SYSTEM CAPABILITIES AND CONSTRAINTS

Questar Gas System Overview

Gas supply costs are the primary focus of the IRP process because they represent a major portion of the total utility cost of service as opposed to IRPs in the electric utility industry where physical plant and the control of the respective costs are typically the focus. Nonetheless, an important element of natural gas IRPs is an analysis of the physical plant used to deliver the product to the consumer. The capacity of the system must meet the forecasted load in order to provide reliable service to the customer.

Historically, Questar Gas customers have been served by an integrated transmission and distribution system connecting natural gas fields in Utah, Wyoming and Colorado to the Company's Utah, Wyoming, and Idaho markets. The operation of this integrated system remains intact as a result of Questar Gas' relationship with Questar Pipeline Company (Questar Pipeline). Questar Gas' ability to serve its customers is dependent primarily upon deliveries from Questar Pipeline and augmented by Kern River Gas Transmission Company (KRGT). The Company also relies on deliveries from Northwest Pipeline Corporation to serve the towns of Moab, Monticello and Dutch John; Williams Field Services to serve the towns of LaBarge and Big Piney in Wyoming; and Colorado Interstate Gas Company to serve the town of Wamsutter. These pipeline systems and costs are part of the modeling process discussed in other IRP sections. This section will focus on Questar Gas' local distribution system.

Questar Gas builds steady-state and unsteady-state Gas Network Analysis (GNA) system models each year to account for changes in piping facilities and customer growth. The Company completes these models in April of each year, using year-end data from the year before, and updates them to include facilities and demands as of February of the current year. Then, Questar Gas adjusts the models to match the predicted demand for the following year based on the growth projections discussed elsewhere in this report. The modeling results provided in this report are based on the 2011-2012 models which were created in April 2011.

Questar Gas uses these GNA models to perform system analysis to help meet future capacity requirements while maintaining system reliability. Each time Questar Gas builds the models its engineering department checks them for accuracy and then reviews them to determine any need for system improvements, supply changes, or contracts revisions. The models can then be expanded to meet any analysis needs including planning and operational analysis, creating models at different temperatures and creating different types of models from the standard system model.

Ongoing and Future System Analysis Projects

High Pressure (HP) Mapping System (APDM)

Questar Gas created the latest version of the HP GNA models from the high pressure mapping system (APDM). As a result, the model is inclusive of all improvements that have been completed by April 2011. This is an improvement over past models that had to be updated manually.

Contingency Planning

Questar Gas uses the HP system models to develop contingency plans for potential emergency scenarios. Questar Gas' engineering and pipeline compliance groups coordinate to incorporate the various scenarios into the emergency plan. Questar Gas' engineering department conducts modeling using the unsteady-state model to determine the system impact and time required to make changes to maintain system integrity or enact emergency procedures. While it may not be possible to model every possible scenario, it is beneficial to prepare general plans that can be tailored to specific events.

Operational Models

Another way to prepare for unforeseen scenarios is to develop and maintain operational models of the system. Questar Gas maintains these models to represent current actual conditions that exist in the system at temperatures that are likely to exist with the system conditions. 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 analyze the improvements needed to maintain adequate pressures in the IHP systems. Questar Gas uses these models to identify the required location 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 flow of the existing stations. This analysis provides Questar Gas with the information necessary to determine what reinforcements it should construct each year. Based on the modeling results, Questar Gas constructs a number of mains and new stations, and upgrades a few existing stations.

Analyzing the HP system models is much more complex than analyzing the IHP system. Engineers must consider gate stations, existing supply contracts, supply availability, line pack, and the piping system in conducting the HP analysis. Because larger HP projects take much longer to complete, Questar gas must also identify the need for such improvements much earlier than with IHP projects. Additionally, Questar Gas and Questar Pipeline collaborate to identify model inputs to be certain that Questar Pipeline's interstate pipeline system can provide the upstream capacity and access to supplies to meet Questar Gas' supply needs.

Model Validation

Questar Gas tested the accuracy of the steady-state GNA models using pressure data and demand comparisons. Questar Gas' engineers built steady-state models to represent the system conditions on January 11, 2011 using actual data from that day (verification day). Model settings were adjusted to match the actual conditions for this day. The modeled pressures were compared to actual pressures at key points and were all found to be within 7% of the actual pressures on that day. Based on this analysis, the models are considered accurate.

Questar Gas also compared the modeled demand with the daily recorded deliveries for the same validation day at the gate stations. The results of this analysis showed that the demand the model predicted was within approximately 10% of the actual deliveries for the verification day. This difference is likely due to the fact that the steady-state model does not include line pack and does not account for 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 steady-state models.

Questar Gas verified the unsteady-state models in the same manner as the steady-state models. Questar Gas reproduced the same verification day in the model using the weather zone specific heating degree days. Questar Gas then matched the gate station flows and pressures as closely as possible. The Central and Northern Regions are the largest connected high pressure system in the Questar Gas system with 7 gate stations and 2 pressure zones. There are three smaller isolated systems which also require an unsteady state model analysis: Summit/Wasatch, Eastern, and Southern. This analysis has 47 pressure verification points as well as the known pressures and flows from the gate stations. None of the pressure differences at any of the verification points have error values higher than 6.85%, when compared to the actual minimum and average pressures. The results of the comparisons confirm the accuracy of the unsteady-state models.

Gate Station Flows vs. Capacity

In order to accurately represent actual system conditions, Questar Gas adjusted the station settings to match supply contracts at each of the Meter Allocation Points (MAPs). This allows Questar Gas to analyze the system based on supply conditions in order to determine capacity requirements of the gate stations as well as the operational capacity of the piping system.

It is also important to stay within the pressure and flow parameters for each of the stations when setting up the system models. In order to do so, Questar Gas completed a capacity study for each of the gate stations. Questar Gas calculated the required hourly and daily flow capacities for each station based on set pressures in the system model and inlet pressures provided by the Questar Pipeline's systems engineering group and those identified in interconnect agreements with other suppliers.

The current models reflect the existing capacity of the Hunter Park station in West Valley City. The station capacity is limited by 250 mcf through the KRGT facilities. Additional changes are planned for this station to remediate some operational concerns. The current models also include the upgrades to the KRGT facilities at Central station in Central Utah. The resulting station capacity is 30 mcf. The Moab stations are still near capacity and being monitored for possible upgrade scenarios in the near future. Sunset Station, near the mouth of Weber Canyon also continues to be constrained due to the upstream piping of main line 3 (ML 3) on the Questar Pipeline system. Questar Pipeline is currently replacing ML 3 which will allow increased deliveries to Sunset Station.

System Pressures

Once Questar Gas verifies the system models and sets them up to match the contractual obligations and station capacities, Questar Gas can use the models to analyze the system pressures to ensure the system has adequate pressures to supply all of the Questar Gas customers. Questar Gas uses the peak models for this analysis. The peak models include all firm loads for both sales and transport customers. Questar Gas uses the daily contract limits for customers with signed contracts and assumes that interruptible customers are off system for purposes of the peak models.

Northern

The Northern Region includes the main system around Salt Lake City and northern Utah, including Salt Lake County, Tooele County, Summit County, Utah County, Wasatch County, Davis County, Morgan County, Weber County, Cache County, and Box Elder County. Questar Gas serves this area 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 area through multiple smaller taps from Questar Pipeline (MAP 162) and KRGT at Hunter Park and Riverton stations.

The ability to take gas from both Questar Pipeline and KRGT allows Questar Gas to meet its peak-day obligations to the Northern Region. The gas supply at the two KRGT gate stations makes up the difference between Questar Gas' peak day obligations and the contracted delivery capacity from Questar Pipeline.

In the steady-state model, the low point in the main northern system is 260 psig at the endpoint of FL 62, near Alta. The pressure at this point is just lower than the location usually considered the lowest-pressure point in the system, the endpoint of FL 36 in West Jordan. The low point at West Jordan is 266 psig. Both of these pressures are substantially higher than our lowest allowable pressure of 125 psig.

The steady-state pressures at some of the key locations in the northern/central systems are shown in Table 1 and Figure 1. Questar Gas models these pressures on a peak day at system endpoints, low points in the area or just 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.

Table 1 – Key Pressures

Location	Pressure (psig)
Endpoint of FL 74 - Preston	282
Endpoint of FL 36 - West Jordan	266
Endpoint of FL 62 - Alta	260
Endpoint of FL 29 - Nucor Steel	290
Endpoint of FL 70 -ATK TS (80/0)	303
Endpoint of FL 63 - Hogup Pumping Site	321
Endpoint of FL 48 - Tooele Army Depot	323
Procter & Gamble Paper Products Company	310
Intersection FL 29 & FL 23 - Brigham City	359

Figure 1 – Key Pressures

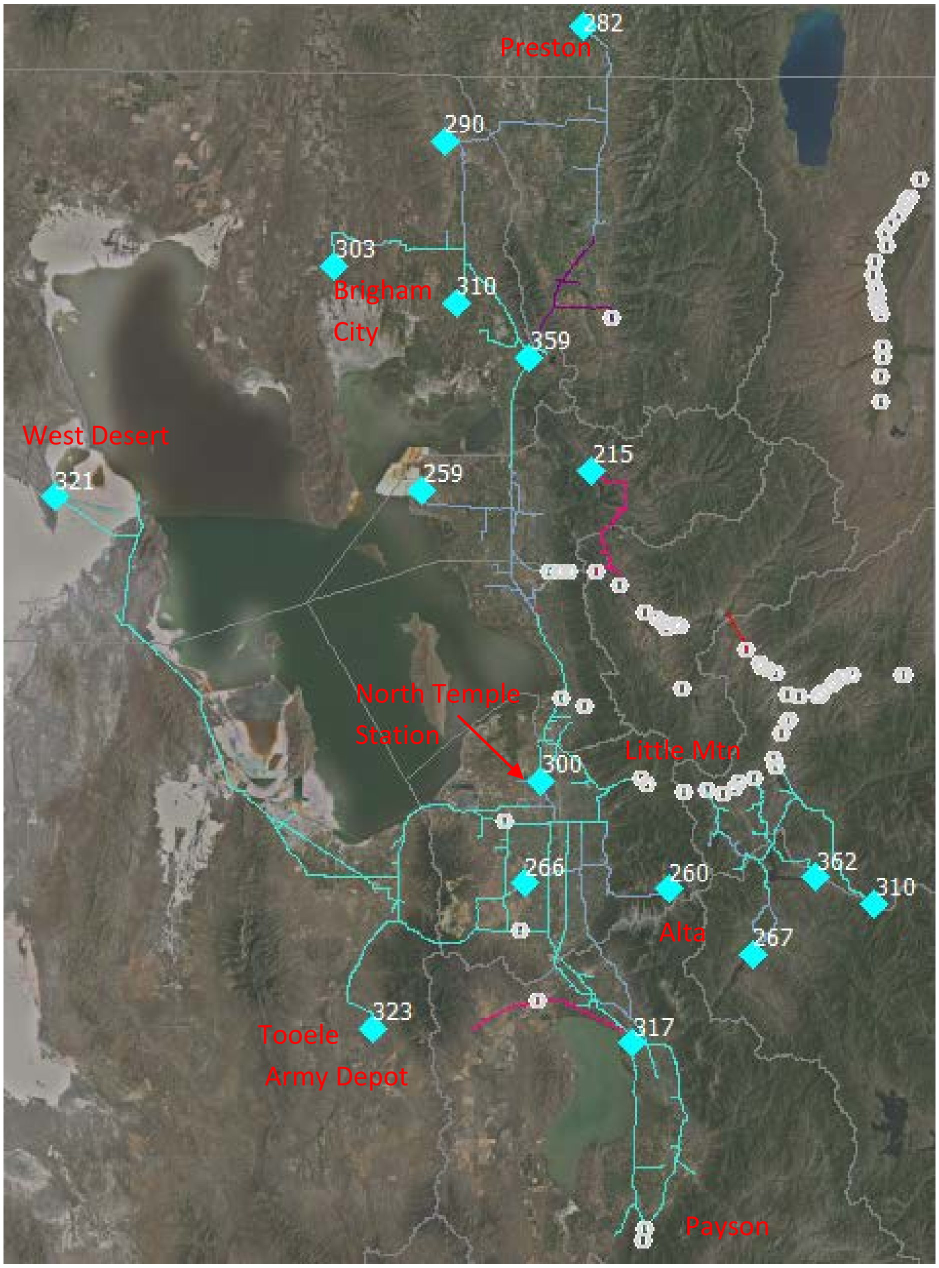
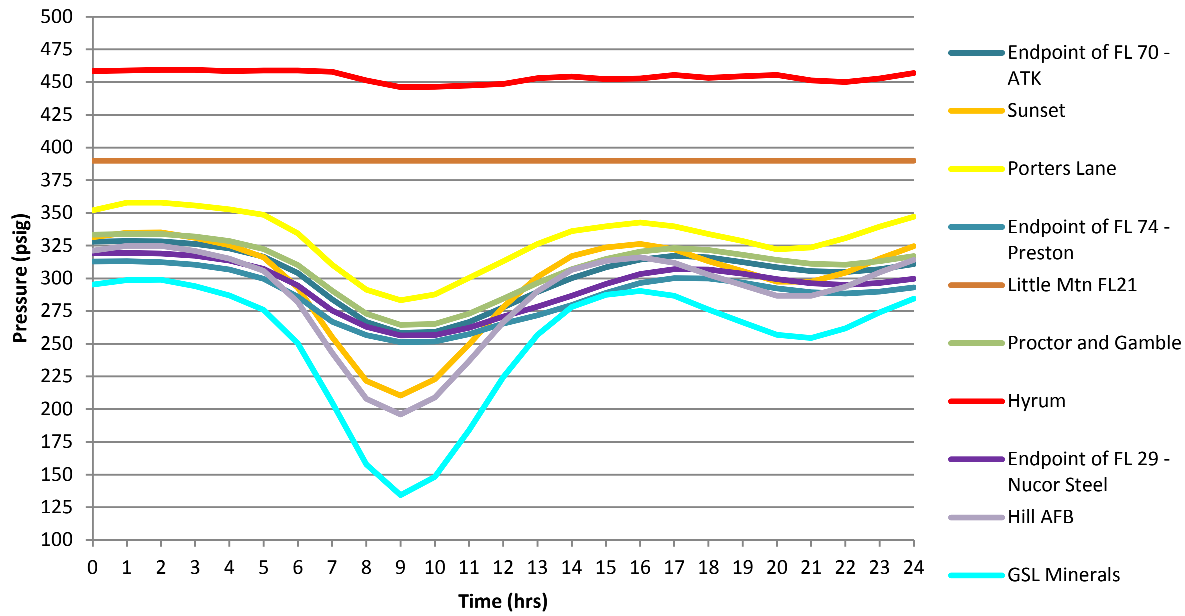


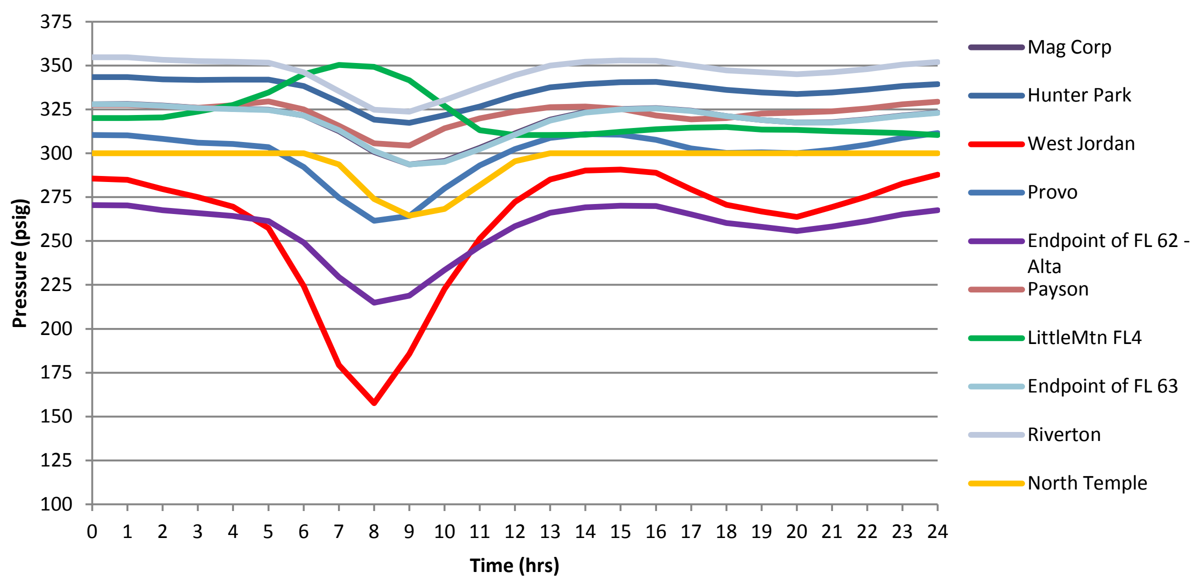
Figure 2 shows the pressure variations at several end points in the northern part of the system using the unsteady-state model. The lowest pressure is 134 psig at the end of FL 51 at Great Salt Lake Minerals/Pacificorp's Little Mountain Plant in Ogden. This is a good example of the difference between the steady-state (average) pressures versus the unsteady-state (profiled) pressures. Questar Gas is considering improvements in this area because of the low pressures the model has shown. There may also be ways to address the pressure concerns based on changes to supply pressures to the system.

Figure 2- Northern Area Critical Point Pressures



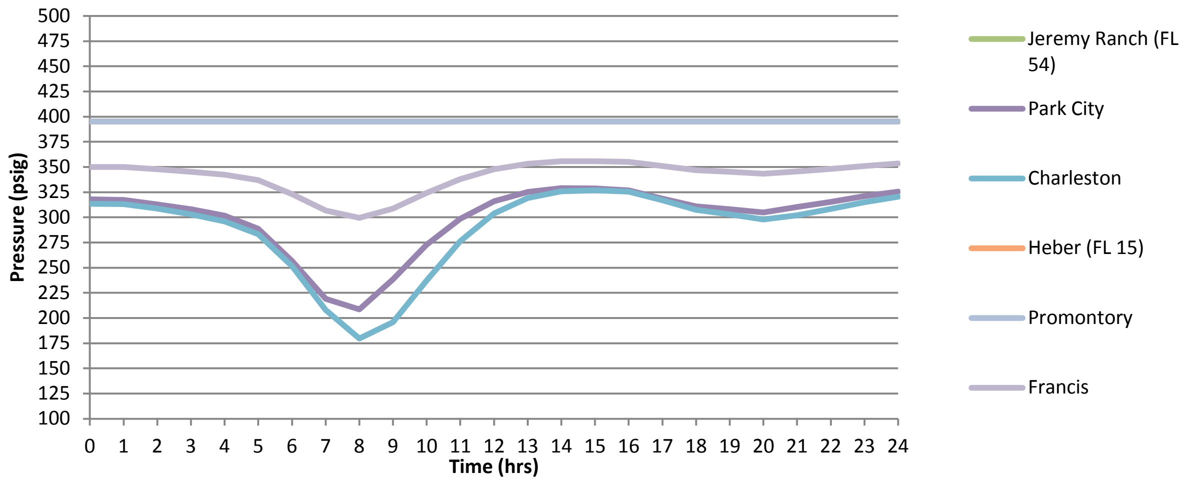
Figures 3 and 4 show the pressures at the end points in the central part of the system and in Summit County. The lowest pressure in the central area is 158 psig at the end of FL 36 in West Jordan. Questar Gas is planning to construct an improvement this year to increase the pressure at this location.

Figure 3 - Central Area Critical Point Pressures



The lowest pressure in the Summit County area is predicted to be 180 psig in Charleston at the end of FL 56. Questar Gas is monitoring this area closely to plan for an improvement to meet growth in the area.

Figure 4 - Summit County Critical Point Pressures

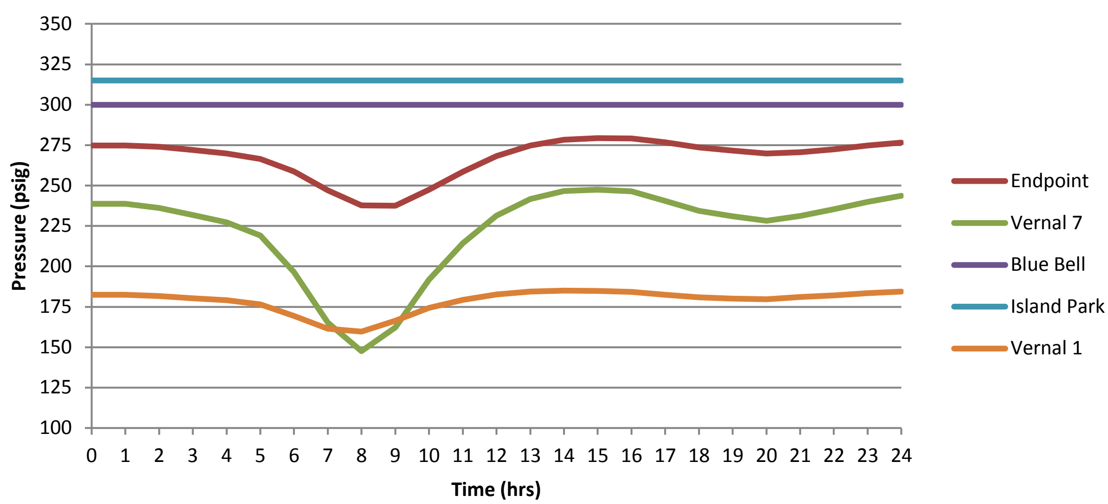


Eastern (North)

The Eastern (North) Region includes Duchesne County, Uintah County, Carbon County, and Emery County, including Price and Vernal. The Vernal system is one of the systems that was previously owned by Utah Gas. This area is served from Questar Pipeline by multiple taps through MAP 163.

The pressure at the end of feeder line 90 (FL 90) is being monitored. The low point is predicted to be 160 psig at the regulator station there during a peak event. Prior to the 2010/2011 heating season, Questar Gas modified the then-existing FL 90 to allow it to operate at increased pressures (the same pressures as FL 100). Given that this location is still experiencing low pressure, and that Questar Gas is anticipating some growth, it may be necessary to construct further improvements to maintain adequate pressures.

Figure 5 – Eastern Critical Point Pressures



Eastern (Northwest Pipeline)

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

The Eastern (Northwest Pipeline) systems are IHP systems and their pressures are regulated to IHP pressure at the interconnects with Northwest Pipeline. Improvements are ongoing to ensure the Monticello IHP system has adequate pressures.

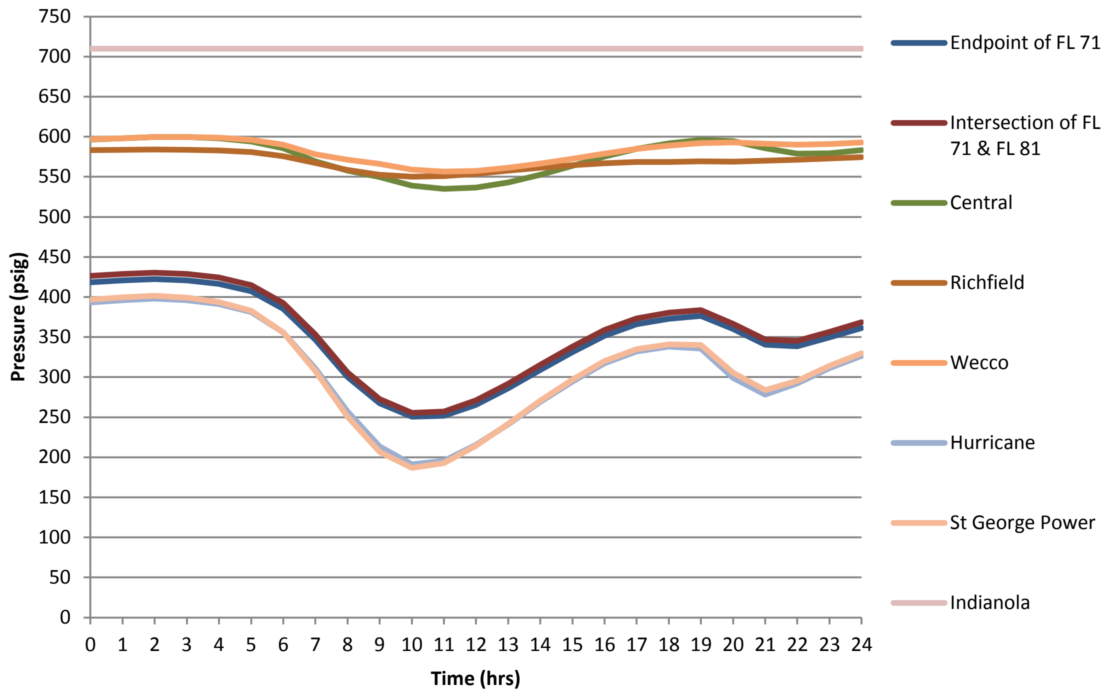
Southern (Main System)

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 KRGT at Central and Wecco stations.

Using the steady-state model, the lowest pressure on a peak day is 352 psig on a spur in St. George. This seems fairly high compared to the pressures in the northern system, but it is important to note that this system operates at higher pressures than most of the Questar Gas system (625-700 psig). Using the unsteady-state model, the lowest pressure in the southern area is 187 psig in St. George.

Questar Gas is monitoring this area for growth and resulting low pressures. Questar Gas is designing a new pressure station in Santa Clara on the 8-inch feeder line from the KRGT interconnect at Central Station, a pressure increase for feeder line 81 (FL 81) and compression at Central Station, in order to meet the growing demand in this area. Questar gas is monitoring growth in the area and will construct this improvement when it becomes necessary.

Figure 6 – Southern System Critical Point Pressures



Southern (KRGT Taps)

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

The system in this area is made up of separate systems with individual taps from KRGT. 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 from Williams Field Services (WFS) at LeBarge and Big Piney.

Due to past improvements, the pressures in this system are adequate. There are, however, plans in place to add a new gate station to provide redundant feed from another supplier to this area. The new station will connect Questar Gas' system with CIG in Rock Springs and is scheduled to be completed prior to the 2011/2012 heating season.

Questar Gas 2010 High Pressure (HP) Projects

In 2010 Questar Gas completed several HP projects of note. Typically, such projects are completed for one of three reasons: general system reinforcement, relocation and replacements, or system expansion. Each category of work is discussed in greater detail below:

System Reinforcements:

Questar Gas did not construct any general reinforcement projects on its feeder line system in 2010. However, Questar Gas constructed the following reinforcements to increase supply to the system. The gate station remodels were:

1. Hunter Gate Station: Hunter Gate Station is located at approximately 3500 South and 5800 West in West Valley City, and is one of two interconnects between Questar Gas and KRGT in the Salt Lake Valley. Questar Gas' GNA modeling indicated that the capacity of Hunter Gate Station needed to be increased to approximately 250 MMcf/D to meet anticipated load growth. Questar Gas paid KRGT a sum of $354,000 for the KRGT improvements required to increase the capacity of the station. KRGT has completed the upgrades to meet this need. Questar Gas had previously modified its own facilities at the station in 2009 to meet the capacity requirements.

2. Central Gate Station: Central Gate Station is located near St. George, Utah. It is one of the two major interconnects between Questar Gas and KRGT in southern Utah (the other is at Wecco). GNA modeling indicated that the capacity of the Central Gate Station needed to be increased to approximately 30 MMcf/D to meet growing load demand in the area. Questar Gas paid KRGT a sum of $199,500 to remodel its facilities and to provide the required increase in capacity. The project was completed in September of 2010. Questar Gas had previously upgraded its facilities in 2009 to meet the capacity requirements.

3. Ruby Pipeline Gate Station: In 2010, Questar Gas pursued a future interconnect with the new Ruby Pipeline. Ruby Pipeline, LLC (Ruby) is currently constructing a new 42-inch interstate pipeline that will cross Questar Gas' feeder line system near Brigham City, Utah. Questar Gas conducted a GNA analysis of its northern system and determined that there could be benefit to adding a new gate station off of the Ruby Pipeline in the future.

   In order to preserve the opportunity to install the future gate station and to avoid substantial costs associated with such a station in the future, Questar Gas paid Ruby to install a block valve and dual tap valve assembly near Brigham City during the initial construction of the line. Questar Gas also elected to purchase a 200' x 350' parcel of land to accommodate the future gate station. Questar Gas paid Ruby $155,000 to install the valve assembly, and paid the land owner $60,000 for the parcel.

Relocations and Replacements:

Questar Gas relocated several HP facilities in 2010. The majority of these relocations were required as the result of conflict with Utah Department of Transportation (UDOT) road projects. Questar Gas was reimbursed for a portion of the costs associated with UDOT projects according to Utah Code Ann. § 72-6-116 (2010). In areas where Questar Gas owns facilities located within existing UDOT corridors (i.e. by permit), Questar Gas receives 50% reimbursement on the relocation work. In areas where Questar Gas owns facilities within rights-of-way that it owns, the reimbursement rate is 100%.

In addition to major HP relocations, Questar Gas also continued its feeder line replacement program. The major HP relocations and replacements were:

1. UDOT I-15 Core relocation, American Fork, Utah: This project involved the retirement of approximately 2,400 lf of FL 26 (20" diameter) and the installation of approximately 6,020 lf of new 20" HP pipe along the 200 West Frontage Road in American Fork, Utah. This project was reimbursed at the 50% level. Questar Gas' actual cost for this relocation was $442,000.

2. UDOT I-15 Core relocation, Spanish Fork, Utah: This project involved the retirement of approximately 1,200 lf of FL 26-21 (4" diameter) and the installation of approximately 1,250 lf of new 6" HP pipe near Williams Lane in Spanish Fork, Utah. This project was reimbursed at the 50% level. Questar Gas' actual cost for this relocation was $71,000.

3. UDOT I-15 Core relocation, Spanish Fork, Utah: This project involved relocating in-place approximately 25 lf of FL 26 near Sam White Lane in American Fork, Utah. This will be reimbursed at the 50% level. Questar Gas estimated that its cost for this relocation will be $95,000.

4. Feeder Line Replacement Program, Utah: Questar Gas continued its Feeder Line replacement program in 2010. The replacement of FL 19 in Ogden was completed with the replacement of approximately 53,000 lf of 20" HP pipe. The cost for this work in 2010 was $26 million. Questar Gas also continued the replacement of sections of FL 12 in Salt Lake City with the replacement of 9,000 lf of 24" HP pipe. The cost for this work in 2010 was $9,200,000.

System Capacity Conclusions

Questar Gas' HP feeder line system is capable of meeting the current peak day demands with adequate supplies and pressures in the system. This system capacity assessment is based on the fact that the gate stations have adequate capacity, the supply contracts are adequate, and both the steady-state and unsteady-state models show that system pressures do not drop below the design minimum of 125 psig. 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 locations served by Questar Pipeline.* As demand increases in areas served only by Questar Pipeline, Questar Gas must increase deliveries on Questar Pipeline to those areas. As a result, the volumes available from Questar Pipeline to the Wasatch Front could decrease. Recent upgrades have increased the capacity to the Hunter Park interconnect (to 250 mmcfd) in order to meet increased supply requirements, but it is likely that Questar Gas will need to procure additional transportation to the Wasatch Front from either Questar Pipeline or KRGT.

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

- *Growth in the Southern Region.* Questar Gas' Southern Region is reaching capacity. As discussed in greater detail below, Questar Gas has analyzed a variety of possibilities for reinforcing this system and will continue to review this system in order to determine the appropriate timing for the reinforcement.

- *Saratoga Springs growth.* Questar Gas is designing a feeder line to support system growth in Saratoga Springs.

- *Low Pressures in the Northern Region.* Questar Gas' modeling shows that pressures near the end of FL 51, in the Northern Region, are low and will require improvements in the foreseeable future. Questar Gas is considering a variety of options to increase the pressures in that area including a local replacement or an increase in supply pressures at one of the sources feeding the area.

- *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.

- *Charleston Growth.* Questar Gas is planning improvements in the Charleston area in Summit County. The timing and nature of this reinforcement will be dictated by the growth in the area.

Maps reflecting peak day flow rates for each of the areas are contained in Exhibits 4.1 through 4.6.

DNG Action Plan

Questar Gas is currently planning and designing several reinforcement and replacement projects. Questar Gas also anticipates that several UDOT projects will continue to require substantial relocation of company facilities in the near term. The following is a brief description of the major projects anticipated by Questar Gas in 2011 and beyond.

2011 Gate Station Projects

1. <u>Hunter Park Gate Station</u>: Questar Gas has been working on improving the capacity and functionality of the Hunter Park Gate station for 3 years. In 2009, Questar Gas increased the capacity on its portion of the facility by installing a larger control valve (3" to 6"). In 2010, Questar Gas paid KRGT to increase capacity on its portion of the facility to match Questar Gas' increased capacity. With these improvements in place the capacity of Hunter Park has been increased to approximately 250 MMcf/D.

   In 2011, the design focus has shifted from improving capacity at the gate station, to improving the functionality and operations at the facility. The anticipated scope for these modifications include adding a new line heater and heater building, removing the existing turbine meter set and replacing it with an ultrasonic meter run, adding a larger control room for telecom and automation equipment, adding gas detection to all the buildings, adding a dual tap onto FL 11, and perhaps acquiring additional property at the station.

   Due to the increasing capacity of the station, the existing line heater is undersized and needs to be replaced. The existing line heater currently has a capacity of approximately 60 MMcf/D. In recent years, KRGT has been compressing the gas in its lines at its compressor station near 1700 South and 5600 West. This compression has resulted in high enough delivery temperatures at Hunter Park that the existing line heater has not been needed. However, in recent years KRGT increased the MAOP on its system to 1,333 psig and looped its line near Bountiful and North Salt Lake. The increased delivery pressure, alone, could result in a need for additional heating at Hunter Park because significant temperature loss occurs during pressure reduction. Additionally, the looping of the line means that KRGT may not have to compress gas in the same manner it has in the past, and that may result in lower delivery temperatures to Hunter Park. Taken together, these operational changes will likely require the addition of a line heater at Hunter Park.

In addition to the heater modification, Questar Gas is planning to remove the three existing turbine meters and replace them with a single ultrasonic meter. The current configuration is loud and the meters have had several maintenance issues. KRGT has permitted Questar Gas to use its metering signal to run its odorizing facilities and Questar Gas is installing the ultrasonic meter as a back-up to this configuration.

Questar Gas is also looking for additional property near the station in order to maintain proper access and to eliminate the risk of encroachment by neighboring residential developments. At present, the station is close to residential developments and Questar Gas believes it appropriate to obtain additional property.

In 2011, Questar Gas will continue planning the facility improvements and order any long-lead time items. Currently Questar Gas has $800,000 budgeted for this year's work. Questar Gas anticipates construction of the improvements will occur in 2012. Questar Gas has estimated the 2012 costs at $2,700,000. Questar Gas estimates that the first year revenue requirement for this project will be $470,000 (if the total cost is $3.5 million).

2011 Feeder Line Projects

1. <u>St. George Reinforcement</u>: Questar Gas evaluated and analyzed a variety of alternatives for providing reinforcement to its Southern region, serving St. George. After preliminary analysis of several options, Questar Gas narrowed its focus to the three most viable options: a compressor station option and two pipeline options.

   The first option consists of pressure testing and inspecting FL 81 and then adding compression at the Central Station in order to increase the operating pressure FL 81 from 700 psig to 1000 psig. This increased inlet pressure would allow significantly more flow to pass through the line. For ease of reference, Questar Gas refers to this as the "Compression Alternative."

The second option involves the construction of a new 24” diameter HP pipeline that would extend approximately 10 miles from a new KRGT gate station near Jackson Springs, through the land owned by the Shivwits Band of the Paiute Indians (the Shivwits), and connecting to Questar Gas’ existing feeder line system near Ivins, Utah. For ease of reference, Questar Gas refers to this alternative as the “Shivwits Alternative.”

The third option involved the construction of a 24” HP pipeline looping Questar Gas’ existing FL 81.

After thorough analysis and review, Questar Gas determined that it would pursue the Compression Alternative and that the Shivwits Alternative was the next best option.

The Compression Alternative and the Shivwits Alternative are comparable in a number of ways. Both provide the same increase in capacity. Both are comparable in terms of service quality, reliability and customer impact. From a customer’s perspective, either alternative would provide the necessary capacity to ensure safe and reliable service to the St. George area.

However, a cost comparison shows that the Compression Alternative is vastly preferable to the Shivwits Alternative. Questar Gas’ engineers estimate that the Compression Alternative will cost approximately $22,300,000 and, Questar Gas estimates that the first year revenue requirement for this project would be $3.6 million. Questar Gas estimates that the Shivwits Alternative would exceed $45,000,000.

The Shivwits alternative poses some other cost risks that, at present, cannot be quantified. Specifically, federal regulations prevent the Shivwits from granting a perpetual easement across tribal lands. Additionally, the Shivwits properties are not subject to condemnation. Accordingly, rights-of-way crossing tribal lands are substantially more expensive than rights-of-way crossing private lands, and they must be renewed, again at significant cost. Other pipelines have also experienced increased operating costs for facilities on tribal lands as a result of tribal ordinances and fees that change, and can increase, over time.

The Compression alternative also provides flexibility in planning for future growth by preserving both the Shivwits Alternative and an opportunity to loop FL 81 as options for providing additional capacity in the future. The Compression Alternative provides a long term advantage (after looping) of maintaining a higher pressure source closer to the load center in St. George. The pipeline will allow for the absorption of load swings.

For the reasons set forth above, Questar Gas is pursuing the Compression Alternative and plans to spend roughly $350,000 during this IRP reporting year.

Questar Gas anticipates constructing the reinforcement in 2013. However, depending upon the load growth in the St. George area, the schedule for construction could be accelerated to 2012 or delayed until some later date. Questar Gas will continue to monitor growth in the area and evaluate the schedule for the project.

Questar Gas is aware that Questar Pipeline is evaluating the possibility of building an interstate pipeline into the area. Questar Gas will monitor this development and, if Questar Pipeline offers still another alternative, Questar Gas will evaluate that as a reinforcement option for this area.

2. Utah Feeder Line Reinforcement Projects: Questar Gas has continued its planning and design of two feeder line projects in Utah. The projects are required to reinforce flow into the towns of Saratoga Springs, Utah and Charleston, Utah.

Charleston Feeder Line

Questar Gas analyzed several different pipeline options for reinforcing the HP system in the Charleston area. Most of these options involved the construction of an approximately 4 mile long extension of 8" HP pipe from Questar Gas' existing FL 16 in Midway, Utah to the termination point in Charleston, Utah. Questar Gas evaluated five routes for constructability, right-of-way availability and cost. The range of costs on options ranged from approximately $2,000,000 to $3,200,000.

In addition to the options above, Questar Gas considered another pipeline option to reinforce the Charleston area. This option included constructing approximately 8.5 miles of 12" HP pipeline from 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 state highway SR-40.

After GNA and costs analysis, Questar Gas determined that the best option to reinforce Charleston would be to construct the 12" extension along SR-32. Although more expensive than the Midway options, this option provides redundant feed in the entire Heber Valley and improves pressures into Park City, Utah. The 8" options discussed above only reinforced the Charleston area of the Heber Valley, leaving the majority of the Heber Valley on one-way feed. If one of these options was chosen, subsequent projects would be required to provide redundant feed into Heber and to reinforce the HP system in Park City. The estimated cost for the preferred 8” option is approximately $2,000,000.

Questar Gas believes that the 12” SR-32 option solves the redundancy and low-pressure issues with one project. In addition, due to the likely routing of the feeder line, it is possible that Questar Gas could receive right-of-way assistance or contributions from residential developers in the area. Questar Gas estimates that the 12” project will cost approximately $9,000,000 to complete. Questar Gas estimates that the first year revenue requirement for this project will be $1.4 million.

Questar Gas is currently pre-engineering this project and finalizing route options. Based on current growth and load projections for the area, Questar Gas estimates that the project will need to be constructed sometime in 2013 or 2014. In the near term, Questar Gas will finalize its pre-engineering of the project, including route selection and phase-1 environmental work, and continue to monitor the area for load growth.

Saratoga Springs Feeder Line

Questar Gas currently serves Saratoga Springs via its IHP system. The nearest regulator station is approximately five miles from Saratoga Springs, and the end of the Saratoga Springs system is nearly nine miles from the station. The IHP mains serving this area have limited ability to meet the load demand without additional HP support.

Questar Gas analyzed eight options for providing HP service to Saratoga Springs. Most of these options involved tying into the company’s FL85 and extending service south. Questar Gas also considered a scenario involving building a new gate station off of KRGT and extending a new feeder line but this option was not cost effective. Likewise, Questar Gas considered an option that involved purchasing the Eagle Mountain system and running a new feeder line but this alternative was not economically viable.

The remaining options all involved extending service from Questar Gas’ interconnect with KRGT located on state road SR-73. Accordingly, any of the remaining options would require remodeling of this gate station. Questar Gas is in communication with KRGT to evaluate alternatives for such a remodel. Additionally, FL 85 has limited capacity available to serve Saratoga Springs.

After GNA and engineering analysis, Questar Gas determined the best option involves replacing approximately 7,400 lf of FL 85 with 20” HP pipe, and extending approximately 20,000 lf of 12” HP pipe to the south, into Saratoga Springs.   This option would also require a new HP regulator station at the termination point of the 12” HP main.

Questar Gas is currently working on engineering and geotechnical evaluation of this option. The current cost estimate for the above scope of work, including the KRGT gate station re-model is $7,900,000. Questar Gas estimates that the first year revenue requirement for this project will be $1.2 million.

The next best option was very similar to the preferred alternative, but was a substantially more expensive. This option involved replacing the same section of FL 85 and building additional 12” HP pipe to Saratoga Springs, following a different route, through city streets rather than through open fields. While this option would reduce the need for Questar Gas to acquire private right-of-way for the project, is would add approximately 1.9 miles to the length. The estimated cost for this option was approximately $10,000,000 (a revenue requirement of $1.6 million). As a result of this increase in cost, Questar Gas elected to pursue the shorter option.

Questar Gas is aware that Questar Pipeline is evaluating the possibility of building an interstate pipeline into the area. Questar Gas will monitor this development and, if Questar Pipeline offers still another alternative, Questar Gas will evaluate that as a reinforcement option for this area.

3. Heber City HP Reinforcement: Questar Gas has been monitoring the IHP pressures on the east side of Heber City for several years. In 2008, Questar Gas completed the preliminary design of a 2-mile HP extension for its FL 16 on the north end of Heber City to a proposed regulator station in the east side of Heber City. This regulator station would reinforce the IHP system in the area and provide the additional capacity needed.

   The project was initially slated to be constructed in 2009 and again in 2011. However, slow load growth in the area allowed for the project to be delayed. Current load projections show that the project may need to be completed in either 2012 or 2013. The estimated cost for this project is approximately $2,300,000.   Questar Gas estimates that the first year revenue requirement for this project will be $340,000.

4. Wyoming HP Reinforcement Projects: Questar Gas analyzed three potential HP projects in Wyoming, beginning in 2010. One in the town of LeBarge, one for the town of Big Piney, and one in Rock Springs.

LeBarge Replacement

Questar Gas serves the town of LeBarge is served from its FL 31. FL 31 is served by a Williams Field Services gathering line. Pressure in the gathering line has been steadily decreasing as production in the area decreases. Currently the pressures in this line drop as low as 120 psig.

Questar Gas conducted an engineering study and determined could maintain proper pressures in its systems (HP and IHP) by removing the regulation at the head of FL 31. In order to do so, Questar Gas will have to verify the strength and condition of FL 31. FL 31 was originally installed and pressure tested to establish an MAOP high enough to match that of the Williams Field Services line. In 2011, Questar Gas will evaluate the condition of this FL 31 via leak and cathodic surveys and install over pressure protection at the end of the line. The estimated cost for this work is approximately $50,000-$75,000.

Big Piney

Questar Gas serves the town of Big Piney utilizing volumes from a Williams Field Services gathering line. Questar Gas' FL 49 is approximately 16 miles long and ties into the Williams Field services line. The line is constructed of both 2" and 3" sections. The IHP demand in Big Piney is growing. In order to meet this demand, Questar Gas needs to increase the delivery capacity of FL 49.

Questar Gas conducted an engineering study and determined that it could increase capacity of FL 49 to operate at a higher pressure. However, in order to do this, the line must be pressure tested to establish the appropriate MAOP's. In 2011, Questar Gas will pressure test the Big Piney line. The estimated cost for this work is $55,000.

Rock Springs

Questar Gas has been evaluating options for creating redundant feed into Rock Springs. The city of Rock Springs is currently served by two sources. The first is FL 107, which ties into a Questar Pipeline main line at the Kanda/Coleman compressor station. The second source into Rock Springs is FL 37, which ties into the same Questar Pipeline main line at Kent's Ranch. If flow was interrupted on FL 107, FL 37 or the Questar Pipeline main line, Rock Springs could suffer service interruptions.

Questar Gas analyzed three options for this project. The first option was to extend FL 107 approximately 7 miles to the east and tie-in to a different Questar Pipeline source at North Baxter. The second option involved extending FL 37 to the north and tie-in with FL 107 near Elk Street in

Rock Springs. Questar Gas analyzed the alternatives and determined that neither option was an economically viable solution to the problem.

In order to provide redundancy to Rock Springs, Questar Gas opted to tap a Colorado Interstate Gas (CIG) line and install a new feeder line that will intersect with FL 107. In 2011, Questar Gas will construct a new gate station that interconnects with CIG and install approximately 5,500 lf of 8” HP feeder line. Questar Gas has estimated the total cost of the project to be approximately $2,800,000. Questar Gas estimates that the first year revenue requirement for this project will be $280,000.

5. Feeder Line Replacement Program:

Questar Gas is continuing its Feeder Line replacement program in 2011 with replacements planned on FL 12, FL 17, FL 18, and FL 25. Pursuant to the Settlement Stipulation and the Utah Commission’s bench order approving the Settlement Stipulation, in Docket No. 09-057-16, the Company will file an infrastructure replacement plan detailing the planned projects, the anticipated costs and other relevant information.

6. UDOT Required Relocations: Questar Gas anticipates the following HP relocation projects in 2011:

- UDOT’s Mountain View Corridor project will require nine HP relocations on Questar Gas’ FL 10, FL 34 and FL 36. The relocations vary in length from a few hundred feet up to approximately 1,500 feet. The estimated total cost for these relocations is approximately $3,370,000. Questar Gas will be reimbursed for a portion of the costs associated with UDOT projects according to Utah Code Ann. § 72-6-116 (2010). After reimbursement, Questar Gas’ anticipated costs are approximately $1,381,000. Questar Gas estimates that the first year revenue requirement for this project will be $140,000.

In addition to the above projects, Questar Gas is also continuously working on reinforcing its system to alleviate low pressure areas and increase service reliability. One such project involves the end point of FL 36 in West Jordan, Utah. As noted above, this area has the lowest pressures of the Questar Gas HP system. Questar Gas has been working with West Jordan City to replace approximately 500 lf of 3” HP pipe with new 6” HP pipe. This project will effectively remove the “bottleneck” in the system and alleviate the low pressures in the area. This project is scheduled to be completed in 2011, and is expected to cost approximately $75,000.

IHP Projects:

1. Monticello Project, Utah: Questar Gas continues to work toward increasing the MAOP of large portions of the IHP system in Monticello, Utah from 25 psig to 60 psig in order to improve delivery pressures within the system. Questar Gas will up-rate the system by either pressure testing the existing lines or replacing the old lines with newer, stronger pipe. This project began in 2008 and was approximately 60% complete at the end of 2010.

   In 2011, Questar Gas plans to complete the up-rate of another 20% of the system. The estimated cost to perform this work is $1,100,000 including replacement mains and services. Questar Gas estimates that the first year revenue requirement for this project will be $110,000. Questar Gas anticipates the Monticello up-rate project will last through 2012.

2. Kemmerer/Diamondville, Wyoming Replacement: In 2008, Questar Gas implemented a replacement program under which major portions of the Kemmerer/Diamondville systems are being replaced.

   In 2011, Questar Gas plans to replace approximately 46,000 lf of main and 511 services at an estimated cost of $ 2,607,000. Questar Gas estimates that the first year revenue requirement for this project will be $260,000.

2012 and 2013 Projects:

- In 2012, Questar Gas anticipates installing the Hunter Park improvements that were detailed above.
- In 2012, Questar Gas anticipates constructing the Saratoga Springs reinforcement detailed above.
- In 2012, Questar Gas plans to continue the Monticello up-rate project.
- In 2012, Questar Gas plans to complete the Kemmerer/Diamondville replacement program. Questar plans to replace approximately 30,000 lf of main and 364 services at an estimated cost of $1,900,000. Depending on weather and construction crew availability, the work may be accelerated and completed in 2011.
- In 2013, Questar Gas may install the St. George reinforcement detailed above.
- In 2013, Questar Gas plans to install the Charleston reinforcement detailed above.

- In 2013, Questar Gas plans to install the Heber reinforcement detailed above.

- In 2013, Questar Gas will reinforce FL 90 in Vernal. The scope of this project has not yet been determined.

- In 2013, Questar Gas will reinforce FL 51 in northern Utah. The scope of this project has not yet been determined.

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 (see 49 CFR Part 192 Subpart O). Under this regulatory framework, Questar Gas must identify all high consequence areas along the segments of feeder lines that are defined as transmission lines[1]. Once these high consequence areas are defined, Questar Gas must calculate a risk score for each segment located in the high consequence area. Questar Gas then sums up these risk scores for each unique feeder line. These risk scores establish the baseline and set the priority for assessment for integrity. Questar Gas verifies high consequence areas and calculates the risk score annually. Questar Gas has ten years[2] to complete the baseline assessment of all segments in high consequence areas.

The transmission integrity rules also require Questar Gas to conduct additional preventive and mitigative measures on feeder lines in high consequence areas and class[3] 3 and 4 locations. These additional measures include monitoring excavations (excavation standby) near the feeder lines and performing semi-annual leak surveys. Other integrity activities include annual high consequence area validation, pipeline centerline survey 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:

[1] Transmission Lines are those feeder lines (or segments of feeder lines) that are operating (i.e. MAOP) at or above 20% SMYS.
[2] The baseline assessment must be completed by 12/17/2012 (49 CFR §192.921 (d)).
[3] Class location as defined by 49 CFR Part 192 (§192.5)

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.

Transmission Integrity Management

Costs

See attached table (Table 1- Transmission Integrity Management Costs) for 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. Currently the threats on the pipeline include 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.

External Corrosion Direct Assessment (ECDA)

ECDA is intended to evaluate the integrity of pipeline segments for the threat of external corrosion, including segments of cased gas transmission pipelines. Questar Gas may identify other types of damage during the assessment process. In those cases Questar Gas must document the damage and use other suitable assessment methodologies to evaluate the integrity of the pipeline segments. Refer to Figure 1 for an overview of the ECDA process.

The ECDA methodology is a four-step process requiring integration of pre-assessment data, data from multiple indirect field inspections, and data from pipe surface examinations. The four steps of the process are:

1) Pre-Assessment - The Pre-Assessment step utilizes historic and recent data to determine whether ECDA is feasible, identify appropriate indirect inspection tools, and define ECDA regions.

2) Indirect Inspection - The Indirect Inspection step utilizes above ground inspections to identify and define the severity of coating faults, diminished cathodic protection, and areas where corrosion may have occurred or may be occurring. Questar Gas utilizes 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. Indications from indirect inspections are categorized according to severity.

3) Direct Examination - The Direct Examination step includes analyses of pre-assessment data and indirect inspection data to prioritize indications based on the likelihood and severity of external corrosion. This step includes excavation of prioritized sites for pipe surface evaluations resulting in validation or re-ranking of the prioritized indications. During this step, Questar Gas re-evaluates high priority areas with corrosion damage and considers which should be subject to further action.

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 those caused by chemical and microbiologically induced corrosion. ICDA focuses on directly examining locations at which internal corrosion is most likely to occur. Refer to Figure 2 for an overview of the ICDA process.

The basis of ICDA is that detailed examination of the most susceptible locations along a pipeline where liquids would first accumulate provides information about the downstream condition of the pipeline. If the locations most likely to accumulate liquids have not corroded, other downstream locations that are less likely to accumulate liquids may be considered free from 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.

1) Pre-Assessment: In the Pre-Assessment step, Questar Gas collects and utilizes historic and recent data to determine whether ICDA is feasible and to define ICDA regions.

2) ICDA Region Identification: The ICDA Region Identification step covers flow-modeling techniques, developing a pipeline elevation profile and identifying sites where internal corrosion may be present.

3) Detailed Examination: The Detailed Examination step integrates the pre-assessment data and ICDA Region Identification analyses to select locations for detailed examinations. As part of this step, Questar Gas excavates certain sites to evaluate for the presence of internal corrosion.

4) Post-Assessment: In the Post-Assessment, Questar Gas utilizes data collected from the previous three steps to assess the effectiveness of the

ICDA process, establish monitoring programs, and determine reassessment intervals.

Visual Examination of Aboveground Pipe and Pipe in Vaults

Questar Gas assesses some pipes through visual examination including pipe that falls in a high consequence area (HCA) and is aboveground, or pipe that, for other reasons, cannot be assessed using external corrosion direct assessment methods (i.e. spans over waterways, pipe in vaults, etc.). Direct visual examination typically includes the removal of external coating to check the pipe for external corrosion and physical defects.

Inline Inspection

Questar Gas assesses some pipelines utilizing inline inspection devices called "smart pigs." Smart pigs are only appropriate when a line is constructed and configured to allow for inline inspection. Only a few pipelines in Questar Gas' system are currently capable of utilizing this method of assessment.

High Consequence Area (HCA) Validation

Each year, Questar Gas conducts a survey on all transmission lines to validate the current high consequence areas as well as any new potential sites that may trigger new high consequence areas. This information is captured in Questar Gas' mapping system and is used to calculate high consequence areas on an annual basis.

Distribution Integrity Management

Costs

See attached table (Table 2- Distribution Integrity Management Costs) for details on the anticipated costs associated with distribution integrity management.

Implementation

Questar Gas has completed their evaluation of this rule and has assigned a team to look at the impacts of this rule and to begin the implementation. The first phase of implementation is establishing a written plan. Questar Gas anticipates completing this task in the near future, and having it finalized prior to the August 2, 2011 deadline.

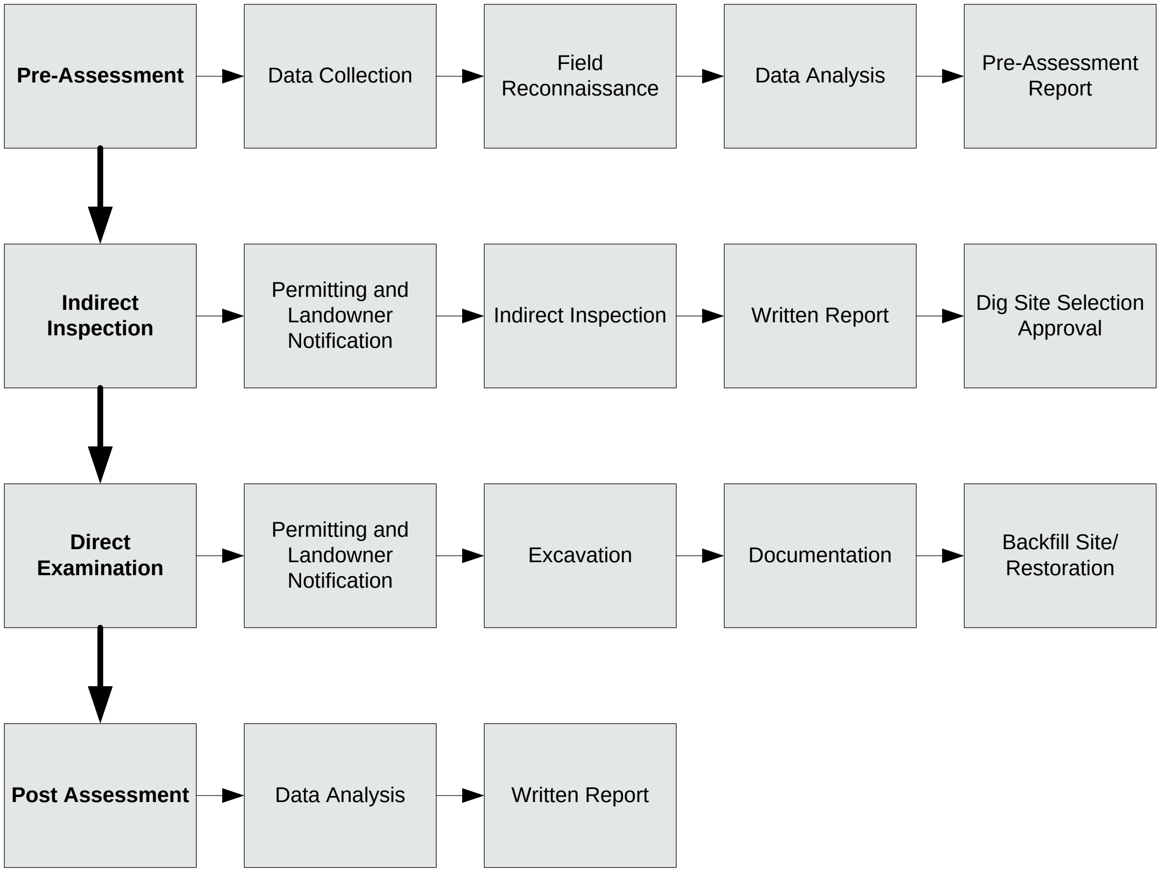


Figure 1 – ECDA Process Overview

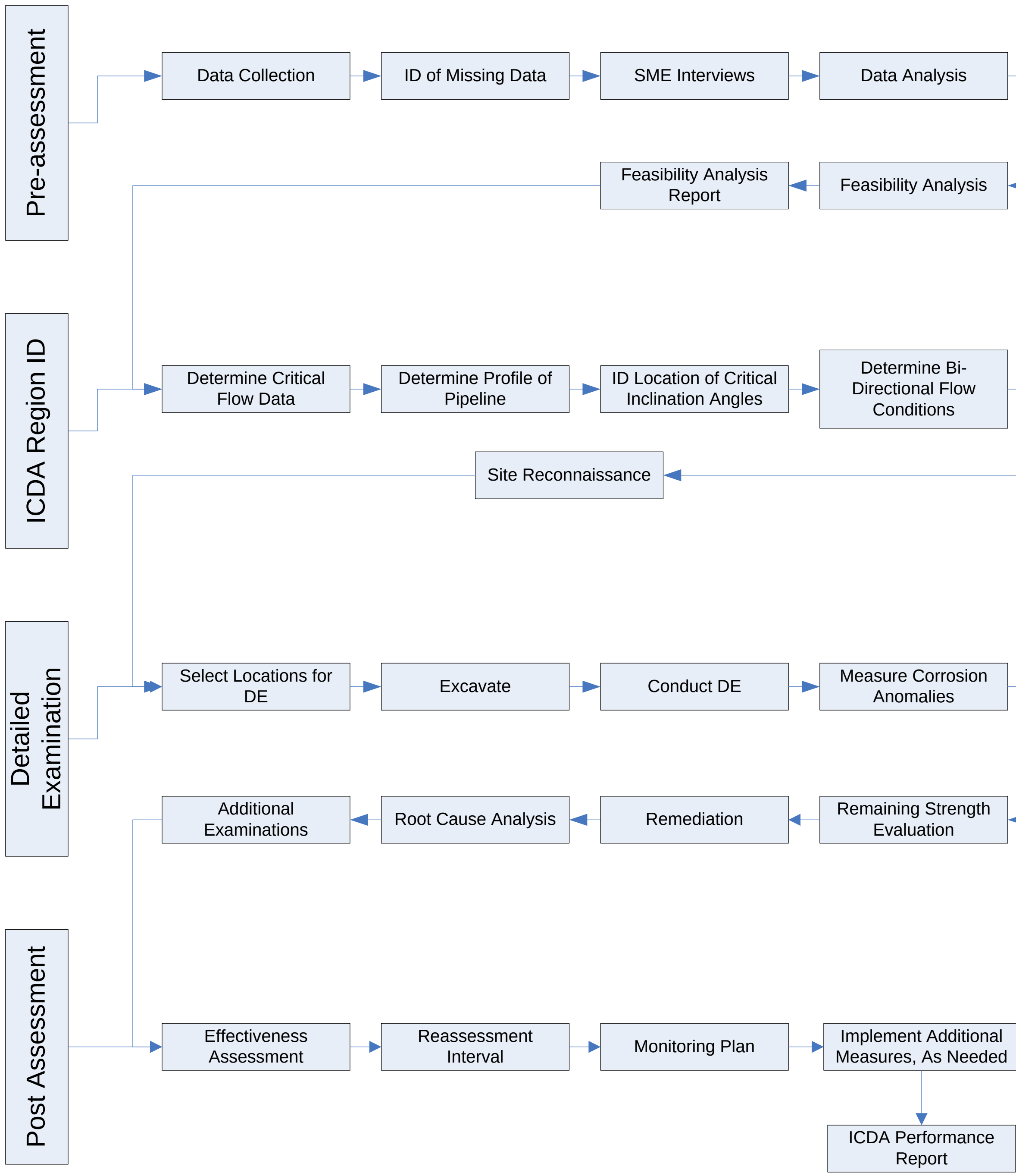


Figure 2 – ICDA Process Overview

Table 1 – Transmission Integrity Management Costs

$ Thousands

Activity	2011	2012	2013
Transmission Integrity Management			
ECDA (Utah Only)			
Pre-Assessment			
2011 (FL 10, 11, 14, 26, 28, 34, 35, 41, 48, 52, 85, 88) (41 HCA miles @ 2 K / mile)	82		
2011 (Casings Only – FL 6, 12, 13, 19, 21, 22) (18 Casings)	10		
2012 (FL 6, 12, 13, 24, 33, 46, 55, 62) (15 HCA miles @ 2 K / mile)		30	
2013(FL 18,19,21, 22, 47) (44 HCA miles @ 2 K / mile)			88
Indirect Inspections			
2011 (FL 10, 11, 14, 26, 28, 34, 35, 41, 48, 52, 85, 88) (41 HCA miles @ 30 K / mile)	1,230		
2011 (Casings Only – FL 06, 12, 13, 19, 21, 22) (0.52 HCA miles $ 30K / mile)	30		
2012 (FL 6, 12, 13, 24, 33, 46, 55, 62) (15 HCA miles @ 30 K / mile)		450	
2013(FL 18,19,21, 22, 47) (44 HCA miles @ 30K/ mile)			1,320
Direct Examinations			
2011 (FL 64, 65, 66, 68, 69, 72, 84) (10 excavations @ 12 K ea.)	120		
2011 (FL 64, 65, 66, 68, 69, 72, 84) (2 casings @ 100 K ea.)	200		
2011 (FL 10, 11, 14, 26, 28, 34, 35, 41, 48, 52, 85, 88) (30 excavations @ 12 K ea.)	360		
2011 (FL 10, 11, 14, 26, 28, 34, 35, 41, 48, 52, 85, 88) (8 casings @ 100 K ea.)	800		
2011 (Casings Only - FL06, 12, 13, 19, 21, 22) (8 casings @ 100 K ea.)	800		
2012 (FL 6, 12, 13, 24, 33, 46, 55, 62) (12 excavations @ 12 K ea.)		144	
2012 (FL 6, 12, 13, 24, 33, 46, 55, 62) (4 casings @ 100 K ea.)		400	
2013(FL 18, 19, 21, 22, 47) (6 excavations @ 12 K ea.)			72
2013(FL 18, 19, 21, 22, 47) (4 casings @ 100 K ea.)			400
Post Assessment			
2011 (FL 10, 11, 14, 26, 28, 34, 35, 41, 48, 52, 85, 88) (41 HCA miles @ 1.5 K / mile)	61.5		
2011 (Casings Only - FL06, 12, 13, 19, 21, 22) (18 Casings)	8		
2012 (FL 6, 12, 13, 24, 33, 46, 55, 62) (15 HCA miles @ 1.5 K / mile)		22.5	
2013(FL 18,19,21, 22, 47) (44 HCA miles @ 1.5 K / mile)			66

Table 1 – Transmission Integrity Management Costs

$ Thousands

Activity	**2011**	**2012**	**2013**
ICDA (Utah Only)			
2011 (FL 14, 41, 48, 52, 88)	350		
2011 Excavations (8 excavations @ 3 K ea.)	24		
Inline Inspection			
2011 (FL 26)	300		
2011 Excavations/ Validation Digs/ Remediation (4 excavations @ 12 K ea)	48		
2012 (FL 4)		300	
2012 Excavations/ Validation Digs/ Remediation (4 excavations @ 12 K ea)		48	
Direct Examination (Utah Only)			
2011 - Spans (2 spans @ 75 K / span)	150		
2011 - Vaults (3 vaults @ 5 K/ vault)	15		
2012 - Spans (2 spans @ 75 K/ span)		150	
2012 - Vaults (3 vaults @ 5 K/ vault)		15	
2013 - Spans (2 spans @ 75 K/ span)			150
2013 - Vaults (3 vaults @ 5 K/ vault)			15
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
Data integration/ update HCAs (100 hrs @ $70.00/ hr)	7	7	7
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			
Outside Consultants	200	200	200

Table 1 – Transmission Integrity Management Costs

$ Thousands

Activity	2011	2012	2013
Administration			
Project Coordination (3 employees (2080 hrs x 3 x $70.00/hr))	436.8	436.8	736.8
Coordinator – Operations Support (0.5 employee (1040 hrs x 1 x $70.00 hr))	72.8	72.8	72.8
Data Integration Specialists (2 employees (2080 hrs x 3 x $70.00/hr))	285.6	285.6	285.6
Data Integration Specialist - QPEC (1500 hrs x $30.00/hr)	45	45	45
Supervisor (1560 hrs x $70.00/hr)	109.2	109.2	109.2
Engineering (1560 hrs x $70.00/hr)	109.2	109.2	109.2
Training (for IM personnel)	22.45	22.45	22.45
Transmission Integrity Management Total ($ Thousands)	$ 6,508	$ 3,479	$ 4,031

Table 2 – Distribution Integrity Management Costs

$ Thousands

Activity		2011	2012	2013
Distribution Integrity Management				
NOTE: *The following is a detailed description of the impact on the Company's on-going operations and costs associated with the new distribution integrity management rule. These numbers represent the projected future costs associated with compliance with this new rule and represent total costs for the entire company and is not limited to just Utah.*				
§ 192.383	**Excess Flow Valve Installation**			
	Administrative Functions (reporting, procedures, documentation) 10 hrs + 2500 hrs @ $70.00/hr	175.7	175.7	175.7
§ 192.1001	**What definitions apply to this subpart?**			
	Procedures and training – 200 hrs @ $70.00/hr	14	14	14
§ 192.1005	**What must a gas distribution operator do to implement this subpart?**			
	Implementation Team – 50 Hrs/ year @ $70.00/ hr	3.5	3.5	3.5
	Plan Template - $25,000.00 (covered in 2010)			
	Plan Prep – 250 hrs @ $70.00/hr (2011)	17.5		
	Plan update/revisions – 250 hrs @ $70.00/hr		17.5	17.5
	Manage overall program – 500 hrs @ $70.00/hr	35	35	35
§ 192.1007	**What are the required elements of an integrity management plan?**			
	System Knowledge – 200 hrs @ $70.00/hr	14	14	14
	Identify threats – 100 hrs @ $70.00/hr	7	7	7
	Risk Software – annual maintenance	10	10	10
	Risk Calculations – 250 hrs @ $70.00/hr	17.5	17.5	17.5
	Region Meetings – 240 hrs @ $70.00/hr	16.8	16.8	16.8
	Field Activities –400,000.00 (e.g. leak survey, cathodic survey)	400	400	400
	Measuring performance – 100 hrs @ $70.00/hr	7	7	7
	Periodic evaluation – 100 hrs @ $70.00/hr	7	7	7
	Reporting – 20 hrs @ $70.00/hr	1.4	1.4	1.4

Table 2 – Distribution Integrity Management Costs

Activity		$ Thousands 2011	2012	2013
§ 192.1009	**What must an operator report when compression couplings fail?**			
	Revisions to database/ capture of field data -20 hrs @ $70.00/hr	1.4	1.4	1.4
§ 192.1011	**What records must an operator keep?**			
	80 hrs/ year @ $70.00/hr	5.6	5.6	5.6
Administration				
	Coordinator - Operations Support (0.5 employee (1040 hrs x 1 x $70.00/hr))	72.8	72.8	72.8
	Supervisor (520 hrs x $70/hr)	36.4	36.4	36.4
	Engineering (520 hrs x $70/hr)	36.4	36.4	36.4
	Operations (2080 hrs x $70/hr)	145.6	145.6	145.6
Distribution Integrity Management Total ($ Thousands)		$ 1,024.6	$ 1,024.6	$ 1,024.6