SYSTEM CAPABILITIES AND CONSTRAINTS

Questar Gas System Overview

Questar Gas' system is currently comprised of over 17,000 miles of pipe serving approximately 950,000 customers. The system operates at pressures that range from 20 psig up to 1000 psig and is broken into many subsystems in order to deliver the pressures and volumes that customers require. Questar Gas Engineering builds system models annually to determine when and to what extent system improvements will be needed. Figure 4.1 is a map of the HP system that shows the service area for Questar Gas.

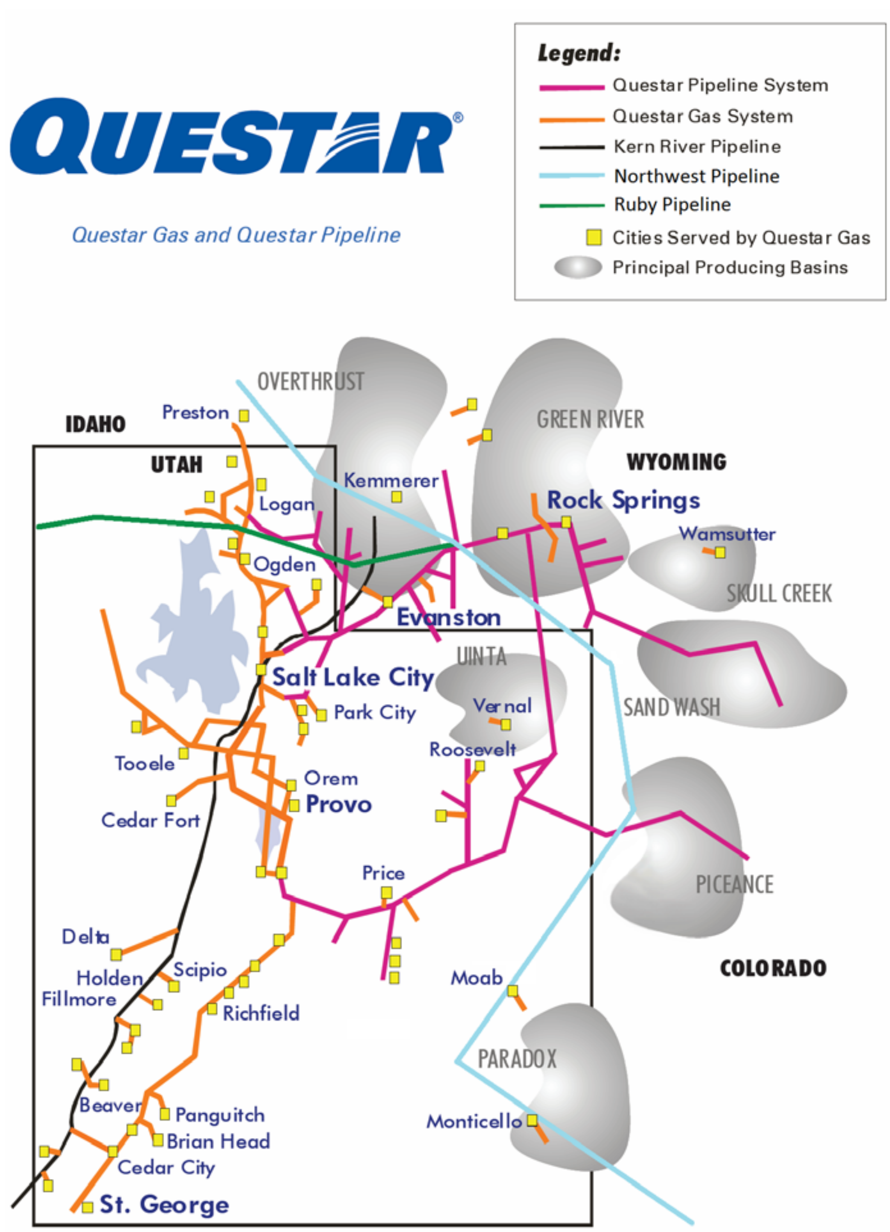


Figure 4.1: QGC HP System

Ongoing and Future System Analysis Projects

Master Planning Models

Questar Gas creates Master Planning Models to more accurately project system growth. The Company's engineering department creates the models using expected growth projections provided by Questar Gas' Regulatory Affairs department and anticipated growth from known planned developments in each area. The benefit of using this data is that the resulting pressures in the peak day model will better reflect the impact of the specific growth centers and provide better projections of system impacts during a peak event.

System Supply Analysis and Joint Operations Agreement (JOA)

Questar Gas' engineering department analyzes its system supplies each year to determine if the current contracts at each Meter Allocation Point (MAP) and available system capacity will meet the coming year's demands. This analysis carefully considers the upstream (interstate transmission pipelines) constraints and capabilities as well as the ability to acquire gas to deliver to the Questar Gas 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 facilitate this required delivery. Based on this analysis, the JOA between Questar Gas and Questar Pipeline, which allows for more accurate modeling of the conditions at the Questar Gas gate stations, has been updated for the 2014/2015 heating season.

Interruption Analysis

There are a number of customers on the Questar Gas system who have chosen to purchase gas on an interruptible rate utilizing any available excess capacity. While the system is not designed for these customers, it is important to understand at which temperatures an interruption would be required. The interruption analysis divides the system into interruption zones and determines the temperature at which interruption of a specific zone is necessary to maintain service to firm customers.

Construction Timeline Analysis

During construction season, there are numerous projects that require feeder lines and high pressure facilities to either be limited (pressure or flow) or shut down completely. Each month the engineering department performs a construction timeline analysis to determine whether or not the planned construction can take place without adversely impacting customers. This analysis considers the gate station settings, gas supply contracts, construction on the interstate transmission pipelines, capacity in Questar Gas' high pressure (HP) system, probable temperatures and other specific conditions. This allows construction to proceed with confidence that the work planned will not have negative impacts.

Operational Models

Another way Questar Gas prepares to respond to unforeseen scenarios is by developing and maintaining operational models of the system. Questar Gas maintains these models to represent current actual 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' engineering department utilizes steady-state Intermediate High Pressure (IHP) models to determine the required system improvements needed to maintain operational pressures. Questar Gas 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 stations. This analysis provides Questar Gas with the information necessary to determine which reinforcements should be constructed each year. Based on the modeling results, Questar Gas constructs a number of IHP mains, new stations, and constructs upgrades to existing stations.

The HP system models have more variables than the IHP system models. Engineers consider gate stations, 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 on 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 verified the accuracy of the steady-state (24-hour period) Gas Network Analysis (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 Monday, December 9, 2013 using actual data from that day (verification 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 verification points and were found to be within 7% of the actual pressures on that day. Thirty six 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 that the demand the model predicted was within approximately 4% of the actual deliveries for the verification day. This difference is likely due to the fact that the steady-state model does not account for system line pack or any lost and unaccounted for gas. Actual system flows would provide for some line pack in the system. The results of the comparisons confirm the accuracy of the calculated demand used in the steady-state models.

Questar Gas verified the unsteady-state (hourly results for a 24-hour period) models in the same manner as the steady-state models. Questar Gas matched the temperatures and the gate station flows and pressures as closely as possible. The Central and Northern Regions are the largest connected high pressure systems belonging to Questar Gas with seven gate stations and two maximum allowable operating pressure (MAOP) zones. There are three smaller isolated systems which also require unsteady-state model analysis: Summit/Wasatch, Eastern, and Southern. This analysis has 39 pressure verification points as well as the known pressures and flows from the gate stations. None of the pressure differences at the verification points have error values higher than 7%, when compared to the actual minimum and average pressures. Thirty three 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. For this study, Questar Gas calculated the hourly and daily flow capacities for each station based on facility limitations, set pressures, and inlet pressures provided by the Questar Pipeline Company (Questar Pipeline) systems engineering group and those identified in interconnect agreements with other suppliers. Gate station requirements are influenced by the ability of Questar Pipeline to supply gas at varying volumes throughout the day as the customer demands also swing throughout the day. It is unnecessary for Questar Gas to perform this analysis for those gate stations that have contractual guarantees.

System Pressures

Once Questar Gas verifies the system models and properly sets contractual obligations and station capacities, Questar Gas uses the models to analyze the system to verify that the system has adequate pressures in order to supply Questar Gas customers. Questar Gas uses peak model(s) 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 off system during the peak day.

Northern

The Northern Region includes the main system around Salt Lake City and northern Utah, including Salt Lake, Tooele, Summit, Utah, Wasatch, Davis, Morgan, Weber, Cache, and Box Elder counties. Questar Gas serves this Region through interconnects with Questar Pipeline at MAP 164 through 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 Hunter Park and Riverton stations.

In the steady-state model, the calculated low point in the main portion of northern system is 274 psig at the endpoint of Feeder Line 36 (FL36) in West Jordan. The next lowest pressure in the Northern Region is at Alta, with a steady-state pressure of 282 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 Northern Region are shown in Table 4.1: Steady-State Peak Day Pressures and Figure 4.2. Questar Gas models these pressures on a peak day at system endpoints, 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 models profile the load throughout the day and represent the pressure fluctuations throughout the peak day.

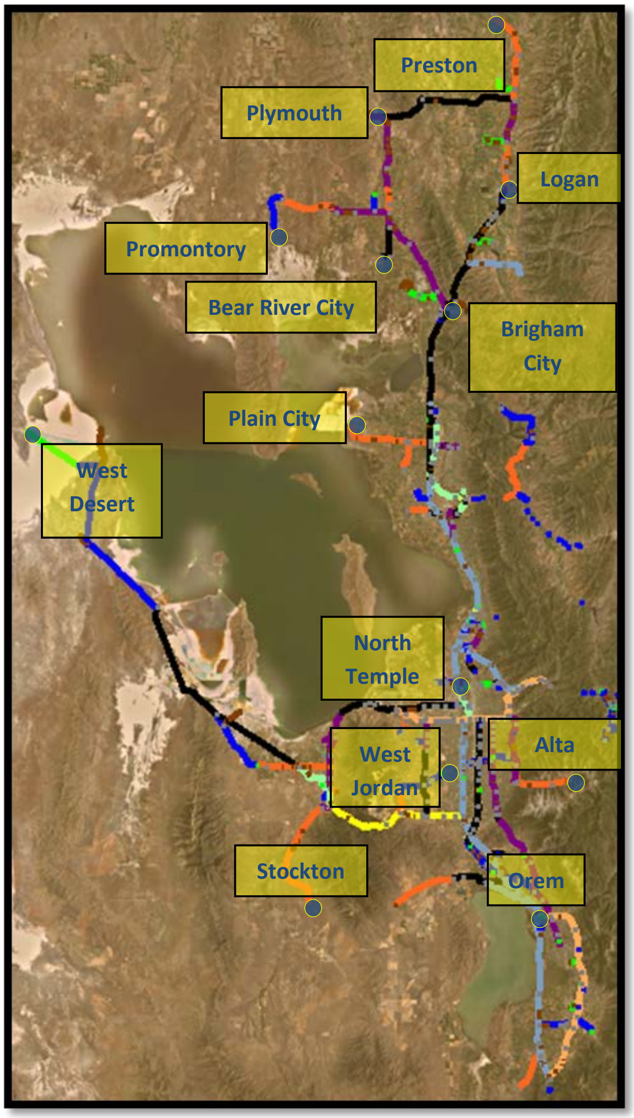


Figure 4.2: Northern Region Key Pressures

Table 4.1: Steady-State Peak Day Pressures

Location	Pressure (psig)
Endpoint of FL29 – Plymouth	351
Endpoint of FL36 – West Jordan	274
Endpoint of FL48 – Stockton	317
Endpoint of FL51 – Plain City	374
Endpoint of FL62 – Alta	282
Endpoint of FL63 – West Desert	317
Endpoint of FL70 – Promontory	361
Endpoint of FL74 – Preston	344
Endpoint of FL106 – Bear River City	366
Intersection of FL29 & FL23 – Brigham City	410

The curves shown in Figure 4.3, Figure 4.4, and Figure 4.5 are the expected peak day pressures in the Northern Region. In the projected unsteady-state models, the low point in the Northern Region is Charleston in the Summit Wasatch system. Questar Gas is in the process of designing the Feeder Line 99 extension to Heber that will increase pressures in Charleston as well as Heber and Park City. A discussion of this project is included in the Distribution Non-Gas (DNG) Action Plan section of this IRP. The next lowest predicted pressure in the Northern System is in Plain City at 186 psig.

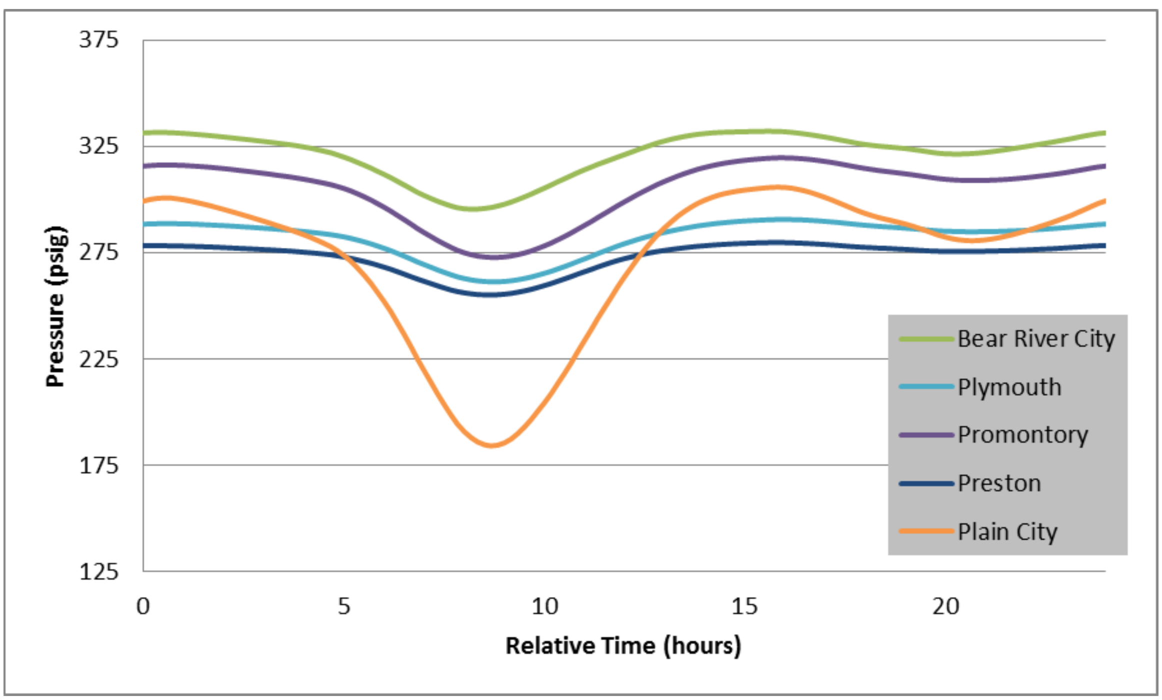


Figure 4.3: 2013 Northern Peak Day Pressures (North of North Temple)

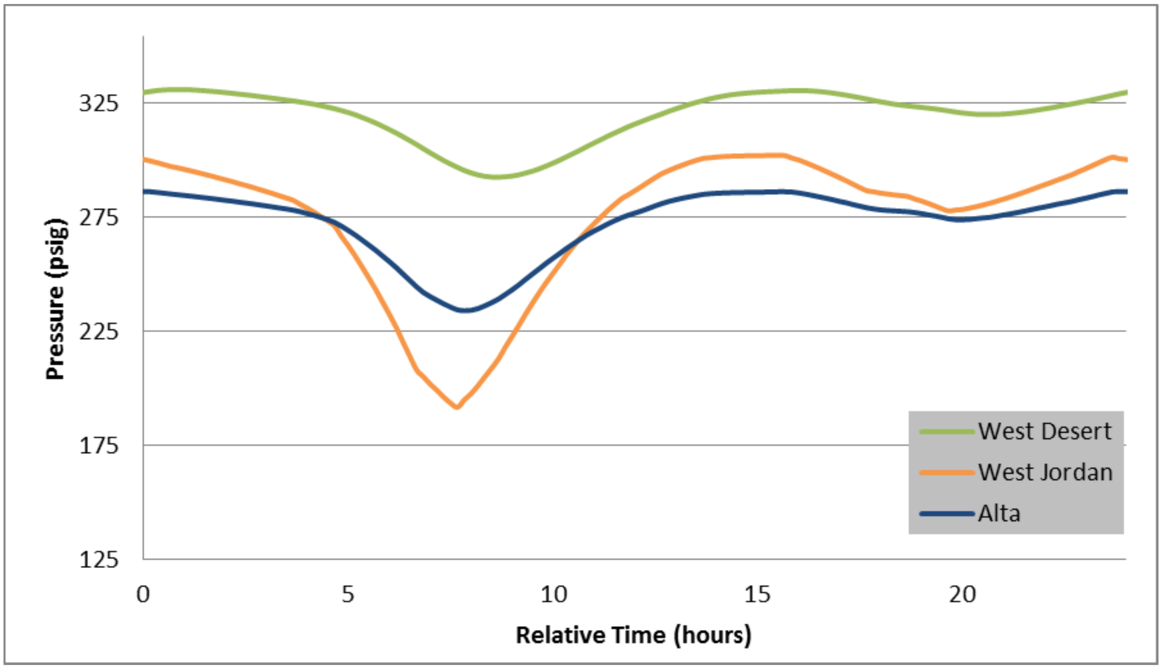


Figure 4.4: 2013 Northern Peak Day Pressures (South of North Temple)

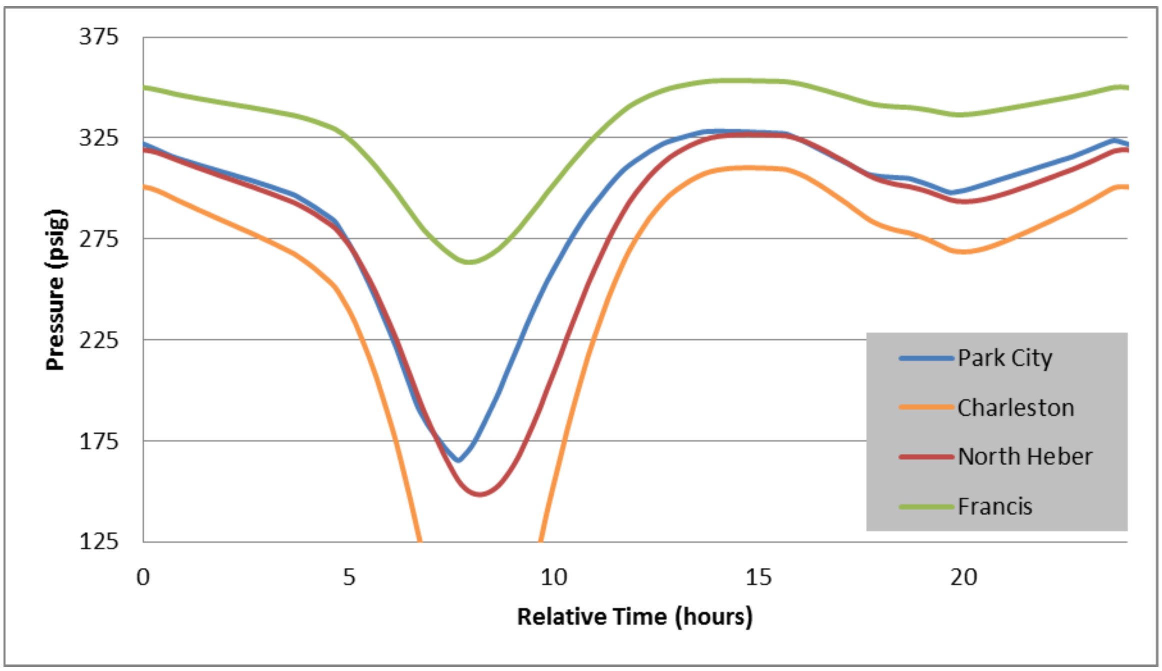


Figure 4.5: 2013 Northern Peak Day Pressures (Summit and Wasatch Counties)

Eastern (North)

The Eastern (North) Region includes Duchesne, Uintah, Carbon, and Emery counties, including the cities of Price and Vernal. The Vernal system is a system that was previously owned by Utah Gas Company. This area is served from Questar Pipeline by multiple taps through MAP 163. The pressure at the end of Feeder Line 90 (FL90) in west Vernal is approaching the minimum operational pressure of 125 psig. This year the minimum pressure calculated by the model is 139 psig on a peak day. A 4 mile replacement of FL89 at the outlet of the Island Park gate would increase the minimum pressure to 203 psig. Another reinforcement option would be an extension of FL89 across town to FL90, which would not only increase the pressure at the end of the line it will also provide some reliability to the system by creating a two way feed.

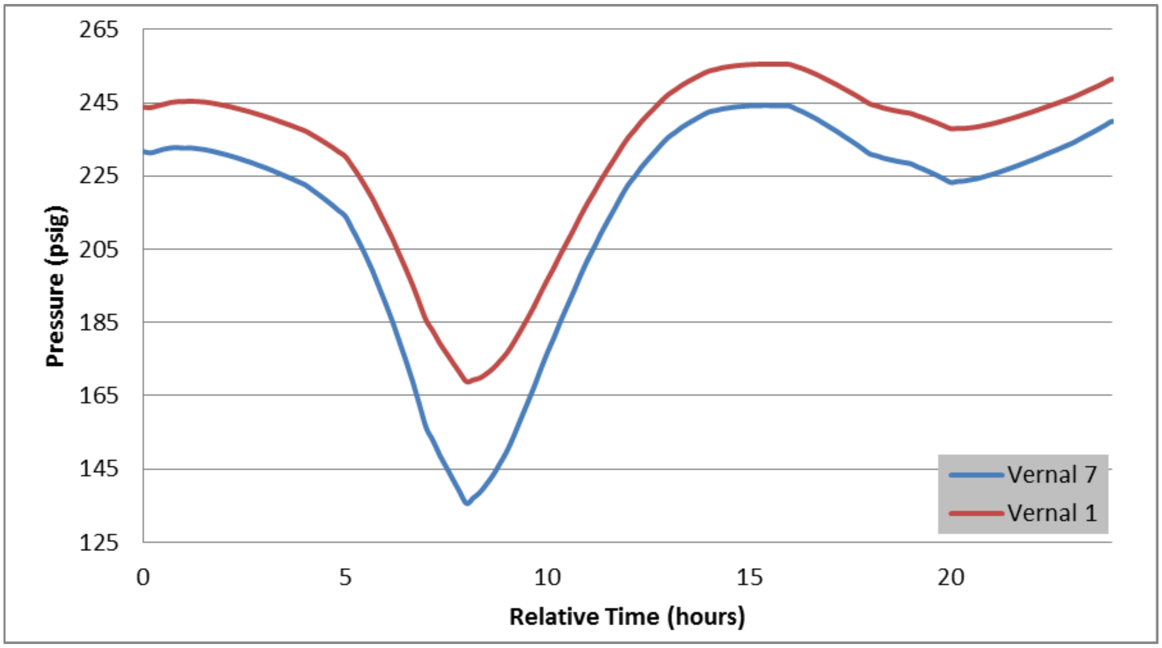


Figure 4.6: 2013 Eastern Peak Day Pressures

Eastern (Northwest Pipeline)

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

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

Southern (Main System)

The Southern (Main System) Region encompasses the areas served by the Indianola/WECCO/Central facilities 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 502 psig at Brian Head. This is higher than the pressures in the northern system due to the higher operating pressures that range between 625-700 psig. Using the unsteady-state model, the lowest pressure in the southern area is 455 psig at Brian Head.

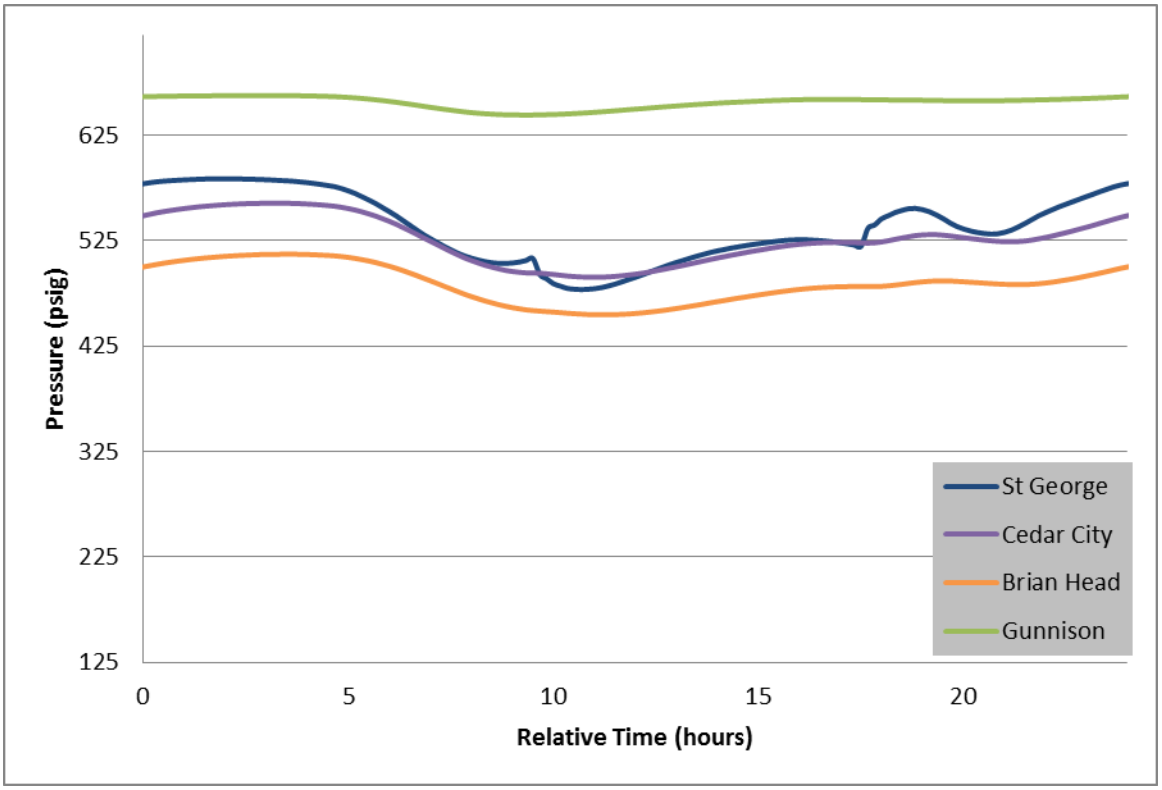


Figure 4.7: 2013 Southern Peak Day Pressures

Southern (Kern River Taps)

The Southern Region includes towns in Juab, Millard, Beaver, Iron, and Washington counties (all of the towns that are served south of 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 of the 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 Colorado Interstate Gas (CIG) at Wamsutter and Rock Springs; and from Williams Field Services (WFS) at La Barge and Big Piney.

The La Barge system has been experiencing low system inlet pressures for the last several years as a result of inconsistent pressures upstream of the La Barge gate station. There is currently a 2014 project to remedy the issue by creating a new interconnect to another pipeline with higher pressures. The nearest pipeline is approximately 5 miles away from the current gate station. A description of this project can be found in the DNG Action Plan section of this IRP.

In 2011, a new gate station (RS0039) was installed in Rock Springs in order to provide system redundancy to the city of Rock Springs. In the projected peak day model, the HP system now requires the gas in order to maintain pressures above 125 psig in Reliance at the end of FL30. FL111 could be extended up to Reliance if pressures continue to drop in future years. The 2013/2014 peak day pressures in Reliance are 125 psig with RS0039 flowing 2.5 MMcfd. Higher volumes through RS0039 provide higher pressures.

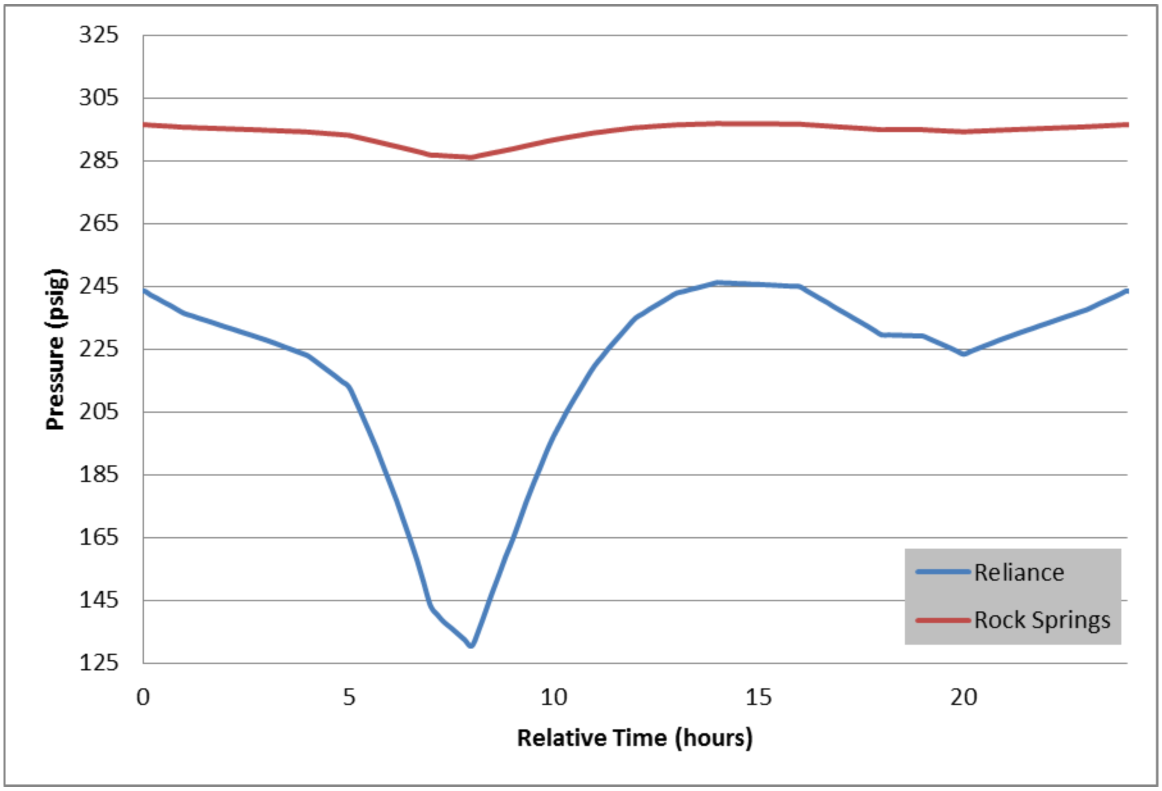


Figure 4.8: Rock Springs Peak Day Pressures

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 system have adequate capacity to meet average daily and peak hourly demands and the supply contracts are adequate. 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 is conducting analysis relating to several system constraints including the following:

- *Increasing Demand in the Northern Region.* Questar Gas is evaluating installing new interconnects with Questar Pipeline, Kern River, and/or Ruby Pipeline in order to meet the supply needs associated with long term growth of the Northern Region. Questar Gas is also considering upgrading existing stations and procuring additional supply contracts for areas experiencing growth.

- *Low Pressures in the Northern Region.* Questar Gas' modeling shows that pressures near the end of FL 51 (Plain City), in the Northern Region, are low and will likely require improvements in the foreseeable future. Questar Gas is considering a variety of options to increase the pressures in that area including a replacement or increased pressures at one of the gate stations in the area. The pressures at the end of FL51 are low due to the line loss in FL51. Increasing the diameter or looping the line will increase the expected pressures at the end point.

- *Low Pressures in Charleston.* Questar Gas is designing a Feeder Line 99 (FL99) extension to Heber. This improvement will increase pressures in Charleston and Park City. This project is discussed in more detail in the DNG Action Plan section of this IRP.

- *Growth in Vernal.* Additional growth in Vernal may result in the need to reinforce FL 90. Questar Gas will monitor growth in the area in order to determine when further reinforcement is appropriate. The Company is considering extending Feeder Line 89 (FL89) across Vernal and tying to Feeder Line (FL90). Alternatively, the Company is considering increasing the size of FL89 to 6-inch from the Island Park gate station to Diamond Mountain.

- *Growth in Rock Springs.* Increasing demand in the Rock Springs area is driving down the anticipated peak day pressures in Reliance. Extending FL111 to Reliance will increase pressures above 240 psig without the use of any gas supply from RS0039. This will allow RS0029 to resume its original design purpose of providing reliability to 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 material projects planned in 2014 through 2016.

High Pressure Projects:

Regulator Station Projects

1. WH0030 High Pressure Regulator Station: Questar Gas has been improving the capacity of its Southern System since 2012. The project, known as the St. George Reinforcement Project, has been documented in IRP's since 2011/12. As part of this project, Questar Gas plans to increase the operating pressure of a segment of its Feeder Line (FL81) to 1000 psig. As a result of this pressure increase, Questar Gas is constructing a high-pressure regulator station to regulate pressures on the remainder of its southern system. Construction on the project began in November 2013, and the Company completed the project in May 2014. The total estimated cost for this regulator station is approximately $3,700,000, with a first-year revenue requirement of about $600,000.

Feeder Line Projects

1. FL 81 Uprate Project: As part of Questar Gas' St. George Reinforcement Project, Questar Gas will uprate a 25 mile segment FL81 from 720 psig to 1000 psig. This project was first discussed in the 2011/2012 IRP. To perform the uprate, Questar Gas will systematically increase gas pressure on this segment of pipeline and monitor the line to ensure the integrity. The uprate was completed in 4 pressure increases of approximately 70 psig each. The uprate was completed in May of 2014.

2. Charleston Feeder Line (Feeder Line 99 Extension): Questar Gas has been analyzing this project since 2010. A detailed description of the project can be seen in the 2011/2012 IRP. For this project Questar Gas plans to install approximately 8.5 miles of 12" HP pipeline beginning at the current termination of FL 99 near Francis, Utah along state road SR-32, and terminating with a tie-in to Questar Gas' FL 16 on SR-40.

   Questar Gas is currently working on right-of-way (ROW) acquisition and pre-engineering of the project, and plans to begin construction in the spring of 2015 with completion by the 2015/2016 heating season. The estimated 2015 expenditure for this project is $11,000,000, with a first-year revenue requirement of approximately $1,600,000.

3. Heber City Reinforcement: This project was discussed in detail in the 2011/12 IRP. Questar Gas has completed the preliminary design for the project. Questar Gas is monitoring growth in the area to determine when construction will need to begin. The Company estimates that this project

will need to be in service for the 2015/2016 heating season. The Company will continue to monitor this area for growth and report any changes, if needed, as part of the IRP Variance report process.

4. Utah Feeder Line Reinforcement Projects: Questar Gas is currently planning and developing route options for feeder line replacement projects in Mapleton and North Ogden. The Company anticipates constructing both projects in 2016. Questar Gas will provide updates, including a comparison of route options, as part of the IRP Variance Report process.

5. La Barge Wyoming Reinforcement: La Barge, Wyoming is currently served by a single regulator station LB0001. This station receives gas from a WFS gathering line and reduces the pressure into Questar Gas' IHP system. In previous years, WFS delivered gas at a high enough pressure to ensure that the regulator station operated properly. Recently however, WFS has been delivering volumes at a much lower pressure, sometimes as low as 70 psig. WFS has indicated that these pressures will decrease over time.

   As a result, Questar Gas is considering alternatives to reinforce feed into the town of La Barge. The preferred alternative involves connecting to a new WFS pipeline that transports gas from the Denbury processing facility near Big Piney to the Opal Plant. Questar Gas is working with WFS to determine the feasibility of this option and to develop a scope of work for the project.

   As an alternative to the preferred option, Questar Gas is also evaluating the possibility of connecting to a second WFS 30-inch line. However, the second line contains a higher level of liquids and, if Questar Gas connected to the line it may require Questar Gas to process the gas supply prior to final delivery. Questar Gas will complete the evaluation of each option and anticipates constructing a project in the fall of 2014 or in the spring of 2015.

6. Feeder Line Replacement Project: Questar Gas is continuing its Feeder Line Replacement program in 2014 with replacements on FL 18, FL 36, FL 6, FL 34, and FL 21-50. The Company will continue to provide updates to this schedule pursuant to the Report and Order in Docket No. 13-057-05. On May 5, 2014, the Company filed its most recent infrastructure replacement plan detailing the planned projects, the anticipated costs, and other relevant information in Docket No. 13-057-18.

Intermediate High Pressure Projects:

1. Belt Line Replacement Project: Questar Gas is continuing its Belt Line Replacement program in 2014 with replacements in Provo, Salt Lake City, and North Salt Lake. Pursuant to the Settlement Stipulation and Utah Commission's Order Approving the Settlement Stipulation, in Docket No.13-057-05, the Company filed an infrastructure replacement plan detailing the planned projects and the anticipated costs.

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

   In 2009, Questar Gas began a replacement program. Replacements in Monticello have been completed. Work in Moab and Vernal is underway. In 2014, Questar Gas will complete the work described below.

   Moab Replacements: The Company will replace approximately 52,000 linear feet of main and 250 services. A majority of the main (42,000 linear feet) will be 2-inch plastic. The total estimated project cost for 2014 is $2,100,000 and a first-year revenue requirement of approximately $300,000. There are no viable alternatives for replacement.

   Vernal Replacements: The Company will replace approximately 65,000 linear feet of main and 405 services. Of the 65,000 feet of main, about 39,000 linear feet will be replaced with 2-inch plastic pipe and about 26,000 linear feet will be replaced with 4-inch of plastic pipe. The total estimated project cost for 2014 is $2,600,000 and a first-year revenue requirement of about $400,000. There are no other viable alternatives for replacement.

Integrity Management Plan Activities and Associated Costs

Overview

Questar Gas continues to implement integrity activities 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 regulations for transmission integrity management require Questar Gas to identify all high consequence areas along the segments of feeder lines that are defined as transmission lines[36]. Once Questar Gas defines these high consequence areas, it calculates a risk score for each segment located in the high consequence

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

area. The Company then sums up the risk scores for each unique feeder line. These risk scores establish the baseline and set the priority for when these segments are assessed for integrity. The Company completes verification of high consequence areas and calculates the risk score on an annual basis. Questar Gas Company had ten years[37] to complete the baseline assessment of all segments in high consequence areas. Once the initial baseline assessment has been completed each segment must be reassessed at intervals not exceeding seven years, or sooner, depending on the results of the previous assessment.

The transmission integrity rule requires Questar Gas to conduct additional ongoing preventive and mitigative measures on feeder lines in high consequence areas and Class[38] 3 and 4 locations. These additional measures include monitoring excavations (excavation standby) near these feeder lines and performing semi-annual leak surveys. Other integrity activities include annual high consequence area validation and the day-to-day administration of the program.

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 operators 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 Company continues to implement activities defined in its Distribution Integrity Management plan for the distribution system. The activities are implemented to mitigate the threats that are identified in the plan.

New Regulations That May Impact Future Costs Associated With Integrity

Questar Gas must comply with requirements set forth in legislation and regulations that have been created in response to recent major pipeline accidents. The Pipeline Safety Act was re-authorized and signed by the President in January of 2012 as the Pipeline Safety, Regulatory Certainty and Jobs Creation Act of 2011. This law included 42 congressional mandates and 32 National Transportation Safety Board (NTSB) recommendations, all of which increase regulatory requirements to ensure pipeline safety and system integrity. The PHMSA developed rules and regulations in response to the congressional mandates but have not yet approved the release or publication of these rules. The uncertainty related to what PHMSA will implement as final rules has resulted in uncertainty in the industry. There is some concern that work might have to be re-done when the proposed rules are finally released. These rules are expected to be

[37] The baseline assessment must be completed by 12/17/2012 (49 CFR §192.921 (d)).
[38] Class location as defined by 49 CFR Part 192 (§192.5).

released late 2014 or early 2015 and will include new regulations which will likely require additional significant investment. The Company expects that the new regulations will include:

- Expansion of integrity management assessment beyond High Consequence Areas (HCAs), including:
  - Moderate Consequence Areas (MCAs)
  - major road and transportation corridor crossings
- Additional historical records research and MAOP validation work
- Integrity verification and fitness-for-service of pre-regulatory pipe
  - Testing or replacement of pipe may be required
- Use of automatic shut off valves (ASVs) and/or remote controlled valves (RCVs) in or surrounding HCAs
- New leak detection technology
- Mandatory excess flow valves
- Increased civil penalties for non-compliance

Penalties associated with non-compliance could be substantial if PHMSA finds violations and issues corrective action orders. Companies like Questar Gas will continue to incur increasing expenses to do the necessary field work to meet the changing regulations.

Transmission Integrity Management

Costs

Questar Gas tracks costs associated with transmission integrity management by year. Table 4.2- Transmission Integrity Management Costs contains details on the anticipated costs associated with transmission integrity management.

Baseline Assessment Plan

The baseline assessment plan prescribes the methods that will be used to assess each high consequence area segment. These methods are determined by the known or anticipated threats to these segments. The most common threats on the pipeline include the following: external corrosion, internal corrosion, and third party damage. The assessment methods utilized to address these threats are external corrosion direct assessment (ECDA), internal corrosion direct assessment (ICDA), direct visual examination, and inline inspection. The Company completed the last 1,000 feet of the Baseline Assessment Plan in 2013.

External Corrosion Direct Assessment (ECDA)

ECDA is an assessment method that evaluates the integrity of pipeline segments for the threat of external corrosion. This includes segments of cased gas transmission pipelines. Refer to Figure 4.9 for an overview of the ECDA process.

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

1. Pre-Assessment - The Pre-Assessment 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.

2. Indirect Inspection - The Indirect Inspection step utilizes above ground inspection methods (such as close interval survey, pipeline current mapper or direct current 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 at least 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. Indications from indirect inspections are categorized according to severity. A third indirect inspection tool is required for initial assessments of the segment.

3. 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 excavation sites are selected based on a review of the data collected during the pre-assessment and the indirect surveys. This information is used to identify the most likely areas on the pipeline within each region where external corrosion is most likely. The required excavations also include an excavation at a location where no indications are identified. This site is used to help validate the effectiveness of the ECDA process. When the Company identifies corrosion or other pipeline damage or coating damage during the Direct Examination step, it repairs the pipe or coating. Additional sites may be selected for examination based on the findings of the required direct examinations.

4. Post-Assessment - The Post-Assessment 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)

ICDA is a process to predict the most likely areas of internal corrosion, including 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.

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.

ICDA was included in the initial baseline assessment plan but will not be required going forward because the initial assessments for internal corrosion found no internal corrosion. The Company is addressing the threat of internal corrosion through the implementation of Questar Gas' internal corrosion plan.

Visual Examination of Above-Ground Pipe and Pipe in Vaults

Above ground piping (i.e. spans) and piping in vaults that are located in high consequence areas that will not or cannot be assessed utilizing other methods are assessed by visual examination.

Inline Inspection

The Company assesses the pipelines that are constructed and configured or are retro-fitted in such a way as to allow for inline inspection by inline inspection tools (also referred to in the industry as "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 cut out. Only a few pipelines in Questar Gas' system are currently capable of utilizing this method of assessment. As aging infrastructure is replaced, the Company designs and builds these new pipelines to accommodate inline inspection tools. Questar Gas has helped fund research that has resulted in advancements in new technology that allow some limited application of inline inspection tools for non-piggable pipelines. Questar Gas has used these advanced tools to assess locations of its system that were not previously assessable without this new technology.

The inline inspection tools provide specific data on the condition of the pipeline segment being inspected. The Company analyzes data that is collected along the pipeline segment for defects and areas of concerns (e.g. wall loss or dents) and excavates those areas for further evaluation and repair or cut out.

High Consequence Area (HCA) Validation

Each year, Questar Gas conducts an on-the-ground survey of all transmission line segments to validate the current HCAs 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.

This information is maintained in Questar Gas' mapping system and is used to calculate HCA areas along each transmission segment on an annual basis.

Distribution Integrity Management

Costs

Questar Gas tracks costs associated with distribution integrity management by year. Table 4.3- Distribution Integrity Management Costs contains details on 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 Company's operations personnel validate the threats and the associated risk scores. Once the Company has 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 an ongoing process and will be done on an annual basis.

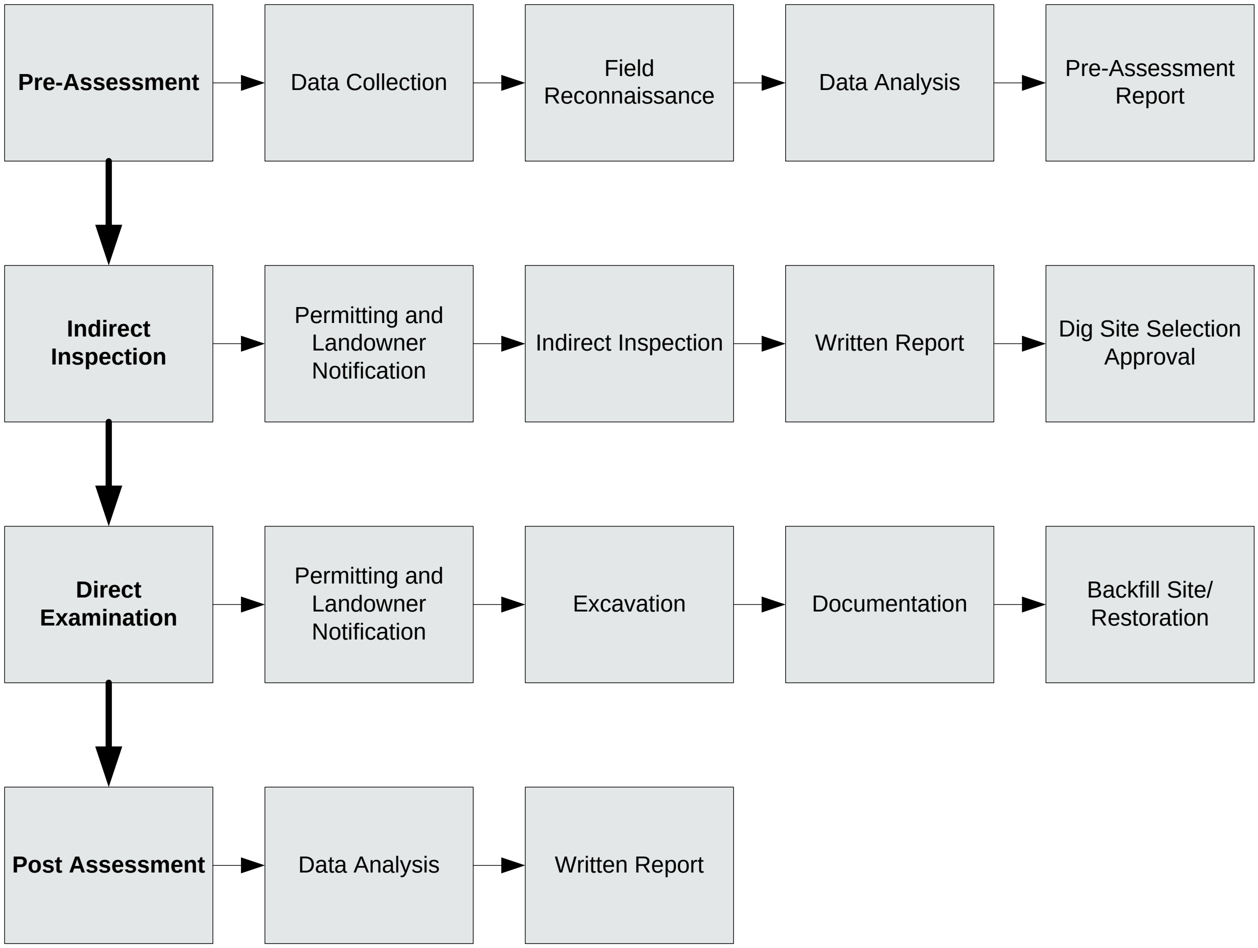


Figure 4.9 – ECDA Process Overview

Table 4.2 – Transmission Integrity Management Costs

$ Thousands

Activity	2014	2015	2016
Transmission Integrity Management			
ECDA (Utah Only)			
Pre-Assessment			
2014 (FL23, 28, 29, 70 ,71, 74) (24 HCA miles @ 2K/mile)	48		
2015 (FL64, 65, 66, 68, 69, 72, 83, 84, 99) (14 HCA miles @ 2K/mile)		28	
2016 (FL10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (17 HCA miles @ 2K/mile)			34
Indirect Inspections			
2014 (FL23, 28, 29, 70, 71, 74) (24 HCA miles @ 30K/mile)	720		
2015 (FL64, 65, 66, 68, 69, 72, 83, 84, 99) (14 HCA miles @ 30K/mile)		420	
2016 (FL10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (17 HCA miles @ 30K/mile)			510
Direct Examinations			
2013 (FL18, 19, 21, 22, 47, 51, 53) (15 excavations @ 25K each)	375		
2013 (FL18, 19, 21, 22, 47, 51, 53) (Pipetel[39] - 2 sites, 2 casings @ 175K/site)	350		
2014 (FL23, 28, 29, 70, 71, 74) (20 excavations @ 25K each)	250	250	

[39]Pipetel is a self-propelled inline inspection tool equipped with wall loss sensors and cameras.

Table 4.2 – Transmission Integrity Management Costs

$ Thousands

Activity	**2014**	**2015**	**2016**
2014 (FL23, 28, 29, 70, 71, 74) (Pipetel – 4 sites, 4 casings @ 175K/site)		700	
2015 (FL64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99) (24 excavations @ 25K each)		300	300
2015 (FL64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99) (Pipetel -3 sites, 3 casings @ 175K each)			525
2016 (FL10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (24 excavations @ 25K each) (12 in 2016, 12 in 2017)			300
2016 (FL10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (Pipetel – 4 sites, 4 casings @ 175K/site) (to be completed in 2017)			
Post Assessment			
2014 (FL23, 28, 29, 70, 71, 74) (24 HCA miles @ 1.5 K/mile)	36		
2015 (FL64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99) (14 HCA miles @ 1.5 K/mile)		21	
2016 (FL10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (17 HCA miles @ 1.5 K/mile)			25.5
ICDA (Utah Only)			
ICDA Complete, no longer required			
Inline Inspection			
2014 (FL 85)	350		
2014 (FL72)	350		

Table 4.2 – Transmission Integrity Management Costs

$ Thousands

Activity	**2014**	**2015**	**2016**
2014 Excavations/ Validation Digs/ Remediation (14 excavations @ 25K each)	350		
2015 (FL104)		250	
2015 (FL71)		350	
2015 Excavations/Validations Digs/Remediation (15 excavations @ 25K each)		350	
2016 (FL26)			450
2016 Excavations/Validations Digs/Remediation (7 excavations @ 25K each)			175
Direct Examination – Spans and Vaults			
2013 - Vaults (8 @ 10K/vault) (4 in 2013; 4 in 2014)	40		
2014 - Spans Reassessment (3 @ 10K/span)	30		
2014 – Spans 1st Time Assessment (1 @ 65K/span)	65		
2014 – Vaults (5 @ 15K/vault)	75		
2015 – Spans Reassessment (7 @ 10K/span)		70	
2015 - Vaults (7 @ 15K/vault)		105	
2016 – Spans Reassessment (7 @ 10K/span)			70
2016 – Spans 1st Time Assessment (1 @ 65K/span)			65

Table 4.2 – Transmission Integrity Management Costs

$ Thousands

Activity	**2014**	**2015**	**2016**
2016 – Vaults (8 @ 15K/vault)			120
Pressure Test Assessment			
2014 Casings (4 casings @ 100K/casing)	400		
2015 Casings (4 casings @ 100K/casing)		400	
2016 Casings (4 casings @ 100K/casing)			400
HCA Validation			
Identified Site Survey (QPEC - 1200 hrs @ $30.00/hr)	36	36	36
Identified Site Survey (misc. travel expenses 40 days @ $125/day)	5	5	5
Excavation Standby			
4 employees (2080 hrs x 4 x $70.00/hr)	582.4	582.4	582.4
Additional Leak Survey			
120 hrs @ $70.00/hr	8.4	8.4	8.4
Additional Cathodic Protection Survey			
System Integrity Support - Cathodic Protection (2080 hrs x $70.00/hr)	145.6	145.6	145.6

Table 4.2 – Transmission Integrity Management Costs

$ Thousands

Activity	**2014**	**2015**	**2016**
Administration			
Project Coordination (3 employees (2080 hrs x 3 x $70.00/hr))	436.8	436.8	436.8
New Position (Project Coordinator and Field Engineer (2080 hrs x 2 x $60.00/hr))	65	250	250
Engineer - Operations Support (0.5 employee (2080 hrs x 0.5 x $70.00/hr))	72.8	72.8	72.8
Data Integration Specialists (1.5 employees (2080 hrs x 1.5 x $70/hr))	218.4	218.4	218.4
Technical Writer – Intern (1 employee (1040 hrs @ $30/hr))	31.2	31.2	31.2
Consultant – 3rd Party Plan Review		25	
Supervisor (2080 hrs x $70/hr)	145.6	145.6	145.6
Manager (1040 hrs x $70/hr) 50% TIMP/ 50% DIMP	72.8	72.8	72.8
Training (for IM and Engineering personnel)	22.45	22.45	22.45
Transmission Integrity Management Total ($ Thousands)	$ 5,281	$ 5,296	$ 5,002

Table 4.3 – Distribution Integrity Management Costs

$ Thousands

Activity	**2014**	**2015**	**2016**
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	407	456	200
Administration			
Engineer – Operations Support (0.5 employee (2080 hrs x 0.5 x $70.00/hr))	72.8	72.8	72.8
Data Integration Specialists (0.5 employee (2080 hrs x 0.5 x $70/hr))	72.8	72.8	72.8
Manager (1040 hrs x $70/hr) 50% TIMP/50%DIMP	72.8	72.8	72.8
Training (for IM and Engineering personnel)	12	12	12
Consultant – 3rd Party Plan Review	25		25
Distribution Integrity Management Total ($ Thousands)	$ 1,462.40	$ 1,486.40	$ 1,255.40

Environmental Review

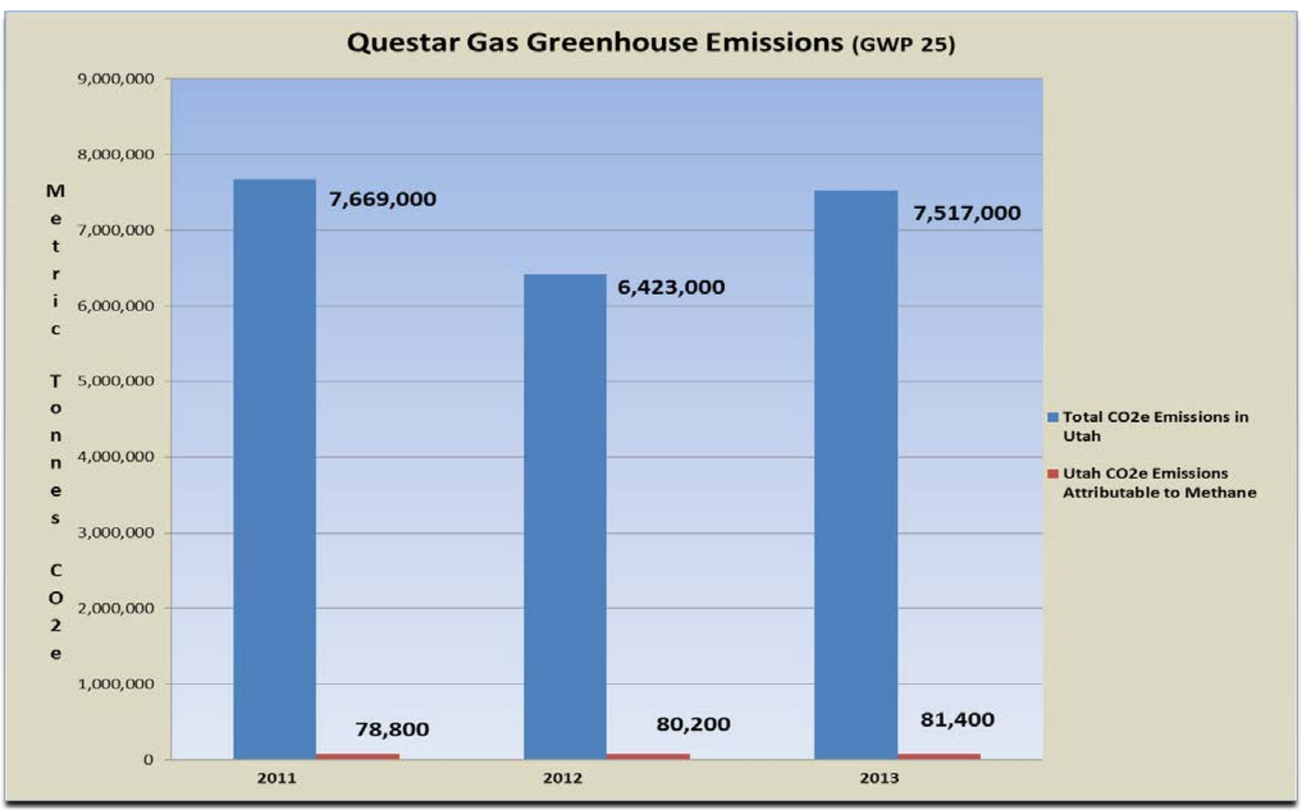
Questar Gas is committed to compliance with environmental laws and regulations. Some of the regulations with which Questar Gas must comply include the National Environmental Policy Act, the Endangered Species Act, the Clean Air Act, the Clean Water Act, and the National Historic Preservation Act, as well as similar state and local laws that can be stricter than their federal counterparts.

Agencies permitting and enforcing these regulations frequently place restrictions on Company activities. Requirements have become more stringent over time and can affect the location and construction of Questar Gas infrastructure. When projects may 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, and sometimes for the life of the installation. For example, the U.S. Fish and Wildlife Service may designate critical habitat areas to protect certain listed threatened and endangered species. A critical habitat designation for a protected species, such as the sage grouse or desert tortoise, can result in restrictions to federal and state land use which can delay or prohibit access or use of that land. Because Questar Gas infrastructure crosses many miles of federal and state lands that include the critical habitat of listed plant and animal species, there can be a material impact on location of pipeline facilities and construction schedules. The Clean Water Act and similar state laws regulate discharges of storm water, hydrostatic test water, wastewater, oil, 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 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or comparable state regulations, require corrective actions as construction activities proceed. Soils disposition must be determined prior to construction (when presence of the contamination is known), employees must be properly trained and equipped with protective equipment, and proper disposal and decontamination procedures invoked, all resulting in escalated project costs. Also, accidental spills and releases requiring cleanup may also occur in the ordinary course of business, requiring remediation; again, substantial costs may be incurred to take corrective actions in any of these cases. Failure to comply with these laws and regulations may result in fines, significant costs for remedial activities, or injunctions.

New and revised environmental policy is affecting industry, in general, 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.

The U.S. EPA adopted the 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) that began with 2010 emissions. 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 those industrial customers using less than 460 MMCF of natural gas) annually. Reporting under this regulation was expanded to include measurement and reporting of GHG emissions attributed to fugitive methane emissions starting in 2011, incorporating measurement and monitoring of regulator and gate-station methane emissions for Questar Gas. All of the GHG emissions stated in this IRP have been adjusted to reflect EPA's 2013 rule change for the global warming potential (GWP) assigned to methane (from 21 GWP to 25 GWP, as compared to carbon dioxide.) Questar Gas reported a total of 7.7 million metric tons of CO_2e emissions in Utah in 2011, with approximately 78,800 metric tons attributable to fugitive emissions. For 2012, Questar Gas' GHG emissions in Utah totaled approximately 6.4 million metric tons, with about 80,200 metric tons due to fugitive methane. The difference in quantity of GHG emissions from 2011 to 2012 may be related to the mild winter conditions in 2012, resulting in less natural gas flowing into the Questar Gas distribution system for use in residential appliances. In 2013 Questar Gas reported GHG emissions of 7.52 million metric tons in Utah, with about 81,400 tons attributed to fugitive methane emissions.



Questar Gas believes that it is important for the natural gas industry to be able to scientifically estimate methane emissions from leaks and fugitive emissions. In 2013, Questar Gas participated in the Environmental Defense Fund's (EDF) project to estimate leakage from the local distribution system, one module of a 5-part study to quantify methane emissions across the natural gas value chain. This study, conducted collaboratively with industry, academia, a consultant and the EDF, will identify realistic GHG emissions factors for the natural gas industry that could then be applied in EPA's GHG Reporting Rule. The results of this study are expected later in 2014.

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; this is already in place for inventoried Clean Air Act National Ambient Air Quality Standard pollutant emissions. Recognizing that Questar Gas is a regulated retail distributor of natural gas, the Company anticipates full recovery of these costs, including the costs of sampling and analysis to collect the data for reporting, to meet any climate change obligations.

While additional climate-change regulation is expected, it is too early to predict how it will affect Questar Gas' business, operations, or financial results. Questar Gas expects that greater awareness regarding the use of natural gas for high-efficiency residential, commercial, transportation, industrial, and electricity generation purposes will significantly lower U.S. greenhouse gas emissions, will result in the advancement of these applications and increased utilization of natural gas-fueled equipment. For example, estimated annual savings of natural gas, realized on the Questar Gas system from 2007 to 2013, the period when the ThermWise® program has been in place to promote the installation of energy-efficient furnaces and water heaters, totals over one million decatherms, the equivalent of about 54,000 metric tons of CO_2e or 11,270 passenger vehicle equivalents (calculated using EPA's GHG equivalence calculator). Lifetime savings attributable to the energy-efficient appliances on the Questar system total over one million tons of CO_2e or the equivalent of about 214,000 passenger vehicles.

Interest in the use of natural gas as an alternative transportation fuel continues to grow, and Questar Gas is actively involved in expanding its refueling infrastructure in Utah. Alternatively, further federal regulation of CO_2e across the natural gas industry could increase the price of natural gas, restrict access to or the use of natural gas, and/or reduce natural gas demand.

Questar Gas will continue to comply with existing and new environmental rules and regulations that protect employees, the public, and the environment. The Company will participate in studies to learn more about the efficiencies of natural gas and its value chain carbon footprint while Company personnel will participate in rulemaking efforts to encourage the use of natural gas.