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USAID MOROCCO PROJECT N°. 608-0176

TECHNICAL ASSISTANCE TO O.N.A.R.E.P.

QUARTERLY REPORT N°.1
PERIOD ENDING 31 DECEMBER 1984
(INCLUDING CALENDAR OF EVENTS
THROUGH 19 JANUARY 1985)

Presented 25 January 1985



Williams Brothers
Engineering Company
24 Avenue de France
Agdal - Rabat

INTRODUCTION

This is the first quarterly report by Williams Brothers on USAID Project 608-0176 - Technical Assistance to O.N.A.R.E.P. Nominally the report is for the quarter ending 31 December 1984, but because submission was postponed to 25 January 1985, the calendar of events and associated comments are made for the period beginning with contract execution on 12 November and extending through 19 January 1985.

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SECTION 1

ISSUES AND PROPOSED RESOLUTIONS

FOR REVIEW

Apart from some administrative matters mentioned in Section 12, the important issue arising in the six week period since the Chief of Party (COP) arrived in Morocco on 12 December is that only 10 percent of the COP's time has been utilized in the service of the Division Etudes et Planification.

In Williams Brothers proposal for USAID Project 608-0176 it was noted that even modest performance of all the tasks and duties falling to the COP would require 85 person months of work, assuming 36 months in the planning advisory role, which is the COP's prime responsibility. It was anticipated that a disproportionate amount of the COP's time in the early stages of the project would be required for activities outside the planning role, e.g., establishing the project office, organizing and scheduling the activities of the other advisors, both permanent and short-term, initiating arrangements for technical seminars and

administering other training programs. But most of these are on-going activities which will always require a significant proportion of the COP's time.

To achieve a better balance between the conflicting demands on his time, the COP has delegated the following tasks, as shown:

<u>Task</u>	<u>Responsibility</u>
1. Geophysics seminar: Content, sub-contractors, timing, physical arrangements, budget.	P.R. Letourneau
2. Geology seminar: Content, sub-contractors, timing, physical arrangements, budget.	J.H. Kenny
3. Training coordination and planning: Participation in U.S. based conferences, short-term courses, internships and in American Language Center English classes.	D.A. Sullivan with advice, recommendations of training needs and opportu- nities from other members of the team.
4. Acquisition of computers, word processors, xerox copier.	A.K. Khatib
5. All budget and financial control matters.	A.K. Khatib
6. Establishment of a technical library in Williams Brothers project office, available to O.N.A.R.E.P. personnel.	P.R. Letourneau

The COP will continue to identify additional tasks which can be delegated, while retaining overall responsibility for the project. The near-term objective is to free up 50 percent of the COP's time for planning activity before the end of the current quarter.

SECTION 2

WORK PLAN CALENDAR

12 NOVEMBER 1984 TO 19 JANUARY 1985

The contract under USAID Project 608-0176 was awarded to Williams Brothers on 12 November 1984. The calendar of events since that date is given in Table 1.

Prime activities during the period included:

- Relocation of resident advisors to Rabat, begun 12 December, completed 1 January.
- Establishment of Williams Brothers project office
- Acquisition of living quarters by each resident advisor
- Resident advisors' integration in O.N.A.R.E.P., assigned counterparts and offices
- Initiation of preparatory work for a geophysical seminar proposed to be held 1 - 12 April
- Initiation of preparatory work for a geological seminar proposed to be held 1 - 14 May
- Initiation of English language training at ALC, Rabat
- Scheduling services of short-term technical advisors.

WILLIAMS BROTHERS ENGINEERING COMPANY
 TECHNICAL ASSISTANCE TO O.N.A.R.E.P.
 USAID PROJECT 608-0176

CALENDAR OF EVENTS 12 NOVEMBER 1984 - 19 JANUARY 1985

12	November	Contract awarded to Williams Brothers. Mobilization initiated.
15/16	November	Orientation meeting of Project Team in Tulsa.
20	November	Stop work order issued.
3	December	Stop work order cancelled.
5	December	J.C. Duffy, G.A. Currie, A.K. Khatib Background briefing USAID Washington. Jacobs, Bliss, Baldwin, Coleman, and Ebbin (International Education Institute).
12	December	Currie arrived in Rabat.
13	December	MM. Hajji, Bricker, Tsitsos, Currie. Briefing meeting. <ul style="list-style-type: none"> - Agreed Human Resources Advisor, Tom See. Scheduled arrival January 19 for two weeks. - Proposed visit Joint Venture Short-Term Advisor rejected. - Five ONAREP employees nominated for English Language classes.

TABLE 1
Continued

13 December (cont.) - Agreed early staging of Technical Seminar - Geophysical interpretation of seismic data.
Seminar initiated by telephone call to Tulsa.
Project Office Manager/Secretary and Driver/Messenger hired.

14 December MM. Douieb, Hajji, Tsitsos, Currie - Briefing meeting.

15 December Currie signed lease on Project Office, 24 Avenue de France, Suite N° 3.

16 December Mr. & Mrs. Kenny arrived in Rabat.

17 December Currie assigned office in Division des Etudes et Planification and ONAREP car; began work with counterpart.

18 December Kenny assigned car.
Mr. & Mrs. Letourneau arrived in Rabat.
Account at Citibank opened in Williams Brothers' name.

20 December Currie, Kenny, Letourneau met Morabat, Rouwane, Hssaine, Nahim.
Letourneau assigned ONAREP car.

21 December Furniture from Kenitra-Bailly warehouse moved into Project Office and Sullivan house.

24 December Kenny, Letourneau assigned temporary office at ONAREP's Avenue de France building.
Mr. Hajjibi presented new list of seminar requirements to Currie.

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TABLE 1
Continued

- 26 December Mr. Hajji requested :
- i) Early arrival of Human Resources Advisor for period of 2 months.
 - ii) Geology and Geophysics technical seminars to be held in first quarter 1985.
- 28 December Currie, Kenny, Letourneau began to define specific content of seminars with M. Alem et al.
Currie signed lease of apartment effective 1st January.
- 31 December Project Staff Team Meeting N° 1.
Furniture Kenitra-Bailly moved into Currie's apartment.
Kenny signed lease of villa effective 15th February.
- 1 January Mr. & Mrs. Khatib arrived in Rabat.
- 2 January M. Hajji requested Human Resources Advisor organize a Career Development System; questioned Tom See's qualifications.
MM. Douieb, Bouchta, Alem, Bennis, Hajji met with Project Team. M. Douieb emphasized :
- Thrust to acquire J.V. partners
 - Training aspect of technical assistance projects.
- M. Douieb defined work program for D.A. Sullivan, assembly of Pre-Rif geological data in support of J.V. activity.
- M. Douieb requested :
- Early arrival of Surface Facilities Engineer to assist in small Meskala development.
 - Short Term Advisor (two months) to establish internal audit system.
- M. Douieb asked COP to investigate possibility of adding services of a drilling engineer to the USAID project.

TABLE 1
Continued

- 3 January Currie, Khatib visited the Division Production Development (Bennis, Ouadghiri) at the base. Sullivan assigned office, 17 Avenue Michlifen.
- 4 January Khatib assigned car and office, began work at the base.
English Language regular courses at ALC defined to include accelerated and super-accelerated courses.
- 7 January Mr. Duffy confirmed that Tom See was eminently qualified for advice on Career Development System, but could not be made available for 2-month assignment; offered Mr. Patton as a substitute.
- 8 January Letourneau signed lease of villa, effective 1st March.
- 9 January M. Chraïbi nominated for English Language course.
- 10 January Kenny, Letourneau assigned separate offices at Avenue de France with space for counterparts Hssaine and Nahim; began to work with counterparts.
- 11 January M. Allam nominated for English Language course; total of 9 persons now registered.
- 14 January Richard Mallard, WESTEC, California, offered as Short-Term Advisor to establish career development plan for ONAREP professional personnel.
- 16 January M. Hajji requested Tom See, Human Resources Short-Term Advisor come to Rabat as scheduled 19 January.
- 18 January Tom See, Human Resources Short-term Advisor, arrived in Rabat.

SECTION 3
COMPARISON OF
ACTUAL VS EXPECTED CONTRACT ACHIEVEMENTS

The comparison of actual vs expected contract achievements is made in Table 2, where the list of expected achievements reflects the calendar of activity as submitted in Table 3.1 of Williams Brothers July 25, 1984 Technical Proposal, amended to allow for slippage due to the stop work order which was in effect from 20 November to 3 December.

Preparation of a work plan in the first 67 days of the contract was the overall objective projected in the July 25 Proposal; on the present schedule, it will be accomplished in 91 days from contract execution. If the stop work period is excluded, preparation of the draft work plan will be accomplished in 77 days, which is the amount of time allowed by the contract.

The work plan may be narrower in scope than was projected in Williams Brothers July 25 Proposal, which anticipated much broader roles for the Joint Venture Promotion Specialist, the Regional Geologist and the Geophysicist than the roles

actually assigned to them. However, the COP will recommend that all members of Williams Brothers Technical Assistance team be associated with Mr. Tom See, the short-term Human Resources Advisor, in his work initiating a Career Development System for O.N.A.R.E.P. Thus, each resident advisor will be in a position to write a report appraising the existing capabilities of a significant O.N.A.R.E.P. organizational unit and bring his experience to bear in recommending measures to enhance the capability of the unit.

Since arriving in Rabat, the resident advisors have undertaken some work which was not visualized in Williams Brothers July 25 Proposal to be performed at this early stage of the contract, notably preparatory work for the geophysical and geological technical seminars to be held in April and May respectively. These variances are not recorded in Table 2.

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SCHEDULE FOR PREPARATION OF PROJECT WORK PLAN

TABLE 2

<u>WILLIAMS BROTHERS' ORIGINAL PROPOSAL</u>		<u>WILLIAMS BROTHERS' PERFORMANCE</u>	
<u>DATE</u>	<u>ACTION</u>	<u>ACHIEVEMENT DATE</u>	<u>VARIANCE</u>
November 12	Chief-of-Party (COP) agrees mobilization plan with Williams Brothers Project Director. COP requests ONAREP to nominate 27 candidates for English language training, and initiates arrangements with ALC, Rabat.	November 12	Timing of subsequent actions adjusted for Stop Work Order in effect November 20 - December 3.
December 16	COP arrives in Rabat. Project Administrator is recruited.	December 12	
December 23	COP secures agreement of ONAREP to initial deployment of advisors and to schedule for preparation of project work plan. Five resident advisors arrive in Rabat.	December 8 December 16 December 18 December 31	D.A. Sullivan arrived. J.H. Kenny arrived. P.R. Letourneau arrived. A. Khatib arrived. T. Conner's arrival scheduled for April 15, request of ONAREP.
January 6-20	Short-term Human Resources Advisor reviews findings of resident advisors concerning capabilities of ONAREP personnel and enhancements required to fulfill ONAREP's business objectives; reviews personnel recruitment and development plans and procedures; recommends measures for improvement.	January 19 - February 9	Mr. Tom See, by request of ONAREP, will assist in preparation of career development system.

Continued

SCHEDULE FOR PREPARATION OF PROJECT WORK PLAN (cont.)

TABLE 1
Continued

WILLIAMS BROTHERS' ORIGINAL PROPOSAL

WILLIAMS BROTHERS' PERFORMANCE

<u>DATE</u>	<u>ACTION</u>	<u>ACHIEVEMENT DATE</u>	<u>VARIANCE</u>
January 12-22	Short-term Joint Venture Promotion specialist reviews ONAREP joint venture promotion activity, discusses strategies and tactics of major oil companies in negotiating concession agreements, recommends measures for enhancing ONAREP capability in attracting and negotiating with potential partners. (This item was entered in replacement of originally proposed services of Short-term Financial Advisor, rejected by ONAREP in contract negotiations October 10-12).	-	Removed from schedule. ONAREP willing to use expert assistance on specific projects, but do not require other advice at this time.
January 14	Each resident advisor completes a report appraising the existing technical skills, analytical methods, and procedures in his division of ONAREP, identifying strengths and weaknesses in relation to the business objectives of ONAREP, reviews report with ONAREP's chief of division.		<p>Not yet done:</p> <ul style="list-style-type: none"> i) Planning Advisor, Currie: preoccupation with duties as Chief of Party has severely limited participation in activities of Division Etudes et Planification. ii) Joint Venture Promotion Specialist, Sullivan: position has been re-defined as provider of technical support to the Division des Participations Pétrolières. iii) Regional Geologist, Kenny and Geophysicist, Letcurneau: assigned to Secteur Nord, will only be able to report on one small part of exploration activity.

Continued

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SCHEDULE FOR PREPARATION OF PROJECT WORK PLAN (cont.)

TABLE 1
Continued

WILLIAMS BROTHERS' ORIGINAL PROPOSAL

WILLIAMS BROTHERS' PERFORMANCE

<u>DATE</u>	<u>ACTION</u>	<u>ACHIEVEMENT DATE</u>	<u>VARIANCE</u>
January 14 (cont.)			iv) Reservoir Engineer, Khatib arrived January 1, will report January 23.
January 17	COP reviews appraisal reports with Director-General of ONAREP, Director of USAID, chief of OTP.		Review proposed for January 31
January 21	Each resident advisor completes a report listing measures to enhance the capability of his division, identifying appropriate on the job training, technical seminars to be given in Rabat, candidates for specified petroleum conferences/seminars in the United States, tasks for short-term advisors; reviews report with ONAREP chief of division.		Kenny, Letourneau are heavily involved in organization of geophysical seminar scheduled for April 1-12, and geological seminar scheduled for May 1-14. Currie is heavily involved in defining tasks for Human Resources Short-term Advisor and arranging his visit. These two tasks were initiated by ONAREP. The team members will develop their own recommendations for future training programs during the months of February, March.

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Continued

SCHEDULE FOR PREPARATION OF PROJECT WORK PLAN (cont.)

TABLE 1
Continued

<u>WILLIAMS BROTHERS' ORIGINAL PROPOSAL</u>		<u>WILLIAMS BROTHERS' PERFORMANCE</u>	
<u>DATE</u>	<u>ACTION</u>	<u>ACHIEVEMENT DATE</u>	<u>VARIANCE</u>
January 25	COP reviews training recommendations with managements of ONAREP, USAID, determines order of priority for implementation.	April 1	Date now proposed for review of training recommendations.
January 28	Williams Brothers' Project Director arrives in Rabat, participates in preparation of project work plan.	February 4	Date now proposed for arrival of Mr. Duffy.
February 1	Williams Brothers' Project Director and COP review proposed project work plan with USAID Rabat, prepare final plan.	February 11	Date now proposed for presentation of proposed project work plan.

SECTION 4

IN-COUNTRY TRAINING

In the initial project briefing meeting on 13 December, M. Hajji requested a technical seminar on "Geophysical Interpretation of Seismic Data" be presented as soon as possible in the year 1985. Preparation of the seminar was initiated immediately by telephone call to Tulsa.

On 24 December, a new list of seminar requirements was presented to the Chief of Party. On 28 December, Messrs. Currie, Kenny and Letourneau met with M. Alem and his staff and initiated a series of discussions to define the specific contents of two seminars requested by ONAREP to be held in the first half of the year 1985.

Mr. Letourneau is the team member responsible for the organization of a Geophysics Seminar, presently planned to be held 1 through 12 April, 1985, in Rabat. Mr. Letourneau is defining the required seminar content to Mr. R. Hagemann of IHRDC Boston, arranging for use of a computer for interactive exercises, and preparing cost estimates. Mr. Letourneau has also solicited a competitive proposal from C.G.G. France through M. J. de la Porte, C.G.G. Manager in Rabat. Mr. Kenny has the responsibility for the organization of a Geology Seminar, presently planned to be held 1-14 May, 1985 in Rabat. The preferred content is comparison of geological structures

in Morocco with similar structures elsewhere and discussion of appropriate exploration strategies for ONAREP.

USAID Project 608-0176 includes the provision of English Language classes for 18 months for up to 27 ONAREP employees; a total of nine have been registered for the current trimester at the American Language Center. The Chief of Party, with USAID concurrence, has approved enrolment in accelerated and super-accelerated classes of six and ten hours a week respectively, it being understood that each participant's total course-hours entitlement will not exceed the equivalent of 18 months (six trimesters) of regular classes at the rate of 3 hours a week.

Mr. Khatib has had preliminary meetings with Messrs. Bennis, Harraj and Ouadghiri on the organization, staffing and training needs of the Direction Production.

A technical library is being established at the Williams Brothers' Project Office at 24, Avenue de France, for use of the advisors and their counterparts. The library is offered as a technical training resource.

SECTION 5

TRAINING IN THE UNITED STATES

USAID Project 608-0176 requires Williams Brothers' Technical Assistance Team to :

- 1) Provide for the attendance of about 12 ONAREP participants at petroleum-related seminars/conferences in the United States
- 2) Identify, arrange and fund 8 internships in the U.S. oil industry in the two-year period 1985-1986
- 3) Arrange English Language proficiency tests for conference participants/trainees
- 4) Arrange for testing of the English Language proficiency of the candidates for U.S. based seminars/conferences/training courses
- 5) Provide intensive English Language classes for up to 14 training candidates.

The internships are to be arranged for the most successful graduates of short-term (3 to 5 months) training courses provided for 14 ONAREP professionals from sources other than this contract. Candidates for the training courses as well as conferences and internships will be identified

by each of the Williams Brothers' advisors in response to the general mandate that they assist ONAREP in the enhancement of its technical capability.

In practice, candidates for internships will have to be identified before the results of the qualifying courses are known, both because the 8 most successful of the 14 graduates of the training courses will not be known until all 14 have completed the courses, and because of the lead time required to arrange the internships.

To date, ONAREP has arranged training courses for three employees in the year 1985 - MM. Kerkoudi and Ouadghiri begin a 3-month course at Denver on 1st May, M. Chraïbi begins a 2-month course at Pittsburgh University mid-July. An English Language test for M. Ouadghiri has been arranged by Williams Brothers, and the Chief of Party has asked M. Hajji to determine if any of these gentlemen are candidates for internships.

Within the Williams Brothers' Technical Assistance Team, coordination of United States-based training programs and English Language preparation has been delegated to Mr. Sullivan. He is working with Mme. Zizi of the Division des Affaires Administratives to solicit the names of training and conference participation candidates from the different divisions of ONAREP.

SECTION 6

MANAGEMENT/FINANCIAL ADVISORY TEAM REPORT

Mr. Currie was assigned an office in the Division des Etudes et Planification on 17 December and began working with his counterpart, M. Debbagh. However, the greater part of Mr. Currie's time has been taken up by his duties as Chief of Party, establishing the William Brothers' Project Office, managing and coordinating all contract activity, initiating the preparation of in-country technical seminars, administering the English Language training program for ONAREP employees, consulting with William Brothers, Tulsa on the scope of work and schedule for the Surface Facilities Advisor and short-term advisors in the areas of Human Resources and Internal Audit.

To date, only ten per cent of Mr. Currie's time has been available for assistance to Mr. Debbagh, permitting only: cursory review of ONAREP planning documents, notably the draft exploration plan for 1985-1990; some advice on the principles of economic analysis of exploration concession terms; and some discussion on coordination of career development plans with ONAREP's business plan.

Mr. Sullivan was assigned an office on the fourth floor at 17, Avenue Michlifien on 3 January and, as directed by M. Douieb, began assembling the data for a promotional technical report of the Pre-Rif area to be used in presentation to potential joint venture partners. As developed in the USAID Project 608-0176 Contract negotiations and confirmed by M. Douieb in the project organization meeting on 2 January,

Mr. Sullivan's task is defined as technical support to the Division des Participations Pétrolières (DPP).

The commencement of professional support service by Mr. Sullivan was delayed by the absence of M. Mouhsine, his counterpart, for most of the period since Mr. Sullivan's arrival on 8 December. Meantime, Mr. Sullivan provided invaluable assistance in project administration, in particular guiding the other members of the team through the documentation process, and facilitating the expeditious initiation of project activity.

Mr. Sullivan's office is located apart from the DPP office, but is conveniently located adjacent to a new Data Room which is being prepared for the use of visiting oil company representatives and for individualized technical presentations.

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SECTION 7

EXPLORATION ADVISORY TEAM REPORT

Mr. Kenny and Mr. Letourneau joined the regional exploration group for the Northern Sector on 20 December 1984. They were assigned office space in ONAREP's building at N° 4, Avenue de France. They shared one office until 10 January, when separate offices became available with space for their respective counterparts, M. Hçaine and M. Nahim, permitting them to begin developing working relationships with their counterparts.

Mr. Kenny and M. Hçaine have assembled geological reports, maps and aerial photographs from ONAREP's Division of Documentation, and M. Hçaine has developed a drainage network of the Northern Sector that will be used as a basis for geological and geomorphological studies in order to reach a complete understanding of the surface geology in the Rif region. Appraisal of these materials will lead to formulation of a work plan for the Northern Area.

M. Hçaine and Mr. Kenny attended a presentation on the middle Devonian reservoir rocks that outcrop in the Doukkala Basin as reported by M. Ben Bouziane. As part of the judging committee, Mr. Kenny discussed the presentation with the other committee members. The committee voted to accept the report for ONAREP and that M. Bouziane would continue his laboratory studies for ONAREP and at the University of Lyons, France.

Mr. Letourneau and M. Nahim, the geophysicists, have obtained large quantities of Northern Sector seismic reports and data from ONAREP's Division of Documentation at 17, Avenue Michlifien. The reports are being studied by Mr. Letourneau and M. Nahim, e.g. the report on the Melloulou Permit. Prime focus is on review of the geophysical results and conclusions in the 1977 Polish Geophysical Company report on the "Experimental Seismic Survey in the Pre-Rif Area" and the 1984 AMOCO report "Rif Area Evaluation".

SECTION 8

PRODUCTION TECHNOLOGY ADVISORY TEAM REPORT

Mr. Khatib, reservoir engineer, joined the Division Production on 3 January, was assigned an office at the base and began work on 4 January. Since then, he has visited the fields in the Essaouira Basin (Meskala, Toukimt and Zelten) on 8 and 9 January; he has reviewed Core Lab and ONAREP reports on Meskala, Toukimt and Zelten; he has discussed the reports with ONAREP engineers (Bennis, Harraj and Ouadghiri), and with Mr. Ploton (Elf-Aquitaine) and I. Ramiro (Rumanian Group) and he has recommended terminating the pressure buildup test at Zelten 101 bis which was started 8 December 1984, and the flow test at Meskala 103, which has been flowing at about 110,000 m³/d since 5 January 1985.

The Direction Production of ONAREP have recently acquired an IBM-XT with 640 K memory, printer and graph plotter. This computer was used to run a program for analyzing pressure buildup tests. The program was purchased from WTS, Oklahoma City, by WBEC for the Morocco Project. Additionally, we have acquired petroleum-engineering software from Garrett Computing in Dallas, for use on a royalty basis. We are investigating the cost of the telephone link which is required for Garrett's billing of the software.

ONAREP engineers are planning a modest development scheme for Meskala and neighboring gas fields. As all three recent "development" wells in Meskala (MKL 106, 107, 108)

came dry or non-commercial, ONAREP have decided not to drill more wells, except for a replacement to MKL 101. With the present three producers (MKL 102, 103 and 104) there will thus be total of four producing wells in Meskala.

Messrs. Douieb, Kenzoui and Bennis have asked if Mr. Tom Conner's scheduled arrival could be brought forward from 15 April to assist ONAREP in designing the surface production facilities of the Meskala area. This is under discussion with Williams Brothers, Tulsa and with USAID.

SECTION 9

ACTUAL VS EXPECTED LEVEL OF EFFORT

From the arrival of the COP on 12 December through 19 January, a total of 162 advisor man days in Rabat has accumulated compared to a total of 147 man days projected in Williams Brothers July 25 Propos. 1. However, some 20 days of the time of Mr. Sullivan, the Joint Venture Promotion Specialist, were diverted to administrative matters, pending the assignment of a specific promotion support task to Mr. Sullivan, and the assignment of an office to him on 3 January.

The time taken for acquisition of living quarters, driving licences, residence permits and registration at U.S. Embassy has not exceeded 3-4 days per person, representing a relatively minor impact on the level of effort by the contractor.

SECTION 10

ACTUAL VS EXPECTED DISBURSEMENTS

Given the short period of elapsed time since contract execution, and the time it takes to communicate between Morocco and the United States, an estimate of actual expenditure could not be made for this report. Estimates will be incorporated in the up-dated budget of monthly disbursements which will accompany the work plan scheduled to be submitted 11 February.

The proforma initial estimate of monthly disbursements was:

	<u>November 1984</u>	<u>December 1984</u>
Total disbursements	\$16,450.	\$95,135.

SECTION 11

TASKS TO BE PERFORMED JANUARY-MARCH

AND ASSOCIATED BUDGET

Mr. Currie, the Chief of Party and Planning Advisor, will :

- Prepare and submit project work plan in detail through September 1985 and in broad outline for subsequent years
- Secure agreement of USAID/ONAREP/Williams Brothers on date of arrival of Mr. Tom Conner, Surface Facilities Advisor
- Secure agreement of USAID/ONAREP/Williams Brothers on scope of work and schedule for Short-term Internal Audit Advisor
- Provide orientation and project supervision to Mr. Tom See, Short-term Human Resources Advisor
- Identify additional tasks to be delegated to other team members, while retaining overall management responsibility
- Increase his participation in the activities of the Division Etudes et Planification.

Mr. Sullivan, Joint Venture Promotion Specialist, will :

- Prepare his section of the project work plan
- Complete the preparation of a promotional technical report on the Pre-Rif area
- Provide support to the DPP in developing and maintaining contacts with international oil company potential partners in joint ventures
- Continue coordination of United States-based training programs and English Language training; seek additional candidates for courses at ALC beginning in the second trimester e.g. MM. Hçaine, Nahim.

Mr. Kenny, Regional Geologist, will :

- Prepare his section of the project work plan
- Complete the preparation of the geological seminar scheduled for 1-14 May
- Analyze existing geological and geophysical data related to the sedimentation, stratigraphic and structural sequences of the Rif basin.
- Select data for the development of structural, isopach and paleogeographic maps of selected formations believed to be the source rocks for petroleum. The entire

geologic column will be analyzed for the petroleum source rocks, their location and their potential for producing petroleum in commercial quantities.

- Investigate methods for the accumulation of new data about the Northern Sector. These will include satellite imagery and aerial photo studies, remote sensing methods, geochemical sampling and analysis, geophysical surveys and drill hole data. In areas where vital data is lacking for the exploration of hydrocarbons, these methods will be assessed for their usefulness in obtaining the correct data wherever needed.

Mr. Letourneau, Geophysicist, will :

- Prepare his section of the project work plan
- Complete the preparation of the geophysical seminar scheduled for 1-12 April
- Complete the assembly of a technical library in the Project Office
- Retrieve from central files and prepare an inventory of geophysical surveys and studies in permits of Northern Sector
- Select and prepare for presentation to representatives of companies interested in acquiring concessions, those geophysical profiles most suitable for demonstrating geological features and trends

- With counterpart, commence interpretation of selected seismic surveys previously worked upon by contractors.

Mr. Khatib, Reservoir Engineer, will :

- Prepare his section of the project work plan
- Prepare training program for the Production Division
- Work with Messrs. Harraj, Ouadghiri and Bennis to narrow the range of proven reserve estimates of hydrocarbons in the Meskala area and agree on the outlines of a development plan
- Install petroleum engineering software on the IBM PC XT in the Production Division, needed for analyzing well tests and estimating reserves
- Assist COF in following administrative matters :
 - a) Budget and cost control
 - b) Obtaining telephone, telex and post office box
 - c) Finalizing project procedures
 - d) Procuring photocopier and word processor(s)

SECTION 12

ADMINISTRATIVE MATTERS

With the help of USAID and O.N.A.R.E.P. personnel, the Williams Brothers project team has enjoyed a relatively smooth inauguration in Rabat. Four of the five members have acquired housing and the fifth is about to sign a lease agreement. All members are installed in offices in O.N.A.R.E.P.'s buildings, and are developing working relationships with their counterparts. Each member was given early assignment of an O.N.A.R.E.P. automobile. Thus the team was assured of early viability both organizationally and logistically.

The Williams Brothers project office was established within three days of the arrival of the COP in Rabat. Telephone, telex and post office box were requested from the P.T.T. on December 13, but have not yet been supplied. The lack of these facilities has imposed a severe handicap on the efficiency of operation of the project office. O.N.A.R.E.P. is now kindly soliciting P.T.T. action in our behalf.

NE/TECH

UNCLASSIFIED
SECURITY CLASSIFICATION

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

MEMORANDUM OF CONVERSATION

DATE OF MEETING: 10/5/83

SUBJECT: Status Report on Recoverable Reserves of Natural Gas at Meskala:
A Question of "Déjà Vu" in the Paleozoic

PARTICIPANTS: Mr. Bouchta, ONAREP S-G
Mr. Khales, ONAREP Technical Director
Mr. Bever, NE/TECH
Mr. Bricker, USAID/Morocco - OTP

FILE

COPIES TO: DIR NE/TECH
A/DIR Morocco Desk
PROG
ECON/COMM
S&T/EY

Reference: OTP's 9/30/83 Status Report

WB technical advisors presumed the MKL-1 discovery well may have hit the upper Paleozoic. The Paleozoic may have been the main source rock for its good performance. Khales noted that MKL-1 had to be closed despite good performance because poor cement completion resulted in a leaking annulus. Therefore, hypotheses concerning which strata were gas bearing could not be properly investigated. The subsequent Meskala appraisal wells MKL-101, 102, and 103 were drilled and tested only at the Triassic. These wells showed poor to moderate production rates with long pressure recovery. (Two to three months were required to reach the original pressure. Poor gas migration through the tight low permeable Triassic saltstone being the presumed cause). Mr. Khales summarized that based on the Triassic alone it was the growing opinion within ONAREP that the original WB projection of 100 billion m³ of Meskala reserves in place was not defensible. Rather probably 6 billion m³ of natural gas are trapped in its Triassic zone. Perhaps 2-4 billion m³ could be brought to the surface over a 10-15 year period depending on whether or not it was commercially attractive to stimulate the wells. Financial indicators of the Triassic remain good but the field would be of little magnitude. Specifically, plans for gas pipeline to Jorf Lasfar or Casablanca would be shelved. Rather 1 or 2 25 MW gas-field electrical plants in Essacarra, process heat provided to the

DRAFTING OFFICER: Gary W. Bricker *GW*

DATE OF PREPARATION: 12/28/83

UNCLASSIFIED
SECURITY CLASSIFICATION

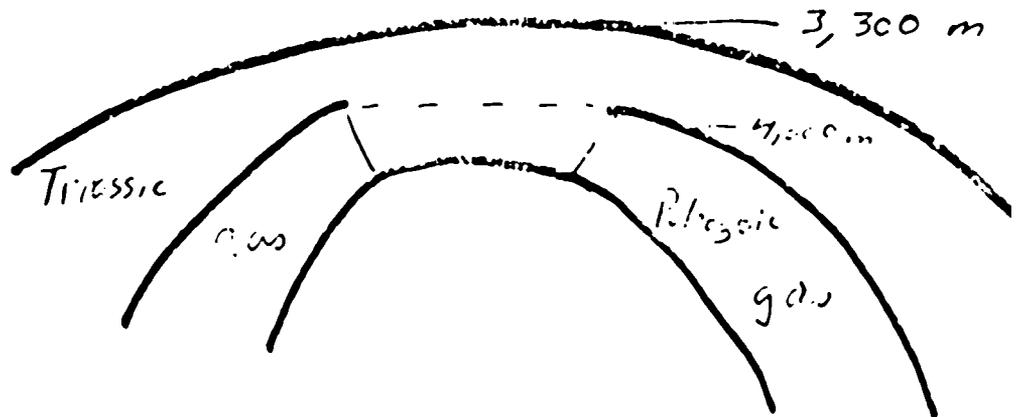
Asmar cement plant or to the Youssoufia phosphate plant would be more likely applications. Mr. Bouchta emphasized that the electricity generating plants would be most attractive since their relative infrastructure costs would be less; however, the immediate demand market was small.

WB advisors with experience mainly in Saudi Arabia where petroleum pressure is based on deep underlying source rock, advised ONAREP explore the Paleozoic on MCL-104. Well logs on MCL-104 showed the same gas bearing structures in the Triassic as previously encountered and several gas bearing zones in the Paleozoic. ONAREP performed a drill stem test on highly fissured calcium rock area in the Devonian strata of the Paleozoic. The 7-hour test showed good performance. The remarkable feature of the test was that after the well was brought back under control, pressure was regained in eight minutes! The normal recharge time is twice the draw down time. Therefore, hopes are riding high that an extended completion test of MCL-104's Paleozoic may produce the results that ONAREP has been seeking. Test results should be available o/a 1/84. Based on the MCL-104 drill stem test, ONAREP has approached the WB to focus its drilling program on the highly permeable Paleozoic. Drilling deeper will not cost more due to lowering of operating costs in the oil business worldwide.

Based on the location, depth, and productivity of all wells at Meskala, Mr. Khales conjectured that the Meskala reservoir configuration is as depicted below. The gas bearing Triassic sits atop the Paleozoic. Its low permeability acts as a trap for the highly permeable Paleozoic below. The top of the Paleozoic structure has been truncated due to erosion/geologic events millennia ago. The gas bearing portion of the Paleozoic is thought to be a ring-like area on the periphery of the Meskala reservoir.

DISTRIBUTION:

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NE/TECH
Morocco Desk



PROJECT STATUS REPORT

A. PROJECT DATA

1. Project No: 608-0176
2. Project Title: Conventional Energy Management and Training
3. Project Amount (Total): \$6,689,600
 - a) AID (Amount and % of total): \$5,000,000 74%
 - b) GOM (Amount and % of total): \$1,689,000 25.3%
 - c) Other (Amount and % of total): -0-
4. Date of Original Project Agreement: 5/16/84
5. Original PACD: 6/30/68 Current PACD: 6/31/88
6. USAID Project Manager: Gary Bricker, OTP
7. AID/W Backstop: Carolyn Coleman, NE/TECH/HRST
8. GOM Implementing Agency(ies) and Project Manager:
Office National de Recherches et d'Exploitations Pétrolières
(ONAREP), Admin. Div. Chief, Hajji
9. Project Evaluation (dates of last and next schedules):
10/85; None.

B. PROJECT DESCRIPTION

10. Statement of Project Purpose:

To build the internal capabilities of the National Petroleum Exploration and Development Agency (ONAREP) (1) to apply cost-effective private sector management principles and techniques, (2) to strengthen its ties to potential private sector partners in petroleum activities and investments, and (3) to explore, develop, and produce hydrocarbon resources.

11. Major Project Inputs (list by category):

- a) AID:
- English Language Training, evaluation, and monitoring
 - Short-term training (58 pm)
 - Four Masters
 - Six resident advisors over 3 years for about 175 pm
 - Short-term advisors (9 pm)

MANAGED
CONV ENERGY
CICLES
8-5

- .. Petroleum reservoir computer services
- .. 2 micro-computers in financial and technical software
- Six technical seminars

- b) GOM:
- .. Salary maintenance of participants RT air fares
 - Salary maintenance for Masters candidates
 - 6 cars
 - 6 counterparts
 - Lecture space

- c) Other: While the IBRD, GOM, USAID, and petroleum companies did not design this project together, project design and policy objectives were closely coordinated. Project will serve to "catalyze" major GOM appropriations, IBRD loans and private exploration investments estimated at \$400 M, \$250 M, and \$150 M respectively.

12. Major Project Outputs:

13. Progress Toward Output Achievement:

1. Financial and Management Activities:

- | | |
|--|-----------|
| - To institute a monitoring program to quantify performance in the field on a cost-per-unit of production basis; | No action |
| - To establish an internal audit capability responsive to MEM and MOF needs; | No action |
| - To institute techniques of economic analysis which will help to espouse development projects with high rates of return and market-clearing price structures; | No action |
| - To examine ONAREP's use of joint venture concessionaires; | No action |
| - To examine the costs/benefits of moving to contract drilling based on competitive bids on cost and time per meter; and | No action |
| - To review procedures that will increase an exchange of management information within ONAREP. | No action |

2. Exploration Design and Analysis Activities:

- | | |
|--|-----------|
| - To integrate standard risk analysis techniques into its exploration and appraisal proposals; | No action |
|--|-----------|

- To develop autonomous exploration teams responsible for assessing the hydrocarbon potential of a given region; No action
- To arrange for on-the-job training to ONAREP geologists/geophysicists in the accumulation and interpretation of petroleum exploration data; No action
- To investigate alternative to "in-house" drilling so that the "drilling contractor" will have time and quality incentives vis-a-vis its clients, ONAREP (This may involve ONAREP divesting itself of its drilling operations or relinquishing direct responsibility); and No action
- To establish a computerized drilling progress reporting system updated over various periods. No action

3. Reservoir and Production Engineering Activities:

- To initiate within ONAREP its own dedicated, computerized petroleum reservoir estimating services. Agreed to purchase micro-computer while awaiting resident advisors.
- To monitor the design, installation, commissioning operation, maintenance, and repair of petroleum transmission facilities (from well-head to separator plant through pipelines to consumers); No action
- To develop a capacity within ONAREP to order and stock perishable drilling supplies and to develop cost-effective options to in-house drilling mud production services; and No action
- To establish a physical inventory/accounting system for perishable supplies and durable equipment. No action

- | | |
|--|-----------------------------------|
| 4. English Language Training
(270 pm) | No action |
| 5. Technical training (58 pm) | 15 pm provided |
| 6. Academic Training (2MS, 2 MBA) | PIL requested nomination on 6/20. |
| 7. In-Country Seminars (6) | None |

C. PROJECT CONTRACTS

14. Existing Contracts:

- a) Name and Type of Contractor: ^{or}
 In negotiation: Williams Brothers and Petro-Engineering
 to be Awarded: o/a 11/5/84
 WB: large business; PE: small business.
- b) Date signed and current Terminal Date: N/A
- c) Total amount: N/A
- d) Nature of contract: USAID Direct
- e) Purpose: Services mainly also training and goods.

15. Planned Contracts:

- a) Type of Contract and schedule for planned procurement:
 Supplement to AID/W Conventional Energy Training
 contract: o/a 11/15/84
 recently awarded to IIF
- b) Approximate Amount: \$416,000
- c) Nature of Contract: AID/W Direct
- d) Purpose: Training Services
- e) Status of PIO/T: 10/84 circulating for USAID and AID/W clearances

D. MAJOR ACCOMPLISHMENTS DURING PREVIOUS SEMESTER

- | | |
|--|---------|
| 1. Signed ProAg | 5/16/84 |
| 2. Issued RFF | 7/17/84 |
| 3. Issued cable to co-fund S&T/EY's conventional training
program | 9/27/84 |
| 4. Invited W. Bros and Petro-Eng. to negotiate | 9/28/84 |
| 5. Provided 15 pm of technical training | 5-9/84 |

E. MAJOR PROBLEMS/ISSUES FOR EXECUTIVE MANAGEMENT CONSIDERATIONS

16. Conditions Precedent outstanding:

None

17. Covenants not being fulfilled:

5.2.(a) counterpart nomination and
 5.2.(b) certification of authorities for U.S. advisors both pending contract execution;
 5.4. logistic support: need 5 cars for advisors.

18. Evaluation and/or audit recommendations outstanding:

None

19. Other:

ONAREP very slow in nominating training candidates. Suggest we telex DG of ONAREP regarding Training PIL of 6/20/84.

F. MAJOR ACTIONS ANTICIPATED OVER CURRENT SEMESTER

<u>Responsible Party</u>	<u>Action</u>	<u>Completion Date</u>
ONAREP	Nominates 2 Master's Candidates	10/31/84
Contractor	Performs reconnaissance visit	11/15/84
Contractor	Procures Office and micro-computer equipment	11/26/84
Contractor	Submits 1st periodic report	12/84
Contractor	Ships over HHEs for resident advisors	11/12/84
Contractor	Fields 1st 5 resident advisors	11/30/84
USAID, ONAREP Contractor	Conduct 1st Steering Committee Review of Project	1/10/85
USAID	Transfer English language training authority to contractor	1/85
Contractor	Submits to USAID and ONAREP draft of work plan for balance of 1st year and out years	1/30/85
Contractor	Installs office and computer material	2/85
Contractor	Finalizes work plan	2/15/85
Contractor	Issues 2nd quarterly report	3/15/85

USAID, ONAREP

Conduct 2nd Steering Committee review
of Project

3/30/85

G. PROJECT "GRATE" ASSIGNED (A-D): B

ONAREP slowness to pick-up on training and 3 months behind schedule made this a grade B effort.

H. PROJECT BUDGET AND EXPENDITURE PROJECTION

Attached.

GOM BUDGETARY CONTRIBUTION/REQUIREMENTS
(Estimates in Dhs000 as of Sept. 30, 1984)

Project Title/Number: Conventions: Energy Management and Training (608-0176)
Project Officer (USAID): Gary Bricker
GOM Implementing Agency: O.N.A.R.E.P.

Budget Line Items (Elements)	I		II		III		Total GOM Cost
	1985 Project Contribution Required from GOM Budget		Estimated Cumulative GOM Contribution Thru 12/31/84		Outyear Requirements (Balance to meet LOP Contribution of ProAG)		
	A. Investment	B. Operating	A. Investment	B. Operating	A. Investment	B. Operating	
1. Cars	67	-	337(a)	-	-	-	404
2. Short Term Training	-	289	-	343	-	148	780
3. Academic Training	-	515	-	484(b)	-	-	999
4. Contractor Short-Term	-	733	-	405	-	389	1527
5. I.A.	-	3676	-	1848	-	3827	9351
6. International Travel	-	52	-	49	-	12	113
TOTAL	67	5265	337	3129	-	4376	13174

a) 5 Cars only since last resident advisor to be fielded only 4/1/85.

b) Keep at Dhs 484,000 pending ONAREP's final response on academic candidates; still in process.

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44-3886

OPTIONAL ACCT: 0

COMPTON CODES: 000

OFFICE CODES: 000

LEADS / MEXICO
SLURRY PROJECT TECHNICAL REPORT BY ELEMENT
AS OF 10/30/84

DATE: 10/32/84
REPORT PAGE NO.: 4
MISSION PAGE NO.: 4

OFFICE NAME: TECHNICAL PROJECTS

PROJECT NO./ ELEMENT NO.	PROJECT TITLE/ ELEMENT DESCRIPTION	FUND TYPE	FACTOR DATE	DATE	TYPE OF ACC. PLAN	CALCULATIONS TO DATE	MARKERS TO DATE	COMMITMENTS TO DATE	EXPENDITURES TO DATE	REMARKS
00000000	CONVENTIONAL ENERGY PGT & TRNG G			6/30/85		5,000,000				
01	EXPT TEAM TRNG (AID)					230,000	3,304,849	5,849	5,849	3,044,151
02	ACADEMIC TRAINING (AID)					189,000	2,000	2,000	2,000	225,000
03	EVALUATION					113,000	0	0	0	113,000
04	CONTINGENCY					172,000	0	0	0	113,000
05	EXPT TEAM TRNG (TECH. ASS.)					232,000	3,849	3,849	3,849	168,151
06	COMMODITIES					19,000	232,000	0	0	232,000
07	TECHNICAL ASSISTANCE					19,000	19,000	0	0	19,000
						3,048,000	3,048,000	0	0	3,048,000

~~BEST AVAILABLE DOCUMENT~~

10/12/84
original

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- 2 -

The Mission comments that the Government and the banks are becoming increasingly concerned at the growing spread between the official rates and free market rate and the consequent shortage of exchange in the commercial bank foreign exchange pool. Government reaction to these pressures has been to take small gradual steps to loosen up controls, due in part to the influence of Minister of Economy El-Said, who is the leading advocate of free market policies. The private sector, however, remains concerned that the Government might revert to more restrictive controls.

Energy Prices (UNCL)

Until recently private sector companies, in general, have had to pay international prices for petroleum products, while public sector firms paid at heavily subsidized domestic prices. During October, the price of heavy fuel oil to public sector brick companies was raised to LE 30 per ton, approximately 25% of world prices, while private sector prices for the fuel were reduced to this level. In the absence of an agreed Government-wide energy policy, energy price changes which are made, as in this instance, come as a response to pressures from the business community to equalize costs between competitive economic sectors.

Lebanon - Salam Visit Postponed Again (UNCL)

The Lebanese Embassy informed us that CDR President Malek Salam would not come to Washington in early December because both you and senior World Bank staff would not be available for meetings (Near East Vice President Willie Wapenhans will be in Europe then). Ambassador Bouhabib says the Salam visit will probably be rescheduled for January or February.

Morocco - Conventional Energy Management and Training Project,
608-0176 (UNCL)

On November 12, the contract for this project was awarded by USAID/Rabat to Williams Brothers Engineering Co. On November 16, Petro-Engineering, Inc. filed an action in Dallas, Texas seeking a declaratory judgment and temporary restraining order so that no procurement action could begin under the contract. Among other things, the protestant disputes the clarity of the RFP and composition of the evaluation team, and claims that the company submitting the winning proposal should not have been eligible for competition because it is a wholly owned subsidiary of an oil company (Ashland Oil).

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- 3 -

Pursuant to advice from GC/LE, the Mission issued a stop work order to Williams Brothers Engineering on November 20. This complaint is scheduled to be heard in Dallas federal court on November 23 at 10:00 a.m. GC is handling the complaint with the U.S. Attorney in Dallas. We will keep you informed on the hearing.

NE/PD:RBell:NE/E:EKrowitz:NE/NEUR:GZamens:NE/TECH:CColeman:mfd:
11/23/84

Clc:NE/DP:DMorrissey(Actg)(draft)

cc:NE Office Directors
GC/NE:GDavidson
PPC/PB:ELeonard
XA/PA:PJHickman
LEG:KLudden
STATE/NEA:JPlacke/AJillson

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Bechtel National, Inc.

Engineers - Constructors

Fifty Beale Street
San Francisco, California

Main Address: P.O. Box 3965, San Francisco, CA 94119



September 5, 1984

Mr. Charles Bliss
U.S. International Development
Cooperation Agency
Agency for International Development
Washington, D.C. 20523

Subject: Moroccan Technical Assistance Program
Contract: DAN-5724-C00-1085-00

Dear Mr. Bliss:

Attached is a copy of our internal progress report for July 1984.

This report is prepared for our own internal project control purposes and provided to the AID Mission informally.

You will note in the introductory section our analysis of ONAREP's real needs during the next one to two years. These are based upon the team's experience and upon my discussions with ONAREP management. These vary significantly from the requirements in the AID Mission's RFP.

Very truly yours,

A handwritten signature in dark ink, appearing to read "J. F. Houle".

J. F. Houle
Project Director

JFH:jkt
Attach.

9/11/84

cc: USAID/Rabat, G. Bricker
NE/TECH, C Coleman ✓

TECHNICAL ASSISTANCE TO ONAREP

MONTHLY REPORT FOR JULY 1984

BECHTEL NATIONAL INC.

RABAT, MOROCCO

U.S.A.I.D. CONTRACT NO. DAN5724-COO-1085-00

GENERAL
MONTHLY ACTIVITIES REPORT
JULY 1984

PROJECT TEAM ORGANIZATION

Certain adjustments were made within the project team organization to match the needs of the client against the capabilities of the team members. The June 28th reorganization memo assigned certain administrative duties to Mr. Scott Hood while retaining Dr. Malaty's responsibilities as Chief of Party and coordinator of the team. ONAREP advised Bechtel in late July that Mr. Scott Hood's activities as Production Engineering Advisor were essentially completed. Accordingly we have arranged for Mr. Hood to complete his remaining tasks during early August. Our organization memo of August 6th confirms this change.

ONAREP NEEDS FOR 1984-85

During discussions with ONAREP and with team members, we have reached certain conclusions regarding the needs of ONAREP for technical assistance over the next several years. These are summarized below.

Planning and Economic Studies

The six year development program will need to be filled in and refined over the next six months. While we expect that by September 1984 the methodology will be well defined, completion of 'fiches des projets' by each ONAREP division will lag behind schedule. This type of project planning is not familiar to the divisions and will likely take longer to complete than has been scheduled this spring.

Consequently, a completion of tasks 150 and 160 in the plan for all projects is not likely until late this fall. Other tasks dependent upon these will also be delayed.

Regional Exploration

This program, in our view, represents the most important part of our Technical Assistance. The analysis and interpretation of geophysical data for each basin must precede any approach to private sector oil companies concerning exploration concessions. U.S.A.I.D. may very well wish to consider the addition of geologists and geophysicists to the Technical Assistance project team to advance this work more rapidly. We would expect that additional short-term technical assistance could also be useful.

Drilling Engineering

We believe that senior level advisory services in the organization, monitoring, and contracting for drilling work are needed by the end of 1984. In early 1985, ONAREP plans to commence drilling of production wells in Meskala field and expects this work to be handled by outside contract drillers. ONAREP rigs and crews would remain dedicated to exploration drilling.

Having no prior experience in contracting for outside drilling services, ONAREP will need most urgently the advice of an experienced drilling engineer with a background in preparation of drilling contracts, negotiations, monitoring procedures for contractors, and the reorganization of ONAREP's Direction Production to handle this activity. Additional Drilling Engineering assistance is being advertised for by ONAREP. They will continue to need expert advice on their exploration drilling program.

Reservoir Engineering

While this activity is of value, it does not, in our view, merit as high a priority as the Drilling Engineering needs outlined above. An engineer with both Reservoir and Drilling expertise would meet ONAREP needs far better than an advisor with only Reservoir Engineering competence.

Surface Facility Engineer

There does not appear to be any strong need for this type of assistance until the spring of 1985 when decisions are reached concerning the full development of Meskala field. At that time, ONAREP may need such an engineer for the following tasks:

- Production engineering for the 10 to 15 additional wells at Meskala (gathering lines, well spacing, etc.).
- Separation plants: preliminary layouts, sizing, and performance specifications for gas-liquid separation.
- LPG recovery: evaluation of the technical and economic feasibility of LPG extraction.
- Pipelines: completion of specifications for gas transmission lines from Meskala to industrial consumers.

SECTEUR CENTRE OUEST DIVISION
MONTHLY ACTIVITIES REPORT
JULY 1984

HIGHLIGHTS FOR JULY

- Presentation of Doukkala exploration status made to seven oil companies on 12 July 1984.
- Vibroseis crew finished its program in July for a total of 695 km of 4800Z data since February 1984.
- Conventional crew completed 77 km in July. By completion of program in mid-August 1984 some 185 km of program will have been acquired since June.
- Total seismic program acquired in 1984 will be approximately 880 km by mid-August.

WELL LOG ACQUISITION AND ANALYSIS

Messrs. Druitt and Taib received copies of the remaining electrical and geophysical well logs, which were then combined and traced, ready for photographic reduction to more useable scales (1/2000, 1/5000). These, plus the lithologic logs will form the base for stratigraphic correlations and structural cross-sections in the Doukkala basin.

12 JULY PRESENTATION

On 12 July 1984 a presentation of the "Hydrocarbon Prospects of the Doukkala Basin" was made to attract and promote participation by foreign oil companies in the search for Moroccan energy resources. Companies represented included Amoco, Mobil, Petrobras, Elf-Aquitaine, North-South, D.O.C., and Apex. Examples were given of the seven potential reservoirs and the 14 types of trapping mechanisms so far indicated by seismic and drilling in the area. A meeting was later held with the Minister of Energy to introduce the presentation team and representatives of the oil companies in attendance.

WORLD BANK PRESENTATION

On 16 July essentially the same presentation was made to representatives of the World Bank to demonstrate the progress in interpretation by the Doukkala Team. Particular interest was shown in the favorable analysis of the Siluro-Devonian source bed. Several perceptive comments were made on the interpretation of the deeper seismic records.

IMMEDIATE PROSPECT RECOMMENDATIONS

On 18 July the Doukkala Team was asked for four specific prospects to be drilled in 1985. Plays 9, 8, 7, and 6 of the promotional presentation were selected as fully supported by seismic and ready to be tested by the drill. Two of these prospects include very promising seismic "flat spots" which will require evaluation by the drill in any event. Another prospect continues the search for the reefal reservoir near EBA-1. Fortunately, all four prospects are relatively shallow, requiring only a total of 8000 m of drilling. In every case, the results of this summer's seismic campaign should be examined before specifying the precise location of the test-hole.

SEISMIC FIELD OPERATIONS

The vibroseis crew completed a total of 695 km of new program in Doukkala on 21 July 1984. The crew moved to Essaouira on 22 July.

The conventional crew completed 77 km of program in July. By mid-August a total of about 185 km of program will have been shot. Because a variety of shot-hole drill problems the crew began using primacord dynamite source in July and will continue its use until the program is finished.

Processing of the vibroseis data will not be complete until some time in August. Processing of the dynamite data will not be complete until mid-September.

WORK PLAN MODIFICATIONS

In the original work plan devised in April 1984, new seismic field work required completion by late May in order to be incorporated into a complete interpretational report by the end of September 1984. Field work has had to continue well beyond the end of May for various reasons. In order to issue a feasible interpretation report at this stage, final report writing will have to commence by mid-August. Any program not processed and available before that date will not be included in the report.

All members of the team have emphasized their willingness to participate in the final activities which will now occur much later than originally planned, and have delayed their long-planned vacations accordingly. This support is gratefully acknowledged here.

However, due to time diverted prematurely to the promotion of foreign company participation and to the writing up of prospects for which the research was still to be undertaken, the entire Doukkala project is two months behind the work schedule on nearly every item. The conversion of maps in seismic time to depth and all paleogeologic studies have had to be eliminated.

To accomplish all the work needed in the time remaining will require that no other demands be made of team members until the end of September. Each interruption will result in a less complete set of reports.

FICHES DES PROJETS

Mr. Keefe spent considerable time during the month working on the 'fiches des projets' for the sector. This effort involved liaison with Mr. Debbagh, Mr. Morabet and Mr. Druitt. Time required in vital geophysical interpretation and mapping had to be spent on planning and development of the fiches in question.

STUDENT CONTRIBUTION

The two Moroccan students working on the Doukkala basin have completed their preliminary review of surface, subsurface, and geophysical literature and are on a field trip to the outcrops in the area.

GENERAL

As of July 6, ONAREP terminated the French language courses which had been attended by team members. These courses were of major importance to the progress of team members' ability to communicate with the host country.

During the month of July, the Division Secteur Centre Ouest consisted of Mr. Keefe as Manager and Senior Geophysicist, Mr. Druitt as Senior Geologist, MM. Taib and Belkhir as Geological Engineers and Mr. Benamara as Geophysical Technician. Mr. Keefe took four days vacation from 3 to 6 July inclusive.

SECTEUR CENTRE OUEST
MONTHLY ACTIVITIES REPORT
JULY 1984

COMMENTARY - FOR INTERNAL DISTRIBUTION ONLY

1. Drafting support cannot be supplied by ONAREP on an urgent basis. Mr. Druitt requested drafting assistance for the 7 and 8 July (Saturday and Sunday). Draftsmen declined to work when they learned they would not be paid. In our opinion, this is just another example of the inflexibility of the ONAREP system during periods when extra work is needed. We don't know if the drafting personnel were offered time-off in lieu of Saturday and Sunday work. Fortunately for the team, Mr. Druitt and Mr. Benamara worked the full weekend of 7, 8, and 9 July (a long weekend) to meet the 12 July deadline.

2. Due to ONAREP's inability to provide bilingual secretarial help and the priorities of other work in the Bechtel office, weekly and monthly reports to ONAREP have been delayed. We understand that a bilingual secretary is to be hired by Bechtel for the Division Secteur Centre Ouest. We hope it will be in time for the commencement of final report drafting in mid-August.

3. ONAREP has not been able to supply the many items we have requested for completion of Division tasks. Such things as a light table and certain supplies take far too long to obtain through the "normal" channels. Lack of a light table, requested 3 months ago, requires that all work for tracing be carried back and forth between 4 Avenue France and 17 Avenue Michlifen. ONAREP cannot supply, on a timely basis, the different kinds of reproduction material required for Division work. Bechtel has had to purchase film and other supplies directly from sources.

SECTEUR CENTRE OUEST
MONTHLY ACTIVITIES REPORT
JULY 1984

INTERNAL DISTRIBUTION ONLY - PAGE TWO

4. The Division team consists of 5 individuals, namely:

Mr. Keefe, Manager and Senior Geophysicist

Mr. Druitt, Senior Geologist

Messrs. Taib and Belkhir, Geological Engineers

Mr. Benamara, Geophysical Technician

The experience and skill levels of the Moroccan Team members require that Messrs. Druitt and Keefe handle personally the geological and geophysical interpretation respectively. All other team members are capable only of limited assistance at this time. The team must continue its concentration on interpretation in order to meet its deadline, especially since seismic field work is at least two months late. We are attempting to discourage all interruptions to the key activities of Messrs. Druitt and Keefe until a set of maps and the draft report are complete. This will not be easy. Nor will it be easy to document the extent to which future diversions and interruptions reduce the quality of the final product.

DEVELOPMENT & PRODUCTION DIVISION
MONTHLY ACTIVITIES REPORT
JULY 1984

GENERAL

This report sets forth the activities in the Development and Production Division for the month of July 1984. Mr. Bennis, the Division Manager, departed Morocco on July 23, 1984 for Norman, Oklahoma, to attend a two week seminar on Energy Conservation. He is scheduled to return to the office on August 8, 1984. Mr. Khalid Oudghiri, the Manager of the Development Department, started his annual vacation on July 30, 1984.

DEVELOPMENT RELATED ACTIVITIES

Survey Pipeline Routes

A final draft of the Request for Proposal for surveying a pipeline route to the O.N.E. power plant at Mohammedia or to the O.C.P. phosphate plant at Khouribga was prepared and translated into French. This final French version was sent to ONAREP's management for their review with a recommendation that this work be performed as a part of the engineering work of the over-all project and not as a separate project.

Supply of Gas to Sugar Plant at Khemis-Zmamra

A feasibility study was prepared to see if it is feasible to supply the sugar plant with gas from the Toukimt and N'Dark fields via the existing S.C.P. pipeline from Korimate to Youssoufia, with an extension from Youssoufia to Khemis-Zmamra. This would involve the installation of a 15 km. 4" pipeline from N'Dark to Korimate and 45 km. of 6" pipeline from Youssoufia to Khemis-Zmamra, plus a compressor at Korimate. This would replace approximately 18,000 tons of fuel oil per year. The payout time is less than 3 years, considering only new investment costs, or 7 plus years considering all investments.

PRODUCTION RELATED ACTIVITIES

Reservoir Study

The Development and Production Division continues to forward to CORE LAB all information and data from the wells in Meskala for their use in preparing the Meskala Reservoir Study. CORE LAB has completed remapping the Trias, using the latest available seismic data with significantly different results from the previous work. The rock volume above the gas-water contact or lowest known gas will be significantly increased. A Monte Carlo technique will be used to determine gas in place when all mapping is done. The results of this have not yet been received. Core samples from well Zelten 101-B were sent to CORE LAB, London, for isotopic dating. Gas and condensate samples from MKL-104 were also sent to CORE LAB, Aberdeen, for analysis.

Well Testing - Baker Production Services

During the month of July, six truck loads of well testing and wire line equipment arrived in Morocco, as well as the personnel (7) to perform a very long duration flow test on MKL-103 and a long duration flow test on MKL-104. The gas from these tests will be flared and the condensate will be sold to S.C.P. These tests should commence the first week of August.

Work Program

The work program submitted in the April Monthly Report has been changed to reflect recent decisions taken by ONAREP management. Activity 130 has been deleted due to decision to flare gas during tests. A new activity 130 is the preparation of an R.F.P. for survey of a pipeline route from Meskala to Mohammedia or to Khouribga.

Activity 160, computer and software, has been rescheduled to mid-August.

Activities 210 & 220 have been added. They are a study to determine feasibility of supplying gas to a sugar plant at Khemis-Zmamra and the performance of a very long duration flow test on MKL-103 and a long duration flow test on MKL-104.

Drilling Activities

As of July 31, 1984 Zelten 101-B was at a depth of 3831 meters, MKL-107 was at a depth of 2822 meters, MKL-108 was at a depth of 1822 meters (spudded on June 22, 1984) and MKL-109 was at a depth of 823 meters (spudded on July 21, 1984).

Schedule of Activities
Development & Production Division

1984

ACTIVITY		APRIL	MAY	JUNE	JULY	AUG.	SEPT
No.	Description						
100	Reservoir Study						
110	Meskala Development Study	-----					
120	N'Dark Development Study		-----				
130	Prepare and finalize R.F.P. for survey of line from Meskala to Mohammedia or Khouribga			-----			
140	Construction of Plan - N'Dark						-----
150	Test Wells in Gharb				-----		
160	Computer & Software					-----	
170	Marketing Negotiations						
180	Training Personnel						
190	Finalize R.F.P. for Meskala Development					-----	
200	O.C.P./O.N.E. Comparison Study	-----					
210	Study Gas Supply to Sugar Plant at Khemis-Zmamra				-----		
220	Flow Tests on MKL-103 & MKL-104					-----	

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EXPLORATION DIVISION
MONTHLY ACTIVITIES REPORT
JULY 1984

HIGHLIGHTS

- Preparation and presentation of a technical report on the Boudenib Basin.
- Preparation of a short course on Exploration for Sandstone Reservoirs.
- Petroleum Exploration Promotion.
- Attendance of World Bank Meetings.

PRESENTATION TO WORLD BANK

The Current Status of Hydrocarbon Exploration in the Boudenib Basin report was presented to the World Bank technical team, T. Fitzgerald and Anton Smit the third week in July. Geological and geophysical data were reviewed and possible plays considered.

PRESENTATION TO THE OIL INDUSTRY

On July 12 three members of the team, John A. Keefe, Charles Druitt, and Dan Sullivan, with the assistance of Mr. Thomas Rogers of Woodward-Clyde Consultants, presented the Doukkala and Boudenib permit areas to the oil industry in a formal setting. The presentations which were prepared during June and early July by the Bechtel/WCC team, were attended not only by oil company explorationists but also by concerned ONAREP staff and representatives from the Moroccan Ministry of Energy and Mines. Messrs. Douieb, Bouchta, and Alem were in attendance as well.

Later in the day we were received by and presented to the Minister S. E. Moussa Saadi in his offices and conducted on a tour of the facilities and Museum of Geology.

The Bechtel/WCC team, which "put on the entire show", must count this day as very successful in all respects. Critical reviews by all facets of the audience were complimentary and ONAREP's senior management was very pleased. Segments of the program were videotaped (outlines are attached).

PREPARATION OF SHORT COURSE

Considerable time has been dedicated to the preparation of a short course for selected ONAREP professionals entitled Exploration for Sandstone Reservoirs. The outline of this course is attached to this report. The formal presentation text has been completed and the preparation of practical exploration exercises is in progress. Formal presentation is tentatively scheduled for the third week in September 1984.

PETROLEUM EXPLORATION PROMOTION

- Presentations of Doukkala and Boudenib Basins to the World Bank and the oil industry.
- Meetings and negotiations with OXOCO International for Offshore Dakhla exploration. We are very close to reaching and signing an agreement.
- Discussions with Anschutz regarding exploration of the Missouri area of the Hauts Plateaux.
- Preparation of letters to more than ninety oil companies regarding exploration and licensing opportunities in the Doukkala and Boudenib Basins.

REPORT ON DISPOSITION OF MONIES FROM FIRST AND SECOND WORLD BANK LOANS TO DATE

Submitted to Mr. J. F. Houle for his review.

ATTENDANCE AT WORLD BANK-ONAREP MEETINGS REGARDING:

- Organization, planning, and management.
- Exploration promotional presentation in Japan late in 1984.

OUTLINE OF PRESENTATION

BOUDENIB PERMIT AREA

12 JULY 1984

1. INTRODUCTION
 - 1.1 GENERAL
 - 1.2 EXPLORATION HISTORY

2. GEOLOGY
 - 2.1 REGIONAL SETTING
 - 2.2 GEOLOGICAL HISTORY
 - 2.2.1 STRUCTURAL EVOLUTION
 - 2.2.2 DEPOSITIONAL HISTORY
 - 2.3 BOUDENIB BASIN: STRATIGRAPHY & HISTORY
 - 2.3.1 PRECAMBRIAN
 - 2.3.2 PALEOZOIC
 - 2.3.3 MESOZOIC
 - 2.3.4 CENOZOIC
 - 2.4 REGIONAL STRUCTURE OF BOUDENIB

3. GEOPHYSICAL EXPLORATION
 - 3.1 GRAVITY SURVEY
 - 3.1.1 RESULTS
 - 3.1.2 CONCLUSIONS

4. DISCUSSION OF HYDROCARBON POTENTIAL
 - 4.1 GENERAL
 - 4.2 PLAY I
 - 4.3 PLAY II
 - 4.4 PLAY III
 - 4.5 EXPLORATION SEQUENCE

EXPLORATION FOR SANDSTONE RESERVOIRS
COURSE OUTLINE

1. EXPLORATION FOR CONTINENTAL SANDSTONE RESERVOIRS
 - 1.1 INTRODUCTION
 - 1.2 BRAIDED RIVER RESERVOIRS
 - 1.3 ALLUVIAL FAN RESERVOIRS
 - 1.4 EOLIAN SAND RESERVOIRS
 - 1.5 MEANDERING STREAM RESERVOIRS
 - 1.6 SEISMIC CHARACTERISTICS OF CONTINENTAL FACIES

2. EXPLORATION FOR DELTAIC RESERVOIRS
 - 2.1 MODERN RIVERS AND DELTAS
 - 2.2 DELTAIC PLAIN RESERVOIRS
 - 2.3 DELTAIC FRONT RESERVOIRS
 - 2.4 USE OF SEISMIC DATA FOR RECOGNIZING DELTAIC RESERVOIRS

3. EXPLORATION FOR INTERDELTAIC SANDSTONE RESERVOIRS
 - 3.1 SHORELINE RESERVOIRS
 - 3.2 OFFSHORE BARRIER ISLAND RESERVOIRS
 - 3.3 USE OF SEISMIC DATA FOR DELINEATING INTERDELTAIC RESERVOIRS

4. EXPLORATION FOR OFFSHORE MARINE SANDSTONE RESERVOIRS
 - 4.1 INTRODUCTION
 - 4.2 SHALLOW MARINE SANDSTONE RESERVOIRS
 - 4.3 SUBMARINE FAN SANDSTONE RESERVOIRS
 - 4.4 USE OF SEISMIC DATA FOR DELINEATING MARINE SANDSTONE RESERVOIRS

5. DIAGENESIS OF POTENTIAL SANDSTONE RESERVOIRS
 - 5.1 INTRODUCTION
 - 5.2 PROCESSES OF PORE OCCLUSION
 - 5.3 PROCESSES OF SECONDARY POROSITY FORMATION

REFERENCES

PLANNING & ECONOMIC STUDIES
MONTHLY ACTIVITIES REPORT
JULY 1984

GENERAL

Mrs. Souad Choukry joined the division as an economist on July 3.

PLANNING ACTIVITIES

Due to a number of delays, it was decided to concentrate all efforts on completing and testing the computer software to be used for compiling the plan and for making economic studies related thereto. This task will be completed by August 10. Daily sessions were arranged between the Planning Advisor and the ONAREP Division Chief, to familiarize the latter with details of the computer software.

Ten 'Fiches des projets' completed to date were reviewed with the appropriate divisions and returned for modifications. Only four 'fiches' were revised by the divisions and are now suitable for computer input. The vacation season is slowing down the process. This is the critical activity delaying the preparation of the plan.

The schedule for preparation of ONAREP's development plan has been updated. Key milestones in the revised schedule are:

- Consolidate plan results, to be completed
September 30, 1984
- Compile draft plan document, to be completed
October 31, 1984.

The updated schedule is being drafted and will appear in the next quarterly report.

SEMINARS

Informal seminars were conducted for division staff starting July 16. Sessions were held twice a week. The following topics were covered:

- Oil Industry - Overview
- Natural Gas Industry - Overview
- Stages of a Development Project

PROJECT STATUS REPORT

A. PROJECT DATA

1. Project No.: 936-5728
2. Project Title: Morocco Program of the Energy Management and Conservation Project
3. Project Amount (Total) \$867,000
 - a) AID (Amount and % of total): \$650,000 75 %
 - b) GOM (Amount and % of total) \$217,000 25 %
 - c) Other (Amount and % of total): - 0
4. Date of Original Project: 8/3/82
5. Original PACD: 1/31/85 Current PACD: 12/31/84
6. USAID Project Manager: Mohammed Oubnichou/Robert Kahn
7. AID/W Backstop: Pamela Baldwin, S&T/EY
8. GOM Implementing Agency(ies) and Project Manager: Ministry of Energy and Mines, Director Bouhaoui.
9. Project Evaluation (dates of last and next scheduled): 6/22/85; None scheduled.

B. PROJECT DESCRIPTION

10. Statement of Project Purpose:

To expand the scope of activity under the agreement to ensure provision of ongoing technical assistance to the Ministry of Energy and Mines in the area of energy analysis, planning and policy development and also make a formal establishment of an Energy Planning Unit within the Directorate of the MEM and encourage it to develop institutions, personnel and process for effective policy-making in order to make tremendous improvements in the efficiency specially of energy use.

Conventional Energy
Corres
8-5

11. Major Project Inputs (list by category):

- a) AID: - Technical assistance services, two resident advisors for a total of 64 pm;
 - energy planning and management;
 - promotion of energy conservation and efficient energy consumption.
- b) GOM: - 1 full-time counterpart and short-termers for about 80 pm;
 - statistical/energy data;
 - RT air fares;
 - logistic support;
 - format establishment of an energy planning service.
- c) Other: None

12. Major Project Outputs

13. Progress Toward Output Achievement:

- | | |
|---|---|
| Task 1: Data base development and management | Complete given current data availability |
| Task 2: Documentation of data base and program | Completed |
| Task 3: Assistance with five-year plan | Not done due to continued MEM delay and scanty investment budget |
| Task 4: Pricing Policy analysis | Report to be delivered to AID/W 5/15/85 |
| Task 5: Energy Analysis of the Agriculture Sector | Completed |
| Task 6: Training/Seminars | 5 persons from MEM have been trained in country, 4 at Stony Brook courses, 10 seminars have been held |

C. PROJECT CONTRACTS

14. Existing Contracts:

- a) Name and Type of Contractor:
Development Sciences, Inc. (DSI)
(Small Business)
- b) Date signed and current Terminal Date:
11/1/82; TD - 1/31/85.
- c) Total amount: \$644,353

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- d) Nature of contract: AID/W Direct
- e) Purpose: Technical Assistance Service

15. Planned Contracts:

- a) Type of contract and schedule for planned procurement: None
- b) Approximate Amount: N/A
- c) Nature of Contract: N/A
- d) Purpose: N/A
- e) Status of PIO/T: N/A

D. MAJOR ACCOMPLISHMENTS DURING PREVIOUS QUARTER

- 1. Final Ag-energy report received, copy to MEM.
- 2. Final report submitted to AID/W

E. MAJOR PROBLEMS/ISSUES FOR EXECUTIVE MANAGEMENT CONSIDERATIONS

16. Evaluation/Audit Recommendations Outstanding:

More staff needed for MEM to form core of Energy Planning and Information Service.

Encourage MEM to fund SPD at level needed to attract/keep qualified economists (unlikely to happen).

Encourage MEM operating agencies and other GOM agencies to use MEM's investment appraisal and simulation model.

17. Conditions Precedent/Covenants Unmet: All met

18. N/A

19. Decisions/Actions Required by Director's Office:
NONE - end of contract

Contractor has to deliver several documents.

10

F. MAJOR ACTIONS ANTICIPATED OVER CURRENT QUARTER

<u>Responsible Party</u>	<u>Action</u>	<u>Completion Date</u>
DSI	Submits documents to AID/W:	
	- Techn. memo on "Energy Consumption in Morocco"	05/15/85
	- Techn. memo on "Energy Pricing in Morocco"	05/15/85
	- Techn. memo on "Envest User's Manual"	05/15/85
	- Camera-ready copy of French version "Energy Planning in Morocco" as edited by MEM to USAID/Morocco.	05/31/85
AID/W	Transmission of the Memos above to USAID.	06/15/85

G. PROJECT "GRADE" ASSIGNED (A-D): B-

Lowered from B+ due to continued poor GOM staffing; poor attendance at English classes, delays in staffing up SPD.

H. PROJECT BUDGET AND EXPENDITURE PROJECTION

MISSION PORTFOLIO REVIEW

ACTION LIST FOR 2nd QUARTER OF FY 85

DIVISION : O T P

PROJECT No. & TITLE : 936-5728 Morocco Sub-Project of Energy

Date Action List Prepared : February, 1985

Date of Follow-Up : April 19, 1985

A C T I O N T O B E T A K E N			F O L L O W - U P	
By	Description of Action	Estimated Compl. Date	S t a t u s	Revised Compl. Da
DSI	Final Ag-Energy report (French version)	12/17/84	Given to Mr. Bouhaouli and Mr. Bencheqroun from the MEM	3/22/85
	Final report (summary appraisal)	12/15/84	Submitted to AID/W	3/31/85

4/1

MISSION PORTFOLIO REVIEW
ACTION LIST FOR 3rd QUARTER OF FY 85

DIVISION : O T P

Date Action List Prepared : April 19, 1985

PROJECT No. & TITLE : 936-5728 Morocco Sub-Project of Energy

Date of Follow-Up :

A C T I O N T O B E T A K E N			F O L L O W - U P	
B y	Description of Action	Estimated Compl. Date	S t a t u s	Revised Compl. Da
DSI	- Tech. memo on "Energy Consumption in Morocco"	4/22/85		
	- Tech. memo on "Energy Pricing in Morocco"	5/15/85		
	- Tech. memo on "Envest User's Manual"	5/15/85		
	- Modified French version of "Energy Planning in Morocco"	5/15/85		
DSI	Submits the documents above for AID/W	5/15/85		
AID/W	Transmits these documents to AID/Rabat	6/15/85		

Bechtel Group, Inc.

Fifty Beale Street
San Francisco, California
Mail Address: P.O. Box 3985, San Francisco, CA 94119



April 18, 1984

Charles Bliss
Office of Energy
Agency for International Development
Washington, D.C. 20523

FILE

Re: Contract #DAN-5724-COO-1085-00
Technical Assistance in Conventional Energy
Morocco: Quarterly Report

Dear Mr. Bliss:

We transmit herewith three copies in English and one copy in French of our Quarterly Progress Report covering the period December 1984 - February 1984.

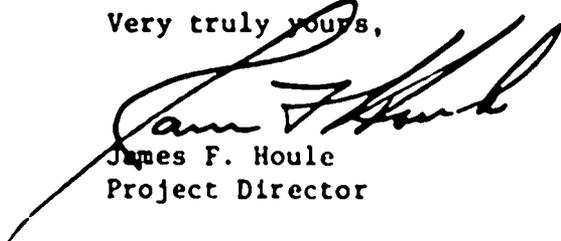
We have increased our in-country staff from three to five professionals with the arrivals of Dr. Samir Malaty and Mr. Charles Druitt. The Drilling Engineer position remains open, awaiting ONAREP's decision. It may well be advisable at this time to defer this position until a new USAID contract is in place for the long term.

Exploration geology in the Doukkala Basin is being completed. Sites for drilling will be selected and consideration will be given to outside investment in the program. Several private firms have entered into negotiations with ONAREP for exploration of other basins.

A gas tariffication seminar was held by Bechtel specialists in Rabat in February. A computer will be provided to allow ONAREP to make use of a Bechtel pricing and cost estimating program in Rabat. Discussions continue with potential customers for ONAREP gas from the Toukint and Meskala fields.

We hope this report meets with your approval. Please let us know of any questions or comments you may have.

Very truly yours,


James F. Houle
Project Director

Attachment
JFH:phs

cc: Jim Bever - USAID

7

PROJECT STATUS REPORT

I. PROJECT DATA

A. Project Title and Number : Conventional Energy Management and Training: 608-0176

B. AID Contribution (LOP) : \$5,000,000

C. GOM Contribution (LOP) : \$1,689,000 (equivalent)

D. Implementing Agency(ies) : National Petroleum Co. (ONAREP)

E. USAID Project Officer(s) : Gary Bricker

F. AID/W Backstop : Carolyn Coleman, ME/TECH/HRST

G. GOM Project Manager(s) : Mohamed Douieb, ONAREP Director General

H. Principal Contractors (firms and/or persons) : Not selected

I. Date of Original Project Agreement : 5/16/84

J. Original PACD : 6/30/88

K. Current PACD : 6/30/88

L. Last Evaluation : N/A

M. Next Evaluation : 10/85

N. Scheduled Audit : None scheduled

II. STATEMENT OF PROJECT PURPOSE

To build the internal capabilities of the National Petroleum Exploration and Development Agency (ONAREP) (1) to apply cost-effective private sector management principles and techniques, (2) to strengthen its ties to potential private sector partners in petroleum activities and investments, and (3) to explore, develop, and produce hydrocarbon resources.

III. MAJOR OUTPUTS OF PROJECT

STATUS

1. Financial and Management-Activities:

MOROCCO
CIVIL
CONCRETE
3-5

- To institute a monitoring program to quantify performance in the field on a cost-per-unit of production basis; No action
 - To establish an internal audit capability responsive to MEM and MOF needs; No action
 - To institute techniques of economic analysis which will help to espouse development projects with high rates of return and market-clearing price structures; No action
 - To examine ONAREP's use of joint venture concessionaires; No action
 - To examine the costs/benefits of moving to contract drilling based on competitive bids on cost and time per meter drilled; and No action
 - To review procedures that will increase an exchange of management information within ONAREP. No action
2. Exploration Design and Analysis Activities:
- To integrate standard risk analysis techniques into its exploration and appraisal proposals; No action
 - To develop autonomous exploration teams responsible for assessing the hydrocarbon potential of a given region; No action
 - To arrange for on-the-job training to ONAREP geologists/geophysicists in the accumulation and interpretation of petroleum exploration data; No action
 - To investigate alternative to "in-house" drilling so that the "drilling contractor" will have time and quality incentives vis-à-vis its clients, ONAREP. No action

(This may involve ONAREP divesting itself of its drilling operations or relinquishing direct responsibility); and

- To establish a computerized drilling progress reporting system updated over various periods. No action
3. Reservoir and Production Engineering Activities:
- To initiate within ONAREP its own dedicated, computerized petroleum reservoir estimating services. Agreed to purchase micro-computer while awaiting resident advisors.
 - To monitor the design, installation, commissioning operation, maintenance, and repair of petroleum transmission facilities (from well-head to separator plant through pipelines to consumers); No action
 - To develop a capacity within ONAREP to order and stock perishable drilling supplies and to develop cost-effective options to in-house drilling mud production services; and No action
 - To establish a physical inventory/accounting system for perishable supplies and durable equipment. No action
4. English language trg. (270 pm) No action
5. Technical training (58 pm) 15 pm provided
6. Academic training (2 MS, 2 MBA) PIL requested nominations on 6/20.
7. In-country seminars (6) None

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IV. PROJECT CATEGORY: B

V. PROJECT NARRATIVE

A. Major Accomplishments/Activities during the previous Semester:

- Signed ProAg 5/16/84
- Issued RFP 7/17/84
- Issued cable to co-fund S&T/EY's conventional training program 9/27/84
- Invited W.Bros. and Petro-Eng. to negotiate 9/28/84
- Provided 15 pm of technical training 5-9/84

B. Major Problems/Issues Unresolved:

1. ONAREP secures 5-6 cars for advisors.
2. ONAREP issues letters of authority.
3. RCO authorizes mobilization of resident T.A. contractor.
4. ONAREP very slow in nominating masters candidates.
5. AID to furnish micro-computer to ONAREP.

C. Major Actions/Activities Planned for Current Semester:

<u>Responsible Party</u>	<u>Action</u>	<u>Completion Date</u>
ONAREP	Nominates 2 Masters Candidates	10/31/84
Contractor	Performs reconnaissance visit	11/15/84
Contractor	Procures Office and micro-computer equipment	11/26/84
Contractor	Recruits local support staff	11/26/84
Contractor	Submits 1st periodic report.	12/84
Contractor	Ships over HHEs for resident advisors	11/12/84
Contractor	Fields 1st 5 resident advisors	11/30/84
USAID, ONAREP, Contractor	Conduct 1st Steering Committee Review of Project	1/10/85

USAID	Transfer English language training authority to contractor	1/85
Contractor	Submits to USAID and OMAREP draft of work plan for balance of 1st year and out years	1/30/85
Contractor	Installs office and computer material	2/85
Contractor	Finalizes work plan	2/15/85
Contractor	Issues 2nd quarterly report	3/15/85
USAID, OMAREP Contractor	Conduct 2nd Steering Committee review of Project	3/30/85

GOM BUDGETARY CONTRIBUTION/REQUIREMENTS
(Estimates in Dhs000 as of Sept. 30, 1984)

Project Title/Number: Conventional Energy Management and Training (608-0176)
Project Officer (USAID): Gary Bricker
GOM Implementing Agency: O.N.A.R.E.P.

Budget Line Items (Elements)	I		II		III		Total GOM Cost
	1985 Project Contribution Required from GOM Budget		Estimated Cumulative GOM Contribution Thru 12/31/84		Outyear Requirements (Balance to meet LOP Contribution of ProAG)		
	<u>A. Investment</u>	<u>B. Operating</u>	<u>A. Investment</u>	<u>B. Operating</u>	<u>A. Investment</u>	<u>B. Operating</u>	
1. Cars	67	-	337(a)	-	-	-	404
2. Short Term Training	-	289	-	343	-	148	780
3. Academic Training	-	515	-	484(b)	-	-	999
4. Contractor Short-Term	-	733	-	405	-	389	1527
5. T.A.	-	3676	-	1848	-	3827	9351
6. International Travel	-	52	-	49	-	12	113
TOTAL	67	5265	337	3129	-	4376	13174

a) 5 Cars only since last resident advisor to be fielded only 4/1/85.

b) Keep at Dhs 484,000 pending ONAREP's final response on academic candidates; still in process.

PROG-1088

USCIB / WFO-0000
SUMMARY PROJECT FINANCIAL REPORT BY ELEMENT
AS OF 6/30/84

DATE : 10/12/84
REPORT PAGE NO.: 4
MISSION PAGE NO.: 4

COUNTRY CODE: 000
OFFICE CODE: 000

OFFICE NAME : TECHNICAL PRODUCTS

PROJECT NO./ ELEMENT NO.	PROJECT TITLE/ ELEMENT DESCRIPTION	FUND SOURCE TYPE / DATE	TYPE OF FUND	ALLOCATION TO DATE	EXPENSES TO DATE	COMMITMENTS TO DATE	EXPENDITURES TO DATE	DIFFERENCE
6020176.00	CONVENTIONAL ENERGY PET & TANG E	6/30/84		5,000,000	4,000,000	2,304,849	5,849	
01	SHORT TERM TRNG (AID)			230,000	2,000	2,000	2,000	3,994,151
02	ACADEMIC TRAINING (AID)			156,000	0	0	0	225,000
03	EVALUATION			113,000	0	0	0	113,000
04	CONTINGENCY			172,000	3,849	3,849	3,849	165,151
05	SHORT TERM TRNG (TECH ASS)			232,000	232,000	0	0	232,000
06	COMMODITIES			19,000	19,000	0	0	19,000
07	TECHNICAL ASSISTANCE			3,048,000	3,048,000	0	0	3,048,000

BEST AVAILABLE DOCUMENT

10/12/84
original

10

608-0176.

PROJECT NO. / ELEMENT NO.		PROJECT TITLE / ELEMENT DESCRIPTION	FUND TYPE	FACD DATE	LIFE CYCLE PRG FUND	COMMITMENTS TO DATE	EXPENDITURES TO DATE	PIPELINES TO DATE
6080176.00		CONVENTIONAL ENERGY PGT & TRNG		6/30/88	5,000,000	4,000,000	3,304,849	3,964,151
01		SHORT TERM TRNG (AID)			230,000	2,000	2,000	225,000
02		ACADEMIC TRAINING (AID)			156,000	0	0	156,000
03		EVALUATION			113,000	0	0	113,000
04		CONTINGENCY			172,000	3,849	3,849	165,151
05		SHORT TERM TRNG (TECH. ASS.)			232,000	232,000	0	232,000
06		COMMODITIES			19,000	19,000	0	19,000
07		TECHNICAL ASSISTANCE			3,046,000	3,049,000	0	3,046,000

BEST AVAILABLE DOCUMENT

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PROJECT STATUS REPORT

I. PROJECT DATA

- A. Project Title and Number : Morocco Sub-Project of Conventional Energy Technical Assistance: 936-5724
- B. AID Contribution (LOP) : \$2.877 million obligated by contract as of 9/30/83 per MOU of 3/12/84
- C. GOM Contribution (LOP) : \$0.959 (equivalent) committed by MOU
- D. Implementing Agency(ies) : National Petroleum Co. (ONAREP)
- E. USAID Project Officer(s) : G. Bricker, USAID
- F. AID/w Backstop : C. Bliss of S&T/EY
- G. GOM Project Manager(s) : Mohamed Douieb, Directeur General of ONAREP
- H. Principal Contractors (firms and/or persons) : Bechtel National
- I. Date of Original Memorandum of Understanding : 5/13/82
- J. Original PACD : Indefinite
- K. Current PACD : 10/31/84
- L. Last Evaluation : 5/16/83
- M. Next Scheduled Evaluation : None
- N. Scheduled Audit : None scheduled

II. STATEMENT OF PROJECT PURPOSE (from non-obligating Memorandum of Understanding)

To enable Morocco through ONAREP to mobilize public and private capital and technology for the exploration, exploitation, and utilization of their indigenous oil and gas energy resources;

To reduce Morocco's dependence upon imported oil and, consequently, the financial drain that such importation exacts upon the Kingdom;

To transfer needed technology to ONAREP and provide guidance in its effective utilization; and

To identify problems and bottlenecks which could retard the rate of development of oil and gas resources and recommend programs to overcome these bottlenecks.

5/1

III. MAJOR OUTPUTS OF PROJECT

STATUS

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|---|--|
| 1. Review and analyze the existing data on oil and gas resources in Morocco. | 1. completed 10-11/83 |
| 2. Complete geologic information on areas already investigated and identify new areas for exploration. | 2. Doukkala and Boudenib Basins' supplementary data needs identified 8/84. |
| 3. Devise an exploration strategy, assign priorities and monitor implementation. | 3. Format proposed implemented 1/2/84. |
| 4. Assist ONAREP management in organizing the program and training personnel. | 4. Early work on program completed 10/10/84; future work needs identified. Limited personnel training. |
| 5. Review and analyze the current drilling program, particularly the operations around Meskala and assign such goals as: complete the rig over-haul program in six months, or complete wells OTA 3 and MKL 103 at a specified date. | 5. Early review done; SNEA/ONAREP now have this job. |
| 6. Study and recommend, as appropriate, improvements in the organization of the Drilling Division. | 6. Recommendations to divest drilling operations using a joint venture/partnership approach under Prime Ministry review. |
| 7. Assist with the development and organization of new Production division and training of its staff. | 7. New organizational chart developed, no training; dropped with departure of Production Engineer. |
| 8. Identify surface facilities required for new oil and gas production, including facilities for gas-liquids separation, gas production, gas processing and treatment, liquids storage and pipelining. | 8. Detailed specs prepared for Asmar. IFB awaits sales contract for product. OCP and ONE are likely customers, too. |
| 9. Provide reservoir engineering assistance to determine recoverable reserves, and optimal production rates. | 9. Being done for Triassic; Paleozoic just beginning; Bechtel hesitant to field reservoir engineer specified in contract/MOU due to uncertainty. Abandoned by S&T/EY in light of follow-on project's commitment. |

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|--|--|
| 10. Assess the needs for training in all areas of oil and gas exploration, drilling and production as well as management. | 10. Not done |
| 11. Develop on-the-job training programs for each division. | 11. The Planning and Economics Study Division now has such a plan. |
| 12. Present seminars on specific subjects such as seismic data interpretation, production testing and oil and gas production techniques. | 12. 4 seminars presented: petroleum mgt., plate tectonics, sandstone basins, lime stone formation. |

IV. PROJECT CATEGORY: B-

- Fast monthly evolution of ONAREP needs/impact
- Fast-moving, changing project
- Training effort not being emphasized due to tight budget.
- Lower category than in last semester due to internal management debate among resident staff.

V. PROJECT NARRATIVE

A. Major Accomplishments/Activities during the previous Semester:

1. Design and early utilization of a systematic program to program for petroleum exploration/development.
2. Shift by ONAREP management away from "force account" work and affirmation of the concessionaire-mode to explore for and produce petroleum.
3. Increasingly accurate (and pessimistic) estimates of recoverable reserves in the Meskala formation.
4. 80% completion of the technical dossiers for Doukala Basin.
5. Deferral of in-house reservoir estimating services until follow-on contract takes hold.
6. Develop model concessionaire contract.
7. Geophysical interpretation indicating large oil-bearing formations at shallow depths in Doukkala.
8. Concessions: North-South Tadla; Exxon-Baudenib; Oxoco - Dakla offshore; Company X - Doukala.

B. Major Problems/Issues Unresolved:

1. Continued poor logistic support compared to MOU:
 - cars
 - drafting
2. S&T/EY advised of sub-program overruns and consequently could not favorably consider funding further extensions.
3. Overlap with follow-on contractor not possible.

C. Major Actions/Activities Planned for Current Semester:

<u>Responsible Party</u>	<u>Action</u>	<u>Completion Date</u>
Bechtel/ONAREP	- Presents overview of accomplishments including 1-year and 5-year corporate planning exercise.	10/10/84
Bechtel	- Submits last quarterly report	10/4/84 done
Bechtel	- Finishes technical dossier for Doukala	10/19/84
Bechtel	- Terminates resident T.A. services	10/26/84
S&T/EY	- Terminates sub-program in Morocco	11/1/84

Quarters: 3rd & 4th of FY'84
Date of Review: 10/15/84

PROJECT STATUS REPORT

I. PROJECT DATA

A. Project Title and Number : Morocco Sub-Project of Energy Management and Conservation: 936-5728

B. AID Contribution (LOP) : \$650,000

C. GOM Contribution (LOP) : \$217,000 (equivalent)

D. Implementing Agency(ies) : Ministry of Energy and Mines

E. USAID Project Officer(s) : Gary Bricker

F. AID/W Backstop : P. Baldwin of S&T/EY

G. GOM Project Manager(s) : Energy Director Bouhaouli

H. Principal Contractors (firm and/or persons) : Development Sciences, Inc.

I. Date of Original Project Agreement : 8/31/82

J. Original PACD : 1/31/85

K. Current PACD : 1/31/85

L. Last Evaluation : 6/22/83

M. Next Scheduled Evaluation : None scheduled

N. Scheduled Audit : None scheduled

II. STATEMENT OF PROJECT PURPOSE: (Project Agreement dated 8/31/82 as amended)

To expand the scope of activity under the agreement to ensure provision of ongoing technical assistance to the Ministry of Energy and Mines in the area of energy analysis, planning and policy development and also make a formal establishment of an Energy Planning Unit within the Directorate of the MEM and encourage it to develop institutions, personnel and process for effective policy-making in order to make tremendous improvements in the efficiency specially of energy use.

III. MAJOR OUTPUTS OF PROJECT

STATUS

Task 1: Data base development and management	Complete given current data availability
Task 2: Documentation of data base and program	Completed
Task 3: Assistance with five-year plan	Not done due to continued MEM delay and scanty investment budget; 11/84 presentation will touch on this aspect.
Task 4: Pricing Policy analysis	Report not delivered.
Task 5: Energy Analysis of the Agriculture Sector	80% complete (major emphasis on sugar refining)
Task 6: Training/Seminars	5 persons from MEM have been trained already in country 4 at Stony Brook courses, 10 seminars have been already held - 80% DSI COP and Behri to meet energy economist counterparts in Sri Lanka.

IV. PROJECT CATEGORY: B-

Lowered from B+ due to continued poor GOM staffing; poor attendance at English classes, delays in staffing up SPD.

V. PROJECT NARRATIVE

A. Major Accomplishments/Activities during the previous Semester:

1. Finalized research on ag-energy interface.
2. Transferred data base and software to a more effective, rapid software package.
3. USAID issued PIL extending DSI presence.

B. Major Problems/Issues Unresolved:

1. Evaluation/Audit Recommendations Outstanding:
More staff needed for MEM to form core of Energy Planning and Information Service.
2. Conditions Precedent/Covenants Unmet: All met

Encourage MEM to fund SPD at level needed to attract/keep qualified economists (unlikely to happen).

Encourage MEM operating agencies and Ministry of Commerce to use MEM's investment simulation model.

4. Contractor has short time frame left to deliver on several documents and demonstrate MEM can handle programming of Invest.

C. Major Actions/Activities Planned for Current Semester:

<u>Responsible Party</u>	<u>Action</u>	<u>Completion Date</u>
DSI	Draft tech. memo on Fuelwood Consumption/Production	10/15/84
DSI	Presentation of Ag/Energy in Morocco	10/15/84
DSI	Prepares 11/84 presentation and pricing tech. memo	10/05-15
DSI	French of "Energy Planning in Morocco"	10/5/84
DSI	Tech. memo on Energy Consumption in Morocco	10/16/84
DSI	Tech. memo on Energy Pricing in Morocco	11/08/84
DSI	Invest User's Manual issued	11/15/84
DSI	Final Presentation "how to use Invest" at MEM	11/26-30
DSI	Final report	11/30/84
DSI	End of project activities in Morocco	11/30/84