

PD-ABK-004

**Regional Inspector General for Audit  
Singapore**

1994/11/11

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**AUDIT OF THE  
QUALITY OF MACS DATA  
AT  
USAID/THAILAND RSM/EA**

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**Audit Report No. 5-493-95-002  
December 21, 1994**



INTERNATIONAL  
SERVICES

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT



U.S. AGENCY FOR  
INTERNATIONAL  
DEVELOPMENT

December 21, 1994

## MEMORANDUM

TO: Linda Lion, Mission Director, USAID/Thailand RSM/EA

FROM: Richard C. Thabet, RIG/A/Singapore 

SUBJECT: Audit of the Quality of MACS Data at USAID/Thailand RSM/EA  
(Audit Report No. 5-493-95-002)

This memorandum is our report of the audit of the quality of Mission Accounting and Control System (MACS) data at USAID/Thailand RSM/EA. We considered your comments on the draft report and have included them as an appendix to this report (see Appendix II). Based on your comments and corrective actions taken during the audit, Recommendations Nos. 1.1, 1.3, 2.3, and 3.2 are considered closed upon issuance of this report. The remaining Recommendations Nos. 1.2, 2.1, 2.2, and 3.1 are resolved and can be closed when the planned action is completed.

I appreciate the cooperation and courtesy extended to my staff during the audit.

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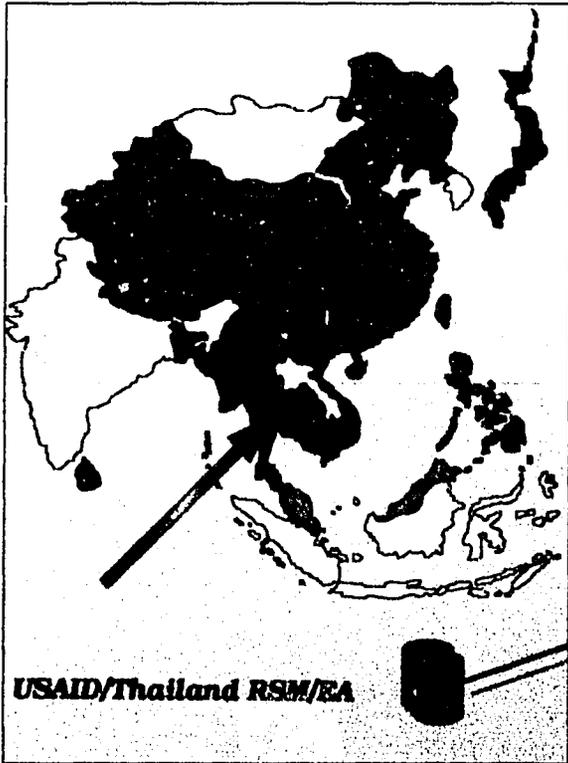
## Introduction

Realizing that USAID must operate with increasingly scarce funds, the Agency is undertaking a new and aggressive effort to change the way data and information are managed. Such an effort is critical to our future: in the modern workplace, be it business or government, a high-quality, reliable information system is no longer a luxury—it is a necessity.

To ensure that the data in the entire USAID system is of high quality—and therefore useful to managers concerned about project status and pipeline reports—the Office of Information Resource Management (IRM) is undertaking a major initiative. They are centralizing data collection and improving the management of information by creating a data warehouse (see page 3 and Appendix V), a repository for data from all Agency systems. One of the first steps in bringing data to this warehouse is the PIPE (Project Information and

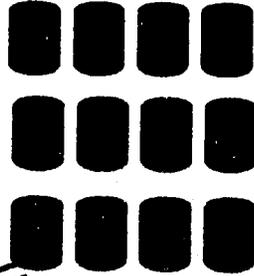
Pipeline Evaluation) initiative. The PIPE initiative is a joint IRM and Financial Management project that will combine MACS data from the missions and financial data from USAID/Washington, allowing all Agency managers timely and comprehensive information on USAID projects worldwide.

Accordingly, for this system to succeed, the MACS data from all of the missions must be of the highest quality. Therefore, in support of IRM's work, the Office of Audit is conducting a series of audits designed to evaluate the quality of data—in the MACS files—which is central to the Agency's work. An important part of the effort is this audit of USAID/Thailand RSM/EA data.

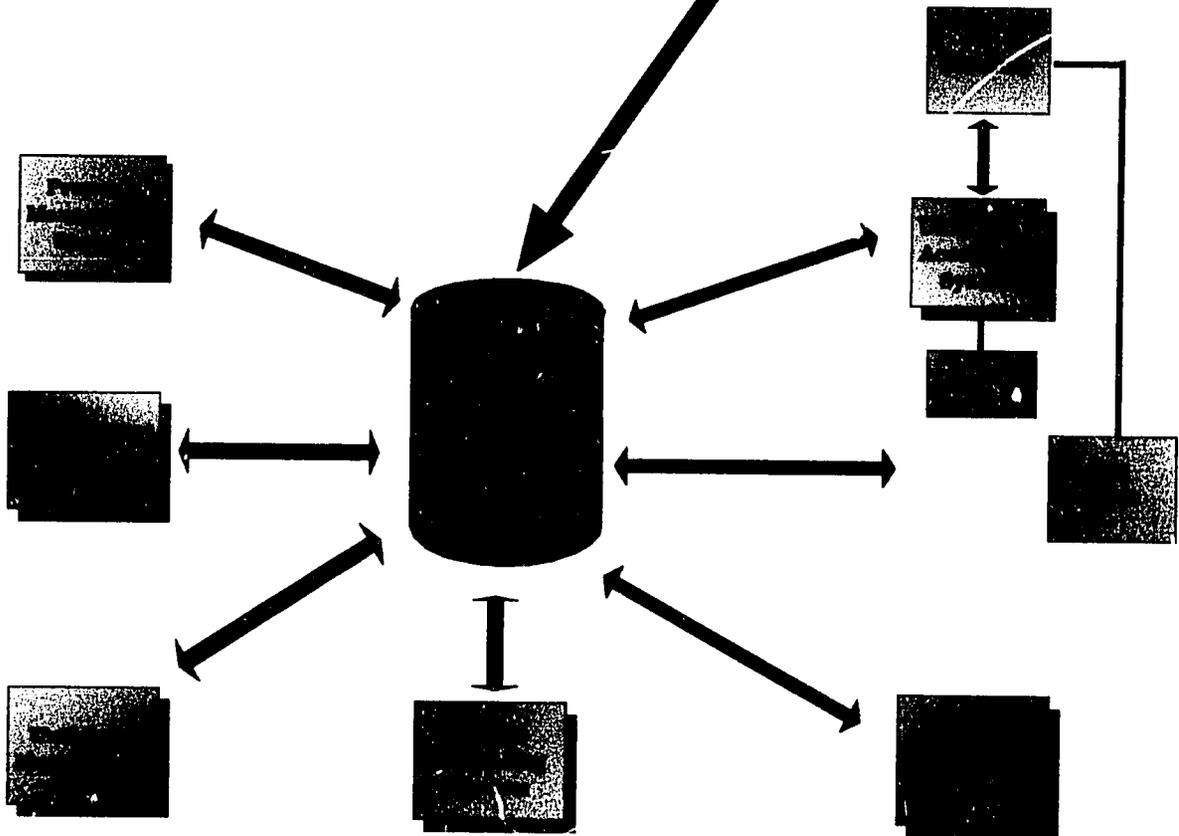
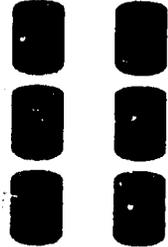


## Populating the Data Warehouse

### MACS Databases



### Databases From USAID/Washington (e.g., FACS, CIMS...)



## Data From USAID's Legacy Systems

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## Audit Objective

The audit was designed to answer the following question:

- Is the data in USAID/Thailand RSM/EA's Mission Accounting and Control System (MACS) accurate?

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## Audit Findings

USAID/Thailand RSM/EA MACS data was accurate in 31 of the 40 data elements reviewed; however, the other nine data elements contained substantial errors.

<b>RESULTS OF OUR REVIEW</b>			
<b>MACS Files</b>	<b>Data Elements Reviewed</b>	<b>Elements With Substantial Errors</b>	<b>Elements With No Substantial Errors *</b>
Budget Allowance Transaction	3	0	3
Reservation/Obligation Transaction	4	0	4
Commitment Transaction	8	1	7
Disbursement Transaction	10	0	10
Advance Transaction	8	2	6
Project Information Master	7	6	1
<b>Total</b>	<b>40</b>	<b>9</b>	<b>31</b>

(\* Error rates of less than 5% were considered accurate for reporting purposes. Error rates for each of these elements can be found in Appendix III.)

The nine errors were caused by three different problems:

1. project files were not maintained accurately;
2. advance transaction criteria was not consistently applied; and
3. commitment end dates were not verified.

Since USAID managers worldwide will rely on information in the Agency's data warehouse for making decisions on where and how to allocate scarce resources, it is critical that the data coming from each mission's MACS is accurate and complete. Therefore, the efforts of USAID/Thailand RSM/EA to ensure the integrity of data in MACS will contribute to the Agency's overall goal of providing accurate and timely information on all project activity worldwide in USAID.

An analysis of each problem area and the recommendations to correct the problems are discussed in detail below.

### **1. Project Files Were Not Maintained Accurately**

The project information in USAID/Thailand RSM/EA's MACS was inaccurate because the information was not maintained according to established procedures and criteria. The MACS User's Guide (Release 19) establishes procedures for maintaining data in MACS. These procedures detail the need to:

- Verify 17 data elements, including the Project Number, Agreement Date, Authorization Date, and Project Assistance Completion Date (PACD), when information is entered into the system; and
- Periodically review the data elements and adjust them as required.

The MACS User's Guide also provides the criteria to be used when data is entered into the system. We recognize that the criteria in the guide is not clear in some areas and have brought this issue to FM/Washington's attention. Problems associated with the clarity of criteria used to enter data into MACS will be addressed in a report by the Inspector General's Office of Programs and Systems Audits.

We reviewed 74 Project Information Master (MXPIM) records and tested seven data elements in each record. Six of the seven elements contained significant errors, with error rates ranging from 6.76 to 44.6 percent (as shown in Appendix III). The three main causes of the errors in the Project Information Master file are as follows<sup>1</sup>:

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<sup>1</sup>These problems represent the three main reasons why the data was inaccurate. There were a variety of other miscellaneous problems such as duplicate records, absence of documentation, errors caused by other fields being incorrect etc... The figures in this chart do not match those in Appendix III, because the appendix has a more comprehensive listing of the errors found.

## MAIN CAUSES OF ERRORS

<b>Data Elements</b>	<b>Information Not Updated/ Incorrect Input</b>	<b>Advice of Budget Allowance Date Was Used</b>	<b>Incomplete Records</b>
Life of Project	7		5
Host Country Contribution	5		
Project Assistance Completion Date	6		4
Authorized Amount	2		6
Agreement Date	10	12	4
Terminal Disbursement Date	8		4
<b>Total</b>	<b>38</b>	<b>12</b>	<b>23</b>

The Mission's procedures did not ensure that all data elements were updated when changes were made to a project. For example, it was often necessary to enter estimated project data in the Project Information Master file before a grant agreement was actually signed. Accounting personnel created a project record and assigned a project number to the proposed project/grant agreement. These steps were necessary to allow the entry of budget and other accounting information into MACS for planned projects. However, once the project grant agreement was signed, accounting personnel did not always revise the information in MACS to correspond with the approved project grant agreement.

In addition, the information contained in the Project Information Master file was not periodically reviewed for accuracy as prescribed by the MACS User's guide. If the project information files had been periodically reviewed, the incidence of input errors could have been minimized.

These problems were compounded because accounting personnel did not consistently apply the same criteria when they entered Agreement Start Dates into the MACS system. We found that accounting personnel used the grant agreement date as the start date for 20 of the 45 Unilateral projects (according to FM/Washington, this is the correct criteria to use). For 10 of the remaining 45 projects, accounting personnel entered the date on the Advice of Budget Allowance cable received from USAID/W. We could not determine what

document was used to enter the Agreement Start Dates for most of the remaining 15 projects. However, we were able to establish that mission personnel did not use the grant agreement start dates for 10 of these 15 projects.

During our review we found that some of the project files were incomplete and did not contain the information necessary for us to verify the accuracy of the MACS data. Since we could not verify the accuracy of the data in MACS, we classified the data as erroneous.

Without accurate and complete information, USAID managers worldwide may rely on inaccurate information in the Agency's data warehouse when making decisions on where and how to allocate resources.

**Recommendation No. 1: We recommend that the Controller, USAID/Thailand RSM/EA:**

- 1.1 Correct the Project Information Master file to ensure that the information is accurate;**
- 1.2 Provide additional training to accounting personnel emphasizing/ clarifying the proper methods and criteria to be used in maintaining data in the Project Information Master file; and**
- 1.3 Periodically review the data entered into the Project information Master file to ensure that the data is correct.**

**2. Advance Transaction Criteria Was Not Consistently Applied**

The criteria used to enter data in the Advance Transaction File was not consistently applied for two of the eight data elements reviewed (accountability dates and advance types). The MACS User's Guide (Release 19) does not provide criteria for establishing the date to be entered in the Accountability Date data element. According to FM/Washington, each mission should establish the criteria based upon their individual needs. USAID/Thailand RSM/EA did not establish criteria for this element. However, accounting personnel generally used a "rule of thumb" of establishing a repayment date of 30 days from the last day of the advance period, with an extended period for frequent travellers. We used this criteria to evaluate the data entered in these data elements. The MACS User's Guide provides criteria for entering data in

the Advance Types data element. The Advance Type should be entered in MACS with the appropriate code for one of the following:

Travel	Quarters
Contractor	Other

Accountability Dates. Thirty-seven (22.0 percent) of the 168 transactions reviewed contained errors in accountability dates. Thirty-six of these errors were caused by the misapplication of the "rule of thumb" and to a lesser extent, input errors. Errors in the Accountability Dates ranged from three to 308 days, with an average discrepancy of 50.3 days. We found data entered in 131 (78 percent) of the 168 transactions followed the "rule of thumb".

Documentation supporting the remaining transactions could not be located. Since we could not verify the accuracy of the data we classified it as an error.

Advance Types. Twenty-eight (16.7 percent) of the 168 transactions reviewed contained errors in advance types. Twenty of these errors were caused by a misapplication of the criteria as it applies to grantees. Advances provided to grantees were coded as a "contract", instead of "other" which was the proper coding. The remaining 8 errors consisted of a variety of mis-codings.

A lack of consistency in the criteria used to enter data in these two data elements diminishes the usefulness of data for monitoring of the outstanding advances.

**Recommendation No. 2: We recommend the Controller, USAID/Thailand RSM/EA:**

- 2.1 Clarify the criteria to be used when data is entered in the Accountability Date and Advance Type data elements;**
- 2.2 Provide additional training to ensure that accounting personnel responsible for entering data in the Accountability Date and Advance Type data elements understand the correct criteria; and**

- 2.3 Periodically review the Advance Transaction file to ensure that the correct criteria is being used when data is entered in the Accountability Date and Advance Type data elements.**

### **3. Commitment End Dates Were Not Always Verified**

Accounting personnel did not always accurately enter commitment end dates in the Mission Accounting and Control System (MACS). The MACS User's Guide (Release 19) describes the document processing and data control procedures which are to be used when data is entered into the Commitment Transaction file. These procedures include the need to verify commitment end dates when commitment reservations and commitment transactions are processed. Additionally, the MACS User's guide defines the data to be entered in the commitment end date data element as the expected date for completion of goods or services.

We reviewed 125 transactions and found that eight commitment end dates (6.4 percent) were inaccurate. Six of the eight errors appear to be a result of input errors when the transactions were entered. Discrepancies in these six commitment end dates ranged from two to 327 days. Although the MACS User's Guide prescribes procedures for verifying commitment end dates, we could not determine if they were being followed. Additionally, documentation supporting the remaining two transactions could not be located. Since we could not verify the accuracy of the data we classified these transactions as errors.

Inaccurate commitment end dates could result in payments being made for services provided beyond the performance period of the contract, purchase order or grant.

#### **Recommendation No. 3: We recommend the Controller, USAID/Thailand RSM/EA:**

- 3.1 Provide additional training to controller personnel, to ensure they use the correct procedures for verifying data entered in commitment end dates are accurate; and**
- 3.2 Periodically review commitment end dates to ensure that the data has been entered accurately.**

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## **MANAGEMENT COMMENTS AND OUR EVALUATION**

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USAID/Thailand RSM/EA officials concurred with the report's findings and recommendations. For Recommendation No. 1.1, mission personnel corrected the errors during our audit. We reviewed the revised MACS data for the Project Information Master file and we are satisfied that the errors we identified were corrected.

USAID/Thailand RSM/EA officials have developed plans to periodically review the data elements which contained substantial errors, identified in Recommendations No. 1.3, 2.3 and 3.2. Data elements in the Project Information Master file will be reviewed Annually for bilateral projects and quarterly for non-bilateral projects such as PD&S. Additionally, mission personnel plan to review Accountability and Commitment End Dates on a semiannual basis. We are satisfied that the frequency of these reviews will:

- be sufficient to ensure mission personnel are following the correct procedures when entering data in the Mission Accounting and Control System; and
- strengthen the integrity of data in the Mission Accounting and Control System by allowing mission personnel to identify and correct any errors found.

In response to Recommendations No. 1.2, 2.1, 2.2 and 3.1, USAID/Thailand RSM/EA officials agreed to provide additional training to accounting personnel to address the problems identified by this audit. Additionally, written guidance will be issued to clarify the criteria to be used when Accountability Dates and Advance Types are established.

Based on USAID/Thailand RSM/EA's actions and comments, Recommendation No. 1.1, 1.3, 2.3 and 3.2 are considered closed upon issuance of this report. Recommendations Nos 1.2, 2.1, 2.2 and 3.1 are considered resolved, and will be closed upon receipt of documentation verifying the proposed actions have been taken. The Missions response to the draft report is included in its entirety in Appendix II of this report.

## SCOPE AND METHODOLOGY

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### Scope

We audited the quality of data maintained in USAID/Thailand RSM/EA's MACS files in accordance with generally accepted government auditing standards. Performed from August 29, 1994, through September 21, 1994, at USAID/Thailand RSM/EA, the audit reviewed six files and 40 data elements (21.4 and 5.3 percent respectively) from a universe of twenty-eight MACS Transaction/Master files and 757 data elements. If the error rate was significant on any of the data elements, we also evaluated the cause and made the appropriate recommendations.

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### Methodology

After consulting with financial management officials in Washington, D.C., we identified the MACS files and key data elements that we would review for each file. We analyzed the fiscal years 1992, 1993 and 1994 data from six of the twenty-eight MACS Transaction/Master files<sup>2</sup>:

- Budget Allowance Transaction
- Reservation/Obligation Transaction
- Commitment Transaction
- Disbursement Transaction
- Advance Transaction
- Project Information Master

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<sup>2</sup> A complete listing of MACS Transaction/Master files can be found in Appendix IV.

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We selected a statistical sample for five of the data files that would provide a confidence level of 90%, a precision level of plus or minus four percent, and an expected rate of occurrence of not over 5 percent. We reviewed 100% of the records in the Project Information Master file. For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from a source document(s). Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was significant. An error rate of five percent or greater was considered significant. Data elements with an error rate of less than five percent were considered accurate for reporting purposes. We statistically projected the number of errors in the MACS file. These projections indicate the total number of errors estimated for each data element based on the errors found in the statistical sample.

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, THAILAND  
REGIONAL SUPPORT MISSION FOR EAST ASIA

MEMORANDUM

December 13, 1994

TO: Mr. Richard Thabet, RIG/A/Singapore  
THRU: Linda N. Lion, Mission Director, RSM/EA/Thailand  
FROM: J. C. Stanford, Controller, RSM/EA/Thailand  
SUBJ: Response to Draft Audit Report  
"Audit of the Quality of MACS Data at  
USAID/Thailand/RSM/EA"

The only general comment we have on the subject draft report is to note that the highest level of error was in areas where the guidance was confusing or unclear. The use of "Other" coding to identify advances to grantees has never been clear. The assumption has been that coding for "Contractors" was in fact for "Contractors/Grantees" since it is very unusual to make advances to contractors. In the same vein, the establishment of start and end dates for unilateral projects that involve multiple obligating documents has never been clear. The clarifications in these two areas cover most of the errors noted in the data.

The balance of our comments relate to specific actions we plan to take or have taken in response to the findings in the recommendations. We ask that this memorandum and the Representation Letter which accompanies it be included as an Annex to the final report.

Recommendation No. 1: We recommend that the Controller, USAID/Thailand/RSM/EA:

- 1.1 Correct the Project Information Master file to ensure that the information is accurate;
- 1.2 Provide additional training to accounting personnel emphasizing/clarifying the proper methods and criteria to be used in maintaining data in the Project Information Master file; and
- 1.3 Periodically review the data entered into the Project Information Master file to ensure that the data is correct.

We have corrected the data in the Project Information Master (PIM) file to reflect the data currently on file in our office. We will prepare a report for submission to the appropriate

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project officers asking that they certify the information as accurate, or provide documentation which specifies the correct information. Based upon these actions, we ask that recommendation 1.1 be resolved upon issuance, and closed after we receive responses from project officers.

The Controller is analyzing the errors in the data, and identifying those cases where the error appears to have been due to lack of understanding of the criteria. He will then prepare a training program for accountants that will emphasize the criteria for each element of the PIM file, and all accounting staff at the RSM/EA will attend the program. Based upon these actions, we ask that recommendation 1.2 be resolved upon issuance, and closed upon completion of the training program.

The Controller will submit a request to all serviced posts that a copy of the semiannual project status report for each project be submitted to RSM/EA/O/FIN. When the reports are received, the accounting staff will compare the reports to the data in the Project Information Master (PIM) file. Any differences identified will be communicated to the project officer requesting documentation to substantiate the changes. Changes will then be made based upon the documentation. This procedure will be repeated annually for bilateral projects. Although the reports are prepared semiannually, we believe that an annual review and certification are sufficient for bilateral projects since changes to this data are relatively infrequent. Non-bilateral projects such as PD&S will be reviewed quarterly. The process for the review is described in an attachment to this memorandum. Based upon this plan, we ask that recommendation 1.3 be resolved upon issuance, and closed after the first documented review.

Recommendation No. 2: We recommend that the Controller, USAID/Thailand/RSM/EA:

- 2.1 Clarify the criteria to be used when data is entered in the Accountability Date and Advance Type data elements;
- 1.2 Provide additional training to ensure that accounting personnel responsible for entering data in the Accountability Date and Advance Type data elements understand the correct criteria; and
- 1.3 Periodically review the Advance Transaction File to ensure that the correct criteria is being used when data is entered in the Accountability Date and Advance Type data elements.

The Controller is reviewing the types of advances provided by his office and developing guidance for the establishment of accountability dates based upon the type of advance, the transaction, and the period to be covered by the advance. Based

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upon this review, he will issue written guidance for the establishment of accountability dates. The problem with the advance type appears to rest on a single issue, namely, the coding of advances to grantees as "Other(4)," rather than as "Contractors(3)." Therefore, a simple notice will be prepared for the voucher examination staff that advances to grantees are to be coded "Other(4)" rather than "Contractors(3)." Based on these actions, we ask that recommendation 2.1 be resolved on issuance, and closed after the guidance is issued.

The written guidance covering the establishment of accountability dates and the notice that grantee advances are to be coded as "Other" will be covered in a training program to be provided to the staff by the Controller and Deputy Controller. Based on this plan, we ask that recommendation 2.2 be considered resolved on issuance, and closed after the training has been completed.

The number of transactions in the advances file precludes a complete review of all transactions. However, a special report will be prepared from the Advance Master file immediately after the submission of the semiannual project status reports, and reviewed by the financial analyst. Any errors noted during the review of this report will be corrected. Repeated errors of any type will be viewed as an indication of a requirement for additional training or guidance. The review will be documented. Based on this plan, we ask that recommendation 2.3 be considered resolved on issuance, and closed after the first semiannual review is completed.

Recommendation No. 3: We recommend that the Controller, USAID/Thailand/RSM/EA:

- 3.1 Provide additional training to controller personnel to ensure they use the correct procedures for verifying data entered in commitment end dates are accurate; and
- 3.2 Periodically review commitment end dates to ensure that the data has been entered accurately.

The errors in commitment end date seem to be simple errors rather than a misunderstanding of the criteria. Of 125 tested transactions, 8 errors were found. Six of the errors were simple data input errors, while documentation supporting the other two could not be found. We suspect that the other two were simple errors as well. The Controller will provide training and guidance on the commitment end date, and particularly on the requirement to maintain documentation on file to support entries in the MACS system. On the basis of this plan, we ask that recommendation 3.1 be resolved on issuance, and closed after completion of the training.

The number of transactions in the commitment file precludes a

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detailed review of each transaction. However, immediately after the semiannual submission of the project status reports, the financial analyst will select a sample of 25% of the transactions entered in the commitment file during the preceding six months. The accounting staff will be required to produce documentation covering the entries in the file, and the analyst will review the transactions, paying particular attention to the commitment end date. Based on this plan, we ask that recommendation 3.2 be resolved on issuance, and closed after completion of the first semiannual review.

QUARTERLY REVIEW OF NON-BILATERAL PROJECTS

Quarterly, a query will be prepared for non-bilateral projects. This query will identify the earliest obligation start date, and the latest obligation end date. It will identify the total obligations for prior years. We will obtain a report from the program office specifying the OYB for the project for the current year.

We will also prepare a query listing the specific information in the Project Information Master (PIM) file.

The earliest start date will be verified against the project authorization and start date. The last end date will be verified against the PACD. The terminal disbursement date will be calculated based upon the verification of the PACD, and verified against the terminal disbursement date in the PIM file. The LOP (in years) will be calculated based upon the start date and PACD and will be verified against the LOP in the PIM file. The project authorized amount will be calculated based upon the total obligations in prior years plus the current year OYB and will be verified against the authorized amount in the PIM file.

The above items cover the verification of specific items required quarterly for non-bilateral projects.

Copies of the queries and the PIM file information reports along with written copies of the calculations will be kept on file as documentation for completion of the review.

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, THAILAND  
REGIONAL SUPPORT MISSION FOR EAST ASIA

REPRESENTATION LETTER

DATE: December 2, 1994

Mr. Richard C. Thabet  
Regional Inspector General/Audit  
Regional Inspector General, East Asia  
Singapore

Dear Mr. Thabet:

This is in regard to the audit which your staff conducted in November, 1994 on "Quality of MACS Data at USAID/Thailand/RSM/EA"

We have asked the most knowledgeable, responsible members of the staff, in the Office of Finance, to make available to you all records in our possession for the purpose of this audit. Based on the representations made to us, we believe that those records are accurate and complete, and that they constitute a fair representation as to the status of quality of MACS data.

Specifically, we confirm that:

A. RSM/EA is responsible for the internal control system, for compliance with applicable U.S. laws and AID regulations, and for the fairness and accuracy of the accounting and management information;

B. To the best of our knowledge and belief, RSM/EA has made available to you all the management information related to the audit objectives;

C. To the best of our knowledge and belief, RSM/EA has disclosed any known irregularities which we consider substantive involving Mission management and employees with internal control responsibilities;

D. To the best of our knowledge and belief, as laypersons and not as lawyers, RSM/EA has not withheld information about material noncompliance with AID policies and procedures or violation of U.S. laws and regulations;

E. To the best of our knowledge and belief, RSM/EA is not aware of any material instances attributable to quality of MACS data where financial or management information has not been properly and accurately recorded or reported, other than the findings in the draft audit findings; and

F. To the best of our knowledge and belief, RSM/EA has no

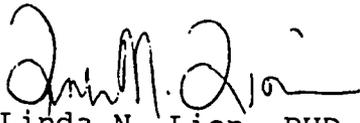
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information about other organizations which would affect the integrity of the quality of MACS data.

Following our review of your draft audit findings and further consultations with the staff, we know of no other facts as of the date of this letter which, to the best of our knowledge and belief, would materially alter the conclusions reached in the draft findings.

We request that this Representation Letter be included as a part of the official Management Comments on the draft report and that it be published therewith as an annex to the report.

Sincerely,

  
Linda N. Lion, PHD  
Mission Director

  
J. C. Stanford  
Controller

USAID/Thailand RSM/EA  
MACS FILES AND ELEMENTS REVIEWED

<u>MACS FILES/ELEMENT</u>	<u>UNIVERSE</u>	<u>NUMBER IN SAMPLE</u>	<u>ERRORS IN SAMPLE</u>	<u>ERROR RATE</u>	<u>PRECISION LEVEL</u>	<u>PROJECTED ERRORS IN UNIVERSE</u>
<b>BUDGET ALLOWANCE TRANSACTION</b>						
Budget Plan Code	674	82	0	< 2.63%		None
Transaction Amount	674	82	0	< 2.63%		None
Project Number	674	82	0	< 2.63%		None
<b>RESERVATION/OBLIGATION TRANSACTION FILE</b>						
Obligation Number	16,286	84	0	< 2.63%		None
Reservation Control Number	16,286	84	0	< 2.63%		None
Budget Plan Code	16,286	84	0	< 2.63%		None
Transaction Amount	16,286	84	0	< 2.63%		None
<b>COMMITMENT TRANSACTION FILE</b>						
Commitment Document Number	3,342	125	0	< 1.81%		None
Earmark Control Number	3,342	125	1	.80%	+/-1.29%	*
Call Forward Date	3,342	125	2	1.60%	+/-1.81%	*
Training Months	3,342	125	3	2.40%	+/-2.21%	*
Transaction Amount (AID/W)	3,342	125	0	< 1.81%		None
Transaction Amount (Mission)	3,342	125	2	1.60%	+/-1.81%	*
Commitment End Date	3,342	125	8	6.40%	+/-3.53%	214
Budget Plan Code	3,342	125	1	.80%	+/-1.29%	*
<b>DISBURSEMENT TRANSACTION FILE</b>						
Obligation Document Number	22,229	83	0	< 2.77%		None
Reservation Control Number	22,229	83	0	< 2.77%		None
Commitment Document Number	22,229	83	0	< 2.77%		None
Earmark Control Number	22,229	83	0	< 2.77%		None
Budget Plan Code	22,229	83	0	< 2.77%		None
Disbursing Office Code	22,229	83	0	< 2.77%		None
Federal Outlay Code	22,229	83	1	1.20%	+/-1.97%	*
Budget Allowance Amount	22,229	83	0	< 2.77%		None
Transaction Type Code	22,229	83	0	< 2.77%		None
Actual Disbursed Amount	22,229	83	0	< 2.77%		None
<b>ADVANCE TRANSACTION FILE</b>						
Advance Number	4,421	168	0	< 1.34%		None
Obligation Document Number	4,421	168	0	< 1.34%		None
Commitment Document Number	4,421	168	0	< 1.34%		None
Project Number	4,421	168	1	.60%	+/- .96%	*
Advance Type	4,421	168	28	16.67%	+/-4.64%	737
Accountability Date	4,421	168	37	22.02%	+/-5.16%	974
Advance Transaction Amount	4,421	168	0	< 1.34%		None
Local Currency Amount	4,421	168	3	1.79%	+/-1.65%	*

\* Error rates of less than five percent were considered accurate for reporting purposes

USAID/Thailand RSM/EA  
MACS FILES AND ELEMENTS REVIEWED

<u>MACS FILES/ELEMENT</u>	<u>UNIVERSE</u>	<u>NUMBER IN SAMPLE</u>	<u>ERRORS IN SAMPLE</u>	<u>ERROR RATE</u>	<u>PRECISION LEVEL</u>	<u>PROJECTED ERRORS IN UNIVERSE</u>
<b>PROJECT INFORMATION MASTER FILE</b>						
PACD	74	74	13	17.57%		13
Authorized Amount	74	74	10	13.51%		10
Agreement Date	74	74	33	44.59%		33
Terminal Disbursement Date	74	74	19	25.68%		19
Host Country Contribution	74	74	5	6.76%		5
Project Number	74	74	0	0.00%		None
Life of Project (In Years)	74	74	16	21.62%		16

\* Error rates of less than five percent were considered accurate for reporting purposes

<b>MACS TRANSACTION AND MASTER FILES NUMBER OF DATA ELEMENTS</b>	
<b>MACS FILE NAME</b>	<b># OF ELEMENTS PER RECORD</b>
Operating Expense Budget Master	10
Operating Expense Budget Transaction	12
Budget Allowance Master File	13
Budget Allowance Transaction File	12
Reservation Master File	17
Obligation Master File	37
Reservation/Obligation Transaction File	20
Project Information Master File	115
Project Information Transaction File	25
Condition Precedent Transaction File	96
Project Element Master File	13
Project Element Transaction File	12
Direct Reimbursement Authorization (DRA) Master File	16
Direct Reimbursement Authorization (DRA) Transaction File	17
Earmark Master File	20
Earmark Transaction File	19
Commitment Master File	41
Commitment Transaction File	25
Advance Master File	22
Advance Transaction File	30
Planned Expenditures Master File	13
Planned Expenditures Transaction File	15
Accrual Transaction File	18
Prepayment Amortization Transaction File	23
Disbursement Transaction File	28
Interface Disbursement/Advance File	36
Interface Disbursement/Advance Reject File	35
Prepayment Amortization File	17
<b>Totals 28 MACS FILES</b>	<b>757</b>

### USAID'S INFORMATION MANAGEMENT

This new USAID effort to establish a quality information system is described in the Agency's Information Systems Plan (ISP).<sup>1</sup> A primary goal of this plan is to have corporate data managed at the Agency level rather than "owned" by each individual office.

Using an information engineering methodology, models of the Agency's business processes and data requirements were created. These models were then broken into eight logical Business Areas. Each Business Area represents related functions within the Agency that share similar business processes and data needs. Each of these eight areas will be studied in depth, in a process called Business Area Analysis (BAA).

The Business Area Analysis (BAA) provides a greater level of detail on the functions in each area and provides a basis for designing system requirements. Each BAA 1) continues to model the data requirements and business functions, 2) includes this information in the Agency's electronic repository, and 3) reconciles the new models back to the Agency-wide models. This results in a high degree of standardization, stability, and reusability.

Currently three BAA's are being conducted—Core Accounting, Procurement, and Budgeting. The inter-dependencies of these three business areas are high and will require significant sharing of data. Therefore, to facilitate the systems development work, IRM is planning a data warehouse that will allow movement to a data sharing environment.

Populating this data warehouse will begin with transferring MACS transaction level data into the warehouse. The Core Accounting BAA, which includes the AWACS project, needs a functioning warehouse to provide the most benefit to the Agency.

Smaller initiatives are under way to begin the transition to a corporate database. PIPE (Project Information and Pipeline Evaluation) currently brings in summary MACS and FACS data, to provide project status and pipeline information to Agency managers. In order to make sound decisions, it is important that managers using such information know the quality of the data being used.

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<sup>1</sup> Information Systems Plan, Volume I: Report To Management, February 1993.

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