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The Advance Payment Program: An Uncontrolled Experiment.
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Report to Rep. Harley O. Staggers, Chairman, House Committee on
Interstate and Foreign Commerce; Rep. John E. Moss, Chairman,
House Committee on Interstate and Foreign Commerce: Oversight
and Investigations Subcommittee; by Elmer E. Staats, Comptroller
General.

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Harley O. Staggers; Rep. John E. Moss.

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94-163).

The Federal Power Commission (FPC), whose
responsibilities were transferred to the Federal Energy
Regulatory Commission (FERC), approved an experimental program
in 1970 that permitted interstate pipelines to provide natural
gas producers with advance payments. The expectation was that
this would bring additional quantities of gas to the interstate
market. These advances were interest-free loans to be used by
producers to cover the cost of exploration, development, and
production of natural gas. About \$3.3 billion in fixed advance
payment commitments were made during the program, and about \$2.2
billion in indefinite advances can still be made to producers
until December 31, 1980. As a result of a 1974 suit filed by the
Public Service Commission of New York, the FPC was ordered to
evaluate the program fully. Findings/Conclusions: The FPC did
not adequately evaluate the program's results nor provide
adequate and timely guidance to participants and allowed the
program to continue for about 5 years without knowing whether or
not it was meeting its goals. The program probably played a
relatively minor role in bringing additional gas reserves to the
interstate market or in bringing them in sooner. Advances may
have expedited development of proven reserves in some cases, but
this cannot be determined explicitly. Some customers paid
increased rates for gas, and producers benefited financially.
Producers' expenditures on advance payment properties were

prudent, and payment vouchers were prepared in accordance with procedures. Their control over gas developed with advance payments was restrictive. An FPC order limits producers' rights to retain offshore Federal domain natural gas for their own use. Recommendations: The Chairman, FERC, should: establish policy guidelines requiring that any special programs and experiments provide for measuring the results against clearly defined objectives, consider the impact of the programs and experiments on FERC's ability to perform its duty of rate regulation before implementing projects, provide guidance regarding how remaining advance repayment schedules should be structured and take measures to induce modification of schedules to comply with regulations, and establish program guidelines which would prohibit including indefinite or tentative commitments of advance payments in the rate base of pipeline companies.
(Author: HTW)

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REPORT BY THE **RELEASED** 7/17/78
Comptroller General
OF THE UNITED STATES

The Advance Payment Program: An Uncontrolled Experiment

To bring additional supplies of natural gas to the interstate market and help alleviate the growing shortage of natural gas, the Federal Power Commission approved an experimental program in 1970 that permitted interstate pipelines to make advance payments to natural gas producers to cover the cost of exploration, development, and production of natural gas.

The Commission's administration of the advance payment program, however, was not adequate to assure that it was in the best interests of the Nation's natural gas consumers and the natural gas industry. The program has been terminated. Even so, GAO recommendations have implications for potential rate-setting cases involving advance payments, and its findings as to how the program was carried out provide lessons applicable to the management of similar Federal programs in the future.



EMD-78-47
JULY 10, 1978



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-181505

The Honorable John E. Moss
Chairman, Subcommittee on
Oversight and Investigations
Committee on Interstate
and Foreign Commerce
House of Representatives

Dear Mr. Chairman:

In your June 7, 1976, letter, which was assigned by the Chairman, House Committee on Interstate and Foreign Commerce, you asked us to investigate the advance payment program. This report discusses the now-terminated program, as administered by the Federal Power Commission, and the program's impact on natural gas producers, pipelines, and customers.

On December 27, 1977, copies of this report were provided to Federal Energy Regulatory Commission and Department of Energy officials for comment. We have not received written comments from these agencies. Because we believe the issues discussed in this report are of a timely nature, we are issuing the report without agency comments.

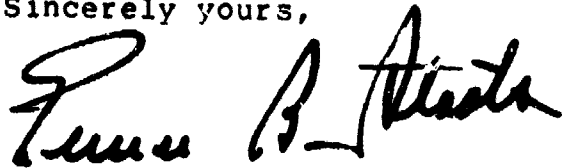
This report contains recommendations to the Chairman of the Federal Energy Regulatory Commission on page 11. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

This report is also being sent today to the Chairman, House Committee on Interstate and Foreign Commerce. As

B-181503

arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 1 week from the date of the report. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James B. Atchafalua". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS
AND THE COMMITTEE ON INTERSTATE
AND FOREIGN COMMERCE
HOUSE OF REPRESENTATIVES

THE ADVANCE PAYMENT PROGRAM:
AN UNCONTROLLED EXPERIMENT

D I G E S T

When the Federal Power Commission 1/ approved an experimental program in 1970 that permitted interstate pipelines to provide natural gas producers with advance payments, it expected this would bring additional quantities of gas to the interstate market and help alleviate the growing shortage of natural gas.

These advances were interest-free loans to be used by producers to cover the cost of exploration, development, and production of natural gas. About \$3.3 billion in fixed advance payment commitments were made during the program, and about \$2.2 billion in indefinite advances can still be made to producers until December 31, 1980.

Subsequently, the Public Service Commission of New York filed a suit, claiming that the Commission did not have sufficient factual basis for continuing and expanding the program. As a result of this 1974 suit, the U.S. Court of Appeals for the District of Columbia Circuit ordered the Commission to evaluate the program fully. Before this, the Commission had considered the experiment to be working and had extended the program on a yearly basis.

In December 1975 the Commission concluded that it could not find enough evidence that natural gas exploration, development, or production had been accelerated as a result of the program and ended it.

The Chairman, House Committee on Interstate and Foreign Commerce, along with the Chairman,

1/As of October 1, 1977, its responsibilities were transferred to the Federal Energy Regulatory Commission.

Subcommittee on Oversight and Investigations, requested GAO to review the Commission's advance payment program and to analyze the origin, operation, and review of the program by the Commission and the impact of the program on customers, pipelines, and producers.

INADEQUATE EVALUATION AND
ADMINISTRATION OF THE PROGRAM

GAO found that the Commission did not adequately evaluate the program's results nor provide adequate and timely guidance to participants. The Commission allowed the program to continue for about 5 years at the expense of customers without knowing whether the program had accelerated the exploration, development, or production of natural gas reserves.

Had the Commission kept a proper watch over the program, it could have determined sooner whether the program should have been continued or terminated and whether it was benefiting those producers that would not otherwise have been able to raise enough capital for gas exploration and development. (See p. 4.)

This failure to provide proper guidance led to differing interpretations of program guidelines and resulted in controversial, time-consuming administrative proceedings. (See p. 4.)

Although the program's overall accomplishments could not be measured, it probably played a relatively minor role in bringing additional gas reserves to the interstate market or in bringing them sooner. Three facts emphasize GAO's belief:

- Most of the gas reserves committed to the interstate market under the advances would have been committed anyway because they were on federally leased lands and are required to be dedicated to the interstate market.
- Properties developed with advances were producers' good quality properties that would have been quickly developed regardless of whether advance payments were involved.

--Producers were aided in the financing of drilling operations only to the extent that the program eliminated interest costs resulting from borrowing to finance such operations.

PROGRAM IMPACT

Although the program provided an economic incentive to producers to find and develop new gas supplies, that incentive was not enough to generate the efforts necessary to reverse the downward trend in additions to gas reserves. At best, the advances may have expedited the development of proven reserves in some cases. This cannot be determined explicitly.

Some customers had to pay increased rates for natural gas to cover the cost of this experimental program without any assurance of benefits in the form of additional natural gas. (See p. 12.) According to a Commission study, pipeline companies were not adversely affected by the financial burden of the program. (See p. 14.)

Producers benefited financially because the advances did not require any payment of interest. If such amounts had been borrowed from commercial sources, it would have cost many millions of dollars; an accurate estimate is not possible because of several unknown factors. (See p. 16.)

GAO also concluded that:

--Producers' expenditures on advance payment properties were prudent and that payment vouchers were prepared in accordance with proper internal control procedures.

--The producers' control over gas developed with advance payments was restrictive. Although some advance payment contracts provided that producers could retain some offshore Federal domain offshore Federal domain natural gas for their own use, such provisions now appear meaningless because a recent Commission order prohibits the transportation of this retained natural gas for the producers' own use or direct sale.

RECOMMENDATIONS

The Chairman, Federal Energy Regulatory Commission, should:

- Establish policy guidelines requiring that any special programs and experiments provide for measuring the results against clearly defined objectives. These guidelines should specifically provide that program participants keep adequate records to permit the Commission to audit and analyze program results.
- Consider the impact of special programs and experiments on the Commission's ability to perform its primary duty of rate regulation before implementing any of these projects.
- Provide specific guidance regarding how remaining advance repayment schedules should be structured and take measures to induce producers and pipeline companies to modify their repayment schedules to comply with such regulations.
- Establish program guidelines which would prohibit including indefinite or tentative commitments of advance payments in the rate base of pipeline companies.

COMMENTS

On December 27, 1977, copies of this report were provided to Federal Energy Regulatory Commission and Department of Energy officials for comment. GAO has not received written comments from these agencies. Because it believes the issues discussed in this report are of a timely nature, GAO is issuing the report without agency comments.

GAO provided companies with excerpts of the report that discussed their participation in the advance payment program. With the exception of Tennessee Gas Pipeline Company, the companies did not furnish comments. Revisions have been made, where appropriate, to include the comments of Tennessee Gas Pipeline Company.

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ABBREVIATIONS

Bcf	billion cubic feet
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
GAO	General Accounting Office
Mcf	thousand cubic feet
Tcf	trillion cubic feet

CHAPTER 1

INTRODUCTION

A principal objective of the Federal Power Commission (FPC) ^{1/} is to assure that the Nation's 45 million natural gas customers have adequate supplies of natural gas at rates that protect customers while assuring that the natural gas industry remains healthy. To achieve this objective, FPC regulates the rates that producer companies and pipeline companies charge for natural gas. Secondary methods used by FPC to meet this objective include special actions, such as the emergency gas sales program, special rates for small producers, and experimental programs like the advance payment program. The advance payment program permitted interstate pipelines to provide natural gas producers with interest-free loans to use in the exploration, development, and production of natural gas. In return, the pipelines received the right to purchase the natural gas developed with the advance.

The Chairman, House Committee on Interstate and Foreign Commerce, requested us to review FPC's advance payment program. The review was to include an analysis of the origin, operation, and review of the program by FPC and the impact of the program on customers, pipelines, and producers.

PROGRAM HISTORY

In January 1970 FPC issued a Notice of Proposed Rulemaking stating that pipeline companies had been requesting approval of advance payments made to independent producers for gas that the pipelines could not obtain until a later date. The pipelines told FPC that these payments should be recoverable from customers in rates because they were directly associated with the acquisition of gas supply for their customers and that, without these advances, such gas supply would not be available.

In response to the Notice of Proposed Rulemaking, FPC received comments from pipelines, producers, and other interested parties. Upon consideration of the comments, FPC decided that, in view of indications that a natural gas shortage was developing, pipelines could make advance payments for gas and include the advances in their rate bases as part of working capital. FPC believed this approach

^{1/}As of October 1, 1977, its responsibilities were transferred to the Federal Energy Regulatory Commission.

was appropriate because of its accounting soundness and the "encouraging effects" it would have on gas supply for the interstate market.

On October 2, 1970, FPC issued the first order governing participation in the advance payment program. During the life of the program, five additional orders were issued to modify certain aspects of the program's operations. On December 31, 1975, FPC terminated the program but permitted continuing the rate base treatment of outstanding advances as well as advances still owed to producers. However, inclusion in the pipeline rate base would be denied for advances made after December 31, 1980, pursuant to contracts signed between December 29, 1972, and December 31, 1975. About \$3.3 billion in fixed advance payment commitments were made during the program, and about \$2.2 billion in indefinite advances can still be made to producers until December 31, 1980.

In July 1976 FPC granted an increase in the price a producer could charge for gas. In view of this higher price, FPC acknowledged in November 1976 that allowing a producer to receive both the new rate for gas and an advance payment to which it might still be legally entitled increased the costs to customers without related benefits. FPC directed that any producer accepting additional advances must reduce the price charged for gas by a "carrying charge credit." This reduction would continue until enough gas was delivered at the reduced rate to offset the amounts collected by the pipeline as the result of including the advance in the rate base.

FPC's intention for the carrying charge credit was to encourage producers to forego accepting additional advances. The pipelines and producers in our study indicated FPC's approach should preclude additional advances. We generally agree that the Commission's actions have diminished the attractiveness of continued advance payments. We are recommending, however, that the Chairman, Federal Energy Regulatory Commission (FERC), take actions to prohibit including indefinite or tentative commitments of advance payments in the rate base of pipeline companies.

SCOPE OF REVIEW

Our review of the advance payment program was made pursuant to the authority granted under Title V of the Energy Policy and Conservation Act (Public Law 94-163). Under this act, our agency has been given authority to

conduct verification examinations of books, records, papers, or other documents of the energy industry to verify the accuracy of both energy and financial data filed with Federal agencies.

We studied the operation of the program at FPC headquarters, two pipeline companies (Tennessee Gas Pipeline Company and Trunkline Gas Company), and two producers (Tenneco Oil Company and Sun Company, Inc.).

We selected these companies because (1) the pipelines were among the largest participants in the program, (2) the producers were the ones to whom these pipelines had made the largest amount of advance payments, and (3) they provided an opportunity to compare the operation of an affiliated pipeline and producer with operations of a nonaffiliated pipeline and producer.

Specifically Tennessee Gas Pipeline Company and Tenneco Oil Company are part of the same corporate structure, Tenneco, Inc. Trunkline Gas Company and Sun Company, however, are not affiliated. Our study was limited to these four companies because, in our view, such coverage was adequate to make valid observations about the program. Also, during our study FPC took action to terminate the program.

At FPC we discussed the origin, operation, and review of the program with FPC officials. We also obtained program directives, reports, and other related data about the program. At the industry level we interviewed pipeline and producer officials to obtain their views on the accomplishments and problems of the program, we reviewed and selectively tested pertinent program data, we reviewed geological and geophysical data on selected offshore properties, and made other tests of data as necessary to evaluate the program.

REPORT OBJECTIVES

The specific purpose of this report is to provide the Congress with the results of our evaluation of the advance payment program. Even though the program has been terminated, our recommendations could have implications for potential rate-setting cases involving advance payments. Also our findings as to how the program was carried out provide lessons applicable to the management of similar Federal programs in the future.

CHAPTER 2

FPC's ADMINISTRATION OF THE ADVANCE PAYMENT PROGRAM

Significant weaknesses existed in FPC's administration of the advance payment program. We found that FPC did not

- establish procedures for adequately evaluating the program's results and
- provide adequate and timely guidance to program participants.

FPC allowed the program to continue for about 5 years at the expense of customers without FPC's knowing whether the program had actually accelerated the exploration, development, or production of natural gas reserves. Had this experimental program been properly monitored, FPC would have been in a better position to determine earlier in the life of the program whether (1) it should have been continued or terminated and (2) the program was benefiting those producers that would not otherwise have been able to raise enough capital for gas exploration and development.

Also FPC's failure to provide proper guidance led to differing interpretations of program guidelines and resulted in controversial, time-consuming problems for program participants and for FPC.

INADEQUATE EVALUATION OF PROGRAM ACCOMPLISHMENTS

FPC did not adequately monitor the advance payment program to determine whether it

- brought gas to the interstate market that would not have come except for the advance or
- brought gas to the market more quickly.

As a result natural gas pipeline customers continued to bear the cost of the program without any assurance of reaping any benefits in terms of new gas supplies.

FPC's program evaluation approach was designed only to determine if its rules and regulations for the program were being followed by the pipelines and producers and not to measure the impact of the advance. FPC's staff reviewed the advance payment agreements for conformity to the program

orders and to identify any unforeseen problems. Periodically FPC asked program participants for their views and comments on the program as well as any proposed changes to the program's rules and regulations.

We believe that FPC should have obtained information periodically from producers and pipelines early in the life of the program as to what exploration and development of new gas supplies was being accomplished with the advance payments that would not have been accomplished in the absence of the program.

Since 1972 FPC has obtained information annually from pipelines and producers concerning the amount of gas developed under advance payment agreements. On two occasions, such action appeared to be prompted by suits filed by the Public Service Commission of New York, which questioned FPC's conduct of the program.

In the first suit the court ruled that FPC was within the scope of its authorization in carrying out temporary experimental attempts to alleviate the gas shortage. However, the court said that, before any such program became institutionalized, FPC should subject the results of the experiment to a meaningful review, analysis, and evaluation.

Pursuant to the court order, FPC sent questionnaires to the participating producers and pipelines concerning the amount of natural gas developed under advance payments. After evaluating the data, FPC concluded in December 1972 that the program was a justifiable experiment in the continuing search for solutions to the critical shortage of natural gas. This conclusion was based, in part, on FPC's "finding" that advances had resulted in the "addition" of about 9.5 trillion cubic feet (Tcf) of proven gas reserves in the lower 48 states.

In its second evaluation of the program in December 1973, FPC again concluded that the program was meeting its objectives of bringing additional gas supplies into the interstate market, noting that proven reserves attributable to advance payments had increased from 9.5 Tcf to about 10.3 Tcf. On the basis of this increase and the review of comments filed by respondents concerning the program operations, the program was extended through December 1975.

FPC's evaluations were deficient, however, because it did not quantify how much, if any, of the gas in additional reserves resulted from advance payments. The only conclusion FPC could reach about the 10.3 Tcf was that the

additional proved reserves involved properties being developed under advance payment agreements.

In 1974 the Public Service Commission of New York filed its second suit, claiming that FPC did not have a sufficient factual basis for continuing and expanding the program. The court held in January 1975 that the program had become institutionalized without FPC's engaging in the meaningful review of experimental data that the court had mandated in its earlier decision. The court ordered FPC to make further study and analysis to fully evaluate the program. Two of the specific problem areas the court told FPC to evaluate follow.

--The question of whether the program had attracted new or additional quantities of gas to the interstate market or had advanced the delivery date of gas reserves.

--The question of whether there was still a shortage of investment capital in the natural gas industry.

To comply with the court order, FPC in April 1975 sent questionnaires to the pipelines and producers that had participated in the program. FPC's analysis of the data presented by pipelines and producers did not show enough evidence of acceleration or initiation of exploration, development, and production of offshore reserves to meet the test laid down by the court for program evaluation.

FPC concluded that there was some evidence that the program had a beneficial effect on onshore reserves. Specifically producers receiving about 58 percent of the onshore advances in the lower 48 states indicated that they could not get sufficient amounts of capital from other sources, and the advances were, therefore, a critical and necessary factor in securing the dedication of the reserves to the interstate market. However, because most advance payments--about 73 percent--went to the offshore area, the onshore producers with capital acquisition problems comprised only about 9 percent of the funds advanced. FPC noted that the producers with capital acquisition problems were generally the small producers. It appears, therefore, that most of the program funds have gone to large producers that were not having capital acquisition problems.

The questions mandated by the court are the type that FPC, in establishing the program, should have realized had to be answered as the program progressed to determine if the experiment was working. FPC acknowledged in its evaluation

summary that asking this type of questions 5 years into the program produced inherently speculative responses that made current evaluation of the impact of advance payments on industry's search for natural gas nothing more than informed speculation. Consequently, FPC terminated the program.

Our discussions with the producers in our review (see ch. 3) revealed that advance payments had played a relatively minor role in bringing reserves to the market for two principal reasons.

1. Most reserves committed under the advances would have been committed to the interstate market anyway because they were on federally leased lands and such reserves are required to go to the interstate market.
2. The properties developed with advances were the producers' good quality properties that would have been developed regardless of whether advance payments were involved. (See p. 16.) In fact, producers had already spent their own funds exploring some of the properties.

Consequently, it is doubtful that the program resulted in significant additional benefits to the consumers.

INADEQUATE GUIDANCE PROVIDED TO PROGRAM PARTICIPANTS

During the life of the program, FPC issued six program orders ^{1/} to serve as the rules and regulations for participation in the program. Our review of these orders and their implementation showed that they did not provide adequate guidance to control program practices. More timely and effective instructions would have enabled FPC and the pipeline companies to avoid some controversial issues that are still causing time-consuming administrative proceedings. Other inadequacies may yet have the same effect.

^{1/}Order 410, issued 10-2-70.
Order 410-A, issued 1-8-71.
Order 441, issued 11-10-71.
Order 465, issued 12-29-72.
Order 499, issued 12-28-73.
Order 529, issued 6-17-75.

Two areas where more timely and effective guidance was needed were (1) methods used by pipelines to advance funds to producers and (2) methods producers used to repay the advances.

Advancing funds to producers

The first four program orders FPC issued did not describe the methods pipelines could use in disbursing advance payment funds to producers. Consequently, the pipelines primarily made "front-end" advances; that is, they provided the producers with the proceeds of the entire advance soon after the advance payment agreement had been signed, even though the producers would not be expending the full amount of the advance at that time. It was not until FPC issued the fifth order in December 1973--some 3 years into the program--that FPC provided guidance strongly encouraging pipelines to use an incremental method whereby advances would be made more in line with the producer's actual expenditures. According to Commission officials, this method would usually be less costly to customers than the front-end method because small amounts of the advances would be in the pipelines' rate bases.

The Commission is now considering whether front-end advances made previous to Order 499 should be allowed in the rate base. This determination is being made during the settlement process on rate increase applications that pipelines must submit to the Commission for approval.

Resolving this matter through the rate-making process has been both controversial and time consuming. For example, on June 15, 1973, Tennessee Gas Pipeline Company filed a request for a rate increase.

Included in its request were front-end advances totaling \$208.5 million. FPC allowed Tennessee to increase its rates effective January 1, 1974, but made the increase subject to later refund. Several hearings were held on the requested increase during 1974, and an initial decision disallowing inclusion of a portion of the advances was issued on February 3, 1975. Tennessee disagreed with this initial decision and filed exceptions to the decision. On July 9, 1976, FPC issued Opinion 769 disallowing about \$92 million of Tennessee's advance payments because they had not been expended by the producers as of the effective date of the proposed increase. FPC acknowledged in Opinion 769A that Order 499 included the first explicit timing standard dealing specifically with front-end advances but argued that regulatory law had always required that extravagant or unnecessary costs not be passed on to customers in rates.

Tennessee asked for a rehearing on portions of Opinion 769. During rehearing proceedings, Tennessee told FPC that front-end advances (1) met applicable program guidelines for being reasonable and appropriate, (2) were common business practice during the time of the applicable program orders, (3) benefited Tennessee's customers, (4) were made by Tennessee in good faith, and (5) were an absolute term of trade which the producers could insist upon because of their superior bargaining position.

FPC was not convinced by Tennessee's presentation and on May 31, 1977, denied Tennessee's request for a rehearing. Tennessee filed an appeal with the U.S. Court of Appeals for the District of Columbia Circuit on June 2, 1977. If FPC's position is upheld by the court, Tennessee will have to make refunds of the amounts it had collected from customers attributable to these front-end advances. Thus far, settlement of this case has been pending for over 4 years, and the date for final settlement is still unclear.

An FPC Commissioner believed that FPC's decision may have an enormous financial impact on pipelines with pending rate cases involving front-end advances. In Tennessee's case, according to the FPC Commissioner, the disallowed advance payments were about 10 percent of the rate base. No specific data has been presented for the amount of front-end advances in the rate bases of other pipelines. However, available statistics on cases involving front-end advances include 17 pipelines with a total of 39 rate filing cases. A more timely resolution of this matter through more effective program guidance would have precluded the need for resolution through FPC's time-consuming rate-making process.

Repayment of advances

About 1975, pipelines began including "balloon repayment" schedules in their advance payment agreements. These schedules allowed a producer to repay only a small part of the advance during the early years of the repayment period--generally 5 years--with a majority of the repayment due the final year. This technique provided pipelines and producers with some of the same advantages as the front-end advances. However, it is also generally more costly to customers than a conventional repayment schedule because it allows most of the advances to remain in the rate base until the final year of the repayment period.

None of the advance payment program orders provide specific guidance on how repayment schedules should be structured. Nevertheless, the Commission considers balloon

repayment schedules to be questionable because they result in higher consumer costs; it has identified approximately six pipelines with such repayment schedules. During rate settlement proceedings, two of the pipelines agreed to modify the questionable schedules.

Since there is no official Federal Energy Regulatory Commission policy on this issue, in accordance with normal FERC procedures, the other pipelines have been allowed to retain their repayment schedules, subject to future refunds, pending final settlement of their rate cases. If at final settlement the repayment schedules are declared to be inappropriate, the related amount of the advance payment in the pipeline's rate base will be removed and the associated carrying charges will be refunded to the pipeline's customers. In addition, a 9-percent annual interest penalty based on the amount refunded will be paid to the customers by the pipeline from the date the pipeline began collecting for the advance payment to the date of the refund.

Generally wholesale rate increases, including potential overcharges, are passed on by pipeline companies to their customers. Overcharge refunds, however, may not be passed on to retail customers, and FERC has no authority in the matter. Again, if the matter had been considered and resolved when the program was being initiated, this controversy could have been avoided. Nevertheless, we believe that resolving these cases can be expedited if FERC provides pipeline companies with specific instructions requiring appropriate modification of repayment schedules.

CONCLUSIONS

FPC's administration of the advance payment program was not adequate to assure that the program was in the best interests of the Nation's gas consumers and natural gas industry. FPC did not develop proper methods for evaluating the program's accomplishments nor provide adequate guidance to program participants. As a result FPC had no way of determining specifically what the program accomplished or whether the consumers derived any benefit for bearing the costs of the program.

Had it exercised more effective administrative control over the experiment, FPC could have made more informed decisions earlier in the life of the program and could have taken corrective actions to deal with program weaknesses.

Also more effective control over the program would have enabled FPC to determine what producers were most in

need of capital for natural gas exploration and development and give preference to such producers in allowing advance payments. Such action may have had a more positive impact on overall gas supplies than actually occurred. It appears that only small amounts of advance payments were made available to those most in need of such funds and that most of the funds went to large producers that did not have capital acquisition problems. Also more timely and effective administrative guidance would have prevented the development of some controversial issues and thereby precluded the need for time-consuming administrative proceedings to resolve such issues.

RECOMMENDATIONS TO THE CHAIRMAN, FERC

We recommend that the Chairman:

- Establish policy guidelines requiring that any programs and experiments provide for measuring the results against clearly defined objectives. These guidelines should specifically provide that program participants keep adequate records to permit FERC to audit and analyze program results.
- Consider the impact of special programs and experiments on FERC's ability to perform its primary duty of rate regulation before implementing any of these projects.
- Provide specific guidance regarding how remaining advance repayment schedules should be structured and take measures to induce producers and pipeline companies to modify their repayment schedules to comply with such regulations.
- Establish program guidelines which would prohibit including indefinite or tentative commitments of advance payments in the rate base of pipeline companies.

CHAPTER 3

ADVANCE PAYMENT PROGRAM'S IMPACT

Although the advance payment program provided at least some economic incentive to some producers to find and develop new natural gas supplies, that incentive was not sufficient to generate the exploration and development necessary to reverse the downward trend in additions to natural gas reserves. At most, the advances may have expedited the development of existing reserves in some cases, but this fact cannot be quantified. Customers had to pay increased costs without any assurance of resulting benefits in the form of additional gas.

IMPACT ON CUSTOMERS

The program affected pipeline customers in at least two important ways--the price they paid for the gas, and the amount of gas they received. The cost to customers is discussed below. Gas received is discussed on page 15 along with the impact of the program on pipelines' gas supplies.

Cost to customers

The cost of the advance payment program to customers can be measured by at least two different methods--added cost and collected cost. FPC used the added cost method to measure the additional costs of all proven gas reserves committed under the advance payments. The collected cost method, which we used, measures the cost that pipelines have collected from customers as the result of a pipeline's participation in the program. We believe that both methods are appropriate, and the costs under each are discussed below.

Added cost method

FPC made only two estimates of the cost of the advance payment program, one in 1972 and the other in 1973. In 1972 FPC estimated the added cost of about 8.7 Tcf of proven reserves committed under advance payments at about \$217.5 million or 2.5 cents per thousand cubic feet (Mcf). FPC's estimate was made by multiplying the average estimated balance of outstanding advances for a 5-year period by an average 13-percent rate of return and dividing the result by the 8.7 Tcf of proven reserves. The outstanding advances each year assumed a 1-year lag between advancement and commencement of repayment.

FPC's 1973 estimate showed that the added cost of proven reserves committed under advance payments had increased to about 3.6 cents per Mcf. This estimate was made in the same way as the 1972 estimate but included revised estimates based on more current program operating experience of proven reserves and a longer lag time between advancement and commencement of repayment.

Collected cost method

We estimated the amounts actually collected from customers by the two pipelines included in our review as follows:

$$\text{Amount collected} = \frac{\text{Advance payments in rate base} \times \text{Authorized rate of return}}{\text{Estimated gas sales}} \times \text{Actual gas sales}$$

Our evaluation showed that as of July 1976 Tennessee Gas Pipeline Company had collected an estimated \$50.7 million in additional costs from its customers, whereas Trunkline Gas Company had collected an estimated \$57.9 million. At Tennessee the \$50.7 million had been collected by adding \$0.0006 per Mcf to the price of gas beginning in 1971. Due primarily to the increase in the amount of advances being made, the amount added to customer rates grew until in 1976 Tennessee was adding \$0.0199 per Mcf because of advance payments.

At Trunkline advance payments added \$0.0057 per Mcf to the price of gas in March 1972. By July 1976 the amount added had grown to \$0.0723 per Mcf. The price rise is primarily attributable to the increase in the dollar volume of advances receiving rate base treatment, whereas the sales volume of natural gas was declining. For example, the March 1972 increase was computed on the basis of \$22.8 million of advance payments and a sales volume of 510 billion cubic feet (Bcf) of natural gas. In July 1976, however, the amount of advance payments receiving rate base treatment had risen to \$200 million, yet the sales volume of natural gas was only 364 Bcf.

These increased costs would not be significant to residential customers because they use only an average of about 118 Mcf of gas a year. Therefore a \$0.07 per Mcf increase would amount to an annual increase of about \$8.26. However, a similar increase could be substantial to an industrial customer, such as a large fertilizer company which can use over 10,000 Mcf a day. The increased cost incurred by the industrial customer would generally be passed on to the consumer.

We could not prepare a meaningful estimate of the total amount customers may pay by the time all advances have been removed from rate base. The major problem precluding a reliable estimate is the uncertainty concerning the possible variances in the key factors that influence the amounts pipeline customers will pay in the future, such as (1) the amount of future advances, (2) the length of time that advances will receive rate base treatment, (3) the rate of return allowed by the Commission, (4) the amount of natural gas produced, and (5) which advances the Commission will allow in a pipeline's rate base.

IMPACT ON PIPELINES

The advance payment program affects the pipelines in two important areas--their ability to make capital expenditures for their own pipeline systems and the amount of gas they have for sale to customers.

Financial impact

In the fall of 1973, FPC asked interstate pipelines whether the advance payment program had adversely affected their financial condition. According to FPC, the majority of the pipelines responding to the question indicated the program had not had an adverse effect. FPC said the pipelines that did indicate an adverse financial impact spoke mostly of possible future harm and cited little or no specific evidence concerning present threats to their financial stability. To test the validity of the pipeline's views, FPC reviewed the capitalizations and rates of return in pipeline rate cases for the most recent 3 years, 1971-73. On the basis of this review, FPC concluded that the program had not been a serious threat to the financial stability of the pipelines.

The advance payment program has not adversely affected the business operations of the pipelines in our study. Tennessee Gas Pipeline, for example, has not had to curtail capital expenditures for other purposes. Trunkline and its parent company, Panhandle Eastern, told FPC that pipelines could not continue to finance the production segment of the industry through advance payments, but they did not cite any specific capital curtailments. They did stress, however, that FPC must permit pipelines to earn a return on investments in advance payments. FPC was urged, therefore, to set forth in its regulations, in specific terms, any regulatory restrictions which may be applied against advances.

Natural gas supply

FPC's evaluation of the program in response to the court order disclosed that, since its beginning in 1970, about 13.1 Tcf of proven onshore reserves and 9.2 Tcf of proven offshore reserves had been committed to pipelines under advance payments. Although the impact of these commitments on total gas supplies is uncertain, it was not enough gas to reverse the increasing level of curtailments interstate pipelines faced, including the two we selected. (See p. 20.)

The producers in our study, in responding to the court-ordered evaluation of the program, told FPC they had committed 586.4 Bcf of proven reserves to pipelines under advance payment agreements. Due to downward revisions in reserve figures, this commitment had decreased to 528.4 Bcf at the time we made our study. Additional changes, upward or downward, may be made as additional reserves are proven or revised. Upward revision is likely since at Sun Company, for example, 15 advance payment properties are still in various stages of exploratory drillings.

According to Tennessee and Trunkline, advance payments were beneficial in bringing additional gas to the market. Tennessee said that advance payments expedited the development of new reserves, but it could not determine how much time was saved because advances were made. Trunkline also believed the program shortened the time for acquiring gas but likewise could not provide an overall quantification of how much time had been saved. Trunkline did, however, provide the following example which it believes illustrates how the program helped shorten the acquisition time.

In 1971 Trunkline and Natural Gas Pipeline Company of America combined forces to build a jointly owned offshore pipeline supply system called Stingray. This venture was made feasible because Trunkline and Natural had used advance payments to secure the commitment of reserves being explored and developed on nearby acreage. Because these reserves were committed to the pipelines under advance payment agreements, FPC was willing to approve the project. This enabled pipelines to make plans for construction of the system prior to the time that many of the wells achieved production status. Trunkline estimated this may have saved as much as 36 months over the amount of time ordinarily required to accomplish such a project without the early commitment of gas. It should be noted that the time saved was not because the gas was discovered and available for production any faster but, rather, because the delivery mechanism was in place earlier than it might have been otherwise.

IMPACT ON PRODUCERS

The program's impact on gas producers is subject to greater debate than for consumers or pipelines and requires more extensive discussion. As summarized in chapter 2, we believe that the program did not play a major role in bringing additional gas to the interstate market or in bringing it sooner. Some of the reasons for this belief bear directly on the actions of producers under the program. FPC data obtained from producers showed that the large producers that received most of the advances were not experiencing capital acquisition problems. Also the properties developed with advance payments were the producers' good quality properties that would have been developed regardless of advance payments. Our findings in these areas at Tenneco Oil and Sun Company are discussed in the following sections.

Financial impact

We attempted to determine the program's impact on natural gas exploration and development by measuring the extent to which producers increased their budget for this activity over what it would have been without advance payments. Such a determination was not possible because neither Tenneco Oil nor Sun Company maintained the data necessary for quantification. We recognize, however, that, in the absence of an FPC requirement, the companies could not reasonably be expected to maintain such data.

We were able to determine for each company the relationship of the amount of advance payments received to the total capital expenditures for gas and oil exploration and development. The following table shows this relationship for each year the program has operated and the cumulative total.

<u>Year</u>	<u>Tenneco Oil</u>		<u>Sun Company</u>	
	<u>Advance payments</u>	<u>Advances as percent of total expenditures</u>	<u>Advance payments</u>	<u>Advances as percent of total expenditures</u>
	(millions)		(millions)	
1971	\$ -	-	\$ 9.7	7.5
1972	-	-	-	-
1973	59.0	39.1	10.5	5.9
1974	-	-	7.4	1.5
1975	<u>3.1</u>	1.4	<u>19.4</u>	4.7
Total	<u>\$62.1</u>	9.0	<u>\$47.0</u>	3.4

As shown above, advance payments represented about 9 percent of Tenneco Oil's total expenditures for gas and oil exploration and development from 1973 through 1975. For Sun Company, advance payments played an even smaller role from 1971 through 1975--only 3.4 percent of the total.

Even though the advances were relatively small compared to total capital expenditures, both Tenneco Oil and Sun Company believed the advances had a positive effect on the magnitude and intensity of their exploration and development. They could not, however, quantify such effect. Also, since Tenneco Oil's and Sun's efforts were mostly on Federal off-shore leases, where all gas must go interstate, they could not say it brought any gas to the interstate market that would not have gone there even without the advance. Tenneco noted that it was not the lack of available capital that made advance payments attractive but, rather, the attractiveness of the terms of the advances.

For producers, the most attractive facet of an advance payment was that it provided them with interest-free capital. Neither FPC nor the producers had estimated the amount of interest they saved through advance payments. The interest producers saved is a cost to consumers because the interest charges incurred by pipelines from borrowing the funds for advance payments are included in the rates paid by the consumers for natural gas.

Quality of properties explored and developed with advance payments

To determine the type of properties the producers developed with advance payments, we reviewed a total of 13 off-shore properties that producers had committed to advance payments. Ten of these properties were committed by Tenneco Oil and the other three by Sun.

We reviewed available geological and geophysical data on these properties at the producer and pipeline companies and compared it to data at the U.S. Geological Survey. This review included examining preleasing, postleasing, and current structure maps; reserve data, both before and after advance payments; well logs; and isopach maps. Our review included consideration of structure interpretations, log analyses of porosity and water saturation values, explanation of economic parameters, and comments as to the degree of reliability of reserve calculations for advance payment negotiations.

Our review showed that producers, pipelines, and the U.S. Geological Survey had made evaluations to achieve specific but separate purposes; that the evaluations by all three groups were prepared in accordance with recognized engineering methods and procedures; and that all evaluations were reasonable based on the information available at the time the evaluations were made. These evaluations indicated that, as far as could be determined from available data, the properties being offered for advance payments were good quality properties that were expected to produce commercial quantities of gas.

We found that, in relation to their total inventory, Sun Company placed 40 of the 66 properties it had available from 1970 to 1975 under advance payments and that Tenneco Oil placed only 10 of its 89 available properties under advance payments. However, Tenneco Oil considered these to be the only economically attractive properties in its inventory at the time they were placed under advance payments.

Other matters of concern

Regarding the impact on producers, we were asked to comment on two other matters of congressional interest, namely (1) whether producers had adequate controls over expenditures on advance payment properties and (2) to what extent producers controlled the reserves developed with advance payments.

Controls over expenses

Advance payments were not gifts. They were recorded on the producers' books as liabilities that must be repaid to the pipelines. Thus the producers had no incentive to spend the funds other than in a prudent manner. On the basis of a randomly selected sample of advance payment vouchers from Tenneco and Sun, we found that the same procedures were followed regardless of the source of funding and that the vouchers were prepared in accordance with proper expense control procedures.

Furthermore, the producer's expenditures for exploration and development were made in the context of the total amount of funds budgeted for properties in its inventory and were based on the results of drilling efforts and not on the source of funds. Also most projects, including those we reviewed, are owned jointly by two or more producers that share the cost of leasing, exploring, and developing a property. These joint interest owners monitor the actions of the partner who actually drills the wells. Any unusual

technique or expenditure must be agreed to by all joint interest owners. The joint interest owners also have the right to and reportedly do make audits of the operating partner's drilling expenses.

Controls over gas supplies

FPC permitted producers to exercise a degree of control over offshore reserves discovered. Specifically FPC has allowed producers to include a clause in their gas sales contracts reserving a portion of the gas found for their own use and committing only certain levels, or reservoirs, within a property to current sales contracts. Each of the above factors can influence the profitability of a producer's operations. For example, the reservation of gas could reduce a producer's cost of purchasing gas for its own operations. The depth limitations 1/ could be used to control the price received for gas. As new reservoirs came on line, a producer could write new contracts and receive the most current price for its gas.

Our analysis of Trunkline and Tennessee Gas Companies' gas sales contracts disclosed that reservation clauses in such contracts involving advance payments were more frequent than in gas sales contracts for conventionally financed properties. Of 174 gas contracts reviewed, 53 had reservation clauses. Of these 53 contracts, 42 involved advance payments. On March 20, 1978, FERC issued Opinion 10 which changed the Commission's previous policy of allowing the producer to retain certain offshore Federal domain natural gas for itself if it was used for high priority purposes. Under the revised policy, FERC prohibits the transportation of this retained natural gas for the producers' own use or direct sale.

Our examination of depth limitations disclosed that advance payments generally places restrictions on a producer's control in this area. Specifically the advance payment agreement generally requires that a producer commit gas found between the surface and the lowest horizon encountered at the time of the sales contract. Also, if a producer finds additional gas on the property at a later time, even though the additional search is not financed with advance payments, the pipeline making the advance payment has first call on

1/A limitation on contract commitment to certain specific reservoirs or depths. It is expressed in a contract by a recitation of the specific reservoirs to be committed or a recitation of the commitment of all productive reservoirs to a specific depth.

the gas but is subject to further negotiations. Generally pipelines not under the advance payment program have no first-call rights on additional natural gas discoveries.

CONCLUSIONS

Because FPC did not establish procedures for collecting the data necessary to an evaluation, a complete and accurate assessment of the program's impact on the Nation's gas consumers cannot be made. Our work indicates that the program increased the prices that customers paid for gas, even though there was no measurable increase in gas supplies. It is possible that some natural gas reserves may have been developed more quickly, but this could not be quantified.

Collectively there is no specific evidence that the pipeline industry has been affected by making the advance payments. The pipeline officials believe that the program did provide an economic stimulus and that in some cases the program aided in bringing gas to the interstate market or brought it more quickly. They believed, however, that the program did not provide the stimulus needed to significantly affect the natural gas shortages.

Most of the producers that received advances were attracted because the advances provided them with interest-free capital. Only about 9 percent of the advances went to producers that said they had trouble getting capital from other sources. Despite the interest-free nature of advance payments, they constituted a relatively small percent of the exploration and development expenditures of the two producers in our study.

The properties producers developed with advance payments were properties that were expected to produce commercial quantities of gas. The producers' evaluations of the properties were independent and were made in accordance with generally recognized industry methods. Our study of these methods and techniques showed that evaluations of the properties were reasonable, according to the information available at the time the evaluations were made.

A producer's acceptance of an advance payment did not require it to follow any special accounting requirements. The advance was a loan that had to be repaid, and, as such, the producer had no incentive to be imprudent with the funds. Our evaluation of the procedures that producers used to control these expenditures disclosed that the same procedures were followed on all expenditures regardless of the source

of funds and that the vouchers for these expenditures were prepared in accordance with proper expense control procedures.

Collectively the advance payment program was restrictive to producers' controlling the gas supply. Specifically an advance gave the pipeline the rights to the gas found in currently known reservoirs on the leased property as well as first call on gas discovered at a later date.

CHAPTER 4

COMPANY DATA

Both the pipelines and producers were responsive to our request for data. Our verification work indicated that the natural gas data submitted by the companies to FPC was generally accurate and reliable. We found no significant deficiencies in the data examined.

The principal problem encountered in acquiring information from the companies was one of timeliness. The average time taken by the four companies to respond to our written requests ranged from 10 to 29 days. To some extent, at least, we believe the time taken to comply with our requests was justified by the historical nature of some of the data requested and the shortage of company staff available to compile the information.

One of the more difficult things for the producers was to reconstruct the various factors they considered before entering into an advance payment agreement. For example, Sun Company could not determine how many pipelines had competed for particular advance payment properties. In another instance Tenneco Oil Company was unable to document its statement that the properties placed under advances were the only commercially attractive properties in its inventories at the time the decisions were made.

The reason for such difficulties was that the companies had not maintained, nor were they required to maintain, such information in their files. The data was not kept, according to the companies, because it served no useful company purpose. Consequently, even if possible, it was difficult and time consuming to reconstruct such historical information.

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