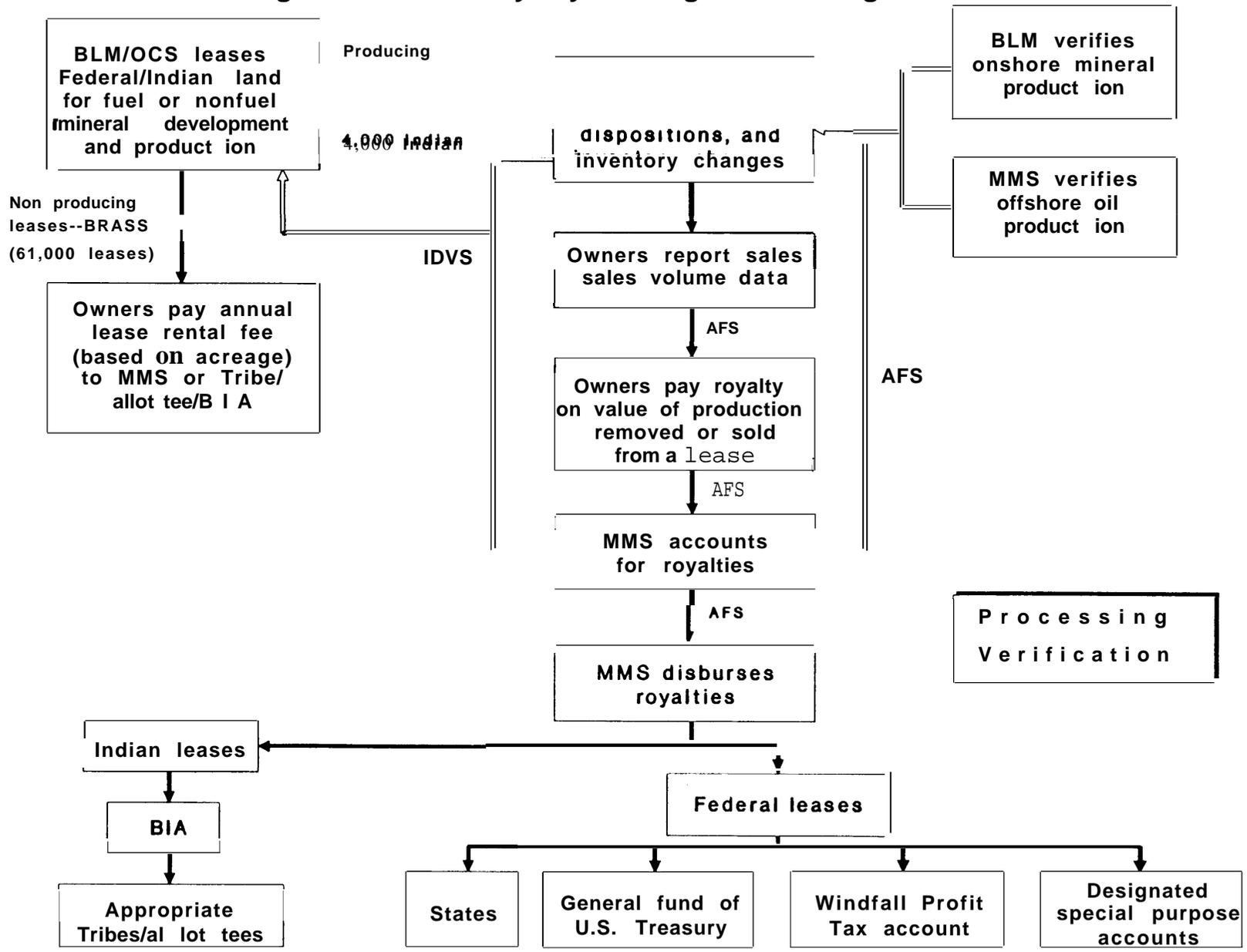# THE ROYALTY MANAGEMENT PROGRAM

Figure 1 provides an overview of the royalty management program. The Bureau of Land Management leases mineral development and production rights on Federal and Indian lands. Owners of producing leases pay royalties monthly on the value of production removed or sold from a lease. An annual lease rental is paid on nonproducing leases. The Royalty Management Program keeps track of leases, collects and accounts for bonus payments, royalties, and rentals, and disburses the funds to the appropriate Federal, State, and Indian accounts. Box A lists the automated elements of the royalty management process.

Within RMP, the Auditing and Financial System (AFS) is the primary system used to ensure accurate royalty reporting and payment on Federal and Indian leases. AFS accounts for and distributes royalties from producing or producible Federal onshore and Indian leases and all offshore leases. Since September 1987, it has operated on an IBM 3081 mainframe computer. It currently accounts for over 20,000 Federal and 4,000 Indian producing leases-- mostly oil and gas.

AFS was designed to fulfill eight principal objectives:

1. Process royalties reported by payers promptly and efficiently.

2. Distribute mineral revenues to States, Indians, and Treasury accounts on a monthly basis in accordance with FOGRMA.

3. Calculate, distribute, and disburse interest and penalty payments to States and Indians where required by FOGRMA.

4. Identify, using data provided by payers, under-reporting and nonreporting to enable MMS to collect revenues due promptly.

Figure I.--The Royalty Management Program

BLM/OCS leases Federal/Indian land for fuel or nonfuel mineral development and product ion	Producing

Non producing leases--BRASS (61,000 leases)

4,000 Indian

dispositions, and inventory changes

IDVS

BLM verifies onshore mineral product ion

MMS verifies offshore oil product ion

Owners pay annual lease rental fee (based on acreage) to MMS or Tribe/ allot tee/B I A

Owners report sales sales volume data

AFS

Owners pay royalty on value of production removed or sold from a lease

AFS

AFS

MMS accounts for royalties

AFS

Processing Verification

MMS disburses royalties

Indian leases

Federal leases

BIA

Appropriate Tribes/al lot tees

States	General fund of U.S. Treasury	Windfall Profit Tax account	Designated special purpose accounts

Box A. --The Elements of the Royalty Management Process

Auditing and Financial System (AFS). The RMP automated fiscal accounting system that accounts for royalties collected from Federal and Indian leases, as reported and paid by lease owners.

Automated Inspection Record System (AIRS). A BLM system that includes data on the status of wells, such as producing or shut-in.

Automated Lease Management Records System (ALMRS). This BLM system maintains key data on all onshore Federal leases, both producing and non-producing. It comprises the data in AFS and BRASS.

Bonus and Rental Accounting Support System (BRASS). The RMP automated system of the RMP that accounts for rentals from non-producing Federal leases.

Interagency Data Verification System (IDVS). An automated system used to compare BLM and MMS databases on a periodic basis.

Production Accounting and Auditing System (PAAS). The RMP automated production accounting system that accounts for all volumes produced, used, and sold from Federal and Indian leases, as reported by lease operators.

State and Tribal Support System (STATSS). This system provides access to AFS data via terminals and remote personal computers through a series of online computer screens and financial reports.

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5. Account for all mineral revenues due, collected, and disbursed in a system of accounts that enhances MMS' ability to control and report on the RMP.

6. Provide royalty accounting and statistical information to States, Indians, and other parties.

7. Build and maintain a database that can effectively be matched with production data in PAAS.

8. Create an automated billing process for all receivables generated by the system.[20]

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[20] U.S. Congress, General Accounting Office, Indian Royalties: Interior has not Solved Indian Oil and Gas Royalty Payment Problems (Washington, DC: U.S. Government Printing Office, GAO/IMTEC-86-13, March 1986).

The owners of leases report sales volume data (including the price at which minerals are sold) to MMS every month. Using AFS, MMS accounts for the royalties and disburses them. Royalties on Indian leases are paid to the Bureau of Indian Affairs, which distributes them to the appropriate Tribes or individual allottees. Royalties on Federal leases are distributed to the States, the general fund of the U.S. Treasury, the Windfall Profit Tax Account, and designated special purpose accounts. '

AFS verifies its accounting and disbursement through cross-checks with other databases and through internal reporting/payment comparisons. The primary cross-check is with the Production Accounting and Auditing System (PAAS) --a database of operators' reports on production volumes, dispositions, and inventory changes. PAAs is designed as an extension of AFS. Based on data provided by lease operators (who often are different from owners), PAAS identifies the amount of production that should be reported to AFS as sold. Sales volumes reported by owners to AFS should match operators' reports to PAAS. The two systems were designed so that data would be compared regularly to identify instances of under-reporting, over-reporting, and nonreporting.[21]

The automated Interagency Data Verification System (IDVS) also compares BLM and MMS databases periodically. AFS data also are cross-checked with the BLM/OCS databases on onshore and offshore leases. Finally, BLM and MMS audit operations to ensure that operators' and owners' reports are correct.[22]

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21 Bettenberg, supra note 4.

22 Ibid.

AFS also performs a function called exception processing to detect late payments and certain types of underpayment. Exception processing compares what a payor reports and pays to what the system expects the payor to report and pay. Where there are discrepancies, AFS generates billable exceptions. PAAS also generates exceptions if production data differ from sales data.[23]

The State and Tribal Support System (STATSS) provides access to AFS data via terminals and remote personal computers through a series of online computer screens and financial reports.

IMPLEMENTATION OF AFS

Several startup problems had to be resolved in order for AFS to accomplish its tasks. First, many of the elements in the old royalty database were out of date or incorrect. The quality of monthly reporting also was poor. Initially, over 40 percent of the report lines submitted by payers were rejected by the system because they contained fatal errors or did not match reference data in the system. To overcome these problems, RMP undertook several initiatives:

- o   payor training, a revised payor handbook, preprinted report forms, and charges for reporting errors;

- o   internal validation of the AFS database against BLM, BIA, State and Tribal data sources; and

- o   design and implementation of an automated system (IDVS) to compare BLM and MMS databases on a periodic basis.[24]

These initiatives dropped the input error rate to below 4 percent.

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[23] Ibid.

[24] Ibid.

After installing the new mainframe, MMS also began a systems improvement effort to identify and implement needed improvements. In April 1985, MMS published a Management Action Plan for improving the RMP which incorporated elements related to policy, management, systems, and external involvement. These included cleaning up the AFS Reference Database and switching to the mainframe, which was sized to accept RMP's current workload and expected growth during its service life. The benefits of the new system were expected to be:

- o improved accountability and auditability of payment receipt and disbursement,

- o improved ability to generate reports explaining royalty processing,

- o direct online access to data and the ability to update the database interactively,

- o improved ability to process royalty payments in a timely reamer,

- o substantial reduction in operational risk with greater assured performance,

- o improved ability to establish routine automated comparisons with other databases to ensure a complete lease universe,

- o improved ability to automate substantial portions of database changes, and

- o capability to use full functionality of the software, especially exceptions processing, which is expected to generate additional royalty.[25]

In November 1986, RMP began an effort to identify, design and implement needed system and program improvements using the IBM Business Systems Planning and Implementation (BSPI) methodology. BSPI is designed to develop

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[25] DOI, supra note 3.

applications and databases that support organizational objectives. The major RMP management objectives were to move money faster, simplify industry reporting requirements, improve cliente le relations, use resources more efficiently, minimize duplication of data collection, and better utilize and validate data collected or shared by RMP.[2G]

Phase I of that effort (completed in November 1987), conducted with significant consultation with States, Tribes, and industry, proposed 59 improvements and provided a framework to guide future systems development. Table 4 lists the proposed improvements and indicates their status as of August 1988. The team chose 5 policy/regulatory projects and 14 system projects (encompassing 34 of the 59 proposed improvements) to be implemented over the following 3 years at an estimated cost of $5.7 million.[27] Three of the recommendations were later determined to be infeasible; the remaining 22 were either completed or underway by August 1988, when the Business System Improvement Plan (see below) was published. Table 5 shows the planned system improvements affecting AFS and the management goals they would further.

The MMS schedule for implementing these projects reflects the fact that some are dependent on the completion of others; i.e., some tasks use data and data relationships established in preceding projects. Therefore, database improvement tasks are first on RMP's schedule. Also, each project will be divided into several software releases so that benefits can be realized as soon as possible. New software is being combined with innovations in normal operations and maintenance to ensure integrated testing.[28]

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[26] U.S. Department of the Interior, Minerals Management Service, Business System Improvement Plan (Washington, DC: U.S. Department of the Interior, August 1988).

[27] Ibid.

[2a] Ibid.

Table 4.--Business System Plan Recommendations

Recommendation	System or nonsystem	Completed or underway	Not feasible
Package 1:			
1. Revenue source level reporting	N		
2. Eliminate zero sales		x	
3. 90-day adjustments for unit/comm		x	
4. Gas estimates at revenue source	S		
5. Payor calculated interest			x
6. Unit/comm agreement reporting	S		
7. Payor calculated and reported WPT	N		
8. Automated reference data reporting		x	
9. Combine manual & tape reports before EP	S		
Package 2:			
1. Establish interest-bearing escrow account	N		
2. Interest on receipt of cash	S		
3. Account for cash w/o report	S		
4. Write-off small mismatches	S		
5. Cash/report reconciliation		x	
6. Disburse partially paid bill		x	
7. Disburse audit payments before report	S		
8. Document disbursement policy	N		
9. AFS D/D similar to BRASS	S		
Package 3:			
1. Eliminate non-respondent EP	S		
2. Automate EP for rent, minimum royalty, etc.	S	x	
3. Oil price database and comparisons	S		
4. Gas price database and comparisons	S		
5. Allowance database and comparisons	S		
6. Monitor adjustments to audited leases		xx	
7. Perform onshore prod/sales comparisons			
8. Release accepted parts of bills to EP			x
9. Notify reporters when PAAS exception resolved		x	
10. More billing data to reporters	S		
11. Identify chronic adjusters	S		
Package 4:			
1. Perform audits on a payor basis		X x	
2. Target audits on major payors			
3. Use system data to target audit candidates		x x x	
4. Approve section 10 recoupments			
5. Reevaluate resident audit program			
Package 5:			
1. Time-specific process for bill follow-up	S		
2. PAAS late and missing report assessments		x	
3. Consolidate penalty issuance	N		
4. Establish civil penalty thresholds		x	
5. Associate Director issue civil penalties	N		
Package 6:			
1. Modify section 10	N		
2. Legislative for leasable solid minerals	N		
3. Delegated audit authority for solids/geothermal	N		
Package 7:			
1. Establish strategic planning process	N		
2. Establish policy document	N		
3. Include production data in STATSS	S		
4. Develop production history report		xx	
5. Correct EOP royalty rate and unit value		X	
6. Develop MIS	S		
7. Conduct annual internal control reviews		x	
8. Automate internal controls	S		
9. Archive at document level			x
10. Disseminate policy changes			
Package 8:			
1. Modify ... MOU on nonstandard leases		x	
2. Nonstandard revenue and production reporting	S		
3. Nonstandard production/sales comparisons		x	
4. Nonstandard production/sales on STATSS	S		
5. Revenue and cost acctg. nonstandard lease	S		
Package 9:			
1. Limit adjustment to six-year period	N		
2. Verify adjustments to original data	S		

Table 5.--Goals of AFS System Improvement Projects

PROJECT	VALUE* (million dollars)	REVENUE			SYSTEM & DATA				
		Generate additional revenue	Improve exception processing	Improve audit trails	Reduce data redundancy	Increase data consistency	Increase flexibility to respond to change	Conserve system capacity	Facilitate future expansion/automation
Lease/agreement database enhancement	$1.23			X	X	X	X	X	X
Financial system enhancement	($0.11)			X	X		X	X	X
Product valuation & allowance monitoring	$9.58	X	X						
Combine manua and tape reports	($0.09)		X						
Expedite audit bil disbursement	$0.13			X					
Exception processing enhancement	$1.71		X	X			X		
Appeals database	$0.04					X		X	
Business information system	$0.56				X	X		X	
Adjustment line monitor ng	$1.28	X							
Bill follow-up	$0.16	X							
Systems integration	$1.09	X			X	X	X	X	
Audit support	$3.71	X		X					

* This is the cumulative net present value over a 6-year period, which is calculated by determining first, the annual net benefit (annual benefit - annual cost), then calculating the annual net present value benefit and summing it over 6 years.

PROJECT	STAFF & MANAGEMENT				PUBLIC RELATIONS	
	Reduce data processing	Enhance query ability	Enhance reporting ability	Increase staff productivity	Simplify payor reporting	Improve payor relations
Lease/agreement database enhancement	x	X	X	X	x	
Financial system enhancement	x	X	X	X		
Product valuation & allowance monitoring	x	X		X	x	x
Combine manual and tape reports		X		X	x	x
Expedite audit bil disbursement	X	x		X		
Exception processing enhancement	X	x	X	X		x
Appeals database	X	x	X	X		
Business information system	X		X	X		
Adjustment line monitoring						
Bill follow-up	x	x	X	X		
Systems integration	x		X	X		
Audit support	x	x		X		

One of SIT's major objectives was to develop projects that would lead to consistency of information throughout RMP. They found that different RMP units did not agree about the definitions and meanings of data fields, and that the same field was structured differently in the various database systems (different field lengths, different code structure, etc.). Records with the same key also were structured differently in the various systems. Moreover, data were processed and updated daily, weekly, monthly, or interactively, giving different values to different copies of the data. Finally, the processing and update rules were different for the various copies of the data.

PLANNED AFS SYSTEM-RELATED IMPROVEMENTS[29]

Lease/agreement Database Enhancement

This project automates data transfer between BLM and MMS; it is scheduled for completion during FY89-90. Currently, AFS, BRASS, and PMS all maintain lease/agreement data. AFS accepts Payor Information Forms (PIFs) from payers and maintains this in its database. PMS runs a comparison against AFS lease/agreement data and converts data to the PAAS onshore and offshore databases. BRASS receives lease information from BLM and stores it in its lease database. When a lease starts producing, BRASS lease data are entered manually into AFS, augmented by data from BLM. STATSS also provides inquiry access to the lease/agreement data. PAAS onshore also receives lease/agreement data from BLM, which sometimes identifies data inconsistent with RMP data. When corrected, these data are passed back to AFS to maintain data integrity.

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[29] Unless noted otherwise, the material in this section is from DOI, supra note 26.

All three systems use an input and error correction file (the document database) that maintains all the transactions for the Lease/agreement Database until they are used to update the latter. Accepted and deleted transactions are archived to tape and not available for online inquiries. AFS maintains reference data as they currently exist, and does not maintain a complete set of reference data as they were at given times. Royalty data for prior periods are processed against current reference data. This can produce invalid comparisons and exceptions. The system needed to be revised so corrections to prior period financial data could be edited against comparable reference data.

Discrepancies between redundant data elements are dealt with by system assurance reports and IDVS. But the large amounts of redundant data mean high costs and slow speed. There are many more programs than necessary to maintain and access some of these data. The greater the number of programs, the worse the problems of modifying them when requirements change.

The various data integrity problems increase the difficulty of reconciling **data** from its different sources. Examples of data integrity problems include: 1) AFS does not have a field to maintain agreement termination dates, so it is being stored in the location field. The PAAS interface programs need this field, but are not able to access it. 2) The current system does not handle special lease requirements very well. Thus solid mineral processing has to be forced to fit into AFS'S predominantly oil and gas environment. Comment and other unused fields on AFS screens are used to store solid mineral data. 3) The verify command results in changes in the agreement effective date. 4) The lease location field or bond coverage field has to be used for the agreement number, which then is not displayed on lease inquiry screens. 5) AFS will not accept duplicate API well numbers, so RMP flags them with an asterisk, making data comparisons difficult.

To remedy these problems, this project will aggregate the lease/agreement data for RMP systems, reduce redundant data storage, increase efficiency of data access, and simplify update processes. First, RMP is switching from its current application databases to a subject database--the Common Reference Database. It will then aggregate existing IBM lease/agreement data, and convert BRASS and offshore PAAS to use the database. The Reference Data Document Database will provide reference document tracking, online access to both accepted and unaccepted transactions, and an audit trail of selected changes to a document prior to posting to the database. Because onshore PAAS recently was designed with a similar subject database approach, including effective dating of key entities and relationships, it can be used as the foundation for the common Lease/agreement Database.

The Lease/agreement Database will be modified to accommodate all of RMP's lease management functions; eliminate rent, advanced royalty, and minimum royalty schedules, which will no longer be needed after database modification; and add separate effective dated records where historical records are necessary to establish time-specific payor responsibility or properly edit adjustments to previously reported royalties.

The software will be modified to move sensitive update processes to separate screens; simplify the PIF screens; implement integrated STATSS inquiries to display the data by lease, payor, or agreement; provide menus t. simplify inquiries; and to simplify the IDVS and database assurance comparisons.

These database and software modifications will make lease/agreement data accessible from a central place, providing information more quickly and accurately. Because the reference database will be available to both PAAS and AFS, and these two systems are not in the same IBM/IDMS central version, special requirements for implementation are needed. The actual implementation

will require reference database availability for update in a common central version and availability for retrieval in all the others. Therefore, the SIT suggests that the maintenance of the Lease/agreement Database be performed by one organizational unit within RMP.

As a result of this project, IDVS also will be simplified in that it will compare BLM data to one RMP Lease/agreement Database instead of three or four. This approach also will provide for consistent definition of similar data across all RMP applications. It will eliminate the proliferation of inconsistent data values due to redundant data items, and much of the need for system assurance programs. In addition, it will make auditing easier by providing a complete audit trail of all changes made to reference data documents. Finally, it will facilitate development of a Management Information System.

Financial System Enhancement

This project modifies AFS to reduce redundant data storage, increase efficiency of data access, and simplify update processes; it is scheduled for completion in two stages during FY89 through FY-91. As noted above, AFS uses an input/error correction file (the document database) to maintain transactions until they are used for updating. Accepted financial transactions are stored on the Detail Financial Transaction File (DFTF). In addition, accepted royalty transactions are stored by sales month and year for a period of approximately 6 months. The Financial Database also stores details of accounts receivable and accounts payable subsidiary ledgers until all associated documents are completely processed. The inactive records are then archived to tape and occasionally restored to the database and updated. As a result, an accepted royalty line resides in 4 different records for at least 6 months. In addition, most internal controls are performed with manual processes.

To correct these problems, changes will be made in the Financial Document Database and financial reference data, royalty processing, the general ledger, subsidiary ledgers, and database structure. The Financial Document Database will be modified to add the following functions:

o   online access to unaccepted transactions;

o   online access to accepted transactions (current and historical);

o   processing of unbilled royalty-in-kind transactions;

o   financial document tracking, for transactions such as refunds, from the receipt of a document until it is accepted as an approved transaction;

o   audit trail of selected changes to the document prior to posting to the Financial Database;

o   eliminating unused database record types; and

o   making, distribution tables more flexible.

Royalty processing will become modular. This will make future changes to royalty processing much easier. Changes to the software will also incorporate the simplification of the Lease/Agreement Database and the Financial Database to eliminate three of the database updates currently in the system.

In addition, internal general ledger controls and reporting of general ledger data will be improved. The accounting functions of other systems will be integrated with AFS. RMP will accomplish these by automating reconciliation of: 1) AFS subsidiary ledgers with the general ledger control accounts, 2) cash transactions with deposit tickets, and 3) AFS cash balances with the Treasury Department. Furthermore, RMP will automate some forms; enhance the general ledger reports to identify net changes, out-of-balance conditions, ac-

tivity by period, and monthly activity by document type/transaction code; create new management revenue reports; and expand online inquiry into general ledger data.

RMP also will implement some subsidiary ledgers now on micro-computers on the mainframe, improve the ability to access the database by lease, and give users better access to financial data. This will involve computing interest on late disbursement to States based on the date cash is received rather than the date a report is received; integrating the three Refund Request Tracking systems with AFS and recognizing it as a subsidiary ledger; improving the accounting for rent, minimum royalties, and advance royalties; incorporating the ability to account for lease bonus payments; recording Treasury confirmation of disbursements; and providing online access to 6 years of detail financial transactions.

All the data needed currently are in the AFS structure, but are not necessarily organized in a manner that allows for processing and inquiry of the data as needed. This approach will take the data that currently are maintained by AFS and organize them so that they are accessible in minutes instead of days.

The systems improvement effort resulted in five proposed database structures for royalty financial processing. The Royalty Document Database stores the images of all financial (royalty, payment, refund, and bill) documents and processes changes to them. The changes will be stored for an audit trail. The Financial Database uses the existing financial areas from the AFS schema plus a new payment reference record to improve the associations between bills/ royalties and checks/refunds. The third structure is a modified version of the DFTF file, which allows documents to be related to each other. For example, a royalty document could be viewed and a list

provided of all bills, checks, refunds, credits, etc., associated with it. This database also will store appeals information (see also "Appeals Database", below). The Accounting Control Database provides the internal controls needed in the automated systems and keeps the general and subsidiary ledgers. Finally, a structure will take care of accounting reference data. This database uses the existing AFS records to maintain current accounting period, the chart of accounts, etc. This will include the common fund so that distribution can be standardized.

The Royalty Document Database, the Financial Database, and the modified DFTF database can be used in combination to provide a consolidated lease history and select audit candidates. Auditors will then be able to request the supporting detail for selected leases and reporting periods.

This project will improve access to financial data to facilitate daily operations, improve the quality of management data, and improve software maintenance capability. It will significantly reduce data manipulation and report review, consolidate the tracking of refunds and eliminate their duplicate entry, reduce data entry time, and automate general ledger controls. Update and inquiry programs also will execute more quickly, and audit trails and automated internal controls will be established.

Product Valuation and Allowance Monitoring

This project establishes an automated allowance and valuation monitoring system and improves RMP exception processing and product valuation capability. The allowance tracking system is now operational. RMP is designing a *proto-type* oil valuation database to run on a microcomputer; they have not yet determined the feasibility of a gas valuation database.

Allowance and product value monitoring currently are performed only on a limited manual basis. For many transportation and processing allowances approved before implementation of the new product value regulations, data were entered on a microcomputer system. The allowances claimed by the payor are on printouts from AFS, and manual comparisons,are made of approved vs. claimed allowances.

Under the new regulations establishing product valuation and allowance requirements , lessees must submit a form detailing an allowance. The existing allowance record on AFS does not contain the fields needed to capture the pertinent data from the new forms. Manual product value checks can be performed now only by comparing unit values reported to AFS with representative prices such as oil postings.

Therefore, this project will establish oil and gas price and allowance databases and perform automated comparisons of payor prices reported on the new forms against expected prices in the database, and of reported allowances with those in the database.

It also will provide automated exception processing for allowances and product values, a significant increase in the number of leases that can be monitored, automatic billing of assessments and interest for regulatory noncompliance, and data leading to further review of payor claims. RMP

estimates that full implementation of this project could increase royalty revenues by as much as $4 million annually (about 0.1 percent of oil and gas royalties collected in 1986).

Audit Bill Disbursement

This project further automates the auditors' billing process by generating more billing detail; it is tentatively scheduled for completion in FY90. Under current procedures, bills sent to payors do not necessarily identify all leases covered by the audit findings, and the final results of the audit are not known until the payor applies the finding rules to leases not included in the bill sample. If the payor submits a check for the audit findings without the appropriate form, the proceeds are disbursed manually (outside of AFS) based on the data from the bill, accompanied by a manual Explanation of Payments (EOP) report. When the proper form is received, the EOP has to be reversed and the form disbursed.

Several approaches are being considered. One approach would allow auditors to download AFS royalty data for all leases and sales periods covered by an audit and create working papers with a spreadsheet. An extract of the auditors' work paper file could be uploaded as a prebilling file and used to produce a prebilling report. This can then be edited and the bill posted to AFS. The special payor form will no longer be required.

Regardless of the approach chosen, the project will provide payers with all the details of the audit findings. It also will allow disbursement directly from a paid audit bill without the payor form. Thus it will reduce the manual workload associated with keying bill data in AFS, and provide payers with more comprehensive bills.

<u>Manual and Tape Report Combination</u>

This project will combine related paper and tape-reported forms prior to processing to reduce exception processing and distribution errors and subsequent meetings with payers, thereby improving exception processing and clientele relations **(FY89-90).** Currently when tape payers need to make a correction, they submit a hard copy form along with the tape (and a check, when necessary). MMS personnel process the hard copy separately, and AFS **erroneously** issues a bill for insufficient payment when one document (hard copy or tape) has cleared all edits and is completely processed and the other has not.

The revised approach would use a related document number table (including edits to preclude improper combining of reports). Royalty processing would then combine the tape and hard copy form into one OIP document. This will significantly decrease the time that Lessee Contact Branch (LCB) personnel spend with payers who were erroneously billed because related documents could not be combined prior to processing.

<u>Exception Processing Enhancement</u>

This project further automates exception processing to reduce the number of invalid exceptions and introduce greater flexibility, including the pre-billing report and Lease/agreement Database discussed above (FY90-91). Verifying exceptions requires substantial effort because several different reports must be reviewed manually to collect all necessary data. (There currently are 4000 exception bills on hold on the Document Database awaiting resolution.) Much time could be saved if the prebill were accurate and the data needed to perform the research were available in an easily accessible format.

This project will be implemented in 2 phases. The first phase will provide an accurate prebill, thereby eliminating many invalid exceptions. New modules will be written to identify exceptions and generate prebills. Rule-based routines will be used to code the parts of exception identification that are subject to changes in policy and procedures.

Currently, payers have 1 month to report royalties with actual figures and 2 months with estimates. If a royalty estimate is considered too low, it is handled under exception processing. The SIT found that processing insufficient estimates and keeping estimate balances requires too much overhead to be cost-effective. Therefore, they recommended eliminating exception processing for insufficient estimates and replacing it with late payment processing.

The second phase will provide automated exception tracking, online prebill and past exception inquiries, and improved audit trails. The exception identification routines would write prebills to the Financial Document Database, which would then be used to track exceptions throughout the entire exception processing cycle, providing an automated audit trail. Payers with frequent or excessive exceptions can be identified for further action.

As part of exception verification and resolution, changes sometimes are made to the reference data and royalty reports. In addition, the Lessee Contact Branch must be notified to follow-up with the payers. This notification process would be automated so that all changes are sent to the Branch and other sections, either in hard copy or by electronic mail. Management information reports also will be easier to generate.

Appeals Database

This project will provides a standard appeals database accessible by all functional areas in need of timely and accurate appeals data (FY90-91). Appeals information currently is kept in separate functional databases. The information often is the same, but the format varies. The information is maintained on microcomputer applications, which generate reports for both internal and external use. Reports are circulated and updated on the hard copy and then returned to the report generator for update of the database.

This project would provide a central database for creation, update, and report generation of appeals information. This database would capture surety data, and relate appeals to lease/agreement, financial, and audit databases. All RMP sections would have access to the data, but creation and update functions would be limited to authorized users. A memo function would retain a history of who created and changed records, along with the data and nature of the change, for later research and statistical reporting. Standard inquiries and reports (by payor, lease, tribe, **originating** office, etc.) will be provided.

This project will provide accurate and consistent appeals data, timely accessibility of the data by all users, elimination of several personal computer applications, improved management information, and elimination of the need to develop, maintain, and reconcile the various PC systems and associated reports.

Business Information System

This project will build a data delivery system between RMP's operational databases and the end users, thereby improving program management and information dissemination and using resources more efficiently (FY90-91). RMP cur-

rently has several automated systems (AFS, PAAS, BRASS) to implement opera-
tional requirements.   These systems have large data collection requirements.
Most of the data needed for different functions exists somewhere in one of the
systems, but is not organized into reports that serve as effective management
tools.   Efforts to manage this information have spawned a number of manual and
automated support subsystems and ad hoc reports to enable different
organizational components to meet their operating and reporting needs.   These
subsystems and reports are dispersed across all parts of RMP, they are
fragmented and supported with manual processes and microcomputers, they
require duplicate programming efforts, and they do not meet management
information needs effectively or efficiently.

The SIT recommended a Business Information System (BIS) architecture to
address all these issues.   It would deliver an integrated and consistent in-
formational system to end users in all RMP functions.   BIS defines the archi-
tecture for the implementation of an information retrieval and reporting ser-
vice.   This architecture runs against a repository of all required business
information in a separate information database called the Business Data Ware-
house.   It puts reporting in the hands of the users, allowing them to select
the fields they want for a query, specify the format and level of detail, and
choose the output medium.   Thus it meets the requirements for both a function-
al detailed information system as well as a management information system,

The information for general user access needs to be separate from RMP's
operating systems production data so that queries and analyses do not disrupt
performance and information does not change as it is used.

Data would be received from the RMP operational systems and subsystems
(including PC-based systems) in an agreed-upon format and stored in the Busi-
ness Data Warehouse.   This would include employee/contractor workload, finan-

cial, pricing, production, and sales data. These data could be used to deter-
mine the backlog of work to be done for employee scheduling, downloaded onto
PCS for use with existing tracking systems, or used to generate statistics and
develop management reports (e.g., the number of lines by document type, age of
rejected lines, or frequency of payor errors) .

A Business Data Directory stores and manages both descriptions of the
data in the Business Data Warehouse and the business rules. It thus serves
both a help and a menu function. As a help system, it provides a method of
locating information, understanding its meaning, and finding the query needed
to analyze it. It also aids in understanding the query results by providing
descriptions of the fields and the coded values in them, and the age or source
of the data. Menus allow users to select a predefined query, or define a new
one by choosing from a list of elements available for reporting.

The End-user Interface allows data in the Business Data Warehouse to be
viewed online, produced into reports, or downloaded to PCs for use with pack-
ages such as Lotus or dBase. Online inquiries would have search capabilities
as well as selective sorting, analysis, and printing. The End-user Interface
will include both menus and comprehensive help in an online tutorial.

Adjustment Line Monitoring

This project would establish criteria for identifying "chronic" adjust-
ers and set a 6-year limit on adjustments (FY90-91). Under the current AFS
design, there is no means of identifying payers who regularly make
adjustments, nor is there automated verification to determine whether an
adjustment submitted by a payor is correct or that the original line was ever
reported. This project would create software to perform after-the-fact
comparisons against adjustments. Any exceptions generated would result in a

bill or an audit. It also would generate initial adjustment activity reports to be used to determine the most appropriate criteria for defining chronic adjusters. These reports also would be compared to the originally reported lines to make sure they were submitted.

Bill Follow-Up

This project automates follow-up letter generation (FY90-91). The current microcomputer-based account receivable subsystem sends out the first two follow-up letters for delinquent payers. The dates of these letters are recorded in the database. The third letter is generated manually. This project would institute a batch process to analyze delinquent bills and identify bill lines that have been unpaid for a specific time period. The process also would identify bills where an appeal has been denied and there is no surety amount. The name and address of the lessee would be obtained from the Lease/agreement Database, and then used to generate a letter. This approach would reduce the backlog of third follow-up letters from 6 months to 1 month and accelerate the collection of delinquent receivables.

Audit Support

This project provides RMP with an automated system to target audit candidates, consolidate all needed audit data from other operational systems, and track the progress of audits and reports on their results (FY90-91). Currently all these functions are performed manually. AFS produces several lease- and payer-level reports, but their sort sequence, lack of subtotals, narrow focus, and large size limit their usefulness in identifying audit candidates. Consolidated payor and lease history is obtained from a combination of STATSS and hard copy files. Audit prebilling is in hard copy, as discussed previously. Audit tracking is provided by PC databases

decentralized in the regional offices. STATSS also has an audit tracking system that is not integrated with either AFS or the micro systems. Management reporting capability is very limited.

The SIT recommended establishing a single automated system that combines all current requirements. This would combine STATSS, AFS, PAAS, ALMRS, and the Royalty Compliance Division's Royalty Audit Tracking microcomputer system. The system would first review the operational database and write summary level data to an audit database to help identify potential audit areas. As auditors began work on an audit, they would have access to the summary level data and could request the supporting details to provide a consolidated payor and lease history. As the audit progresses, audit actions and findings would be added to the audit database, providing the basis for management reports.

RCD historically has collected an average of $60 million annually with approximately 120 auditors and divisional staff. In March 1990, they had 200 staff and were recruiting 60 more. This system will provide data to the auditors more quickly and accurately, and free up auditors' time to perform more audits and get into more detail. RCD estimates that this system could increase audit findings by $1 million per year.

Systems Integration

This project integrates RMP databases to reduce data redundancy, elimi-nate duplicate program maintenance, and provide additional functionality to all RMP systems (FY91). The first database would be a common reference data-base shared by AFS and PAAS. It would contain data currently used by those systems (lease, agreement, operator, payor, etc.) but restructured and opti-mized in logical areas for effective maintenance and ownership. A common re-porter subject area also would be established (separately from operator-speci-fic data) for operations, payers, billees, and refiners.