

THE BYPASS OF LOCAL GAS
DISTRIBUTION UTILITIES--HOW CAN
YOU TELL IF IT IS FOR REAL?

Prepared for

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FOREWORD

At its May 1986 meeting, the Board of Directors of the NRRI called for the preparation, within 120 days, of an analysis of the threat of bypass of natural gas distribution companies by their large customers. Specifically, the Board wanted to know what questions to ask about those threatening to bypass to distinguish real potential bypassers from fakers simply seeking lower rates. This report responds to that directive. It is offered as a contribution to the current debate on this important issue.

Douglas N. Jones, Director
Columbus, Ohio
September 1986

1. INTRODUCTION

The natural gas industry is composed of three segments: the producers, the pipelines, and the distributors. The producers are, for all practical purposes, deregulated, although approximately 40 percent of production (old gas) is still subject to price regulation. At the other end of the spectrum are the distributors, who are fully regulated in the traditional manner, primarily by the states.¹

The pipelines, on the other hand, are betwixt and between. The Federal Energy Regulatory Commission (FERC) had permitted these entities to offer various incentives to selected customers in order to maintain the pipeline's market share against the onslaught of competitive fuels such as oil. Many of these efforts were discount sales programs, but at least two, Order 234-B and the Special Marketing Programs (SMPs), made it possible for end users to buy directly from producers. Order 234-B permitted pipelines, on a temporary experimental basis, to obtain blanket certificates to transport gas to low priority users. The SMPs permitted gas committed to a pipeline to be transported or sold, with the line's approval, by other pipelines, producers, or marketers.

The Order 234-B and SMP programs were held by the U.S. Court of Appeals for the District of Columbia, in the summer of 1985, to be unduly discriminatory; these programs were to be eliminated by October 31, 1985. As a consequence, the Commission issued Order 436 and its various amendments. Under this order, the blanket certificate and special marketing programs were discontinued for low priority users, with high priority users grandfathered until their present contracts expire, or October 9, 1987, whichever is earlier.

The major thrust of Order 436, however, is not only to permit the industry to compete against other fuels, but to further open the industry to competition within itself. The latter was already

¹ Charles G. Stalon, "The Diminishing Role of Regulation in the Natural Gas Industry," The Energy Journal, April 1986, pp. 1-12.

occurring, but the order attempts to hasten gas-on-gas competition by encouraging pipelines to offer non-discriminatory transportation service to all who desire it, and by encouraging them to enter new markets. Thus, large users are able to bypass the local distribution company (LDC) to seek gas supplies from lower cost sources such as producers, pipelines, and market intermediaries, while at the same time the pipelines are permitted to bypass the LDC and directly interconnect with large users. Firm customers, primarily LDCs, are permitted to reduce their contract demand with the pipeline, or to convert to firm transportation arrangements, in phased steps over a five year period.

As of February 1986, only nine pipelines had elected to come under the provisions of Order 436.² Despite the current disinterest in the Order on the part of the pipelines, it is apparent that competition has arrived for the industry as indicated by the fact that gas delivered by the pipelines for others increased from 9 percent of total deliveries in 1974 to 22 percent in the last quarter of 1985. At the same time, 24 percent of total industrial sales moved under negotiated carriage agreements, presumably bypassing the LDC.³ Further, it is estimated that the spot share of the market has increased from 12 percent in 1983 to 17 percent in 1985.⁴ Thus, the battle for large gas loads is well underway.

Needless to say, public utility commissions (PUCs) are vitally concerned with the outcome of this battle. Inasmuch as these organizations are charged with assuring adequate and reliable service for all customers, the PUCs cannot be indifferent to the market share and consequent financial health of the LDC.

² Jeremiah D. Lambert, "Bypass in the Natural Gas Industry: The Fruit of Regulatory Change," Public Utilities Fortnightly, April 3, 1986, pp. 11-17.

³ U.S. Congress, Congressional Research Service, Natural Gas Transportation: New Directions from FERC, by Donald Dulchinos and Lawrence D. Kumins, Issue Brief No. 84082.

⁴ "Gas Trade," Financial Times Energy Economist, June 1986, p. 9.

As is widely discussed, if large users leave the distribution system, the utility will suffer a decline in revenues, and the remaining customers may be required to pick up the share of fixed costs formerly paid by the large users. In an effort to prevent the loss of such large loads, regulators may provide an incentive for the customer to stay on the system by charging the bypass candidate a lower rate than otherwise might be levied. The availability of such an incentive rate, however, may encourage other large industrials to threaten bypass in order to obtain that rate even though there is no possibility that they would actually leave the LDC system. The commission is then faced with the necessity of screening out real bypass candidates from those who are attempting to take advantage of the situation, i.e., the bluffers.

In order to begin such screening, the regulator must ask questions. The National Regulatory Research Institute was asked by its Board of Directors to set out the appropriate questions a public utility commission should ask in an effort to decide if the threat of bypass is real. In order to formulate what needs to be asked, we attempt, in this paper, to carefully define bypass, discuss why it may be considered a problem, analyze the characteristics of a bypass candidate, and finally pose the questions.

2. TO BYPASS OR NOT TO BYPASS?

THE BACKGROUND

The gas industry, particularly pipelines and distributors, has traditionally been considered a natural monopoly, that is, one for which economies of scale are such that costs will decline over the long run so that a single firm can supply the product at a lower unit cost than would result from competition. This model of the industry no longer appears appropriate since economies of scale no longer appear pertinent, and there is competition in virtually all of the gas markets. This involves both interfuel and intrafuel competition.⁵

Interfuel Competition

Until recently, natural gas has been losing the interfuel competitive battle. This situation appears to be on the road to solution through greater pricing flexibility. That is, alternative fuel-based gas rates were available in 44 service areas for commercial, and 63 areas for industrial markets in 1984, compared with 24 and 27 areas, respectively, in 1982. A fuel-based rate is one that fluctuates periodically to reflect changes in the price of an alternative fuel such as Number 2 or Number 6 fuel oil. Such a rate is needed in view of the fact that 52 percent of industrial gas sales, and 89 percent of sales to electric utilities, are to customers with dual-fuel capability.⁶ An estimated 14 percent of commercial load is dual-fuel.⁷ Such customers tend to be very price sensitive.

⁵ American Gas Association, White Paper on Gas Distribution Industry Ratemaking Options, April 1983.

⁶ American Gas Association, Gas Distribution Industry Ratemaking Options, 1984 Update, April 1984.

⁷ George H. Lawrence, "Structural Change in the Gas Transportation Industry," presented at the 10th Annual Rate Symposium, Washington, DC, February 8, 1984.

Intrafuel Competition

The question of intrafuel competition has generally been viewed, at the national level, in terms of the need for mandatory contract carriage. The contract carriage issue revolves around the ability of distributors and large users to seek out supply sources other than a pipeline, and to have the right to move non-pipeline-owned gas to their system, or to an end-use point. Given that two-thirds of the gas distribution companies are served by only one pipeline (although 80 percent of sales for resale are to distributors with at least one other source of supply or to other pipelines),⁸ the mandatory carriage issue is of some importance assuming that it is desirable to stimulate competition.

BYPASS--PROBLEM OR NOT?

On the state and local level, however, a subsidiary issue may be of greater importance. This is the potential loss of large customers by distributors to other sources of gas supply. Such a loss can occur either because the customer buys gas elsewhere and then arranges for its final delivery over the distributor's system, or through a complete bypass of the distributor system. The bypass of the system is by far the more serious situation, since it involves a complete loss of load and the accompanying revenue.

The former, in fact, may not involve much of a loss at all, since the distributor would give up the gas commodity value, but would receive a fee for the transportation of the gas, presumably including an adequate rate of return. As a consequence, the LDC net revenues would not be appreciably different from the case where the customer had continued purchasing gas from the distributor. To a considerable

⁸ Ibid.

extent, the net result depends on the methodology used to set transportation rates.

Transportation Rates

Three general methods, called gross margin, simple margin, and cost-of-service, are used. Under the gross margin method, the transportation rate is derived by subtracting the commodity cost of gas from the existing retail rate. The simple margin is similar, except that the customer's share of pipeline demand charges is also subtracted. These methods are attractive because of their relative simplicity, and because none of the LDC costs are shifted to other customer classes, while the customer still has an opportunity to seek out gas supplies below the distributor's cost of gas. On the other hand, these methods may not provide an adequate incentive to potential bypass customers to remain on the system, but rather may encourage them to seek out lower cost alternatives.

The cost-of-service method determines the transportation rate by computing the cost of providing that service. As a cost-based rate it is the most economically efficient. In those cases where a disproportionate share of fixed costs has been allocated to a large customer for equity reasons, however, a cost-of-service rate may appear inequitable to other customer classes who must pay a larger allocation. Cost-of-service rates tend to be lower than rates computed by the margin methods.⁹

Apparently on the general theory that if you cannot beat them, join them, some 21 distributors offered transportation rates in January 1984 compared with none in December 1982.¹⁰ These LDCs are located

⁹ Richard A. Mahony, An Analysis of Natural Gas Transportation Policies for Local Distribution Companies, John F. Kennedy School of Government, Energy & Environmental Policy Center, E-86-08, June 1986, pp. 27-36.

¹⁰ American Gas Association, Gas Distribution Industry Ratemaking Options, 1984 Update.

throughout the country, and generally base rates on a margin method. At the moment, only four states have a uniform policy on transportation rates. These are California, New York, Pennsylvania, and Illinois.

In California, an interim order (Decision 85-12-102, 12/20/85) required that firm long-term carriage be offered to all customers transporting 25,000 mcf per year or more. The transportation rate is computed by the gross margin method, using the cost of gas avoided by the transportation. The customer has two rate options: the "actual margin recovery" and the "fixed-margin recovery" methods. Under the latter the transportation rate is based on the customer's margin at the time of the contract, subject to escalation. The actual recovery option, on the other hand, provides a transportation rate that changes every six months, when gas costs and retail rates are redetermined.¹¹

The interim order, according to Mahony, has now been modified to relieve the LDCs of the obligation to serve some industrial customers. The PUC has proposed a cost-of-service transportation rate including a fixed demand charge, customer charge, and a flexible volumetric rate.¹²

New York uses a two-tier system. Those customers desiring to retain the option of returning to the system pay a transportation rate based on the gross margin, while firm transportation customers who do not desire this option pay a simple margin rate.¹³

Pennsylvania and Illinois originally used the gross margin method. Illinois now uses the simple margin, while Pennsylvania allows cost-of-service rates for gas produced in the state.¹⁴

In addition, a recent NRRI study, which discusses rate design and transportation policy, is of interest here. Among other things, the study notes a conceptual link between the notion of a death spiral,

¹¹ "National Gas Issues: Transportation of Customer-Owned Gas," NRRI Quarterly Bulletin 7 (April 1986): pp. 160-161.

¹² Mahony, An Analysis of Natural Gas Transportation Policies.

¹³ Ibid.

¹⁴ Ibid.

unregulated monopoly pricing, and fixed cost recovery.¹⁵

The Distributor and Transportation

In many cases, the use of the distributor's lines to move the customer's gas will be the preferred method since it may not be physically or economically possible to move the gas otherwise. In general, the use of the LDC lines to move the customer's gas will be less costly except where the large user is closer to the pipeline than other customers of the distributor, or where rates are set so that industrial customers are subsidizing other customer classes. The latter might occur if a disproportionate share of the distributor's fixed costs have been allocated to industrial customers.¹⁶ Alternatively, in some cases, the cost of the new supplies of gas may be sufficiently low to more than compensate for any additional transportation costs that might be incurred.

A major problem for the distributor, however, may be the need to be able to provide back-up gas service for its transportation customers. Presumably, this can be alleviated by levying a charge sufficient to compensate for the cost of maintaining standby service, or by agreeing in advance that such service will not be provided.

Contracting for gas supplies and arranging transportation may not, however, be the preferred method of obtaining gas. Many customers lack the ability to determine field gas deliverability rates, reservoir reserves, gas quality, and so forth. Further, arranging for transportation services may be complicated, involving a number of pipelines as well as the distributor, and many large users may be

¹⁵ J. Stephen Henderson et al., Natural Gas Rate Design and Transportation Policy under Deregulation and Market Uncertainty (Columbus, Ohio: The National Regulatory Research Institute, 1986), p. 171.

¹⁶ Deborah A. Cohn and Robert C. Means, Common Carriage of Natural Gas: A Preliminary Analysis of the Issues, Federal Energy Regulatory Commission, October 1983.

unwilling to attempt the task. Finally, individual customers do not usually have the right of eminent domain; construction of feeder lines by the large user from the pipeline to his premises, therefore, would be difficult in the event that the distributor's facilities can not be used.

As a consequence of the various complications outlined above, many customers may prefer to simply bypass the LDC, contracting directly with a pipeline for supplies. The pipeline would then handle the details such as procurement of gas, transportation arrangements or construction of feeders, and so forth.

It is this latter case with which we will be primarily concerned. Thus, for our purposes, bypass can be defined as an instance where a customer moves to another supplier, and does not use any of the LDC facilities.

BYPASS--THE GOOD AND THE BAD¹⁷

As we have noted, Order 436 encourages pipelines to enter new markets under expedited proceedings. It, thus, permits a pipeline to bypass an LDC and directly interconnect with a large customer. At the same time, end users can seek out lower cost gas from pipelines, producers, and market intermediaries, such as brokers. As a consequence of this competitive free-for-all, gas markets are affected in three ways: (1) reduced competition, (2) cost shifting to other customer classes, and (3) cost increases for the distributor.

Competition

As Order 436 plays out, an LDC may be at a competitive disadvantage since the pipeline is required to offer non-discriminatory service to

¹⁷ The discussion in this section is based on Lambert, "Bypass in the Natural Gas Industry."

all, even to customers of an LDC that does not elect to participate. Thus, while the customer would pay the same pipeline transportation charge as the distributor, the latter would be unable to seek out lower cost sources of gas in order to compete, assuming it is a full requirements customer of the pipeline.

Even if the LDC were to participate in Order 436, it would be released from its contract with the pipeline over a number of years. As a consequence, it would have difficulty competing, at least in the early years, since it would still be tied to the line for some of its requirements. This inhibition becomes less important as the phase-in period proceeds. Thus, it is apparent that the LDC could lose large customers, but be contractually unable to compete.

Cost Shifting

Among the detrimental consequences that might be suffered by the distributor as a result of bypass actions is the loss of load and accompanying reduced revenues discussed earlier. Such a loss could require a reallocation of fixed costs among the remaining customers, resulting in increased rates. This cost-shifting may not be very important, however, because (1) it is possible that average gas costs may decline as a consequence of bypass in certain circumstances such as those cases where gas-takes from high cost contracts can be minimized, or where there is a penalty for exceeding contract volumes, (2) the reallocation of costs may be minor, unless the departing customer has been carrying a very large share of fixed costs, and finally (3) the reallocation may simply correct for subsidies from large users previously granted to the other customer classes.

Additional Cost Burden

Of greater importance may be the additional cost burdens imposed on the LDC, and its customers, as a byproduct of the bypass. That is, the

LDC is obligated, in most cases, to serve all comers at their option. The bypass customer may stay off the distributor's line when low cost alternatives are available, and return to demand service when prices rise, or its alternative service is terminated. The LDC is, thus, forced to maintain facilities on standby to serve the bypass customer, if and when it desires such service. The cost of this would presumably be covered by all customers, unless other arrangements were required.

This additional cost burden is one of the issues in the Burns Harbor case (FERC Docket CP 84-386). In that case, ANR Pipeline Co. filed on May 31, 1984, to transport gas directly to the Bethlehem Steel Corp. plant at Burns Harbor, Indiana. This would bypass the Northern Indiana Public Service Co. distribution system, and its major supplier, Natural Gas Pipeline Co. The latter two organizations asserted that allowing major customers to swing back and forth would impose major cost burdens on pipelines and distributors. The case is not yet resolved.

BYPASS AND THE STATES

Aside from the FERC, the states presumably may constitutionally regulate direct pipeline sales to end users, but only 10 do so.¹⁸ Most states do not exercise their authority in this sphere because they do not regard the pipeline as a public utility. That is, pipelines do not offer their services to the general public, but rather to a limited group of high load customers, and thus are presumed not to be eligible for state regulation.

As the number of bypass customers increases, the states may find it advantageous to change their attitudes in this respect. State regulation of bypass sales may not solve the problem, however, since

¹⁸ According to Lambert, the states regulating sales between pipelines and end users are Illinois, Indiana, Iowa, Michigan, Montana, New Mexico, North Carolina, Tennessee, Utah, and Wyoming. In addition seven states regulate direct sales between a producer and an end user. These are Arizona, Arkansas, Kentucky, Montana, Texas, Utah, and Washington. See Lambert, p. 15, nn. 24, 25.

most regulators attempt to achieve three relatively inconsistent policy objectives. These are (1) promotion of competitive price signals, (2) protection of residential customers from paying a disproportionate portion of costs, and (3) protection of the LDC from market erosion.

This conflict among goals might be resolved if the LDC were able to compete without penalty through resale to the large customer of lower cost gas from its current supplier. If this were possible, the LDC market would be no smaller than at present, fixed costs could be spread over the same number of mcf, and pricing would reflect the competitive situation. This is possible only if the increased market access envisioned by Order 436 becomes a reality.

In any case, it is apparent from the foregoing discussion that while the possibility of bypass may not be a serious problem yet, it has the potential for becoming so in a number of areas. It, therefore, behooves state regulators to put in place the requisite policies to achieve regulatory goals. These should consider economic efficiency, equity, and administrative feasibility.

3. BYPASS CHARACTERISTICS

It is apparent that not every LDC customer will want to, or be capable of, bypassing the system. Our earlier discussion of the bypass phenomenon makes it obvious that a candidate for bypass must possess certain characteristics.

The bypass candidate must have sufficient expertise to be able to seek out an alternative source of gas, and at the same time have an incentive to do so. The latter implies that the price of gas is of some importance in terms of unit cost, while aggregate use must be large enough to have an impact on total cost. At the same time, the bypass candidate must be physically located where it is possible to economically receive the alternative gas supply. These various characteristics can be gathered under three major headings: accessibility, price and cost sensitivity, and size.

ACCESSIBILITY

It is self-evident that the potential bypass plant must be within physical and economic reach of the supplier. That is, the customer must be on, or near a pipeline, or at a location where a feeder can easily be built at a cost that can be amortized over a reasonable time period, given the expected size of the gas sale.

In most cases, a feeder line will have to be built to connect the user to the transportation system. Whether the construction is undertaken by the customer or the pipeline, the cost will have to be recovered. In either case, the cost of construction will be depreciated over time. In both instances, the cost of the feeder will presumably be recouped as a charge against the gas flowing through the line.

Thus, the longer the line, and the more complicated the construction, and hence the more costly the feeder, the more expensive the delivered gas. The latter price must be less than the price available from the LDC, otherwise there is no point to the bypass. The

cost of the feeder, therefore, has an impact on the price that can be paid for the bypass gas at the city-gate, and could well make or break the project.

From the foregoing it is apparent that the customer's location in relation to the pipeline can be crucial in determining the economics of the bypass, and hence its viability.

COST AND PRICE SENSITIVITY

In considering any bypass action, the potential candidate must regard the cost of gas as being of some importance in his total cost picture. This importance is apparent in those cases where (1) the cost of gas is a relatively large fraction of the unit cost of a given product; (2) total gas consumption is sufficiently large so that a small reduction in the price paid per thousand cubic feet (mcf) will result in relatively substantial total cost savings; or (3) the price of the gas customer's product or service is rising at a lower rate than the price of gas.

In an instance where gas costs comprise a substantial fraction of the total cost of a product, say 10 percent or more, any action that reduces that cost will make the product more competitive against similar and substitute products. At the least, such a firm will be able to maintain its market position. There are relatively few products, however, where energy costs are an important portion of unit cost. Energy constitutes 5 percent or less of the cost of most products.

The more common case would be one where usage is large enough to generate substantial total savings from relatively small gas price reductions. This would encompass both industrial and commercial customers. In fact, the 10 largest gas consuming sectors, noted in table 1 below, are responsible for 50 percent of total industrial-commercial consumption, while the seven largest industrial consuming sectors are responsible for 44 percent.

Table 1
Major Industrial-Commercial Consuming Sectors, 1983

Sector	Consumption (Bcf)	Revenue (m\$'s)
1. Chemicals	1320	\$2335
2. Petroleum & Coal Prod.	648	1037
3. Primary Iron & Steel	401	1414
4. Food & Kindred Prod.	343	1318
5. Stone, Clay, Glass & Concrete	323	1192
6. Paper & Allied Prod.	268	895
7. Primary Nonferrous	231	798
8. Education (schools)	194	Not Available
9. Health Services, Hospitals	181	" "
10. Apartments	161	" "

Source: AGA, Gas Facts, 1983, pp. 94, 213

In this regard, it should be noted that while three of the ten major consumers are in the commercial category, few of these may be candidates for bypass. That is, while schools, hospitals, and apartments, may be major consumers in the aggregate, there are a large number of each of these, and use per unit may be relatively small. As a consequence, no single user may be able to save enough to make the problems inherent in leaving the LDC worthwhile. Conversely, no supplier, other than the distributor, may be interested in selling directly to these commercial consumers. There will be a few specific instances, of course, where a commercial complex is sufficiently large to be a viable bypass candidate.

In terms of relative price increases, a gas consumer for whom gas is a major element of cost may be in a situation where it is not possible to increase the price of the product to compensate for increases in gas prices. This could occur if the demand for the product of a particular industry was growing slowly or not at all, or a specific plant was relatively inefficient, or there was substantial competition within the industry, etc. In such a situation, the customer might seek to bypass the LDC in an effort to obtain lower cost gas, and thus relieve some of the cost pressure.

This latter situation may not be important at the moment. In 1984, according to the Edison Electric Institute, the Producer Price Index for all items rose 2.4 percent compared with the previous year, while gas prices declined 3.3 percent.¹⁹ Data for 1985 and 1986 show a similar result. The comparable figures for 1983, however, are quite different. All items rose 1.3 percent, but gas rose 8.2 percent. While the future is uncertain, it is likely that gas prices will remain constant, or decline somewhat, at least in real terms, over the next few years.

The AGA, as shown below in Table 2, projects that industrial gas prices will decline through 1988 at an average annual rate of 3 percent, and then rise at an average of 7 percent per year through 1995.

Table 2

Industrial-Commercial Gas Prices, 1982-1995 (dollars per mcf)		
Years	Commercial	Industrial
1982	\$4.72	\$3.97
1983	5.51	4.48
1984	5.51	4.41
1985	5.39	4.16
1986	5.10	3.78
1988	4.82	3.70
1990	5.58	4.37
1995	7.12	5.77

Source: AGA, Historical and Projected Natural Gas Prices: 1986 Update, June 10, 1986, p. 9, 18, 19.

The data above are in nominal dollars per mcf. As a consequence, these numbers are not comparable with the Producer Price Index data quoted earlier.

SIZE

The foregoing discussion dealing with accessibility and price sensitivity implies that size is an important determinant of the ability

¹⁹ Edison Electric Institute, Statistical Yearbook of the Electric Utility Industry/1984 (Washington, DC: Edison Electric Institute, 1985), p. 92.

to bypass the LDC. Conversely, it is apparent that not every customer is a candidate for bypass, even if he possesses the other characteristics discussed above. A residential or small commercial customer is unlikely to be able to switch. Few bypass suppliers would be willing to service a dispersed series of small loads. These would be uneconomic under such circumstances.

In order to be a viable bypass prospect the customer must use a sufficient quantity of gas to allow for the amortization of the cost of any required new facilities over a reasonable period of time, and to yield an adequate rate of return. This size requirement will vary according to individual circumstances. That is, the more extensive the construction of new facilities, the larger the gas throughput that is required to cover the cost. In general, however, consumption of 25,000 mcf per year, based on the recent decision by the California PUC discussed earlier, can be assumed to be the minimum necessary to cover the cost of a bypass.

Size may well be the key characteristic required for a viable bypass candidate. Unless the customer is large enough to make direct service by a pipeline or other alternative source profitable, the other characteristics may be of limited importance.

4. QUESTIONS TO ASK

The viability of the bypass option is dependent on a number of factors as outlined above. The ability to bypass the LDC system, however, is dependent on the interaction of these factors. Inasmuch as this interaction will vary from place to place, the economic circumstances will be different in each case. As a consequence, the ability to move to alternative sources of supply is specific to each customer and his circumstances.

Therefore, in order to help the PUCs sort out the viable bypass candidates from those whose choice might be unrealistic, we present below a list of questions that can be asked. The questions are derived from the discussion under Bypass Characteristics. As a result, these are designed to provide sufficient data to allow an evaluation of bypass potential in the light of that discussion.

In the main, these questions should be addressed to the PUC staff, with the expectation that they will ferret out the necessary data and provide the commission with the information in a format that will permit a decision.

It should be noted that not all of the questions apply to every case, and the regulator must pick and choose to elicit the necessary information to fit the specific situation.

1. What is the location of the plant relative to the supplier?
 - A. Can the plant be connected to the line in a physical sense?
 - B. Are there environmental or other problems in such a connection?

The purpose of this set of questions is to determine if there are physical, environmental, or other noneconomic problems inherent in the bypass. If there are, and these problems are of a substantial nature, then obviously a bypass of the LDC is not likely.

2. What would be the cost of the connection, including feeder lines and other equipment?
 - A. What is the distance between the plant and pipeline?
 - B. What is the estimated connection cost per foot or mile?
 - C. How does this compare with the LDC cost of connection?

These questions should elicit data regarding the comparative capital costs involved in the bypass. This information, in conjunction with the next two questions, should indicate the probable fixed cost range.

3. What is the estimated annual average gas consumption?
 - A. What is the likely minimum annual consumption?
 - B. What is the likely maximum annual consumption?

The data developed by this question, together with that in question 2, will allow computation of the answer to the next question.

4. What is the estimated fixed cost per mcf for the connection, at average, and at minimum and maximum consumption?

The answer to this question provides an indication of the fixed costs faced by the bypasser on average, as well as the likely range of such cost. These costs in relation to those incurred by the LDC should give some indication of the relative economics of the project, without considering the commodity cost of the gas.

5. What is the delivered cost of bypass gas vis-a-vis gas from the LDC?
 - A. Would there be escalation in the anticipated contract?
 - B. How does the escalation compare with the LDC's estimated future price increases?

This question allows a comparison of the immediate delivered cost of gas through the bypass with that from the LDC, as well as a comparison of possible future costs. It permits, in conjunction with question 4, a determination of the range of future costs. In addition, this question together with number 4 allows one to estimate the trade-off between capital costs and the commodity gas cost, to determine if there are adequate savings.

6. What is the current cost of gas as a percentage of product or service price?
7. What is the cost of gas as a percentage of total cost?
 - A. Using the LDC gas?
 - B. Using bypass gas?
 - C. What are the savings as a percent of plant sales or revenues?
8. What is the percent price increase for the product or service, each for 5 years?
9. What is the percent gas cost increase each year for 5 years?
 - A. Gas from the LDC?
 - B. Gas from bypass (estimated)?
 - C. How do the gas cost increases relate to price or revenue changes for the product or service?

Questions 6 through 9 are designed to provide data to evaluate the cost and price sensitivity of the potential bypasser, in terms of the importance of gas costs to the end user, and in terms of his ability to pass gas cost increases on to his customers.

10. How does the unit cost of this plant's product or service compare with the industry average?

11. How does the growth rate of this industry or sector compare with the growth rate for all industry or the economy?
-

Questions 10 and 11 should provide some insight into the relative competitive position of the bypasser's plant, as well as his goods or services. This, as discussed in an earlier section, could have a bearing on the bypasser's ability to pass gas price increases through to his customers. If this is difficult, the bypass may be a way of attempting to reduce these costs.