers, retirement centers, hospitals and prisons.

The Company maintains this information in its mapping system and uses it to calculate HCAs on an annual basis.

Distribution Integrity Management

Costs

Table 4.4 details the anticipated costs associated with distribution integrity management.

Implementation

Questar Gas implemented its written Distribution Integrity Management Plan in August of 2011. Implementation included identifying the threats associated with the distribution system within each operating region as well as calculating a risk score for each identified threat. The risk scores are derived by utilizing known infrastructure data and leak history. The threats and the associated risk scores are validated by operating personnel within each operating region. Once the Company identified the threats and calculated the risk scores for each threat, each operating region identified possible measures that could be implemented or are currently being implemented that would help mitigate the risks on the distribution system. The process of identifying threats and calculating the risk for each threat is ongoing and is evaluated on an annual basis.

Key Performance Integrity Metrics

Table 4.5 details specific performance metrics associated with the integrity management program.

New Regulations that May Impact Future Costs Associated with Integrity Management and Operations

The following regulations may have significant impact on Questar Gas:

Safety of Gas Transmission and Gathering Lines (Mega Rule)

PHMSA initially published an advanced notice of proposed rulemaking (ANPRM) for the Mega Rule on August 25, 2011. On April 8, 2016, PHMSA published a notice of proposed rulemaking (NPRM) in the Federal Register. The Mega Rule is intended to increase the level of safety associated with the transportation of gas by imposing regulations to prevent failures like those involved in recent incidents. The Mega Rule also seeks to clarify and enhance some existing requirements and address certain statutory mandates and National Transportation Safety Board (NTSB) recommendations.

If adopted, the proposed rule would require additional pipeline integrity management measures for pipelines that are not in HCAs, as well as clarifications and selected enhancements to integrity management activities related to pipelines within HCAs.

The proposed Mega Rule addresses several integrity management topics, including:

- Revision of integrity management repair criteria for pipeline segments in HCAs to address cracking defects, non-immediate corrosion metal loss anomalies and other defects;
- Codifying functional requirements related to the nature and application of risk models consistent with current industry standard;
- Codifying requirements for collecting, validating, and integrating pipeline data models consistent with current industry standards;
- Strengthening requirements for applying knowledge gained through the integrity management program models consistent with current industry standards;
- Strengthening requirements on the selection and use of direct assessment methods models by incorporating recently issued industry standards by reference;
- Adding requirements for monitoring gas quality and mitigating internal corrosion, and adding requirements for external corrosion management programs including above ground surveys, close interval surveys, and electrical interference surveys; and

- Codifying requirements for management of change consistent with current industry standards.

With respect to non-integrity management requirements, the proposed Mega Rule would impose:

- A new ‘‘moderate consequence area’’ definition;
- Requirements for monitoring gas quality and mitigating internal corrosion;
- Requirements for external corrosion management programs including above ground surveys, close interval surveys, and electrical interference surveys;
- Requirements for management of change, including invoking the requirements of ASME/ ANSI B31.8S, Section 11;
- Repair criteria for pipeline segments located in areas not in an HCA; and
- Requirements for verification of maximum allowable operating pressure (MAOP) and for verification of pipeline material for certain onshore steel gas transmission pipelines including establishing and documenting MAOP if the pipeline MAOP was established in accordance with §192.619(c) or the pipeline meets other criteria indicating a need for establishing MAOP.

The proposed Mega Rule also proposes requirements for additional topics that have arisen since issuance of the ANPRM including:

- Requiring inspections by onshore pipeline operators of areas affected by an extreme weather event such as a hurricane or flood, landslide, an earthquake, a natural disaster or other similar event;
- Allowing extension of the 7-year reassessment interval upon written notice;
- Requiring operators to report each exceedance of the MAOP that exceeds the margin (build-up) allowed for operation of pressure limiting or control devices;
- Adding requirements to ensure consideration of seismicity of the area in identifying and evaluating all potential threats;
- Adding regulations to require safety features on launchers and receivers for in-line inspection, scraper and sphere facilities; and
- Incorporating consensus standards into the regulations for assessing the physical condition of in-service pipelines using inline inspection, internal corrosion direct assessment and stress corrosion cracking direct assessment.

Plastic Pipe Rule

PHMSA published this regulation as a NPRM on May 21, 2015, with an anticipated final rule publication in 2016. PHMSA is proposing to amend the natural and other gas pipeline safety regulations to address regulatory requirements involving plastic piping systems used in gas services. These proposed amendments are intended to correct errors, address inconsistencies and respond to petitions for rulemaking. The requirements in several subject matter areas are affected, including incorporation of tracking and traceability provisions; design factor for polyethylene (PE) pipe; more stringent mechanical fitting requirements; updated and additional regulations for risers; expanded use of Polyamide-11 (PA-11) thermoplastic pipe; incorporation of newer Polyamide-12 (PA-12) thermoplastic pipe; and incorporation of updated and additional standards for fittings.

Valve Installation and Minimum Rupture Detection Standards Rule

PHMSA plans to publish this rule as an NPRM in July 2016. This rule is expected to cover rupture detection and response time metrics including the integration of automatic shutoff valves and remote control valves on transmission pipelines with an objective to improve overall incident response.

Miscellaneous Rule

PHMSA published this regulation as a final rule on March 11, 2015, with an effective date of October 1, 2015. This rulemaking includes the performance of post-construction inspections and qualification of plastic pipe joiners. Post-construction inspection could have a significant impact on Questar Gas. PHMSA is currently in the process of developing guidance for the interpretation and implementation on the requirements associated with post-construction inspection. The effective date for this part of the rule has been extended indefinitely. The Company anticipates publication of further guidance in 2016.

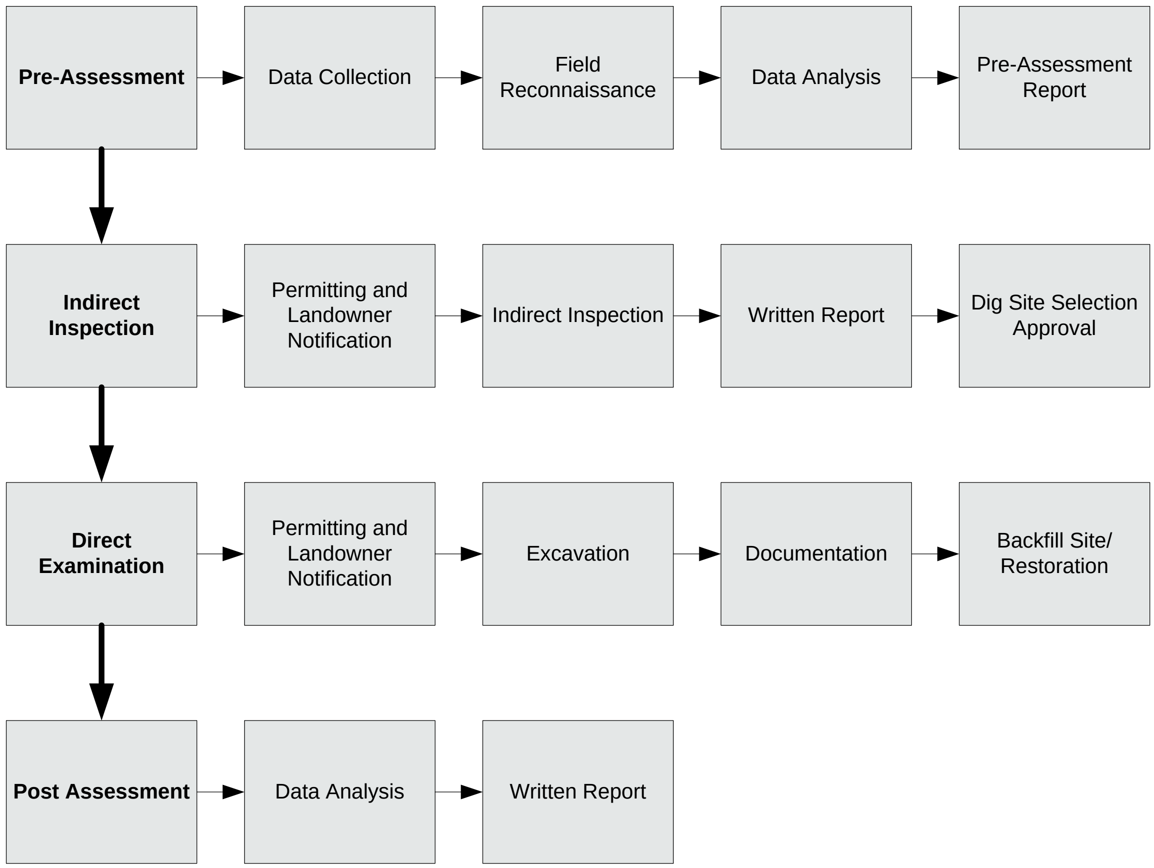

Figure 4.10 – ECDA Process Overview

Table 4.3 – Transmission Integrity Management Costs

$ Thousands

Activity	**2016**	**2017**	**2018**
Transmission Integrity Management			
ECDA			
Pre-Assessment			
2016 (FL 10, 14, 21, 26 (uprated portion), 35, 41, 42, 48, 62, 88) (14 HCA miles @ $2,000/mile)	28		
2017 (FL 4, 11, 26 (non-uprate portion), 34, 85, 103) (20 HCA miles @ $2,000/mile)		40	
2018 (FL 6, 12, 13, 22, 24, 33, 46, 51, 53) (17.5 HCA miles @ $2,000/ mile)			35
Indirect Inspections			
2016 (FL 10, 14, 21, 26 (uprated portion), 35, 41, 42, 48, 62, 88) (14 HCA miles @ $30,000/mile)	420		
2017 (FL 4, 11, 26 (non-uprate portion), 34, 85, 103) (20 HCA miles @ $30,000/mile)		600	
2018 (FL 6, 12, 13, 22, 24, 33, 46, 51, 53) (17.5 HCA miles @ $30,000/ mile)			525
Direct Examinations			
2016 (FL 19, 20, 52, 64, 65, 66, 68, 69, 83, 84, 89, 99, 104, 116) (9 excavations @ $35,000 each)	315		
2016 (FL 32) (4 excavations @ $35,000 each)	140		
2016 (FL 21, 62) (4 excavations @ $35,000 each)	140		

Table 4.3 – Transmission Integrity Management Costs (cont.)

Activity	$ Thousands 2016	2017	2018
2016 – 2017 (FL 10, 14, 26, 35, 41, 42, 48, 88) (10 excavations @ $35,000 each)	175	175	
2016 – 2017 (FL 10, 14, 26, 35, 41, 42, 48, 88) (2 casing internal examinations @ $175,000 each)		350	
2017 – 2018 (FL 4, 11, 26-non uprate portion, 34, 85, 103) (10 excavations @ $35,000 each)		175	175
2017 (FL 4, 11, 26-non uprate portion, 34, 85, 103) (2 casing internal examinations @ $175,000 each)		350	
2018 - 2019 (FL 6, 12, 13, 22, 24, 33, 46, 51, 53) (12 excavations (6 per year) @ $35,000 each)			210
2018 (FL 6, 12, 13, 22, 24, 33, 46, 51, 53) (4 casing internal examinations @ $175,000 each)			700
Post Assessment			
2016 (FL 19, 20, 52, 64, 65, 66, 68, 69, 83, 84, 99, 104) (14 HCA miles @ $1,500/mile)	21		
2016 (FL 21, 62) (4 HCA miles @ $1,500/mile)	6		
2016 – 2017 (FL 10, 14, 26-uprate portion, 35, 41, 42, 48, 88) (10 HCA miles @ $1,500/mile)		15	
2017-2018 (FL 4, 11, 26 (non-rate portion) 34, 85, 103) (20 HCA miles @ $1,500/mile)			30
Inline Inspection			
2015-2016 Excavations/Validations Digs/Remediation (14 excavations (7 per year) @ $35,000 each)	245		
2016 (2 Projects – FL 26, FL 21 @ $350,000 each)	700		
2016 (2 Projects utilizing robot pigs – FL 68, FL 29 @ $175,000 each)	350		

Table 4.3 – Transmission Integrity Management Costs (cont.)

Activity	$ Thousands		
	2016	2017	2018
2016 – 2017 Excavations/ Validations Digs/ Remediation (10 excavations @ $35,000 each)	210	140	
2017 (2 Projects – FL 19, FL 71 @ $350,000 each)		700	
2017-2018 Excavations/Validations Digs/Remediation (14 excavations (7 per year) @ $35,000 each)		245	245
2018 (1 Project – FL 68 @ $350,000 each)			350
2018 – 2019 Excavations/Validations Digs/Remediation (7 excavations (4 in 2018, 3 in 2019) @ $35,000 each)			140
Direct Examination – Spans and Vaults			
2016 - Spans Reassessment (5 @ $10,000/span)	50		
2016 – Spans 1st Assessment (1 @ $65,000/span)	65		
2016 - Vaults (3 @ $15,000/vault)	45		
2017 - Spans Reassessment (3 @ $10,000/span)		30	
2017 - Spans 1st Assessment (1 @ $65,000/span)		65	
2017 - Vaults (8 @ $15,000/vault)		120	
2018 - Vaults (9 @ $15,000/vault)			135
Pressure Test Assessment			
2016 5 pipeline segments @ $100,000/segment	500		

Table 4.3 – Transmission Integrity Management Costs (cont.)

Activity	$ Thousands 2016	2017	2018
2017 5 pipeline segments @ $100,000/segment		500	
2018 5 pipeline segments @ $100,000/segment			500
HCA Validation			
Identified Site Survey (misc. travel expenses 40 days @ $125/day)	5	5	5
Excavation Standby			
5 employees (2,080 hrs x 5 x $70/hr) (adding an additional person in the Richfield area (Q3,2016)	655.2	728	728
Additional Leak Survey			
120 hrs @ $70/hr	8.4	8.4	8.4
Additional Cathodic Protection Survey			
System Integrity Support - Cathodic Protection (2,080 hrs x 2 $70/hr)	291.2	291.2	291.2
Administration			
Project Coordination (4 employees (2,080 hrs x 4 x $70/hr))	582.4	582.4	582.4
Data Integration Specialists (2 employees (2,080 hrs x 2 x $70/hr))	291.2	291.2	291.2
Construction Records Tech (1 employee (2080 hrs x $70/hr)) (new position in Q3, 2016)	72.8	145.6	145.6
IM Engineer-Intern (1 employee (1,040 hrs @ $30/hr))	31.2	31.2	31.2

Table 4.3 – Transmission Integrity Management Costs (cont.)

Activity	$ Thousands		
	2016	2017	2018
Consultant – 3rd Party Plan Review		25	
Senior Engineering M2 (2,080 hrs x $70/hr)	145.6	145.6	145.6
Senior Engineer (IM Support) M2 (2,080 hrs x $70/hr)	145.6	145.6	145.6
Damage Prevention Technician (2080 hrs x $70/hr)	145.6	145.6	145.6
Training (for IM and Engineering personnel)	22.45	22.45	22.45
NOTE: all labor costs associated with both DIMP and TIMP are captured in the TIMP costs.			
Transmission Integrity Management Total	5,806.7	6,072.3	5,587.3

Table 4.4 – Distribution Integrity Management Costs

$ Thousands

Activity	2016	2017	2018
Distribution Integrity Management **NOTE:** *The costs estimated here are based on additional and accelerated actions initiated based on the threats identified. The costs also reflect the administration costs associations with this new regulation.*			
Additional and Accelerated Actions			
Stray Current Surveys	350	350	350
Additional Leak Survey	300	300	300
Region Specific Accelerated Actions	150	150	150
Mapping Improvements	200	200	200
Distribution Integrity Management Total	1,000	1,000	1,000

Table 4.5 – HCA Miles Assessed/ Anomalies Repaired

YEAR	HCA Miles Assessed	Anomalies Repaired
2012	26.470	28
2013	50.367	27
2014	54.555	20
2015	11.040	2
NOTE: Approximately 17 miles of HCA were assessed in 2014 that were originally planned to be completed in 2015. Due to favorable circumstances for completing the direct examinations we were able to complete these assessments early.		

Environmental Review

Questar Gas is committed to compliance with environmental laws and regulations. Some of the regulations with which Questar Gas must comply include the National Environmental Policy Act, the Endangered Species Act, the Clean Air Act, the Clean Water Act, the Toxic Substance Control Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Emergency Planning and Community Right to Know Act, the Oil Pollution Act and the National Historic Preservation Act, as well as similar state and local laws that can be more strict than their federal counterparts.

Agencies issuing permits and enforcing these regulations frequently place restrictions on Company activities. Requirements are becoming more stringent over time and are affecting the location and construction of Questar Gas infrastructure. When projects impact the environment, regulatory agencies require permit applications, agency review and public comment periods prior to permit approval. Permit conditions can be rigorous and costly, requiring compliance activities long after project completion. Monitoring may be required for the life of the installation.

For example, the U.S. Fish and Wildlife Service may designate critical habitat areas to protect certain threatened and endangered species. A critical habitat designation for a protected species, such as the desert tortoise, can result in restrictions to federal and state land use. Such restrictions can delay or prohibit access to or use of subject land. Because Questar Gas infrastructure crosses many miles of federal and state lands that include the critical habitat of protected plant and animal species, there can be a material impact on the location of pipeline facilities and construction schedules.

The Clean Water Act and similar state laws regulate discharges of storm water, hydrostatic test water, wastewater, and other pollutants to surface water bodies such as lakes, rivers, wetlands and streams. Failure to obtain permits for such discharges or accidental releases could result in civil and criminal penalties, orders to cease such discharges, corrective actions and other costs and damages.

Pre-existing conditions complicating project construction include situations where Questar Gas' pipelines, both new and existing, cross contaminated sites owned by third parties. In many cases, these sites have not been reported to regulatory agencies by the prior owner, and in some cases the boundaries of the sites are unknown, resulting in unforeseen construction interruptions as Questar Gas consults with the regulators on proper remedial activities. Where they have been reported, the sites, usually regulated by the CERCLA or comparable state regulations, require corrective actions as construction activities proceed.

The Company must determine soil disposition prior to construction (when presence of the contamination is known), properly train employees, equip employees with protective equipment and invoke proper disposal and decontamination procedures, all of which result in escalated project costs. Accidental spills and releases requiring cleanup may also occur in the ordinary course of business, requiring remediation. The Company may incur substantial costs to take corrective actions in any of these cases. Failure to comply with these laws and regulations can result in fines as well as significant costs for remedial activities or injunctions.

New and revised environmental policy is affecting the industry and Questar Gas specifically, and will result in additional costs to conduct business. For example, federal and state courts and administrative agencies are addressing claims and demands related to climate change under various laws pertaining to the environment, energy use and development.

In 2010, the U.S. Environmental Protection Agency (EPA) adopted Greenhouse Gas (GHG) Reporting Regulations requiring the measurement and reporting of carbon dioxide equivalent (CO_2e) emissions emitted from combustion at large facilities (emitting more than 25,000 metric tons/year of CO_2e). Although Questar Gas does not have any single facilities that exceed that threshold, local distribution companies are required to account for the GHG emissions of their customers (residential, commercial and industrial customers using less than 460 MMcf per year of natural gas) annually.

In 2011, the EPA expanded reporting under this regulation to include measurement and reporting of GHG emissions attributed to fugitive methane emissions, requiring on-going measurement and monitoring of methane emissions at Questar Gas regulator and gate-stations. In 2015, Questar Gas reported a total of 5.9 million metric tons of CO_2e emissions in Utah and 214,500 metric tons of CO_2e emissions in Wyoming. The Company also reported approximately 85,400 metric tons attributed to fugitive methane sources in Utah and zero fugitive methane emissions in Wyoming. Figures 4.11 and 4.12 show Questar Gas' GHG emissions as reported under the EPA mandatory greenhouse gas reporting program.

The GHG Reporting Rule has essentially developed an "inventory" of CO_2e emissions that could be used in future climate change initiatives. Depending on how new rules evolve, companies subject to the GHG Reporting Rule could be required to pay a fee based on the amount of CO_2e emitted; a system is already in place for emissions of criteria and hazardous air pollutants reported annually under the Clean Air Act.

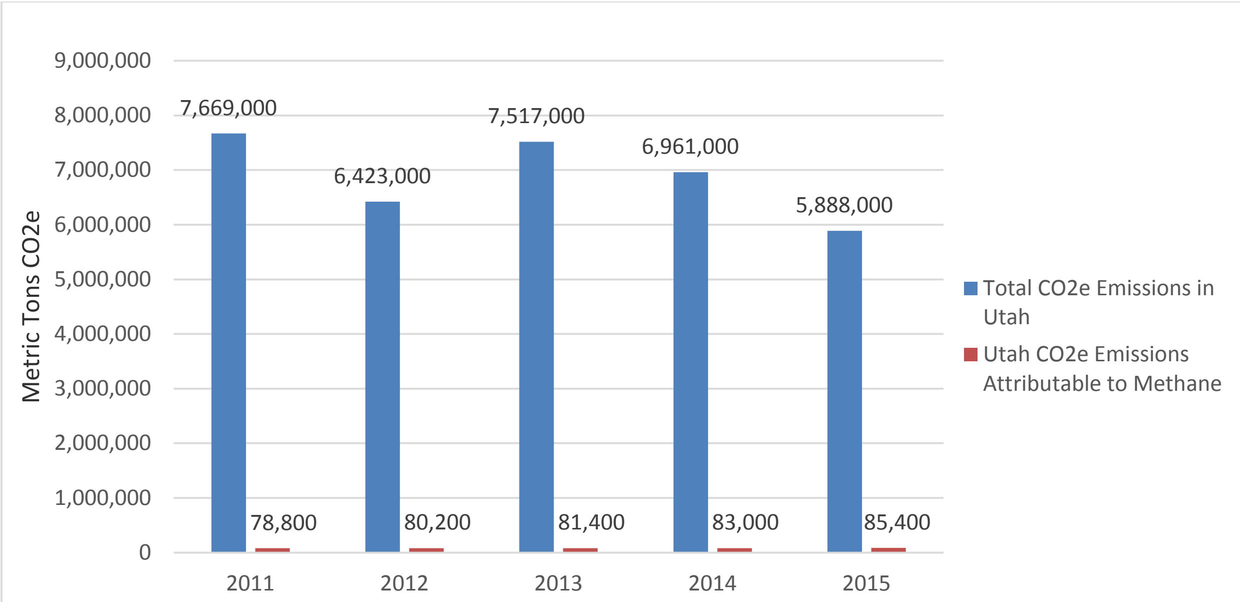

Figure 4.11 – Greenhouse Gas Emissions (Utah) – Reported by Questar Gas

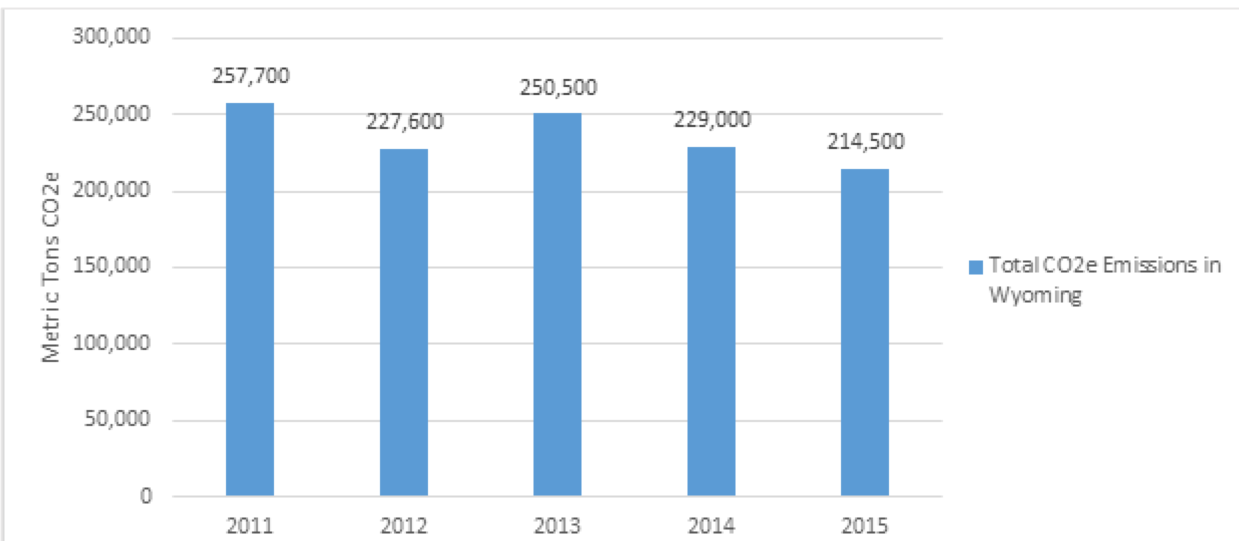

Figure 4.12 - Greenhouse Gas Emissions (Wyoming) – Reported by Questar Gas

In January 2015, the Obama Administration issued a “blueprint” outlining the policies it plans to adopt in order to address methane emissions originating from the oil and gas industry. The blueprint announces an overall goal to cut emissions by 40-45% from 2012 levels by 2025. This will occur through a combination of regulatory and voluntary initiatives that the government will roll out over the next few years. In March 2016, Questar Gas became a Founding Partner with the EPA on one such initiative, the Natural Gas STAR Methane Challenge Program, committing to voluntary practices that will reduce methane emissions.

In August 2015, the EPA finalized the Clean Power Plan – under §111d of the Clean Air Act - for the control of CO_2 emissions from existing fossil-fuel-fired electric-generating power plants. The rule requires states to adopt plans to reduce CO_2 emissions by 30% from 2005 levels by 2030. Implementation of the rule was stayed by the U.S. Supreme Court on February 9, 2016 and is currently pending judicial review.

Questar Gas expects that greater awareness regarding the benefits of natural gas for high-efficiency residential, commercial, transportation, industrial and electricity generation purposes will result in the advancement of these applications and increased utilization of natural gas-fueled equipment. Greater utilization of natural gas should result in significantly lower U.S. greenhouse gas emissions in comparison with more carbon intensive fuels. For a more detailed discussion about full fuel-cycle efficiency, refer to the Customer and Gas Demand Forecast section.

Conservation efforts will also continue to have a positive environmental impact. For example, the Company estimates annual savings of more than 5 MMDth of natural gas from 2007 to 2015. The savings represents the equivalent of about 265,000 metric tons of CO_2e or 55,800 passenger vehicle equivalents (calculated using EPA's GHG equivalence calculator). Lifetime savings attributable to the ThermWise® program totals more than 2.4 million tons of CO_2e or the equivalent of about 502,000 passenger vehicles.