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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Repeal Of Unneeded Outer Continental Shelf Production Rate-Setting Functions Would Cut Costs

Under various laws, the Department of the Interior requires operators of Outer Continental Shelf leases to submit information regarding the rate at which oil and gas can and will be produced. Three different rates of production are currently compiled by the Department's Minerals Management Service. However, GAO found that most of the data are not useful or necessary.

Congressional relief for the Department from some statutory requirements and consolidating the existing data submittal requirements would allow both the Department and industry to better use their resources to serve higher priority needs.



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

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To the President of the Senate and the
Speaker of the House of Representatives

This report points out opportunities to save money or better utilize resources within the Department of the Interior by eliminating unneeded statutory and other reporting requirements involving the production of oil and gas from Federal leases on the Outer Continental Shelf. It addresses concerns expressed in a request from the Chairman and four members of the House Committee on Merchant Marine and Fisheries, but should be of more widespread interest in the Congress in view of budget constraints and the desire to see the Federal Government managed more efficiently.

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of the Interior; and the House and Senate committees and subcommittees having oversight and appropriation responsibilities for the matters discussed in this report.

Shilton J. Rowland

Acting Comptroller General
of the United States

D I G E S T

Under authority of the Outer Continental Shelf (OCS) Lands Act of 1953 and the OCS Lands Act Amendments of 1978, the Department of the Interior requires operators of OCS leases to provide various information regarding the rate at which oil and gas can and will be produced. Three different rates are currently compiled by the Department's Minerals Management Service (MMS)--one rate determined on a well basis, another by reservoir, and the third by significant fields. The production rates by wells and reservoirs were established primarily for conservation purposes, i.e., for the Department's use in assuring that industry's production would result in the maximum ultimate recovery of oil and gas resources. The rate determined from significant fields is mainly to fulfill a legislative mandate to provide the Congress with data on the ability of the OCS to meet production demands during energy supply emergencies.

The three production rates administered by MMS entail a substantial amount of collection and calculation of data and subsequent reporting by both Government and industry. Because of budget constraints and the need to utilize Interior's limited personnel as efficiently as possible--particularly within the newly established MMS--GAO looked at the original legislative mandates, current usefulness, and continued need for the individual rate-setting efforts. These same concerns were expressed in a letter dated June 9, 1982 (see app. I) from the Chairman and four members of the House Committee on Merchant Marine and Fisheries.

MOST OCS PRODUCTION
RATE-SETTING EFFORT
IS NOT USEFUL

Most of Interior's rate-setting effort is not useful or necessary and could be curtailed. The individual well rate--known as the maximum production rate (MPR)--is the only one that is clearly useful to the Interior Department in monitoring possible damage to individual oil and gas wells caused by excessive production. It could also be used by Interior for reporting to the Congress on the total potential production from the OCS--should that information be desired during an energy supply emergency. (See p. 4.)

The reservoir rate--known as the maximum efficient rate (MER)--is useful for only 5 to 10 percent of the OCS reservoirs that are likely to be damaged by overproduction (i.e., sensitive reservoirs). But the data gathering effort is unnecessary for the other 90 to 95 percent of OCS reservoirs that are not susceptible to such potential damage. In addition, GAO believes the MER can probably be eliminated entirely since MPR data could be used to monitor the sensitive reservoirs. (See p. 5.)

The production rate for significant fields--the maximum attainable rate (MAR)--is a hypothetical number of little practical value. MAR reports prepared by MMS pick up only a portion of OCS production (i.e., for significant fields only--which represent about 70 percent of total OCS oil and 45 percent of OCS gas production). GAO found no apparent use made of the reports and no interest in having them continued. In addition, wide variances were noted between the MAR rates reported and actual production from significant fields. (See p. 6.)

PRODUCTION RATE COSTS
EXCEED BENEFIT

Although exact figures are not available, the costs on the part of both MMS and industry to collect and report on the production rates are significant. MMS estimates it spends about \$231,500 yearly on OCS production rate activities. GAO contacts with just seven of the many oil and gas companies that operate on the OCS

indicated costs of \$426,500 yearly. Elimination of data collection and reporting efforts related to the unnecessary OCS production rates would allow both Government and industry to better utilize resources to serve higher priority needs. (See p. 9.)

MMS is currently considering revisions to regulations which would eliminate the MER for nonsensitive reservoirs. GAO believes MMS could probably eliminate the MER entirely, using MPR data to monitor sensitive reservoirs--although MMS at this time prefers to continue to use the MER for sensitive reservoirs. In addition, MMS officials agree that the MAR is not necessary since the information needed on OCS production capabilities can better be provided through the data supporting the MPR. However, since the MAR is required by statute, legislative relief by the Congress is required before it can be discontinued. (See p. 10.)

RECOMMENDATIONS

GAO recommends that the Congress repeal section 606 of the OCS Lands Act Amendments of 1978 (43 U.S.C. 1865) to eliminate the data gathering and reporting requirements related to the MAR.

Until such time as legislative relief is granted, MPR data could be used to fulfill the OCS Lands Act Amendments (MAR) requirement. Thus, the Secretary of the Interior should require the Director of MMS to establish necessary procedures to use MPR data for this purpose and, after legislative relief is granted, for continuing to fulfill Interior's responsibilities for overseeing OCS production activity. Also, GAO continues to believe MMS should give further consideration to using the MPR data in lieu of the MER to monitor sensitive reservoirs.

AGENCY COMMENTS AND GAO's EVALUATION

Interior officials agree that the MAR is of little practical value and could be eliminated and that the MER is useful only when applied to the 5 to 10 percent of reservoirs that are rate sensitive, i.e., those that could be damaged by producing too fast. (See app. II.) MMS has drafted revised procedures to limit the MER to rate-sensitive reservoirs but disagrees that the MER could be eliminated entirely,

with MPR data used for monitoring sensitive reservoirs. MMS also believes MER data serves in satisfying requirements of the Natural Gas Policy Act, such as making well and reserve determinations and conducting production plan reviews. GAO notes, however, that the starting point for determining both the MER and MPR as well as for satisfying other requirements of the Natural Gas Policy Act is data on individual wells, which is what is, or could be made, available through MPR reporting. Thus GAO believes MMS should reconsider the possibility of using MPR data for these purposes as well. Comments are further discussed on page 12.

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ABBREVIATIONS

DOE	Department of Energy
DOI	Department of the Interior
GAO	General Accounting Office
MAR	Maximum attainable rate
MER	Maximum efficient rate
MMS	Minerals Management Service
MPR	Maximum production rate
OCS	Outer Continental Shelf
OCSLAA	OCS Lands Act Amendments of 1978

CHAPTER 1

INTRODUCTION

THE ISSUE

Petroleum companies produce oil and gas from the Outer Continental Shelf (OCS) under leases awarded by the Federal Government. Production activities conducted on Federal OCS leases are generally carried out in accordance with operating decisions made by the companies. Over time, however, the Congress has given the Secretary of the Interior and the Secretary of Energy legal authority to determine production rates on Federal OCS leases. Under this authority, the Secretary of the Interior determines production rates for (1) individual wells, (2) reservoirs, 1/ and (3) designated fields. 2/ These rate-setting activities involve substantial reporting by both Government and industry. Because of budget constraints and the need to utilize Interior's limited personnel as efficiently as possible--particularly within the newly established Minerals Management Service (MMS) 3/--we looked at the original legislative mandates, current usefulness, and continued need for the individual rate-setting efforts.

This report addresses concerns expressed in a letter dated June 9, 1982 (see app. I), from Congressman Walter B. Jones, Chairman, and four other members of the House Committee on Merchant Marine and Fisheries, requesting us to review offshore legislation and Interior regulations for production-related reporting requirements--such as those we previously have pointed out concerning shut-in and flaring wells 4/--that may no longer be appropriate.

LEGISLATIVE ENVIRONMENT

The OCS Lands Act of 1953 (43 U.S.C. 1334) gave the Secretary of the Interior authority to regulate the orderly and timely development of OCS resources. Under this authority, production rates were established to promote the conservation of OCS oil and gas resources in order to maximize their ultimate recovery--since attempts to produce oil/gas too quickly can, in some cases, leave more resource in the ground than if production occurs at a lesser, more steady rate.

1/A porous, permeable sedimentary rock formation containing quantities of oil and/or gas enclosed by layers of less permeable or imperious rock.

2/The geographic area encompassing a group of producing oil and gas wells.

3/Formerly the Conservation Division of the U.S. Geological Survey.

4/"Annual Report on Outer Continental Shelf Shut-In and Flaring Wells Is no Longer Needed," EMD-82-17, Nov. 19, 1981.

With realignment of the management of energy activities that accompanied establishment of the Department of Energy (DOE), responsibility for setting production rates was transferred to DOE in 1977 by Section 302 of the DOE Organization Act (42 U.S.C. 7152). Due to higher priority tasks, DOE never undertook an active role in setting production rates. However, the Department of the Interior (DOI) had an OCS rate-setting program in place and operational which it continued. On December 23, 1981, the DOI Appropriations Act for fiscal year 1982 repealed section 302(b) and (c) of the DOE Organization Act. This action in effect returned the OCS production rate-setting responsibility to DOI.

In 1978 the Congress, by section 606 of the OCS Lands Act Amendments (OCSLAA), directed DOI to develop a maximum attainable rate (MAR) of production for significant oil and gas fields on the OCS as part of a continuing investigation of OCS oil and gas resources (43 U.S.C. 1865(d)(1)). DOI was required by this statute to determine the reasons for any production less than the MAR. In addition, the act required DOI to report the results of its determination to the Congress by January 1, 1980, and every 2 years thereafter.

OBJECTIVES, SCOPE, AND METHODOLOGY

We initiated this review to determine whether the OCS production rate-setting requirements serve a useful purpose and whether, in view of budget constraints, the resources used--particularly by the MMS--in collecting, calculating, storing, and reporting OCS production rates continue to be justified by the uses made of the data. In performing our work, we studied legislative and regulatory requirements and contrasted those mandates with the views of Government and oil and gas industry officials on the need for and uses made of OCS production rates.

We conducted our work at DOI and DOE headquarters in Washington, D.C., and at DOI's Minerals Management Service (MMS) headquarters in Reston, Virginia, and its Metairie, Louisiana, field location. We also contacted oil and gas industry officials in Houston, Texas, and New Orleans, Louisiana. At DOI and DOE headquarters, we interviewed agency officials and reviewed agency records documenting the development and implementation of production rates. We also held extensive interviews with officials at MMS headquarters and its Metairie field office and analyzed various documents and studies showing the historical development of the OCS production rate programs and their costs. At the oil and gas companies, we discussed the value of the OCS production rates to company operations and the costs to the companies to comply with program requirements.

We visited seven oil and gas companies--both large and small, from among the hundreds that operate on the OCS--to obtain an industry view of OCS production rate programs carried out by the

Government: Chevron Oil Co.; Exxon Company, U.S.A.; Mesa Petroleum Co.; Odeco Oil and Gas Co.; Penzoil Exploration and Production Co.; Transco Exploration Co.; and Union Oil Company. While the views expressed by these companies cannot be considered statistically representative of the views that might be expressed by the entire industry, we believe, because of the consistency of the statements, they are valid expressions of the problems that have been faced by most companies in complying with OCS production rate regulations.

Our review was performed in accordance with GAO's current "Standards of Audit of Governmental Organizations, Programs, Activities, and Functions."

CHAPTER 2

CERTAIN OCS PRODUCTION RATES

ARE NOT NEEDED

One purpose for production rate-setting is to assure production of oil and gas as quickly as possible, but not so rapidly that damage caused by overproduction would jeopardize maximum recovery of the resources. ^{1/} In response to this objective, MMS collects data which it uses to establish three different OCS production rates. Our evaluation disclosed, however, that only one of the rates plays a clearly useful role in achieving the objective. Efforts to establish the other two could be eliminated, thus saving time and money for both the Government and industry.

REQUIRED RATES AND THEIR PURPOSES

The three OCS production rates have similar sounding names but each is designed for different reasons. They are (1) the maximum production rate (MPR), (2) the maximum efficient rate (MER), and (3) the maximum attainable rate (MAR).

Maximum production rate

OCS Order No. 11 defines the MPR as the approved maximum daily rate at which oil or gas may be produced from a specified well. Under the Order, the operator of a well has 45 days after first continuous production to submit an MPR for approval. This proposed rate is based upon production tests, conducted by the operator, designed to measure the maximum production that a well can achieve without causing damage to the well or the production equipment. The MPR is established at the point where the well begins to produce unacceptable levels of sand or water, thus risking damage to production equipment by clogging the well with sand or allowing excessive water encroachment.

After MMS approves the initial MPR, the operator tests each oil well every 3 months and gas wells every 6 months to assure that the rate remains valid. If results of the periodic tests are within 90 percent of the latest approved rate, no new MPR is needed. If an operator fails to submit the required periodic test results, MMS will automatically assume that the well has been shut down--i.e., no longer producing. If there is subsequent production, the operator will have to test and refile for a new MPR. MMS also requires an operator to retest the well and revise the MPR to

^{1/}Damage to a water-driven reservoir, for example, could be caused by water below the oil moving upward and into the well bore through channels, fissures, and permeable streaks, leaving the oil sidetracked and by-passed.

a more appropriate level if he produces in excess of an MPR for 3 consecutive months.

Maximum efficient rate

OCS Order No. 11 also requires operators to have an approved MER for each producing reservoir--the maximum sustainable daily oil or gas withdrawal rate (production rate) which will permit economic development and depletion of that reservoir without reducing ultimate recovery of the oil or gas.

The MER differs from the MPR in several ways. First, the MER is for a reservoir, while the MPR is for an individual well. A reservoir is an oil or gas accumulation into which a number of wells may be drilled. For example, Gulf of Mexico reservoirs average 1.5 wells each.

The second difference relates to the precision with which the rates are calculated. More specifically, the MPR is based on a well's demonstrated capability to produce, while the MER is primarily a hypothetical rate based on limited engineering data and economic constraints an operator may face when actually wanting to produce oil or gas from the reservoir. The initial engineering data are limited because it does not provide precise knowledge about the long-range production capabilities of a new reservoir. Some experts maintain that it takes from several months to several years of actual production history before precise and reliable engineering data are available for MER purposes. The other factor in computing an MER, economic conditions, ^{1/} further increases the hypothetical nature of the rate. Specifically, the level of production that is economical for one company may not be economical for another company.

As might be expected, there is a wide variety in the amount of attention companies give to MER calculations. Some companies spend hours determining a single MER, while others simply total the MPRs for all wells in a reservoir and multiply the result by 110 percent. Both methods of calculation are accepted by MMS.

An operator has 45 days after first production from a reservoir in which to submit a proposed MER. MMS approval is routine unless errors are found in the submittal forms. The MER must be updated annually thereafter, but may also be revised at any time during the year. This could occur, for example, if MMS's monitoring of actual production discloses that the approved rate is exceeded for 2 quarters. MMS could order an operator to cease production in such instances until a balancing of MER with actual production occurs. However, officials at the Metairie field

^{1/}Factors such as, but not limited to, (1) investment costs, (2) current operating costs, (3) the costs of capital, and (4) the well head value of the hydrocarbons produced.

office of MMS could not recall any instances in which this had ever been done. They prefer to have the operator update the MER.

Maximum attainable rate

The third OCS production rate currently required is the MAR. Section 606(g)(1) of the OCSLAA defines this as the maximum rate at which crude oil or natural gas may be produced under actual operating conditions without loss of its ultimate recovery. The Congress apparently felt a need for these data to identify how much OCS oil and gas could be produced to meet any energy supply emergencies. The rate is determined as part of the continuing investigation of OCS oil and gas resources, being produced or producible, that is required by section 606.

To provide the Congress with these data, the MMS obtains MARS for "significant fields" on the OCS, which it defines as those which, during the most recent 6-month period, have averaged production of at least 5,000 barrels of oil per day or 100 million cubic feet of gas per day or are capable of producing at that level. For the current MAR period (1982-83), only 78 fields have been identified by MMS as "significant"--74 of which are in the Gulf of Mexico OCS area. These include 38 oil fields, representing 69 percent of the total oil production for the area, and 36 gas fields, accounting for 46 percent of total gas production in the area.

To meet the legislatively imposed requirement to compare MARS with actual production and report any variances, MMS requires operators to prepare MAR projections for a 2-year period, considering all known factors that may affect production during that period. During the 2-year period, MMS monitors actual production on a quarterly basis and compares it to the projected MAR. Any variances of plus or minus 20 percent must be explained by the operator. At the end of the 2-year period, MMS consolidates the data and reports the results to Congress.

In the report to the Congress, MMS must confirm that the MAR data have been adequately and independently audited and verified for the purpose of determining the availability of OCS oil and natural gas. MMS accomplishes this objective by analyzing MAR projections on approximately 10 percent of the significant fields each year. To perform its review, MMS analyzes various documents which are submitted by companies to meet various other regulatory purposes, such as (1) company development plans, (2) the future usefulness of any shut-in wells, and (3) reserves to production ratios. Various other documents may also be reviewed and direct contacts with the companies made, if necessary, in order to reach a decision about the validity of the MARS.

LIMITED USES MADE OF RATES

Uses made of the three OCS production rates by both Government and the oil and gas industry are very limited. Industry officials

told us they do not need any of the rates to conduct their business. On the other hand, MMS officials told us the only rate they need in its current format is the MPR, although they also believe the MER is useful for the 5 to 10 percent of the Gulf of Mexico's 3,850 reservoirs that are subject to damage by overproduction. Both MMS and industry officials agree that the MAR data serve no useful purpose.

Uses of the MPR

MMS regional officials in the Metairie office told us that while the MER has only limited value (i.e., for sensitive reservoirs), and the MAR is of no value, the MPR is useful for various reasons. For example, they noted that the MPR is the only rate available on an individual well basis, the only rate calculated directly from actual production tests, and the only rate that forces operators to express their best judgment regarding the volume at which a well can be produced. These factors make the rate useful to MMS--for example, in settling disputes over the amount of allowable production by two or more operators from a competitive reservoir. 1/ The MPR also can be used as a basis for calculating the maximum production achievable from the OCS for short time periods (e.g., 90 days).

Oil and gas industry officials we visited told us they do not need the MPR rate to manage their activities. They noted that the information on which the MPR is based is used in their operations, but that their data are updated at least monthly whereas the data provided to MMS are updated only quarterly for oil wells and semi-annually for gas wells.

Uses of the MER

MMS's use of the MER as a maximum upper limit of production without incurring damage to a reservoir has been largely invalidated by a determination that 90 to 95 percent of the Gulf of Mexico reservoirs cannot be damaged by increasing current production levels, a fact which was not known when the rate was established, but which became apparent as actual production data became available on these reservoirs.

The only exceptions to this are oil reservoirs with associated gas caps, i.e., those reservoirs where gas caps provide the energy to move the oil to the surface. These are sensitive to the rate of production. To produce this gas in an improper manner could

1/A competitive reservoir contains one or more producible or producing wells on each of two or more leases, or portions thereof, in which the lease or operating interests are not the same.

reduce the maximum amount of oil that ultimately could be recovered-- thus the need for information on sensitive reservoirs. However, only 5 to 10 percent (193 to 385) of the 3,850 Gulf of Mexico OCS reservoirs, as of January 1, 1982, fit this category.

The MMS now recognizes that MERs serve no valid purpose if OCS reservoirs are not subject to damage by increasing production. Accordingly, on August 6, 1980, MMS initiated efforts to review regulatory requirements in this area. In January 1981, a draft revision of OCS Order No. 11 was completed, including a proposed change eliminating MERs on all OCS reservoirs except those with associated gas caps. MMS has performed an additional study of the regulatory impact of the proposed revision and expects to publish the proposed revision to OCS Order No. 11 in the Federal Register by the end of September 1982.

Oil and gas companies view MER production rates as largely useless in their internal operations, although officials at several of the companies we contacted acknowledged that their companies do routinely gather much of the basic data used in establishing MERs.

Uses of the MAR

The Congress has been provided two MAR reports since inception of the MAR concept. The first report was due January 1, 1980, but not issued until April 4, 1980. The second report was due January 1, 1982, but not issued until March 2, 1982. According to MMS officials, these reports have apparently not had much impact. Specifically, other than the MMS officials responsible for the reports, no one had objected to the missed due dates. MMS officials' concern was related to meeting their legislative responsibilities, not a need themselves for the data contained in the reports. They told us that no one has ever requested clarification or additional data on either of the two reports. In fact, the only interest they have seen for the MAR reports was from several technical libraries that requested copies for their files. Our contacts with staff members of several congressional committees and subcommittees responsible for overseeing OCS activities similarly indicated no real need or use for the reports.

In addition to the apparent lack of use of the MAR report, we also noted several problems that hamper the report's effectiveness. For example, the 2-year period over which MARs must be projected is such a long time period that it is very difficult for operators to foresee all factors that will affect actual production during the period. As a result, the variance between actual production and MAR projections steadily widens during the 2-year period. In their second report, MMS noted that early period comparisons showed that actual production varied from the MAR by a tolerance factor of plus or minus 20 percent on fewer than 25 percent of the significant fields. During the second year, however, variance from the MAR by plus or minus 20 percent occurred on as many as 40 percent of the significant fields. This variance trend, the tolerance factor of plus or minus 20 percent before computing the variance, and

the limited amount of OCS production on which MARs are collected (see p. 6) raise serious doubts as to whether the Congress is getting useful data on the amount of OCS oil and gas potentially available to meet any unanticipated energy supply emergencies.

(A better basis to judge anticipated production during an emergency situation would be to use information on wells actually producing or soon to be producing--information available through the MPR, as discussed in other parts of this report.)

Firms we contacted do not use MAR forecasts, but rely on their own production forecasting systems.

COSTS OF OCS PRODUCTION RATES

Development of precise figures for the costs of collecting and reporting on OCS production rates was not possible. Neither Government nor industry monitors expenses at such a detailed level, but both provided us with estimates of the costs. They should be considered only as indicators of costs and not precise cost figures.

The MMS headquarters' office in Reston prepared the following estimate of total yearly costs associated with collecting and reporting on the various rates.

<u>Production rate</u>	<u>Costs</u>
MPR	\$ 94,400
MER	52,700
MAR	<u>84,400</u>
Total	<u>\$231,500</u>

This estimate includes technical and administrative staff salary costs, computer charges, and other miscellaneous expenses. The major portion of the estimate is for salaries. Discussions with MMS officials disclosed that staff members who perform OCS production rate duties are also involved in other MMS work. They usually spend from 10 to 50 percent of their time performing production rate duties--thus eliminating such duties would provide MMS an opportunity to reevaluate total staff needs. Staffing reassignment to other MMS functions could lessen costs and increase overall productivity.

Company officials told us that so much is involved in complying with the rate-setting process that it is difficult for them to place a definite value on the resources expended. None of the companies' accounting systems tracked rate-setting process expenses, thus none could provide precise cost data. The best estimates, however, for the seven companies we contacted suggest total costs of as much as \$426,500 yearly on OCS production rate activities.

This ranged from a low estimate by one company of \$5,400 to a high for another company of \$227,000. While these estimates are little more than informed guesses, they nevertheless do indicate the extent of resources that just a few companies must commit to meet requirements for OCS production rate-setting activities. While projections of costs for the entire industry cannot be made, it is readily apparent that these rate-setting activities are expensive. Eliminating unnecessary rates would free company employees to spend their time on operations more vital to producing oil and gas.

ALTERNATIVES TO PRESENT PRACTICES

MMS's responsibility to prevent waste and provide for conservation of OCS natural resources, and to provide the Congress with reliable information on industry's capability to produce OCS oil and gas can be satisfactorily met without requiring the collection and reporting of three separate OCS production rates.

Adoption of the proposed revisions to OCS Order No. 11 to eliminate MERs for all OCS reservoirs except associated gas cap reservoirs is a step in the right direction, although we believe MERs could probably be eliminated entirely. Available MPR data are more reliable and we believe could be used to monitor production levels for reservoirs subject to damage from overproduction.

In addition, rather than continue to develop separate MAR rates, MMS could use the MPR data already available to provide the Congress more reliable information on the availability of OCS oil and gas to meet energy supply emergencies--should such information be desired by the Congress. The advantages of using the MPR rate over the MAR rate include the following:

- MPR data are more current. The MPR is updated quarterly for oil and semi-annually for gas, whereas the MAR is updated only once every 2 years for both oil and gas.
- The MPR is by OCS-producing wells and is based on actual tests during production, while the MAR is a projection of estimated production and limited to just significant fields.
- The MPR projection could be done quickly and with more certainty on a demand basis. There would be no need for a continuing program unless the Congress wants one.

MMS officials told us that using the MPR to calculate energy supply capabilities of the OCS in an emergency would involve simply totaling all MPRs and adding a surge factor of from 2 to 5 percent. This surge factor would recognize the total production increase that would be likely to occur during an energy supply emergency.

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Only one of the three OCS production rates currently collected by the MMS is serving a clearly vital role in helping the agency discharge its basic OCS responsibilities. This rate, the MPR, is based upon actual tests of the production capabilities of each well, and provides the best assessment available of the amount of oil and gas a well is capable of producing. It also offers the most realistic basis for calculating the amount of oil and gas available to meet energy supply emergencies in the event such data are required by the Congress or others.

Of the two remaining rates, the MER has limited usefulness. The MER rate is useful for reservoirs that could be damaged by increasing production. This condition, however, only applies to about 5 to 10 percent of the OCS reservoirs--those that are sensitive to damage. The MMS is currently considering eliminating the requirement to collect MERs on nonsensitive reservoirs. This is a step in the right direction, although we believe the MER could probably be eliminated entirely since available MPR data would seem an even more reliable source for monitoring production levels for sensitive reservoirs.

The third rate, the MAR, is not providing any useful data. In addition, we found that no one is apparently using the MAR report. We also found that the 2-year MAR projections are inaccurate and show a wide variance when compared to actual production. A 2-year period is too long for operators to accurately forecast actual production. This shortcoming, plus the limited amount of production to which the MARs apply, suggests that the MARs are not a valid basis for the Congress to use in determining OCS production available to meet supply emergencies--should that information become vital.

An alternative to the MAR is the MPR rate, which can be totaled for all wells and provide the Congress with the best available data on the amount of OCS production available to meet energy supply emergencies.

The costs to both the Government and industry to collect, calculate, monitor, and report on the MER and MAR rates are difficult to precisely estimate but are obviously substantial. Both Government and industry could more productively utilize the resources currently used in carrying out these rate-setting functions.

RECOMMENDATIONS

We recommend that the Congress repeal section 606 of the OCS Lands Act Amendments of 1978 (43 U.S.C. 1865) to eliminate the data gathering and reporting requirements related to the MAR rates.

Until such time as legislative relief is granted, MPR data could be used to fulfill the OCS Lands Act Amendments (MAR) requirement. Thus, the Secretary of the Interior should require the Director of MMS to establish necessary procedures to use MPR data for this purpose and, after legislative relief is granted, for continuing to fulfill Interior's responsibilities for overseeing OCS production activity. Also, we continue to believe MMS should give further consideration to using MPR data in lieu of the MER to monitor sensitive reservoirs.

AGENCY COMMENTS AND OUR EVALUATION

The Department of the Interior provided written comments on a draft of this report on July 14, 1982 (see app. II). The Department indicated agreement that the MAR for significant fields is of little practical value and that the MPR could be used in lieu of the MAR to report production potential to the Congress, should that information be required. The Department also agrees with our conclusion that the MER is useful only when applied to the 5 to 10 percent of reservoirs classified as rate sensitive. However, the Department disagrees that MPR data could be used in lieu of the MER to monitor the activity of sensitive reservoirs. The Department stated that the sum of the MPRs could be significantly higher than the reservoir MER and that the MPR does not take into account the damage it may cause in sensitive reservoirs over longer time intervals. The Department also stated that MER data serve in Natural Gas Policy Act well determinations, reserves determinations, mathematical reservoir simulations, downhole commingling studies, unitization reviews, and development and production plan reviews.

We agree with the Department that there is a need to monitor only those comparatively few reservoirs that are sensitive, but we are not convinced that the MER data collection effort is necessary to accomplish this. The MPR--which is updated quarterly--would appear to provide the best data available to identify sensitive reservoirs and to monitor changes in reservoir conditions. It is only by drilling into a reservoir that one can determine whether or not the reservoir is sensitive, and such drilling is precisely what is done for MPR rate determinations. Thus it would seem that information already available, or which could be made available, through the MPR rate determination process would be the logical starting point for deriving information to monitor potential damage to sensitive reservoirs. This same information on a well-by-well basis--which is what the MPR is all about--would also seem the best source for satisfying other data requirements under the Natural Gas Policy Act. Adopting this approach might make possible the total elimination of the present MER data-gathering exercise and allow better utilization of both MMS and industry resources.

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U.S. House of Representatives
 Committee on
 Merchant Marine and Fisheries
 Room 1334, Longworth House Office Building
 Washington, D.C. 20515

June 9, 1982

Honorable Charles A. Bowsher
 Comptroller General of the U. S.
 U. S. General Accounting Office
 441 G Street, N. W.
 Washington, D.C. 20548

Dear Mr. Bowsher:

Your November 19, 1981, report entitled "Annual Report on Outer Continental Shelf Shut-In or Flaring Wells Is No Longer Needed" (EMD-82-17) recommends that the Congress repeals specific sections of the Outer Continental Shelf Lands Act Amendments (OCSLAA) of 1978 requiring annual reporting on shut-in and flaring wells by both the Department of the Interior and the General Accounting Office. As you know, a provision for such repeal has been included in H.R. 2792 which is presently pending before the Committee on Merchant Marine and Fisheries. That provision was in direct response to GAO's recommendation.

Additionally, we are concerned that there may be other hydrocarbon production related reporting requirements mandated by the OCSLAA -- such as the production rate-setting requirements of section 606 -- which, while they may have been appropriate when enacted, may now no longer be needed. Thus, we are requesting that the General Accounting Office review offshore legislation and Interior Department regulations and report any such

Page Two

requirements that you believe no longer are needed and the reasons for your conclusions. We would like your report by July 30, 1982.

Sincerely,

W. Wm. B. Jones
Walter B. Jones
Chairman

John B. Breaux
John B. Breaux

Carroll Hubbard, Jr. Edwin B. Forsythe
Carroll Hubbard, Jr. Edwin B. Forsythe

Norman F. Lent
Norman F. Lent



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUL 14 1982

Honorable Charles A. Bowsher
Comptroller General of the
United States
Washington, D.C. 20548

Dear Mr. Bowsher:

Thank you for the opportunity to review the report
entitled "Repeal of Unneeded Outer Continental Shelf
Production Rate Setting Functions Would Cut Costs."

The Department of the Interior's comments on the
report are included in the enclosure.

Sincerely,

UNDER SECRETARY

Enclosure

Comments on General Accounting Office Draft Report Entitled
"Repeal of Unneeded Outer Continental Shelf Production
Rate Setting Functions Would Cut Costs"

The Department of the Interior (DOI) agrees with the General Accounting Office (GAO) conclusions as follows:

- That the maximum efficient rate (MER) is useful only when applied to the 5 to 10 percent of reservoirs classified as rate sensitive.
- That the maximum attainable rate (MAR) for significant fields is of little practical value and that the well maximum production rate (MPR) could be used in lieu of the MAR to report production potential to Congress as required.

The DOI does not agree with GAO's conclusion that the MPR could be used to monitor sensitive reservoirs in lieu of the MER.

On page ii in the last sentence of the second paragraph, the GAO states:

"In addition, the MER could be eliminated entirely since MPR data could be used to monitor sensitive reservoirs."

In a sensitive reservoir, the sum of the MPR's could be significantly higher than the reservoir MER. The MPR is a maximum rate at which a well can produce hydrocarbons on a sustained basis. It is determined by well tests taken at regular time intervals. It does not take into account the damage it may cause in sensitive reservoirs over longer time intervals. In such cases, it may cause premature depletion of the reservoir drive mechanism and loss of hydrocarbon resources.

The reservoir MER is a maximum rate at which a reservoir may be produced without decreasing the ultimate recovery of the reservoir, regardless of how many wells the reservoir contains or the total of the well MPR's. By using MPR data to monitor sensitive reservoirs, a reservoir could be damaged to the extent that ultimate recovery of the reservoir would be less than if regulated by an MER.

Through experience, the DOI has determined that only 5 to 10 percent of reservoirs on the Outer Continental Shelf (OCS) are sensitive to production rates. For this reason, a revision of OCS Order No. 11 has been drafted which would apply the MER concept only to those reservoirs determined to be rate sensitive. Such a revision will significantly reduce costs to the oil industry and to the Department of the Interior because nonsensitive reservoirs will no longer be analyzed routinely to determine MER's.

Collection of reservoir data on the Form 9-1866 must continue in order to monitor and control production rates on sensitive reservoirs. Also, this data serves in Natural Gas Policy Act well determinations, reserves determinations, mathematical reservoir simulations, downhole commingling studies, unitization reviews, and development and production plan reviews.

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