

- BEFORE THE PUBLIC SERVICE COMMISSION OF NEW JERSEY
QUESTAR CORP.

WMA
SGY
GHR
MED
SG
CEB
JMD
CLB
JLB /AKA

AUG 14 1997

In the Matter of the Analysis of an
Integrated Resource Plan for MOUNTAIN
FUEL SUPPLY COMPANY.

) DOCKET NO 95-057-04
) LEGAL DEPARTMENT
) ACKNOWLEDGMENT OF MOUNTAIN
) FUEL SUPPLY COMPANY'S
) INTEGRATED RESOURCE PLAN
) DATED MAY 1, 1995

ISSUED: August 12, 1997

BY THE COMMISSION:

SUMMARY

The Company submitted its third full biennial Integrated Resource Plan (IRP) on May 1, 1995, in conformance with the Commission's Standards and Guidelines for Integrated Resource Planning for Mountain Fuel Supply Company (MFS or Company). These guidelines require an IRP report every two years, with an update in the intervening years. The Commission requested comments from interested parties on the adequacy of the IRP and sought recommendations for future improvements. Comments were received from the Committee of Consumer Services (Committee) and the Division of Public Utilities (Division). This order reviews the Company's IRP, the parties' comments and makes recommendations for future improvements to the Company's IRP.

We herein acknowledge that the Company's Integrated Resource Plan meets the standards and guidelines for preparing such plans adopted by Order of September 26, 1994, with the exception of the Company's treatment of demand-side resources. We order that improvements to the IRP and its treatment of demand-side resources be made as soon as is practical or the Company petition the Company for a change in the IRP Standard and Guidelines. In the latter instance, the Company will need to present evidence to the Commission as to why it is in the public interest to change the IRP guidelines.

Acknowledgment is not to be construed as pre-approval of any expenditures by the Company for gas supplies, capital equipment or to institute or alter a demand-side management program. The prudence of Company actions, whether or not undertaken in conformance with a Plan, will only be determined in appropriate ratemaking proceedings.

On May 20, 1997, the Company submitted its 1997 IRP. Any party wishing to comment on the reasonableness of this filing should do so.

PROCEDURAL HISTORY AND PUBLIC PROCESS

On July 27, 1995, the Commission requested comments from interested parties on the adequacy of Mountain Fuel's third biennial Integrated Resource Plan (IRP). On September 18, 1995, comments were received by the Committee and the Division. The Company held a total of eleven public meetings between February 9, 1994, and March 22, 1995. A closed meeting was held on April 17, 1995, between the Company and regulators to discuss the modeling data and assumptions. This meeting was closed to the public because competitively sensitive pricing information was disclosed that could compromise the Company's bargaining position when purchasing gas on the open market. The divulgence of such information could result in higher costs - costs that could be borne by the Company's core ratepayers.

DESCRIPTION OF THE IRP

The Company continues to use its SENDOUT model, produced by Energy Management Associates (EMA) to evaluate gas supply alternatives. SENDOUT is a linear programming optimization model which chooses the combination of Company gas production and new resource additions that minimize the cost of gas over a selected time horizon (twenty years). The

model has been used in previously submitted IRPs and it is the Commission's understanding that the model is continuously being upgraded. For this IRP, the Company used version 7.1.3 which can evaluate both supply-side and demand-side resources on a consistent basis.

The Company's IRP develops a plan to provide customers with the lowest reasonable commodity cost over the long-term, consistent with reliable service. Such a plan requires an accurate projection of future customer requirements, an analysis of tradeoffs between system capacity and various gas supply sources, and the development of an understanding of demand-side management issues. The results of the model help derive planning guidelines that provide the basis for creating a flexible framework for guiding the day-to-day decisions on the gas supply process.

The Company's report is divided into sections that include: load forecasting, system capabilities, demand-side resources, technology improvements, purchased gas, company-owned gas, storage, gathering and transportation, modeling results, action plan and various appendices.

The Company develops a load forecast over a ten-year horizon. The model then selects the optimal quantities of gas from its various alternative sources. These sources include: existing gas purchase contracts, Company-owned production, storage, and potential future contracts that vary by price, load factor and availability. The Company uses a statistical clustering algorithm to reduce the number of existing contracts from 20 to 12. The groups of contracts have similar terms and conditions. In addition, the Company includes eight potential gas purchase contract clusters that mimic likely attributes of prospective contracts in the market place. There are two additional "sized" contract clusters; the first is for spot market gas, the second is for the Five-Cent-Waiver Program

gas¹. The contracts vary by length of time and "take" requirements. The price for prospective contracts is dependent on the assumed future natural gas price index. This price index is the most important variable in determining the amount of purchased gas that is selected by the model. It is also the most difficult to predict. The Company uses \$1.40 per decatherm as the starting index price and uses a price escalation rate based on Data Resources, Inc. (DRI) projections. DRI reduced its projection of escalation rates to reflect the significant downward trend in gas prices during 1994 and the first part of 1995. The Company argues that virtually all gas purchase agreements currently traded on the market are being indexed. The Company makes the assumption that supplies of gas will be available every year at the assumed index-based price, thus there is little distinction between short-run and long-run contracts for purposes of modeling. The Company notes that most of its recent contracts are for short-run periods; 70% are for winter season or spot purchases; only 2% are over a three year span.

Improvements in SENDOUT's Linear Program (LP) optimizer allow the Company to use 25 Company-owned production categories compared to 17 categories used in the previous interim report. A larger number of categories allows for greater homogeneity within each category. The model is run with a 20-year time horizon in order to effectively evaluate the long-run nature of the Company-owned gas reserves. End-effect adjustments have been made to take into account the fact that availability of the resource is longer than the planning horizon of the model. Such adjustments are necessary because model runs for 30-year periods require enormous computer

¹ The Five-Cent-Waiver Program, is a program for interruptible transportation customers who voluntarily agree to provide MFS their gas during peak periods when transportation is interrupted. In return, the customers receive a five cent reduction in their transportation rate.

capacity and result in prohibitively long computer runs. This is specially true if these longer runs are made for each scenario or sensitivity. In order to estimate these end-effects, a limited number of 30 year runs were made in order to estimate their effects. These end-effects were quantified and adjustments were made to the 20-year runs.

In addition, the Company attempts to model gathering and transportation options that reflect the physical nature of the system available to Mountain Fuel. Year-round, peaking, seasonal, and release capacity transportation options on Questar and Kern River were considered as well as transportation on Northwest and Colorado Interstate Gas Pipelines. The modeling of some of these options was difficult and the Company argued that some options should be precluded because of the low probability that the event would occur or that it was intuitively obvious that the model would not select such an option.

The Company states that it models gathering and transportation charges to reflect the appropriate costs and the historical nature of the system that was originally built to service MFS's load. The Company argues that in many instances Questar Pipeline is the only alternative for gathering and transportation. In addition, storage and other peak-day options are analyzed as alternatives to purchased gas. These include: aquifer reservoirs, Clay Basin, future underground storage as well as peak-shaving alternatives such as Liquefied Natural Gas and Propane-Air systems. Based on assumptions made by MFS concerning future Questar tariffs to be approved by the FERC, these alternatives were not viable.

IRP RESULTS

The Company performed a "base-case" model run that, in the Company's opinion, includes the most likely estimates of input values. The key inputs include: estimates of loads, temperatures, discount rates and future gas prices. Estimates of future gas prices require assumptions about the starting point, escalation rates, and seasonality fluctuations. The base-case assumes a starting point of \$1.40 per decatherm for gas purchased on the market, with a real escalation rate of one percent and a nominal rate of 3.2 percent. The Company assumes a 7 percent discount rate. The 1995 base case load forecast starts higher than the 1994 forecast and escalates a slightly higher rate over the ten-year projection period.

Scenarios are run, using various estimates of inputs, to gauge the impact on revenue requirement and costs to customers. The starting point for gas prices ranged from \$0.30 below and \$0.20 above the assumed starting price of \$1.40. Scenarios also test the effects of different seasonality assumptions, i.e., how prices vary with the seasons of the year. Load forecasts are varied to capture the impact of different assumptions about the demand for gas. Additional capacity issues are also modeled and computer runs made to measure the impact on cost of reducing the Company's entitlement on Questar Pipeline and getting transportation services from other pipelines or other sources.

The sensitivity or scenario analyses help the Company identify relationships between key gas supply factors. The Company plans on rerunning the model periodically throughout the heating season to perform a reality check with regard to the minimization of gas cost within a

changing environment. The Company concludes that the following general guidelines can be gleaned from its planning process.

The guidelines include:

- To the extent possible, given the uncertainties associated with demand and operating conditions, the Company can produce approximately 56 million decatherms of the Company-owned gas assuming normal weather conditions.
- To the extent possible, given the uncertainties associated with demand and operating conditions, the Company can generally produce the categories of Company-owned gas as determined in the base case for this modeling exercise as contained in Table 4. (Generally, higher-cost D-24 gas should be produced at the maximum throughout the year while the lower-cost prior-company gas is produced at maximum only in the winter heating-months and not at all in the summer².)
- Purchase a portfolio of gas whose primary components are six-day gas, four-month heating-season gas (or three-month depending on Request For Proposals price relationships), and firm-winter spot supplies.
- Attempt to accommodate deviations from normal weather with purchased gas and use of existing storage.
- Override the SENDOUT Model utilization profiles when producer-to-producer imbalance considerations dictate otherwise.
- Postpone taking the remaining Canyon Creek make-up from the summer of 1995 to the 1995-1996 winter heating season.
- Recoup enough Birch Creek make-up gas in the summer of 1995 to have rights to the remaining make-up deliverability for the 1995-1996 winter heating season.
- Attempt to negotiate a better short-term wintertime make-up rate for Church Buttes, and work to get in balance by Fall 1997.

² The Wexpro agreement provides different ratemaking treatment of Company-owned gas depending on when it was drilled. Gas drilled before the Wexpro agreement (prior Company gas) is ratebased at the Company's authorized rate of return. Gas produced in the Wexpro fields after the agreement (D-24 gas) is allowed a 24 percent rate of return.

- Continue reducing Bruff/Moxa imbalances.
- Continue to negotiate (through Wexpro as Mountain Fuel's agent) more balancing agreements, particularly in the Bruff/Moxa Arch area.
- Continue to evaluate the possibility of obtaining reserves in developed fields where the Company currently has an ownership position.
- Continue to replace needed segments of Mountain fuel's system. However, under most scenarios, MFS's existing system capacity can meet customer needs for the next 5 years without additions.
- Acquire additional peaking supplies as determined in this modeling exercise.
- Continue to investigate long-term potential of a liquified natural gas facility by evaluating benefits, risks and costs.
- Maintain as much flexibility as possible to minimize gas costs under possible combination of conditions as modeled in the variance analysis, without jeopardizing reliability.
- Do not pursue DSM programs without further direction. While nine demand-side Management (DSM) measures were studied based on assumptions agreed to by the Division, Committee and Commission Staff, none passed all four California tests and none passed the Ratepayer Impact Test, indicating that all programs would raise rates.

DISCUSSION AND FINDINGS BASED ON COMMENTS OF THE PARTIES

Two parties, the Division of Public Utilities (Division) and the Committee of Consumer Services (Committee), sent comments to the Commission. The Division emphasized three main points. The first was a critique and analysis of the Company's treatment of demand-side resources; second, a request for information detailing the differences between planned and actual gas procurement; and finally, a request that the Company provide options to its Questar Pipeline contract for firm transportation when it terminates in 1999.

The Division found that the Company's demand-side analysis contained a procedural error and a questionable interpretation of the definition of lost revenues which when corrected produced different conclusions than presented by the Company. The first error concerns the Company's assumption that gas costs will escalate at a higher rate than its retail prices. Such an assumption contributes to the Company's conclusion that all Demand-Side Management (DSM) programs, including load-building ones, result in lower profits for the Company and thus place upward pressure on prices. The Division asserts that this assumption is incorrect because gas costs are handled through a passthrough proceeding where increased gas costs are recovered in rates. The Division also maintains that the Company made errors in their calculations of lost revenues associated with their DSM programs. The Company categorizes some load-building programs as fuel substitution programs where gas appliances replace electric appliances. The Company further assumes that the lost revenues associated with electricity sales should be included in the cost benefit analysis. The Division testifies that such an inclusion would only be valid for a combined utility selling both electricity and gas.

The Division found that when these mistakes are corrected, some of Mountain Fuel's DSR programs passed both the Total Resource Cost Test (TRC) and the Ratepayer Impact Measure (RIM) test. The Division notes that the Commission's IRP Guidelines for Mountain Fuel rely on the TRC test for evaluating resource acquisitions. The Company has taken the stance that DSR programs should pass both the TRC and RIM test, in order to prevent any upward pressure on rates.

The Division recommends that the Company combine programs that pass TRC with programs that pass both TRC and RIM. The Division maintains that programs can be designed that

DOCKET NO. 95-057-04

- 10 -

conserve natural resources, are beneficial to participants and do not put any upward pressure on rates.

The Division asserts that the Company's analysis of DSR does not provide meaningful discussion of the value of DSR investment nor does it satisfy the guideline that the IRP evaluate demand-side and supply-side resources on a consistent and comparable basis. The Division recommends that the Company correct its mistakes in calculating the benefits and costs of DSR and then use the corrected figures to integrate DSR options with supply side options in the SENDOUT model. Such an analysis would provide the Company with better information on the value of DSR programs.

During an IRP meeting on January 5, 1996, the Company addressed some of the issues concerning DSR. The Company maintains that its interpretation of the lost revenue issue is correct and that none of its programs passed either test. The Company concludes that its responsibility for analyzing DSR is complete and given these results that DSR analysis is no longer necessary.

The Commission can not accept this position on its face. The Commission's rules and guidelines state explicitly that the Company's IRP shall look at all possible resources, both supply-side and demand-side, in meeting its goal of providing its customers with the lowest cost natural gas energy services. The Company is obligated to perform such analyses. The Commission is cognizant that there are changes in the industry that might mitigate the need for IRP planning and wants to be flexible in its approach to dealing with such events. However, it is incumbent on the Company to formally request that it be exempted from a certain regulation or to request that the regulation be changed to better meet the current circumstances.

The Commission requests that if it did the same in the 1997 IRP, the Company correct the mistakes in its assumptions regarding differential escalation rates for gas costs and retail prices

and its inclusion of lost revenues associated with electricity sales. The Company should follow this approach in the 1997 IRP and apply it in the SENDOUT model and report the results. If the results indicate that investment in DSR is a more cost-effective approach, the Company is free to make arguments about an exemption from such investments directly to the Commission.

The Division requests that additional detail on the differences between planned gas procurement activities and actual procurement results be reported. The Division claims that such information on both Company production and gas purchases is necessary in order to monitor Company performance. In particular, the Division requests the following information:

1. Tabulation of variances in gas volumes and prices (where applicable) between planned activities and actual activities.
2. Reasons why such variances occurred in each instance.
3. Documentation of the means utilized for making changes in the plan which resulted in the actual variances (i.e., Was an additional model run carried out to determine the change, or was employee judgment called upon, and if so, provide a summary of the factors considered in making the judgment.).
4. Information should be supplied quarterly.

The Commission finds that the Company has been providing the Commission, the Division and the Committee with such information on a confidential basis. The Commission requests that the Division use this information in future evaluations of the Company's IRP.

The Division also requested that the next IRP address transportation options other than Questar for providing firm transportation service for the Company. The Company has pursued

DOCKET NO. 95-057-04

- 12 -

more options for transportation and should continue to do so. It is incumbent on the Company to shoulder the burden of proof that it is pursuing all options that will bring lower costs to the MFS's customers regardless of the Company's relationship to its sister corporations. The Commission trusts that such information is contained in the 1997 IRP; if not, the Company should include it.

The Committee and its consultant, the Tellus Institute, commended the Company for making significant strides in soliciting and responding to public input. They expressed concern about specific IRP issues, but believed the IRP process was fundamentally sound and the IRP successfully linked the modeling results with the Company's action plan. The Committee did not identify any critical issue that requires immediate revision of the IRP. However, the Committee made recommendations for future improvements in four areas: Interruptible Service/Obligation to Serve, Capacity Planning, No-Notice balancing service requirements and sensitivity analyses. The Committee recommends that the Company perform the recommended analyses and include the results in the next full IRP. (Which has now been filed.)

The Committee requests that a study be performed that would test whether the rates for interruptible sales recover the marginal commodity and capacity costs incurred to make these sales. The optimal amount of transportation capacity requirements vary significantly depending on the sales to interruptible customers. The Committee recommends that the Company test the sensitivity of its supply plan to the level of demand requirements, i.e., gross firm and interruptible requirements versus net firm requirements. The Committee wants the Company to perform SENDOUT runs to test to see that the revenues generated through interruptible sales covers the incremental commodity and capacity costs incurred to make those interruptible sales.

This appears to be a reasonable request and the Company shall meet with the Committee and Division to decide the best way to perform such analyses. The goal is to determine if interruptible sales are fully compensatory. If they are not fully compensatory, the Company should explain why they are just and reasonable or propose rates for such sales that are just and reasonable.

Another area of planning that the Committee suggests needs further analysis is capacity planning. MFS currently has a contract for 799,000 Dth/day of firm transportation capacity that it acquired from Questar Pipeline Company (QPC). This contract expires in 1999. The Company's IRP ran a limited number of options to test whether the contract should be renewed. The Committee is critical of the Company's modeling, arguing that many potential options were unduly constrained or not considered. The Committee recommends that the Company collect data on a variety of capacity options and perform computer runs to test these options on the new SENDOUT optimization model. The options should include various levels of entitlements on QPC after the expiration of the current contract. The options should also include: the consideration of seasonal and year round transportation, capacity release, winter firm capacity, and peaking capacity options on both Kern River and Questar pipelines. Furthermore, additional storage capacity in conjunction with seasonal firm transportation capacity on QPC or Kern River, as well as a LNG facility, should be considered.

The Company argues that it did not model a reduction in year-round capacity entitlement of QPC because it did not believe that a reduction would benefit MFS customers. Modeling a reduction in QPC entitlements would be difficult, the Company maintains, because of the uncertainty surrounding the price for reduced capacity. The Company argues that QPC's system was

constructed specifically to serve MFS and FERC would approve full-rate recovery of QPC's costs from MFS regardless of the entitlement level elected by MFS. Thus, MFS could end up paying the same amount for reduced capacity.

The Committee maintains that this belief is not supported by quantitative analysis and the Committee rejects the Company's prediction of FERC's ratemaking treatment that would saddle MFS with QPC's entire revenue requirement. The Committee recommends that MFS ask QPC to further unbundle its transportation services and set rates for year-round, seasonal and peaking transportation. This would provide MFS with an array of options that could be tested for a least-cost solution. This could be accomplished with a formal solicitation of bids from both Questar and Kern River for a variety of unbundled services. The Committee recommends that the Company undertake legal research on capacity turnback to gain perspective on the issue of whether Questar could implement full rate recovery of its costs regardless of the capacity level that MFS selected. The Company should explicitly model options which reduce firm year-round capacity entitlement on Questar and identify a least-cost mix of capacity options under such assumptions. Further, the Committee recommends that if any constraints are placed on alternative capacity options, the constraints and the basis for such constraints should be explicitly specified.

The Commission agrees with the Committee that artificial constraints should not be placed on resource options without full explanation and justification. The Commission is aware that all possible combinations and permutations of capacity options cannot be modeled and analyzed given the limitation of human and computer resources. However, given past Commission concerns regarding affiliate relations, the Company should make every attempt to allay concerns that it might

be eliminating options that have an adverse effect on Questar. In particular, the Company should not prejudice FERC on its decisions concerning the appropriate rates under different capacity entitlements requested by MFS. In fact, it would be appropriate to run scenarios testing different assumptions on price and capacity entitlements. The Commission requests that the Company work with the Committee and its consultants, and other interested persons, to ensure that a variety of alternative capacity options are studied in the IRP process. The Company should continue to keep the Commission and other interested parties informed of their progress.

The Committee also recommended a review of the Company's daily balancing requirements and its choice of using QPC's No-Notice transportation to accomplish this task. The Committee requests that the Company describe in its next IRP or update alternatives to No-Notice service on QPC; for instance, such services might be obtained in the Western Market center. The Committee recommends that the Company clearly identify on a daily basis balancing requirements of MFS's transportation customers, the costs it incurs to meet these balancing requirements and whether its tariffs for transportation sufficiently recover such costs.

The Commission agrees that this is an important issue and directs the parties to work together to analyze this issue either in the IRP process (to include in a full or update IRP) or in another venue.

The last concern addressed by the Committee's comments deals with the Company's treatment of risk and its sensitivity analyses. The Committee and its consultants recommend that the Company develop from the outset a procedure for analyzing risk. The analysis should identify who is at risk, ratepayers or the utility, and how those risks could be mitigated. The Committee argues

that the Company's sensitivity analyses should explicitly express the objectives of the IRP study and how sensitivities and risk analyses can evaluate the Company's strategies to meet those objectives. The Committee notes that the Company runs a significant number of scenarios to test the sensitivity of outcomes to different values of inputs. In particular, the Company tests the sensitivity of the Company's costs and supply mix to changes in the discount rate and different load growth assumptions. The Committee recommends that the risk analysis be expanded to include the optimal mix of capacity for transportation.

The Commission agrees with the Committee that a more extensive risk analysis should be performed. A description of the methods the Company plans to deploy to analyze risk should be made. It should include an explanation of the risks the Company is trying to mitigate, who is at risk, the Company or the ratepayer, and the magnitude of the risk under different assumptions concerning the future. Strategies should be developed that mitigate these risks and provide some cost/benefit analysis to justify pursuing the risk mitigation measures. This is a difficult task. The Commission requests that the Company work with the Division and the Committee and its consultants to determine a procedure for handling such risks. This new process for dealing with risk should be instituted as soon as practical.

CONCLUSIONS

The Commission acknowledges that the Company's analysis of its gas acquisition options, i.e., the supply-side, submitted in its May 1, 1995, IRP satisfies the standards and guidelines of the Commission's September 26, 1994, Order. However, the Company's analysis did not meet the guidelines with respect to its analysis of its demand-side options. We will accept the Company's

plan for this planning session, but order the Company to perform the required analysis for demand-side options and present the results of its analysis in revisions to the 1997 IRP or in its IRP interim report due May, 1998. The Company can request an exemption from implementing the results of its fully integrated resource plan along with an explanation of why it should be exempted. As stated previously, this acknowledgment does not confer any pre-approval of resource expenditures by the Company. Such approval can only occur in a rate proceeding.

We commend the Company for improvements made in the IRP process, particularly in the area of soliciting public input. The Company has scheduled more public meetings and has informed the regulatory community to a greater degree than in the past and we believe that this helps the planning process. The Company has also been submitting quarterly data that helps the Division analyze the actual production and purchase of gas with the Company's planned production and purchase of gas. We expect the Division to use this information in their evaluation of the Company's IRP.

The Commission concludes, after consideration of the parties' comments, that the following improvements should be undertaken by the Company as soon as practical.

1. The Company will perform demand-side analysis using consistent escalation rates for both natural gas costs and retail prices. Revenues associated with lost electricity sales will not be included as the lost revenues in the calculation of the Rate Payer Impact Test. The Company will input the data on DSR into the SENDOUT Model and report the results.

DOCKET NO. 95-057-04

- 18 -

2. The Company will perform a thorough analysis of all transportation and gathering options. There should be no pre-conceived assumptions regarding FERC treatment of the costs of different requests for firm service from Questar. In addition, the Company will provide a legal analysis of the possibility of capacity turnback to Questar. This request should in no way be construed as a pre-judgement by the Commission on this issue. The Commission just wants all options to be fully investigated.
3. The Company should perform a sensitivity analysis to test the Committee's question whether interruptible rates are fully compensatory. Do the rates charged to interruptible customers cover both the incremental gas and transportation costs?
4. The Company should also confer with both the Committee and the Division on the most appropriate venue to investigate the Company's daily balancing requirements and its choice of no-notice transportation on QPC to meet these requirements. A discussion of this review should be included in IRP report.
5. The Company will perform a risk analysis from the utility's and ratepayers perspective. This should include both capacity planning and end-effect issues. These issues should be discussed with the Division and Committee to determine an appropriate course of action.

DOCKET NO. 95-057-04

- 19 -

DATED at Salt Lake City, Utah, this 12th day of August, 1997.

/s/ Stephen F. Meham, Chairman

(SEAL)

/s/ Constance B. White, Commissioner

/s/ Clark D. Jones, Commissioner

Attest:

/s/ Julie Orchard
Commission Secretary