1096 HRES FERC, ORDER SETTING VALUES

Determination of Incentive Rate of Return, Tariff, and Related Issues) Docket No. RM78-12

Chairman Curtis, concurring,

Although I am willing to accept the vote of the majority, I want to note my preference for a marginal rate of 6% coupled with an 18% center rate. Because a marginal rate of 6% would exert greater incentive for cost containment than would result from an 8% marginal rate, I believe it is appropriate to account for this effect by a one-half point adjustment to the risk premium factor, thus yielding a center rate of 18%.

The IROR scheme adopted by the Commission would allow a lower rate of return as construction costs increase thereby creating an incentive to control costs during construction. The marginal rate represents the incentive portion of the IROR mechanism and is an important determinant of the overall rate of return on equity. I am concerned that the marginal rate of 8% selected by the Commission may provide too little incentive to control construction costs.

With an 18% center rate and a 6% marginal rate, the resulting IROR schedule would allow higher rates of return

than the majority's schedule for a cost performance ratio of 1.3 to one of 1.6, (or for about 30% above the center point) for cost performance ratios greater than 1.6, this schedule would yield lower rates of return on equity. If there is true expectation that the pipeline can be constructed within a cost performance ratio of 1.6, I would think the sponsors would prefer the higher returns.

Notwithstanding my preference for this alternative, I recognize that the question is one of judgment and have determined to abide by the determination of my colleagues on this matter, recognizing that the issue may be represented to the Commission in the course of the rehearing procedure set out in the rule.

Charles B. Curtis
Chairman

Comparison of Two Combinations
of Center Rates and Marginal Rates
in the IROR Schedule for
the Alaskan Segment of the Pipeline

Cost Performance Ratio	Allowed Rates of Return on Equity 1/ For a 17.5% Center Rate and an 8.0% Marginal Rate	For an 18% Center Rate and a 6% Marginal Rate	Column (2) minus Column (1)
	(1)	(2)	(3)
1.0	20.35%	21.60%	1.25%
1.1	19.23	20.18	.95
1.2	18.29	19.00	.71
1.3	17.50	18.00	.50
1.4	16.82	17.14	.32
1.5	16.23	16.40	.17
1.6	15.72	15.75	.03
1.7	15.26	15.18	-.08
1.8	14.86	14.67	-.19
1.9	14.50	14.21	-.29
2.0	14.17	13.80	-.37
2.1	13.88	13.43	-.45
2.2	13.61	13.09	-.52
2.3	13.37	12.78	-.59
2.4	13.15	12.50	-.65
2.5	12.94	12.24	-.70

1/ Assumes a 1.3 CPR as the center point.

Terms and Conditions

1. Applicability

The Incentive Rate of Return (IROR) will apply to two of the three segments of the Alaskan Natural Gas Transportation System within the United States, as defined in the President's Decision and Report to Congress on the Alaska Natural Gas Transportation System (referred to hereinafter as the Decision). These segments are: (1) the portion of the system within the State of Alaska, and (2) the portion of the system from the United States/Canadian border near Monchy in the Province of Saskatchewan to a point near Dwight in the State of Illinois. In the following terms and conditions, the term "pipeline" refers to each of these two segments, and all terms and conditions herein apply to each.

2. Cost Performance Ratio

As required by the second finance term and condition of the Decision (at page 36), the rate of return on equity during the operating period of the pipeline will be increased if the pipeline is completed under projected cost and reduced if the pipeline is completed over projected cost. The relationship between projected cost and completed

cost will be determined by a Cost Performance Ratio. The Cost Performance Ratio is the ratio of the Deflated Actual Capital Costs (see Condition 3, below) to the Projected Capital Costs (see Condition 4, below).

3. Deflated Actual Capital Costs

The Deflated Actual Capital Costs will be determined at the start of operations as the sum of direct construction costs actually incurred in the construction of the pipeline after conversion into base-year prices (see Condition 5 below) plus a Finance Charge calculated from the Real Rate of Return (see Condition 6 below). The Finance Charge will be calculated quarterly, based on the Deflated Actual Capital Cost incurred prior to the beginning of the quarter. When a segment (see Condition 1, above) is completed and tested, accrual of the Finance Charge and any other costs in the Deflated Actual Capital Costs will cease for that segment.

4. Projected Capital Costs

The Projected Capital Costs will be determined at the start of operations as the sum of direct construction costs included in the Certification Cost and Schedule Estimate approved by the Commission pursuant to Condition 7, below, and after any adjustments for Changes in Scope (see

Condition 10, below) or resulting from design changes prior to the Final Design (see Condition 9, below) plus a Finance Charge calculated from the Real Rate of Return (see Condition 6, below). The Finance Charge will be calculated quarterly, based on the Projected Capital Costs estimated to be incurred prior to the beginning of the quarter.

5. Inflation Adjustment

The direct construction costs actually incurred, excluding interest during construction, will be deflated to base-year prices, where the base year will be that used in calculating the Certification Cost Estimate. The inflation index will be a composite index calculated as a weighted average of existing published indices or price data. The attached schedule (see Condition 18 below) contains the categories of cost to be used and the index or prices to be used for each category. When the project sponsors submit their Certification Cost Estimate, all projected costs will be divided into each of the cost categories for each year or quarter. The proportion of total costs in that year or quarter for each cost category will be used as the weight for that cost category. For any construction that occurs beyond the projected construction schedule for the project,

the weights specified for the last year of the projected construction period will be the weights used.

6. Real Rate of Return

The Real Rate of Return to be used to calculate the Finance Charge included in the Projected Capital Costs and the Deflated Actual Capital Costs shall be five percent (5%). The Real Rate of Return shall only be used in determining the Cost Performance Ratio in the IROR mechanism, and will not be used to calculate the allowance for funds used during construction (AFUDC) included in the rate base for cost of service.

7. Certification Cost and Schedule Estimate

Pursuant to the second finance condition in the Decision, the applicant for a certificate of public convenience and necessity for the pipeline shall submit to the Commission a Certification Cost and Schedule Estimate, adjusted to reflect any design changes resulting from the Agreement on Principles with Canada and any addendum thereto, for comparison with the capital cost estimates filed by Alcan with the Federal Power Commission on March 8, 1977. This estimate will include costs actually incurred prior to submission of the estimate. This Certification

Cost and Schedule Estimate will be submitted in 1978 or 1979 base-year prices and with costs set forth according to formats to be specified by the Commission (see Condition 8, below). The March 1977, cost estimate referred to in the second finance term and condition in the Decision must also be resubmitted in the same format, and recalculated in the same base-year prices for comparability with the certification estimate. An explanation of any significant differences between the March 1977 estimate, and the Certification Cost and Schedule Estimate, must be provided. The date of the base-year period for submitting costs may be determined by the applicant. With these estimates, the applicant shall also provide a Construction Plan and Pipeline Design which show the techniques and procedures the applicant proposes to use in constructing the pipeline, and provide a detailed description of the pipeline as it will appear when completed.

8. Cost Estimate Format

All cost estimates shall be submitted to the Commission according to a Cost Estimate Format to be determined by the Commission. Prior to submittal of the Certification Cost and Schedule Estimate, the applicant may submit to the Commission a proposal for the Cost Estimate Format. The

Cost Estimate Format will specify the functional categories or components into which the total cost estimate must be divided, according to the time period in which the costs are estimated to occur. The breakdown of costs shall be in sufficient detail such that the Commission may compare the various cost estimates and determine the reasonableness of any changes.

9. Final Design

After the submission to and acceptance of the Final Design by the Federal Inspector as required by the Decision, the Certification Cost and Schedule Estimate will be altered to reflect changes in quantities or types of materials, labor, and services, and changes in project development or construction schedule and construction techniques, resulting from changes in design or schedule (including changes in the time necessary to obtain the required government approvals and permits) between the time the Certification Cost Estimate was prepared and the approval of the Final Design. Prices of labor, materials, or services used in the Certification Estimate will not be altered unless the Final Design requires a type of labor or material input not assumed to be used in the Certification Estimate. In that event, base year

prices for that new type of input will be used to the extent practicable.

The project sponsors shall submit the revised Certification Estimate, including both an explanation of the alleged design or schedule change and an estimate of the change in costs or schedule, to the Federal Inspector. The Federal Inspector will approve or disapprove the inclusion in Projected Capital Costs of such changes in cost or schedule, pursuant to procedures to be determined by the Inspector, and his decision will be final. The Federal Inspector will promptly notify the Commission of his determinations, including an explanation of the respective changes in design and schedule, and the resultant changes in costs.

10. Change in Scope Mechanism

The Change in Scope Mechanism is applicable to changes caused by events that occur subsequent to the date on which the Federal Inspector approves the Final Design. The Projected Capital Costs shall be increased in an amount equal to the amount of cost increases attributable to Change in Scope events beyond the control of the project sponsors. Such Change in Scope events shall be limited to (1) wars, (2) any disaster declared by the President of the United

States pursuant to the Disaster Relief Act of 1974, Pub. L. No. 93-288, 88 Stat. 143, (3) major design changes compelled by changes in Federal or State laws or regulations applicable to natural gas pipelines enacted or adopted subsequent to the Federal Inspector's approval of the Final Design of the pipeline, (4) major changes in pipeline routing or capacity ordered by Federal or State Governments for the Alaska Natural Gas Transportation System from that approved by the Federal Inspector in the Final Design of the pipeline, and (5) delay in the issuance of a government permit or certificate necessary for completion of the pipeline system, when such delay (a) occurs subsequent to approval of the Final Design, (b) occurs through no fault of the project sponsors, and (c) causes significant cost increases. To the maximum extent practicable, cost increases attributable to Change in Scope events shall be calculated based upon the assumptions and parameters used to calculate the Certification Cost Estimate.

11. Change in Scope Procedure

Whenever the project sponsors believe a Change in Scope event (as defined above) has occurred, the project sponsors shall submit to the Federal Inspector an explanation of the alleged Change in Scope and an estimate of the increase in

Projected Capital Costs for the project. The Federal Inspector will approve or disapprove the inclusion of such increases in Projected Capital Costs, pursuant to procedures to be determined by the Inspector, and his decision will be final. The Federal Inspector will promptly notify the Commission of his determinations, including an explanation of the Change in Scope events and the resultant changes in costs.

12. Center Point

Based upon the findings of the President's Decision, the Center Point (CP) for the Alaska segment shall be calculated from the following formula:

Center Point = [1.3 x (March 1977 Cost Estimate + Finance Charge)]/[Certification Cost Estimate + Finance Charge]

where the March 1977 Cost Estimate is in base-year prices.

The Center Point for the Northern Border segment will be calculated from the following formula:

Center Point = [1.1 x March 1977 Cost Estimate + Finance Charge)]/[Certification Cost Estimate + Finance Charge]

where the March 1977 Cost Estimate is in base-year prices.

The base-year prices shall be those utilized in the preparation of the Certification Cost Estimate. For purposes of this condition, the March 1977 estimate and the Certification Cost Estimate shall include a Finance Charge calculated from the Real Rate of Return (see Condition 6, above).

At the time the Certification Cost Estimate is submitted to the Commission (see Condition 7 above), the Commission will consider adjustments to the value of the Center Point derived from the above formulas if a showing is made that unanticipated developments have altered the basic nature and scope of the project from that assumed in the preparation of the March 1977 estimate. If the project sponsors believe that a major change in the project has occurred, the sponsors, as part of their submission of a Certification Cost Estimate, should present: (a) the nature of the changes in the project subsequent to the President's Decision, including a detailed explanation of why the Certification Cost Estimate has changed from the March 1977 estimate; (b) the nature or benefit to the nation and to gas consumers of construction of the project in light of the revised cost estimates; and (c) the cost increases or cost overruns above the Certification Cost Estimate that may occur, including explanation and analysis of the contingencies for

which costs have and have not been included, the likelihood of such contingencies occurring, and their respective impact on costs.

13. Operation Phase Rate

The Operation Phase Rate is the rate of return on equity that will be allowed after the pipeline is in operation and after the one-time adjustment to the rate base has been made made. The Operation Phase Rate initially shall be 14 percent (14%) for the Alaska segment and 13 percent (13%) for the Northern Border segment.

14. IROR Formula

The Incentive Rate of Return shall be set equal to [(17.5)(CP) + B (A - CP)]/A for the Alaska segment and [(15)(CP) + B (A - CP)]/A for the Northern Border segment, where A is the Cost Performance Ratio (see Condition 2, above) and CP is the Center Point (see Condition 12, above).

15. Financing Plan

The financing plan submitted pursuant to the Commission's Regulations (18 CFR 157.14(a)(14)[1978]) as part of the application for a certificate of public convenience and necessity under Section 7 of the Natural Gas Act shall describe how the applicant proposes to finance

the estimated cost of the project and any overruns, and in particular the proportions of debt and equity financing to be used. If the actual proportions of debt and equity used to finance the project deviate significantly from the financing plan submitted to, and approved by, the Commission, the Commission reserves the right to alter these terms and conditions.

16. Cost of Service Calculations

The allowed rate of return on equity used to calculate cost of service during operation of the pipeline will be the Operation Phase Rate defined above in Condition 13. The rate used to calculate the equity portion of the allowance for funds used during construction shall be the Operation Phase Rate defined above in Condition 13. The rate base will include an allowance for funds used during construction, and will also include the one-time adjustment calculated pursuant to Condition 17 less the cumulative amortization thereof. The cost of service for the pipeline shall include amortization of the one-time adjustment on a straight-line basis over the project life. An amount equal to the one-time adjustment net of related accumulated provisions for amortization will be considered as common equity in the rate of return calculation.

17. Adjustment to Rate Base

Upon completion of construction and initial operation of the pipeline, a one-time adjustment to the rate base will be calculated in three steps. First, for each year in the assumed 25-year operating life of the pipeline, a revenue stream for equity will be derived assuming that the equity investment including AFUDC in the pipeline at the start of operation is fully recovered by depreciation over a 25-year period in equal annual installments at the end of each year, and that an annual return on equity is derived by applying the Incentive Rate to the depreciated equity investment at the beginning of each year. Second, the present worth of this revenue stream will be calculated using a discount rate equal to the Operation Phase Rate specified in Condition 13 above. Third, the difference between this present worth sum and the equity investment including equity AFUDC at the start of operations will be added to the rate base of the project and the equity investment. If the difference is negative, the rate base and the equity investment will be reduced by the difference.

Within six months after condition and testing of the pipeline, the one-time adjustment and a schedule of amortization of the adjustment must be submitted for

approval by the Commission. If the Commission reduces the one-time adjustment, the excess in transportation charges incurred during the intervening period will be subtracted from the one-time adjustment. Similarly, any shortfall will be added to the one-time adjustment.

18. Cost Categories and Index/Prices

Cost Category	Index or Price	Source
1. Labor		Engineering News Record
a. Welders and Helpers	Ironworkers Structural and Reinforcing	
b. Operators and Oilers	Motor Graders	
c. Drillers and Power Men	Skilled Laborer	
d. Pipe Fitter	Steamfitter	
e. Carpenters	Carpenters	
f. Electricians	Electricians	
g. Truck Drivers	Truck Drivers, Teamsters, for Dump, rear, over 4 cylinders	
h. Station Mechanics	Skilled Labor	
i. Other Skilled Labor	Skilled Labor	
j. Other Unskilled Labor	Common Labor	
2. Salaried Employees	Executive Compensation Survey for Similarly Skilled Personnel Categories	Bureau of Labor Statistics and American Management Association

Cost Category	Index or Price	Source
3. Line Pipe	36" Line Pipe F.O.B. McKeesport, Pennsylvania	U.S. Steel
4. Gas Turbine Compressor Sets and Auxiliary Equipment	Gas Compressor (Centrifugal Uncooled)	PPI 11410105
5. Gas Refrigeration Systems and Auxiliary Equipment	Pumps, Compressors and Equipment	PPI 1141
6. Generation Systems	Generators and Generator Sets	PPI 117302
7. Supervisory Control and Data Acquisition Instrumentation and Metering Communications and Other Electrical Equipment	Electrical Machinery	PPI 117
8. Valves, Flanges and Fittings	Valves and Fittings	PPI 114901
9. Pipe Insulation and Coating	Plastic Resins and Materials	PPI 006

Cost Category	Index or Price	Source
10. Building and Utilities Including Building Systems (e.g., HVAC, Water, Sewage)	Construction Materials	PPI, Special Commodity Groupings
11. Cement Not Used for Building	Portland Cement	PPI 1322013114
12. Miscellaneous Fabricated Metal Products	Fabricated Metal Products	PPI, Special Commodity Groupings
13. Other Miscellaneous Materials	Construction Materials	PPI, Special Commodity Groupings
14. Air Transportation		Interim Financial Results of Certified Air Carriers (CAB)
a. Passenger	Average Revenue per Passenger Mile Flown in U.S.	
b. Air Cargo	Average Revenue per Ton Mile Flown in U.S.	
15. Surface Transportation		Transportation Statistics in the U.S. (ICC)
a. Water	Average Revenue per Ton Mile Shipped by Water in the U.S.	

Cost Category	Index or Price	Source
b. Rail	Average Revenue per Ton Mile Shipped by Pail in the U.S.	
c. Truck	Average Revenue per Ton Mile Shipped by Truck in the U.S.	
d. Bus	Average Revenue per Ton Mile Shipped by Bus in the U.S.	
16. Facilities		
a. Government Owned	Department of Commerce Composite Index	Table S-11 of Survey of Current Business
b. Food Supplies	Processed Foods	PPI, Special Commodity Grouping
c. Other	CPI--All Items--U.S.	Bureau of Labor Statistics
d. Leased Facilities	Department of Commerce Composite Index	Table S-11 of Survey of Current Business
17. Crawler Type Tractors	Tractors, other than Farm, Crawler type, Diesel 260 Net Engine HP and Over	PPI 11280217

Cost Category	Index or Price	Source
18. Other Heavy Construction Equipment	Construction Machinery and Equipment	PPI 112
19. Transportation Equipment	Transp rtation Equipment	PPI 14
20. Miscellaneous Construction Machinery and Equipment	Construction Machinery and Equipment	PPI 112
21. Diesel Fuel	Diesel to Commercial Customers: Pacific	PPI 0573030108
22. Other Petroleum, Oil and Lubricants	Petroleum Products Refined	PPI 057
23. Other Miscellaneous Consumables (e.g., explosives, tires, welding rods, etc.)	Industrial Commodities, less Fuel and Power	PPI, Special Commodity Grouping
24. State, Municipal and Native and Private Land	Farm Real Estate Developments Index	Average Value Per Acre by State, U.S. Department of Agriculture
25. Purchased Field Data	CPI--All Items--U.S.	Bureau of Labor Statistics

NOTE:

PPI: Producer Price Index--Source Bureau of Labor Statistics--Available Monthly.

Engineering News Record: Simple 20 City Average-

-Available Quarterly.

CPI--Consumer Price Index: Available Monthly from Bureau of Labor Statistics.

U.S. Steel Line Pipe price is a list price available on request; actual selling price may be different.

American Management Association Executive Compensation Survey is available once a year; Linear interpolation for quarterly estimates.

Interim Financial Results of Air Carriers available quarterly from the Civil Aeronautics Board (CAB).

Transportation Statistics in the U.S. published by the Interstate Commerce Commission (ICC).

Farm Real Estate Index: Source U.S. Department of Agriculture--Available Semi-annually; Linear Interpolation for quarterly estimates.