

PD-ACD-472

**TECHNICAL ASSISTANCE FOR
RURAL POWER FOR POVERTY REDUCTION II PROGRAM**

USAID Contract No. 388-C-00-02-00124-00
USAID Project No. 388-0287-06

RPPR II WORK PLAN YEAR #3

1 October 2004 Through 30 September 2005

(Approved By USAID)

Prepared By

NRECA INTERNATIONAL, LTD.

In Partnership With

RURAL ELECTRIFICATION BOARD OF BANGLADESH

And

USAID MISSION TO BANGLADESH

WORKPLAN FOR YEAR #3
October 1, 2004 to September 30, 2005
Technical Assistance for Rural Power For
Poverty Reduction II Program

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I. RPPR II PROGRAM OVERVIEW

General Description of RPPR II Program:

The objective of the RPPR II is to continue USAID's support of rural electrification in Bangladesh by concentrating on strengthening business operations and sector management so as to ensure institutional self-sufficiency and sustainability. Ultimately, the RPPR II will support USAID's overall objectives of poverty reduction in Bangladesh. The activities undertaken by REB and NRECA during this first year of the RPPR II program will be aimed at beginning the process of strengthening management and technical capability of the a group of selected PBSs. These activities will promote credibility and viability among these entities so that IFI and MDB donor funding will continue to be available for infrastructure and ongoing technical assistance; and will assist in preparing the REB system for the changes in the Bangladesh electric industry.

RPPR Mission Statement:

"To reduce rural poverty by enhancing the capacity of the PBSs to provide efficient user-owned electric service for the benefit of the customers."

RPPR II Program Objectives:

The overall RPPR II Program will promote the sufficiency and sustainability of the RE Program as a means of ensuring that the gains made over the last twenty five years will be continued with a reduced need for foreign assistance. Specifically the RPPR Program involves the completion of a eight specific Tasks under four Program Activities that support the following four main objectives:

- **Planning and System Engineering:** This Activity involves the completion of two tasks, including extending the geographic information systems (GIS) to an additional seven PBSs beyond the four systems developed under RPPR; developing improved planning capabilities at REB and the consulting engineering firms serving two PBSs. These efforts will be led by a long term Engineering and Operations Advisor supported by two short-term specialists. The GIS Specialist will provide specific technical support for development of the GIS task. The Planning Specialists will provide training to the consulting engineers in advanced analysis techniques. The expertise developed from the work in these limited number of PBSs will be expanded to additional PBSs.
- **Operations and Maintenance Program:** The focus of this Activity will include undertaking two tasks - strengthening preventive maintenance programs at two PBSs and working with the REB to institutionalize maintenance materials procurement and warehousing at REB and the PBSs. This Activity will be led by the Engineering and Operations Advisor and will be supported by two short-term specialists. The Maintenance Systems Specialist will provide specific guidance on execution and planning of line and equipment maintenance tasks. The Materials Specialist will work with REB and the PBSs to streamline maintenance material acquisition and warehousing.
- **Strengthening Utility Performance:** This focus area will involve two tasks. NRECA will work to strengthen the REB training function and complete the computerization task begun under RPPR I. The effort will be guided and managed by the Team Leader. The Team Leader will be supported by two short term specialists with expertise in training and computerization. Because of the demands on the Team Leader's time and the limited funding available to support the specialists, the bulk of the

responsibility for execution of both the training support and computerization programs will fall to seasoned local professionals, all of whom are long term NRECA employees

- ***Supplemental Tasks:*** This focus area includes Tasks of a specific nature which have been requested by REB and which do not fall into any of the categories above. One task consists of a review and updating of the engineering and construction standards in use at REB with an eye to adapting them both to changing times and to new requirements for such things as construction of primary line in densely populated urban areas taken over from BPDB. In addition, the need for a socio economic assessment of the impact on rural poverty of electrification has been recognized for some time, and this focus area will include the further institutionalization at REB of capability for evaluating such impacts. The standards review will be carried out by an Engineering Specialist under the supervision of the Engineering and Operations Advisor, while the socio economic assessment will be conducted by local professionals on NRECA's staff under the supervision of the Team Leader.

RPPR Program Elements:

- **Implementing Agency:** Rural Electrification Board
- **Duration:** Five Years: Sept 26, 2002 through September 30, 2007
- **Total Amount:** US\$ 9.69 million (Tk.56.2 crore)
- **Donor Funding:** US Agency for International Development (USAID) - Contract

Program Implementation Strategy As "Partnership"

The design and development of the original RPPR I Program was through a "partnership" between the REB, USAID, and NRECA International, Ltd, and this partnership arrangement will continue in RPPR II. The design of the Program was completed under a *Tripartite Agreement* between the partners. With the approval of the RPPR Program by the GOB and the execution of the *Results Package Agreement* between the GOB's Economic Resource Division (ERD), the partners have entered into a *Trilateral Agreement* that provides direction for the implementation of the RPPR II Program. This Agreement outlines the various responsibilities of the respective partners.

Development of Annual Work Plan Year #3

Activities undertaken during Year #3 of RPPR II will continue to focus specifically on the initial RPPR II framework as it was developed with adjustments being made based on the accomplishments and progress achieved during Year #2. As outlined in this Annual Work Plan (AWP), the technical assistance being implemented for Year #3 will primarily focus on the continuation of the Activities and supporting Tasks that continue from RPPR I or were initiated during Years #1 and 2 of RPPR II. See Section II of Work Plan on page 5 for a summary of the major accomplishments from Year #2.

As of the date this Work Plan is being prepared, the Government of Bangladesh has still not approved the Technical Assistance Project Proforma (TAPP). It is assumed that this will occur some time in coming months based on REB's ability to move it forward. The Work Plan is based on an assumption that the delay in the TAPP approval will not affect project activities.

In light of the incorporation of the consulting engineering firms as having significant focus of assistance in two project tasks under Activity A (Engineering and Planning), it is assumed that REB will continue its discussions and negotiations with the firms regarding compensation for the new services being provided to the PBSs and that such issues will not delay implementation of the project tasks. In the event where REB and the consulting engineers cannot arrive at acceptable arrangements for compensation in a reasonable timeframe, then project delays will likely ensue and alternative financial arrangements will have to be discussed.

As was noted in the previous Annual Work Plans, the two Tasks under Activity C deal with Strengthening Training Program and Procedures (C.1) and Enhancing Computerization in REB and PBSs (C.2) have involved the completion of assessments of needs for these two functional areas. Based on the findings of these two assessments, the ongoing support and subsequent activities in these two areas will be tailored to the results of these two individual needs assessments. As noted in earlier AWP's, some specific sub-tasks that will emerge from the specific Needs Assessment and as such it is not possible at this time to reflect all of these sub-tasks in this current Work Plan.

II. MAJOR ACCOMPLISHMENTS UNDER ANNUAL WORKPLAN YR #2

Program Activity A: Planning and System Engineering

Task A.1: Service Territory Database.

- Geographic Information System (GIS) field work was completed for two more PBSs (Dhaka 1 and Mymensing 2) using a team of consulting engineering firms that varied between four firms and two firms, with significant progress in the formal development of the actual data base at Dhaka 1 PBS.
- Significant efforts were made to work with PBSs to obtain accurate transformer record information for incorporation into the GIS databases being developed for the respective PBSs. The status of this work is as follows:
 - Corrected transformer data was received from both Pabna 2 and Natore 1 with a preliminary review of this information indicating that it was of much superior quality compared to what was previously submitted. Field verification was to be completed before the end of the calendar year, with adjustments being made in feeder data in each of these PBSs being done as needed.
 - The transformer record data from Dhaka 1 was received, and integrated into the GIS database, however inaccuracies were noted that would need to be corrected before the GIS can be finalized. The Dhaka 1 General Manager provided assurances that the data will be corrected and delivered within the near future.
 - Transformer data from Mymensing 2 was not received, thus completion of the GIS remains pending without this data. Numerous requests and personal visits by NRECA personnel were made to the GM, and as of the time of preparation of this AWP, indications were that the concerned staff were engaged in gathering the transformer data as requested.
- Due to the importance of record keeping to all RPPR II Tasks including Service Territory Database, significant efforts were focused on developing a set of procedures that could easily and routinely be followed to facilitate record keeping at all PBSs.
 - To assist in this process, two new forms were developed, including a "Transformer Issue Record Form", and "Transformer Installation/Removal Record Form".
 - This new set of procedures also required some modification to the existing "Customer Meter Order (CMO) Form", which has been in use by the PBSs.
 - In addition, a half-day short program was prepared to: a) describe the process of reorganization of important records; b) describe how the records should be maintained; and c) emphasize the importance of this process. This program was conducted at Dhaka 1, Mymensing 2, Pabna 2, Natore 1, Manikganj, Narsingdi 1, Tangail, and Comilla 1 PBSs.
 - Intensive follow up visits were also conducted to assist the PBSs that were actively cooperating in this new record keeping initiative.
- A new REB/PBS Policy Instruction, which will serve as a guideline for continuous, ongoing update of the engineering and operations records at the PBSs was drafted and is in the process of being finalized for submission to REB for review and formal approval. Once this Policy is approved, efforts would then focus on seeking support from the concerned REB officials to begin implementing this new Instruction in all 67 PBSs with the necessary training and oversight being provided.

- A new "grid-system" pole numbering methodology was developed for the identifying the location of the distribution poles within the PBS network and was implemented as a pilot program at Dhaka 1 PBS. This approach was initiated based on experience indicating that unless the PBS pole numbers are physically installed in the field, it is very difficult for the field personnel to supply the pole location data necessary to keep the E&O records up-to-date.
- The task of technology transfer for GIS development and use was formally initiated with participation of a local PBS engineering consulting firm.
- Work related to the incorporation of the Electronic Record Card (ERC) data into the GIS database was completed. While the development of this ERC software package by the NRECA Computer Team under Task C.2 (Computerize the REB and PBSs) was done primarily in support of Tasks A.2 and B.1, it is very complementary to the work being performed under the GIS Task.

Task A.2: PBS Short and Medium Range Planning

- A qualified local professional was hired for the Utility Engineering position to assist specifically with the work associated with this Task. His employment and initial orientation took place during the earlier period covered by the Annual Work Plan Year # 2.
- Completed the final draft of the Construction Work Plan (CWP) for Manikganj PBS, the first of two PBSs where CWP's are to be completed. This is the comprehensive planning document that was envisioned as the major document in this task. It is planned that this document will become the primary planning document required for each PBS, by REB.
- Developed and delivered a training presentation for REB, local consultant and PBS personnel that gave an overview of the CWP process.
- Conducted a four-day training class on WindMil engineering analysis software, which is the software to be used during the development of a typical CWP and for other REB/PBS engineering analysis work. Participants included two REB personnel and four engineers from two of the local PBS consulting firms.
- Initiated the review of operating conditions and data available at the previously selected pilot PBS, Dhaka PBS 1 in preparation for the beginning of the CWP development for that PBS.

Program Activity B: Operations and Maintenance Programs

Task B.1: Preventive Maintenance Programs

- A qualified local professional was hired for the Maintenance Engineer position to assist specifically with the work associated with this Task. His employment and initial orientation took place during the earlier period covered by the Annual Work Plan Year # 2.
- The Short Term Maintenance Specialist completed two assignments earlier in Year #2, with the last 3rd one having taken place during the last month of the AWP for Year #2.
- Completed the second phase of "hands on" maintenance training at ten of the substations of two of the pilot PBSs selected to participate in the maintenance task. This training was done onsite as the substations were undergoing their annual maintenance program and focused on reinforcing the

training received during the earlier phase of training, as well as on some additional maintenance tasks to further enhance the methods and skills of PBS/REB personnel related to maintenance work.

- Following visits to numerous PBSs to evaluate personnel and their approach to maintenance and in consultation with REB, Comilla PBS 1 was selected as the third pilot PBS to participate in the activities associated with the maintenance task.
- Delivered additional field training for the PBS line technicians related to "substation inspection procedures", with other general substation maintenance training also being incorporated.
- Conducted a thorough review of all of REB/PBS maintenance guidelines and prepared the subsequent revisions as follows:
 - Both PBS Instruction 100-29 (Substation Inspection and Maintenance) and PBS Instruction 100-30 (Distribution Operation, Inspection and Maintenance) were thoroughly reviewed and revised to reflect current needs and utility accepted practices
 - Formal review sessions were held with the concerned REB and PBS personnel to finalize the newly revised Instructions, when where subsequently submitted to REB for formal approval by the Board.

(Note: The submission of the revised guidelines was a deliverable under the RPPR II contact.)

- Located a high quality wood pole test and treatment firm and executed a contract with them for their Wood Pole Plant Specialist to perform an initial survey of a representative sample of wood poles in the REB System.
- As part of the overall maintenance program, arranged for the completion of a field survey utilizing a Wood Pole Plant Specialist from a wood pole testing and treatment firm in order to determine the condition of REB wood poles presently in service and to make subsequent recommendations as to a cost effective test/treatment program to increase the service life of the poles.
- Participated with NRECA Computer Team in support of the development of enhancements for the new Electronic Equipment Card (EEC) software package that was designed in Yr. #1 for tracking the installation and maintenance of all system equipment (e.g., transformers, voltage regulators, capacitors, etc.), which is complementary to Task B.1.

Task B.2: *Material Supply for O&M Program*

- Successfully completed a lengthy recruitment process and engaged the services of a highly qualified short term Materials Management Specialist.
- This Materials Specialist completed two assignments with the focus being on his orientation to the REB/PBS system and work to assist with improving the Program's approach to the tendering and purchasing procedures in connection with the maintenance of substations and distribution line.
- Completed specific work related to the review of the existing PBS Policy Instruction 100-58 (OMRR Inventory Materials). This included a through review of the present OMRR Material List with appropriate recommendations being made with respect to modifications to the listing.
- Assisted REB and the PBSs in the preparation of a detailed list and indent for the equipment and materials required for the annual maintenance program for all substations located in the three pilot

PBS which are participating in the maintenance Task. This specific maintenance effort, which is scheduled for early 2005, will involve completing the annual maintenance of the substations, as well providing an opportunity for training of REB/PBS personnel assigned as members of the substation maintenance team.

Program Activity C: Strengthen Utility Performance

Task C.1: Strengthen Training Program and Procedures

- Curriculum development activities included finalization of the work on the design, development, pilot testing, finalization of curriculum materials (Trainer and Trainee Manuals), which was followed by implementation of the following training programs:
 - Management: Its Nature and Scope (REB and PBS officers/staff) (IM105) - Eng & Bangla
 - Management: Its Nature and Scope (REB and PBS Accounts staff) (IM 106) - Eng & Bangla
 - Operation, Maintenance and Repair of Voltage Regulator (Engineers) (TO 235) - English
- Additional curriculum development activities included work on the design and development of approved Curriculum Outlines, with work currently in process on the development of the curriculum materials (Trainer and Trainee Manuals) for the following training programs:
 - Operation, Maintenance and Repair of Voltage Regulator (Lineman Part III Passed) (TL 044)
 - Planning & Acting: Getting the Job Done (PBS Billing Supervisors) (IM121) - Eng & Bangla
 - Material Accounting (REB Assistant Directors (Finance) and Accountants) (IF 520)
- Other curriculum development work activities involved the design and development of approved Curriculum Outlines, however the work on these specific materials currently on hold until such time as the Financial Management Information System (FMIS) of REB has been developed and formally approved:
 - PBS General Accounts Manual for PBS officers/staff (IF300, IF305, IF310) – English
 - PBS Accounting Procedures for PBS officers/staff (IF315) – English and Bangla
- Proceeded with the organization of Training of Trainers (TOT) for the REB and PBSs employees who act as trainers in the training events.
- The Training Team, through the Curriculum Specialist (Finance) supported NRECA's Computer Team with respect to the development of the Financial Management Information System (FMIS) that is being prepared for REB under Task C.2.
- Members of the Training Team staff assisted the Engineering & Operations Team with final editing, and formatting requirements related to the revisions made to both PBS Policy Instructions 100-29 and 100-30 that were accomplished as part of Task B.1: Preventative Maintenance Program
- Provided support for the development of different communication materials associated with the RPPR II Program implementation and various aspects of Rural Electrification Program.

- As part of the ongoing assistance being provided to REB in support of the development of proposed RE Academy, a regional consultation tour was arranged for four officers to visit electric utility training institutions in Pakistan and Malaysia.
 - In Pakistan the various WAPDA operated training institutions visited included: Trabella Academy, WAPDA Staff College in Islamabad (developed and constructed with USAID funding), the Regional Training Center in Lahore, and the Technical Training Center in Faisalabad.
 - In Malaysia, visits and discussions were primarily with the Institut Latihan Sultan Ahmad Shah (ILSAS), which is the training center operated as part of the Tenaga Nasional Berhad (TNB), the national electric utility of Malaysia
- A total of 6,883 persons participated in training programs delivered by REB and NRECA during the reporting period. From this total, there were 1,349 female participants.

Task C.2: Enhance Computerization in REB and PBSs

- At REB's request, updated the Statistical Database (PBS module) to accommodate the provision for allowing adjustments to be made for entries of Debit Memorandum and Credit Memorandum (DM/CM) issued from REB and also to make the provision for having a 13th period that would remain open up until December of the current year. The updated module of the software was installed in all PBSs and at least one person per PBS received training on how to use this new module.
- Initiated the required testing and crosschecking necessary for the confirming the accuracy of the Performance Target Agreement (PTA) module of the Statistical Database (REB Module).
- Organized a two-day workshop on "Strategic Information Technology Planning (SITP)" in mid January, 2004 for REB and PBS personnel with the results being the identification of needs, strategies and priorities that would be required for directing the IT initiatives within the RE Program for the near term.
- Based on the priorities established at the IT Workshop and outlined in the Workshop Report, completed the design and development of the Consumer Information System (CIS) for the PBSs. In addition to providing ongoing support in other areas, the efforts related to the development of the CIS during the reporting period included the following:
 - Preliminary work included: assessments of existing computerized Billing Systems various PBSs; reviews of relevant PBS instructions related to consumer information and billing; and extensive discussions with relevant REB/PBS personnel to determine system requirements.
 - Assisted the two pilot PBSs in procuring the required hardware/software needed for CIS.
 - Installed the CIS package in the two pilot PBSs, Mymensingh PBS 3 and Kishoreganj PBS and conducted initial briefing sessions as orientation for the CIS users of the pilot PBSs.
 - Designed a data acquisition form appropriate for the transcription and entry of the consumer master data into the CIS database, which captures all relevant data for all existing consumers.
 - Completed training on the basic operation of the CIS package for the PBS users in pilot PBSs.
 - Initiated the data acquisition process (data transcription and data entry) in the two pilot PBSs.

- Organized a series of live CIS demonstrations for the participants from REB and different PBSs, including the two pilot PBSs with feedback being accommodated into the CIS package.
- Initiated the development of a draft "CIS User's Manual" that will support this newly developed software package.
- Conducted training course entitled "Computer Operating Fundamentals" in 19 PBSs with 275 PBS employees of different level have been trained.
- Support provided to make necessary modification in REB Payroll to accommodate tax and budget module in it.

Program Activity D: Supplemental Tasks

Task D.1: Updating Engineering and Construction Standards

- Evaluated the quality of Hotline Clamps manufactured locally and rendered an opinion on quality and functionality.
- Researched the switch tender awarded to a local manufacturer, including a visit to the manufacturing plant, and rendered a professional opinion on the acceptance of the tender, and quality of manufacturing processes and facilities of the manufacturer that won the tender.
- Solicited support from NRECA's Wood Quality Control subsidiary and rendered an opinion on acceptability of proposed wood preservative treatments to replace the present CCA treatment in response to formal request made by REB.
- At REB's request and in response to a position taken by the BPDB, researched and developed a paper on the effects of low voltage on power factor.
- Working in consultation with REB's Material Planning, Standards, and Specifications (MPSS) Directorate, assistance was provided in determining what would be the appropriate sets of "Standards" for REB to procure for referencing in their equipment and material specifications.

Task D.2: Socio-Economic Impact Assessment

- Continued implementation and institutionalization of the Socio-economic Baseline Database (SBDB) System to the initial eight "model" PBSs.
- Expanded the implementation of the SBDB system in nine additional PBSs with ongoing support provided for the full institutionalization of the system.
- Prepared two reports relevant to the socio-economic impact assessment activities, namely a) "Review of Accomplishments of the RPPR-I Socio-Economic Activities; and b) "PBS Performance in Baseline Data Collection For July 2002 to June 2003".
- Delivered various training programs related to the SBDB system at participating PBSs that included 738 PBS staff according to the following breakdown: Training of Trainers (33); refresher for data collection techniques and procedures (62); basic for data collection techniques & procedures (576); and data entry procedures & techniques (100).

- In addition to implementation at the additional nine PBSs, conducted eighteen follow up visits to ten PBSs for troubleshooting and providing support for the implementation of the SBDB.
- Completed three case studies on the positive impacts of the RE Program and prepared one page summaries of each.
- Continued with ongoing support for enhancing the capacity of the SEMEC and, provided some technical documents on socio-economic study design and data analysis. At REB's request, assisted SEMEC with the evaluation of bids for the IDA-financed project designed for tracking implementation of the socio-economic study activities, which would be carried out by a consulting team.
- Participated in a number of discussions on various social-economic issues related to the Bangladesh RE program, in particular the Dutch-funded Gender Strategy & Action Plan for the RE Program and subsequent Workshop that was held in early 2004.

III. PROGRAM ACTIVITIES WITH TASKS

Focus on Project Yr. #3

Program Activity A: Planning and System Engineering

Task A.1: Service Territory Database

Advisor Assigned: Ray Thayer, Engineering and Operations Advisor
Specialist Assigned: Daniel Waddle, GIS Specialist
Local Professional: A.T.M. Selim, GIS Specialist Local

The GIS work being done under this particular Task for RPPR II is the second phase of work that is a continuation of what was began under the initial phase during RPPR I that served as a pilot demonstration for four PBSs. During Year #1 of the second phase, the fieldwork at Natore 1 and Pabna 2 was completed. However these PBSs failed to provide transformer data of sufficient accuracy to permit the GIS project to be completed at their PBSs. They resubmitted data during the latter part of the second quarter of year 2. This data has been integrated into the GIS database and found to be acceptable for most feeders. However, on approximately 10 % of the feeders, the completeness of data was unacceptable. Consequently, before proceeding further, data that is more accurate is being pursued from the PBSs with the expectation that it would be received in the early part of the time covered by this Workplan.

In terms of enhancing the planning and system engineering for REB/PBSs, it is imperative that the engineering & operations (E&O) records of a PBS be kept accurately and up to date. If the local consultants and PBSs update E&O records and maintain them on a regular basis, system planning will be done with more accuracy and overall PBS operations will improve as will system reliability. To successfully institutionalize the Engineering and Maintenance Tasks of RPPRII, it is absolutely necessary that the PBS have up-to-date engineering, operations and maintenance records. Further, it is also necessary that the PBS have an effective data flow within the records updating procedure that is functioning that will allow for these records to continue to be kept up to date. The records updating procedure has been developed by NRECA and is being implemented at the PBSs involved in the GIS activities. Lastly, there should be someone (REB or PBS personnel) who has to take responsibility to oversee these processes to assure they are being accomplished, and have sufficient confidence as to be able to verify the accuracy of the records. In actuality this E & O record keeping process is important to all four Tasks included under both Activity A and Activity B of RPPR II.

Based on experience it has been determined that the level of cooperation with key PBS managers, starting with the General Manager and extending to the Assistance General Managers is key to the successful implementation and institutionalization of GIS and E&O project initiatives at all PBSs. When a GIS Project begins at a PBS, it involves from 12-16 personnel from three or four consulting firms, in addition to NRECA and PBS personnel. Therefore, if the decision has to be made to discontinue a GIS project at a particular PBS, which has already initiated the fieldwork due to the absence of the required cooperation, various logistical problems would occur for the participating firms and their personnel. This would also mean valuable time and resources would have been expended by NRECA's GIS Team in preparation for a GIS initiative that would not be possible to complete.

Experience has also shown that institutionalizing the "records updating process" as described above has proven to be much more of a challenge than that actual implementation of individual

GIS projects themselves. As such it has been determined that an effective way to select PBSs for future GIS projects would be to first spend a week implementing the "records updating procedures" at a particular PBS to determine whether the level of cooperation from the concerned PBS personnel, as well as the Retainer Engineer would potentially be what is required for the GIS work. Implementing this E&O records process is something that should be done at all PBSs regardless of whether a GIS initiative will be done in the near future or not, so using it as a "qualifying test" is certainly not something that would be considered outside of the process used for rolling this out to all the PBSs. It would involve only a few man-hours of NRECA personnel's time, and only the consulting firm serving as the PBS Retainer Engineer would be involved. This provides the PBS with an opportunity to show interest in improving their job performance and at the same time demonstrate that they are willing to become engaged in the work required for having a GIS initiative at their PBS. If after a couple of weeks, it is determined that the PBS, and consulting firm are effectively engaged in the updating of the E&O records, a decision could then be taken with respect to proceeding with a GIS project at that PBS. If support were not forthcoming from the PBS and consulting firm personnel, then this "records updating process" would be started at another PBS as part of the process of selecting the next PBS to be involved with the GIS initiative.

Regarding the proper implementation and institutionalization of the records updating process and ensuring that PBSs keep accurate E&O records, significant third party actions by REB will impact NRECA's ability to complete the GIS work outlined in this proposed Year #3 Work Plan. REB will need to give strong support to this effort and must insist that the PBSs assure the data flow processes described below are implemented and that their E&O records are updated as part of routine work and thus are kept up to date, as described below. REB must also ensure that the PBSs have adequate levels of budgeted financial resources to allow them to update their records, and physically number their poles in the field.

The nature of the GIS work requires that the in-depth training on developing and using GIS be provided to the consulting firms, while REB's needs relate more to overseeing this work and knowing how to utilize the information that is an output of the GIS. These roles and responsibilities were outlined in a REB/PBS Policy Instruction that was drafted during Yr. #1. During Yr. #2, the task of training some of the participating local consulting firms and REB's GIS Cell staff in the use of ESRI's Arc View software package was initiated. While the more sophisticated work on the Arc Info software will remain with NRECA's local GIS professionals for the immediate future, efforts will begin to better formalize the specific roles as outlined in the earlier drafted Policy Instruction. Plans are in place to continue this training in the use of the ESRI GIS software for personnel from both REB and local consulting firms during Yr. # 3.

It should be noted that significant third party actions at the PBS level would affect NRECA's ability to complete the proposed AWP Yr #3. The participating PBSs would need to provide complete, accurate engineering and operations data, including transformer record data. Also, the local consulting firms would need to provide GIS field personnel to participate in the field GIS data gathering and training.

Further significant third party actions involve the REB. These actions include ensuring that the GIS Cell personnel would be dedicated solely to this task. It is also necessary for REB to purchase the computer hardware and software for the GIS Cell that was established under the World Bank-funded Institutional Development TAPP. In addition, arrangements may have to be made so that the local consulting engineers can purchase the computer hardware and software that is required for providing this new GIS service to the PBSs. The consulting engineers that do not have the necessary hardware will be responsible for data gathering only

and will be trained on use of the software after their equipment is available. The participating consulting firms that have the necessary hardware will be provided with training when the Arc View software is available to them. In addition, there is a need for REB (or the participating PBSs) to purchase, or otherwise make available to consulting engineering firms GPS receivers to be used in updating of the GIS for their respective PBSs.

Specific tasks and sub-tasks related to GIS work to be addressed during Year #3 include:

- 1) Continue to select PBSs and consulting engineers to participate in this phase of the GIS work. This selection process will be ongoing throughout Phase 2 of GIS.
- 2) Complete the GIS processing for Dhaka 1, Natore 1 and Pabna 2 including the following:
 - Re-incorporation of GIS field data into the GIS database for when sufficiently accurate transformer data is provided.
(Note: The incorporation of data was nearly completed earlier, however it had to be stopped for lack of accurate data from the PBSs. This will be completed upon provision of acceptable data from those PBSs.)
 - Prepare and print the final maps and provide copies to both REB and the respective PBSs.
- 3) Integrate transformer data into the GIS database, print maps, and develop an economic viability by feeder analysis for Mymensingh 2.
(Note: This work can only be done if the PBS provides acceptable transformer data.)
- 4) Continue with the development of the complete GIS capability for Narsingdi 1, which will include the following:
 - Completion of GIS field data gathering (Note: This was approximately half completed by the time it was discontinued because of rainy season with the expectation it would resume early in the period covered by this AWP);
 - Integration of the transformer data into the GIS database;
 - Preparation, printing and distribution of the detailed maps; and
 - Development of the economic viability by feeder analysis for the PBS.
- 5) Develop complete GIS capability for Tangail and one additional PBS, consisting of the following at both PBSs:
 - Supervision of field data gathering;
 - Development of the land base, and incorporate field data into GIS database;
 - Preparation of final detail maps for both REB and the respective PBSs; and
 - Development of the economic viability by feeder analysis.
- 6) Provide advice and assist REB in regard to making the necessary arrangements for equipping consulting engineering firms with the hardware and/or software requirements for this GIS task.
 - Provide support as needed to facilitate REB's taking necessary action regarding the required staffing for the REB GIS Cell; and
 - Provide support as needed to facilitate REB's taking necessary action regarding the required computer hardware and/or software for consulting engineers, as well as acquisition of GPS Receivers for use consulting engineers.

7) Train selected consulting engineers for various GIS tasks.

- Conduct refresher training for the consulting engineering firms of RPPR 1 in the use of the GPS receivers.
- Provide training to selected consulting firm personnel new to the GIS task in the use of GPS Receivers for geo-referencing electric line features.
- Conduct training for selected consulting engineers and concerned REB officers to demonstrate necessary features of Arc View, which will be used by the consulting engineers for GIS updating for their respective PBSs.

During the course of the past year, it has become glaringly obvious that the PBSs do not have up-to-date engineering, operations and maintenance records, nor do they have effective procedures in place that will assure that the records are kept up-to-date.

For the above reason, it was decided that to be successful in institutionalizing our E&O tasks (including GIS) at the PBSs where we are introducing them, we will first have to assist them in implementing adequate data flow procedures, then oversee them in the data gathering and records update processes, until the E&O records are up-to-date. We will continue with this in year # 3.

Specific tasks and sub-tasks related to the E&O Record keeping initiatives to be addressed under the Year #3 Work Plan include:

- 1) Verify the accuracy of the operational diagrams ('Single Line Diagrams') and detail maps.
 - Work with the consulting firms to file the "As-Built" Staking Sheets in order by date completed, or "Work Order" number. If they choose to file them by "Work Order" number, the consulting firm personnel will be requested to display a list that designates what year the various "As-Built" Work Orders were received.
 - Review a sample of the "As-Built" Staking Sheets for various years, including those within the past 6 months, and ensure they are shown accurately on both the single line diagram and the detail maps.
 - Encourage the consulting firm to go to the field and accurately and completely update the Single Line Diagrams and detail maps, ensuring that there is strong support from both the PBS General Manager, and REB.
- 2) Encourage the PBS to have all the primary distribution poles physically numbered in the field, according to the newly updated Single Line Diagrams and detail maps.
 - The PBS General Manager should do this either with PBS personnel, or by contract. In most cases, this will take strong support from both the PBS General Manager, and REB.
 - REB will need to assure the PBS operating budget has sufficient amounts of taka in the appropriate account for performing this work.
- 3) After the pole numbers are physically placed on the poles in the field, the data flow processes need to be put in place that will allow for the records to be kept up to date on a continuous basis.
- 4) After the data flow processes are working effectively, then and only then should the field data be gathered to accurately update the transformer record cards.
 - Transformer poles must be climbed and nameplate data be recorded on hard copies.
 - Number of customers by consumer classification must be counted and recorded on the

above hard copy.

- While the above items in #4 are taking place the data flow forms must be accumulated until the field data gathering is complete and input to the Record Card (ERC) software.
- 5) After the transformer data is gathered and recorded, it must be input to the Electronic Record Card (ERC) software developed by NRECA for this purpose.
- 6) After # 5 is complete, the data flow forms accumulated in # 4 must be input to the ERC software, now the E&O data discussed above is correct.
- 7) The PBS must continue to provide data (through the data flow processes implemented above) to the Retainer Engineer (RE).
- 8) RE personnel must input the data provided by the PBS personnel in # 7 to the ERC software.
- 9) Seek REB support for NRECA to train REB personnel to assist the PBSs with implementation of data flow processes described above, and updating their E&O data. NRECA will not oversee these processes, but simply act in an advisory role.

The Engineering and Operations Advisor, assisted by the lead Local GIS Specialist will be responsible for directing the overall GIS activity as well as developing the basic requirements for the GIS development. Other member of the NRECA GIS Team will manage the data collection in the field, as well as do some development work in the office during the raining season when fieldwork cannot be done. The STS – GIS Specialist will support the overall GIS activity and provide the necessary expertise required for the technical direction of the GIS Task.

◆ LTA -Engineering and Operations Advisor	3.0 MM	Oct. 2004 – Sept. 2005 (PT)
◆ STS – GIS Specialist	3.0 MM	Oct. 2004 – Sept. 2005 (PT)
◆ LPS – GIS Specialists (3)	36.0 MM	Oct. 2004 – Sept. 2005 (FT)

Task A.2: PBS Short and Medium Range Planning

Advisor Assigned: Ray Thayer, Engineering and Operations Advisor
Specialist Assigned: Colin Jack, Planning Specialist A
Specialist Assigned: Michael Smith, Planning Specialist B
Local Professional: Maruf Hasan, Electric Utility Engineering Specialist

The Manikganj PBS Short-Range-Planning Document, which was completed during the Year #2 Work Plan, will be used to continue the process of training consulting engineers from two PBSs to carry out short and medium range work plans, during Year #3 of the RPPR II Program. More specifically, the consulting engineers and REB will be given further training in the use of some of the system analysis software that was used in the development of the Manikganj Work Plan. The consulting engineering firm ECBL, whose client is Manikganj PBS, will prepare a 'load flow analysis' under the direction of NRECA personnel, as their part of the development of the update to the Short-Range Planning Document prepared for Manikganj during Years #1 and #2. Updates to this document will also be done during each of the remaining years of RPPR-II, during which the consulting engineering firm will complete other modules under the guidance of NRECA. This is the method that will be utilized to train the consultants on the preparation of various modules that are included in the actual planning document. The same method will apply for TSL, the consulting firm providing engineering services to Dhaka 1.

As with Task A.1, in most cases, the training related to this planning methodology will focus primarily on staff from the consulting engineering firms, however opportunities will be available for REB personnel to participate where appropriate. Being that these firms are responsible for providing engineering services to the PBSs, the in-depth training on these methodologies and this engineering software will be provided to the consulting firms, while REB's needs relate more to overseeing this work and knowing how to review the work plans when they are submitted by the PBSs for approval.

As was the case for Task A.1, significant third party actions will affect NRECA's ability to complete these elements of the proposed Work Plan for Year #3. The primary action includes the need for REB to negotiate compensation agreements with the consulting engineers that allow them to participate in the project using these new planning methodologies. The present compensation rates are based on criteria that may not readily adapt to the new planning methods, but at a minimum will necessitate review and possible revision of the rates. In the interests of long-term sustainability, it will be the responsibility of the PBSs to compensate the respective consulting engineers in the future for providing these enhanced technical services to their respective PBS clients. However, as in Task A.1, REB sets the compensation rates for the various consulting services provided by the firms to the PBSs. A rate will need to be established for these enhanced planning methods that will now be available to the PBSs.

Further significant third party actions affecting NRECA's ability to complete the proposed work plan for year # 3 will include the need for REB to give strong support by requiring that the consulting firms become engaged with NRECA whereby they can participate in the training and thus further their capabilities with the various software modules by developing the parts of the planning documents as discussed above.

Specific tasks and sub-tasks to be addressed during Year #3 include:

- 1) Oversee the update of the database for the Manikganj PBS by their consulting firm (ECBL), and support them as needed for the utilization of the analysis software and for other aspects of the preparation of the updated planning document.
- 2) Install the Milsoft engineering software packages on the computers of the participating consulting engineering firms and continue training on the Windmil feature of the Milsoft package, which will be used by personnel from the consulting firms.
- 3) Continue the process related to the collection of data required for the development of the Work Plan for Dhaka 1 PBS and as part of this process involve ECBL from Manikganj PBS so the training effort can support both consulting firms and the respective PBSs.
 - 1) Conduct training at Dhaka 1 and Manikganj PBSs in the proper procedures for recording and retaining data on outages, system loading and voltage regulation.
 - 2) Obtain operational performance data on outages, system loading and voltage regulation.
- 4) Advise and assist REB in the development of appropriate compensation rates for the use of new techniques and engineering software being utilized for the development of the new planning documents being prepared for the PBSs by the local consulting firms.

The Engineering and Operations Advisor, assisted by the Local Professional will be responsible for implementation, monitoring and evaluation. The Engineering and Operations Advisor, assisted by his Local Professional, will lend hands on support, as needed to the local consultants and REB personnel in the use of WindMil analysis software. The Local Engineer will also assist with the ongoing implementation and institutionalization of the E&O Records Updating

process. The Planning Specialist A will not be utilized during this Work Plan period as the Milsoft training will be handled by the E&O Advisor and the Planning Specialist B. The Planning Specialist B will conduct training in the process being utilized for the development of the PBS Work Plans.

- ◆ LTA -Engineering and Operations Advisor 4.0 MM Oct. 2004 – Sept. 2005 (PT)
- ◆ STS - Planning Specialist B 3.0 MM Oct. 2004 – Sept. 2005 (PT)
- ◆ LPS - Electric Utility Engg Specialist 12.0 MM Oct. 2004 – Sept. 2005 (FT)

Program Activity B: Operations and Maintenance Programs

Task B.1: Preventive Maintenance Programs

Advisor Assigned: Ray Thayer, Engineering and Operations Advisor
Specialist Assigned: E. D. Stanley, Maintenance Systems Specialist
Local Professional: Hasibur Rahman, Maintenance Engineer

The focus of Year #3 for this Task will be to continue working on the various elements that will provide an enhanced preventative maintenance program. This effort will strive to enhance the capacity the PBS capacity to implement the basic functions of an effective maintenance program. This work will include improving the work procedures associated with the proper maintenance of substations, routine line inspections, monthly substation inspections, and interruption reports. This will include working with REB and PBS personnel in order to develop an improved understanding of the importance of completing the paperwork properly and providing instructions on the procedures for properly filling out the paperwork associated with these tasks. The efforts described above are a continuation of the groundwork laid in Years 1&2. Based on experience there is an agreement that these subjects need to be continually reinforced with both PBS personnel and REB personnel.

As was done during Years #1 & #2, the efforts made during Year #3 will also include an extensive focus on training of PBS and REB personnel on various maintenance procedures and techniques for both substations and distribution lines. This training will be primarily delivered to the PBS "maintenance teams" from the three pilot PBSs who received training during the past two years. The overall plan includes using the trained personnel for dissemination of the newly acquired techniques and skills to personnel from other PBSs. It is also imperative that REB System Operations personnel be involved in these training sessions as well.

In order to improve the overall effectiveness of the preventive maintenance program within the RE Program, REB must move away from the supervisory and execution role it now plays in relation to maintenance of the PBS substations. It is quite important that the responsibility for the maintenance work in the PBS substations be given to the PBS personnel, with REB providing oversight to ensure that the maintenance schedules are developed properly and followed in such a manner that the maintenance work gets performed as scheduled and with satisfactory results. REB also needs provide maintenance training when needed. This is a major reassignment of responsibility for REB and the PBSs, and efforts will be expended during Year # 3 to promote a transition to this new approach.

As noted under Task A.1, the emphasis on proper E&O records is also related to this Task because having an effective preventive maintenance program requires accurate information on the equipment installed on the distribution system that is to be maintained. The Engineering &

Operations Advisor and the STS Maintenance Specialist will continue to provide the necessary support required for the development of the Electronic Record Card (ERC) Software that is required by the NRECA Computer Team. As this subject was discussed in detail under Task A.1, the details will not be repeated here.

As with other RPPR II Tasks, significant third party actions will impact NRECA's ability to complete all of the elements of the proposed Year #3 Work Plan. One of the key actions includes the need for REB to strongly support the procurement of many "spare parts" that are needed for performing the substation maintenance and which are not presently being stocked. Once available in country, REB will need to support the timely distribution of these needed spare parts when they are needed. Other recommendations for the procurement of maintenance materials will be made in Task B.2. REB will also need to support NRECA's request to continue the maintenance training with the same personnel from the PBSs that were designated as the "PBS maintenance team" and who received the related training on substation inspections and maintenance during Year #2. Lastly, REB will need to actively engage the new concept of having the REB System Operations group transition from an active role in the maintenance of PBS substations to a role of oversight (not supervision) and training.

Specific sub-tasks to be addressed in Year #3 include:

- 1) Continue the development and implementation of automated Electronic Record Cards (ERCs) program for the PBSs that was initiated during Year #1 and was improved significantly during year 2. The enhancements will continue during year 3, and will include the addition of Power Transformer Cards, and possibly Capacitor Cards.
 - Install the ERC software at 2 or 3 additional PBSs, as requested. Time constraints do not allow us to install this software at other PBSs.
 - Seek REB support to train and support REB personnel while they install the ERC software at other PBSs.
 - Continue with enhancements to the software package and include the addition of cards for Power Transformers located in substations, and possibly cards of capacitors.
- 2) Proceed with the delivery of the required training for the PBS and REB personnel on various topics related to effective maintenance procedures and techniques.
 - Conduct hands-on training for substation maintenance personnel from the three participating PBSs as part of active involvement with the annual substation maintenance work that occurs during the winter (dry) season.
 - Begin the first phase of training with the "maintenance team" from the third pilot PBS (Comilla 1) that was selected during Year #2 to be involved with this Task.
 - Continue the training for the "maintenance teams" from the two PBSs who received training during Year #2 with the focus being on the reinforcement of the earlier training, as well as introducing more diagnostic tests, and remedies for problems and potential problems that are likely to be found.
 - Continue the training on the proper methods of conducting routine substation inspection including the proper procedures for filling out the associated paperwork. This sub task was begun during the latter part of year 1, and the level of effort to continue during year # 2, was minimal. This effort needs to increase substantially.
 - While continuing to reinforce the topics covered in the various training sessions as part of the institutionalization process, begin some planning as to what will be required to mentor the personnel making up these "maintenance teams" as part of the process of

preparing of these pilot PBSs as training sites for other PBS personnel in order to disseminate these elements of a quality preventive maintenance program to other PBSs.

- 3) Continue to perform on-site reviews of current line maintenance practices.
- 4) Review vegetation control options including the investigation of option of obtaining a blanket national tree trimming permit from the concerned GOB department.
- 5) Follow up on the proposed revisions of PBS Instructions 100-29 (Substation Maintenance) and 100-30 (Distribution Line Maintenance) that were finalized and submitted to ensure that REB takes the necessary action to approve these two policies.
- 6) Conduct a seminar for REB and PBS personnel on the findings of the assessment of current line maintenance practices and present recommendations and options for addressing deficiencies that were identified.
(Note: This was an item in the Year #2 Work Plan, but it was not completed.)
- 7) Develop a recommended pole inspection and maintenance program for the PBSs, and begin a pilot program to train them in the techniques involved.

The Engineering and Operations Advisor will be responsible for coordination, logistics, scheduling, and monitoring of all phases. The Maintenance Systems Specialist will be the primarily individual responsible for the execution of this Task with support being provided by the local professional.

◆ LTA -Engineering and Operations Advisor	2.0 MM	Oct 2004 - Sept. 2005 (PT)
◆ STS - Maintenance Systems Specialist	3.0 MM	Oct 2004 - Sept. 2005 (PT)
◆ LPS - Maintenance Engineer	9.0 MM	Oct 2004 - Sept. 2005 (PT)

Task B.2: Material Supply for O&M Program

Advisor Assigned: Ray Thayer, Engineering and Operations Advisor
Specialist Assigned: Craig Dickson, Materials Management Specialist
Local Professional: Hasibur Rahman, Maintenance Engineer

The most immediate objective of this Task is to ensure that the PBSs participating in Task B.1 have access to necessary materials (OMRR) to be able to carry out the maintenance tasks as needed and planned as part of the training that will be conducted during the coming year. The activities of Year #1 accelerated rapidly during year #2, after the Materials Specialist was successfully recruited, and had the opportunity to initiate activities related to this Task during the later part of Q2 and the beginning of Q3. The current situation at REB and the PBSs indicates that there is a need for a change in how the process of obtaining OMRR materials for PBS maintenance is viewed and how this is presented in the OMRR policy. Currently only the material included on the OMRR policy list can be ordered (without written approval of Chief Engineer P&O) unless the order is for a specific construction project thus indicating the existence of limited flexibility in the Policy. In actuality, all items of material are needed for maintenance work. This needs to be addressed in the revision to the OMRR policy.

The aim of this coming year's activities will continue to be for developing the required framework with delegations of authority and responsibilities between REB, the three participating PBSs, and NRECA to allow for the timely acquisition and efficient distribution of maintenance materials. This framework will culminate in the recommended revisions to PBS

Instruction 100-58 (Operations, Maintenance Repair & Replacement, (OMRR)) that will facilitate the above framework. Working to ensure that the Policy is being properly implemented will also be part of the effort associated with this Task.

Significant third party actions that will affect NRECA's ability to complete these elements of the proposed Work Plan for Year #3, include REB to tender and procure the maintenance items as requested by NRECA during the latter part of Q2 of Year #2. Also to successfully implement a delivery system that provides the PBSs with a regular supply of OMRR materials, REB must actively support the recommended framework as presented above.

The planned sub-tasks to be addressed in Year #3 include:

- 1) Continue the identification of needed changes to the PBS Instruction on OMRR with regard to the delegations of authority and assigned responsibility to allow for streamlined maintenance material acquisition.
 - Prepare the necessary revisions to the PBS Instruction on OMRR with regard to delegations of authority and assigned responsibility according to results of findings of year # 2.
 - Conduct a seminar for REB and PBS personnel on the proposed revisions to PBS Instruction 100-58 (OMRR). This would focus on what the present OMRR Instruction states, as compared to what is actually being practiced in the field and discussion on what is being proposed as revisions and why these are felt to be necessary.
 - Provide the appropriate oversight on the framework of responsibilities as listed in PBS Instruction on OMRR.
- 2) Continue evaluating PBS warehousing and issuance practices for maintenance materials and propose changes to be implemented in RPPR II.
 - Provide focused oversight at the three PBSs selected for the Pilot Maintenance Program to assure proper procedures for warehousing and issuing are being followed, as recommended so these PBSs can be used as models for other PBSs to view and learn from.
 - Determine how to address the perceived problem of "ordering for stock" as opposed to "ordering for construction projects only". Currently the only the material listed in the OMRR policy list can be ordered (without written approval of Chief Engineer P&O) unless the order is for a specific construction project. In actuality all items of material are needed for maintenance work. This needs to be addressed in the revision to the OMRR policy.
- 3) Follow up on stock levels and "material usage issues" identified during Year #1 and #2 to assess activity rates with respect to OMRR items in the three pilot PBSs.
 - Advise and assist REB in regard to a second procurement for substation maintenance items that will be required in order to maintain appropriate stock levels that will be depleted quickly because of the previous gaps in supply and inventories that existed.

Coordination, scheduling, logistics and monitoring will be the responsibility of the Engineering and Operations Advisor. The Material Specialist will be the individual assigned the responsibility of executing the activities associated with this Task. The local Maintenance Engineer, who will be working on Task B.1 on an as needed basis, will also provide some support for this Task.

◆ LTA – Engineering and Operations Advisor	2.0 MM	Oct 2004 - Sept. 2005 (PT)
◆ STS – Materials Specialist	4.0 MM	Oct 2004 - Sept. 2005 (PT)
◆ LPS - Maintenance Engineer	3.0 MM	Oct 2004 - Sept. 2005 (PT)

Program Activity C: Strengthen Utility Performance

Task C.1: Strengthen Training Program and Procedures

Advisor Assigned: James Ford, Team Leader
 Local Professional: Bashir Ahmed, Director of Curriculum Development & Training
 Specialist Assigned: Dr. Randall Dupont, Training Specialist

A number of the sub-tasks related to this Task will be ongoing from Year #2. One important sub-task will be to finalize the Training Needs Assessment that has been drafted, while another one will be to continue with the major curriculum development effort that is providing the REB Training Directorate with quality training materials for conducting all types of training programs (e.g., engineering/technical, management, and finance). Progress on both of these subtasks is providing significant benefits towards strengthening the REB training program and procedures. In addition advise and assistance continues to be provided to REB with regard to the development of the proposed Training Academy, however the approval process for this Academy has been very slow and still remains within the government bureaucracy.

A series of workshops will be conducted whereby the concerned REB officers and selected representatives from PBS will have the opportunity to thoroughly review the present draft report on the Training Needs Assessment of REB/PBS officers and employees and its corollary task analysis. The objective of the Training Needs Assessment and task assessment is to attempt to present a synopsis of the training needs for the personnel assigned to the various positions within the RE Program with respect to the tasks assigned to each position. It will also attempt to reflect the expectations of management for the various positions and reflect the level of preparation of the incumbents in the respective positions with regard to fulfilling those expectations. In addition, the Report to indicate the planned progression of development resulting from the training interventions as outlined in the REB Curriculum Plan.

With regard to this Training Needs Assessment, it is again noted that while this Assessment will be supporting the development of the proposed Training Academy, the RPPR II Program does not have adequate resources that would be required to complete the full Feasibility Study that may be necessary to support the government approval process leading to the development of the proposed Training Academy whose construction is to be funded by the ADB.

Likewise previous year, the on-going curriculum development effort of the team of specialists will continue with the participation of the Directorate of Training of REB in Year #3 as a means for addressing the enormous requirement related to the revision and updating of existing curriculum materials and the development of curricula for programs that have yet to be offered by REB's Training Directorate. In addition, the translation of materials from English to Bangla required to support the needs of the target populations of selected training programs that have PBS personnel. Due to its importance, the NRECA Training staff will also provide support for the delivery of computer training that will continue to target both REB and PBS personnel. This is particularly important with regard to assisting with the implementation of the computerization effort being directed by NRECA under the RPPR Program, including the

previously developed software packages and the new Customer Information System (CIS) that is currently under development.

Various sub-tasks identified for completion during Project Year #3 include:

- 1) Continue with the established curriculum development process in support of the following curriculum development activities:

(Note: The curriculum development process includes: design of Curriculum Outline, review and approval of Curriculum Outline, development of materials, review and approval of materials by concerned REB Curriculum Committee, pilot testing, and finalizing. English to Bangla translation will also be completed as needed. Curriculum materials include both Trainer and Trainee manuals along with necessary visuals (overhead transparencies, etc.).

- Complete the development of the curriculum materials (Trainer and Trainee Manuals) for the following training programs that were initiated during Year # 2:
 - Operation, Maintenance and Repair of Voltage Regulator for Lineman Part III Passed (TL 044)
 - Planning and Acting: Getting the Job Done for PBS Billing Supervisors (IM121) – English and Bangla
 - Material Accounting for Ass't Directors (Finance) & Accountants of REB (IF 520)
 - Controlling – Keeping Plans on Target for PBS Billing Supervisors (IM 135)
 - Interpersonal Communication for PBS Billing Supervisors (IM 152)
- Conduct the necessary analysis and prepare the Curriculum Outlines of the following training programs proceed with for developing the training materials (Trainer and Trainee Manuals) for the following programs:
 - Understanding Financial Reports (IF 335)
 - REB Financial Audit Procedure for REB DDs and ADs (IF 545)
 - REB Internal Audit Procedure REB DDs and ADs (IF 555)
- Prepare the Curriculum Outlines of the following training programs, obtain approval of the concerned Curriculum Committee, proceed with for developing the training manuals (Trainer and Trainee Manuals) for the following programs aimed at the engineering staff of REB and PBS:
 - Maintenance and Repair of Transformers for Engineers (TO 230)
 - Transformer Maintenance and Repair for Technicians (TO 232)
 - Transformer Maintenance and Repair for Lineman (TL 042)
- Complete the English to Bangla translation of the Trainer and Trainee Manuals as determined by REB based on the target populations of the various programs.

(Note: The particular sequence of programs identified for curriculum development may change depending on REB requirements.)

- 2) Finalize the Report on Training Needs Assessment to determine the current and future needs for the REB and PBSs through the completion of the following:
 - Conduct the workshops with the concerned personnel to review the initial findings of the assessment;
 - Develop additions aspects of the preliminary assessment report and present to stakeholders; and
 - Finalize the Report and submit it as one of the RPPR II deliverables.

- 3) Support the development of the Financial Management Information System (FMIS) that is being prepared for REB under Task C.2..
 - As a member of the development team, the NRECA Curriculum Development Specialist (Finance) will continue to work with REB and NRECA personnel on activities associated with the ongoing development of this new automated system because this new system will impact the finance related training materials being developed in support of the Task
- 4) Continue to support the development of different communication materials associated with the RPPR II Program and other aspects of the rural electrification program.
(Note: NRECA Training Team has expertise to prepare hardcopy and softcopy mechanicals in-house to meet commercial production requirements.)

The Training Task will be under the direction of the Team Leader with the day to day coordination being managed by the Director Curriculum Development. The details regarding personnel directly associated with this Activity during this Program Year include:

◆ LTA - Team Leader	5.0 MM	Oct. 2004 - Sept. 2005 (PT)
◆ LPS - Director of Curriculum Development	12.0 MM	Oct. 2004 - Sept. 2005 (FT)
◆ LPS - Curriculum Developers (3)	36.0 MM	Oct. 2004 - Sept. 2005 (FT)
◆ LPS - Support Staff -Training (3)	36.0 MM	Oct. 2004 - Sept. 2005 (FT)
◆ STS - Training Specialist	3.0 MM	Nov 2004 - Sept. 2005 (PT)

Task C. 2: Enhance Computerization in REB and PBSs

Advisor Assigned: James Ford, Team Leader
 Local Professional: Nurul Islam, Director Computer Systems Development
 Specialist Assigned: Samuel West, Computerization Specialist

This task will continue with the computerization efforts that began under RPPR I and progressed significantly during Year #1 and #2. As planned, the "Strategic Information Technology Planning (SITP)" Workshop was completed in mid January 2004, at which time REB had the opportunity to identify and prioritize the processes they would like to have automated. Based on the results of the Workshop a report was prepared that outlined the priorities agreed upon. Further to this effort, the NRECA Computer Team initiated work on a Strategic Plan for Information Technology with input from the concerned REB and PBS personnel. This Plan includes the findings of the assessment of the IT capabilities within REB/PBSs, as well as outlines the overall direction for the IT effort including a implementation scheme for some of the packages currently being developed for implementation.

Based on outcome of the IT Workshop, REB's top priority was the design and development of a comprehensive and integrated Customer Information System (CIS). At that time, REB requested NRECA to design and develop this new software package and subsequently took a Board decision, which formally documented the decision to have NRECA design and develop this important software package. Accordingly, NRECA started working on this software development project on a priority basis. CIS, as has been designed, is a single software package that will be common to all PBSs for processing all information related to PBS consumers, with consumer billing being a major component. The design and development of this comprehensive software package will incorporate all the principles, procedures and rules included in the relevant PBS Instruction series. The work on the design and development of this software has

involved a great deal of interaction between the NRECA Computer Team and knowledgeable REB & PBS personnel in an attempt to ensure that the software will meet the needs of the PBSs. This software package, when implemented, will provide for better "internal control" and security for the billing process and it will be totally controlled by REB through its ownership of the package. In addition having a common software functioning in all PBSs will make it much easier to update, to training the users, and will create less problem when staff are transferred from PBS to another.

A significant amount of the effort under this Task during Year #3 will be devoted to carrying out various tasks related to CIS. Specifically this will involve installing the software package at the two pilot PBSs, conducting the pilot testing, having a post implementation review, training vendors to install and support the CIS package at additional PBSs.

The previously developed Material Management software which integrates four REB Directorates (Material Planning, Standards & Specifications (MPSS); Accounts; Clearance, Movement & Storage (CS&M); and Procurement) will be reinitiated with plans to formally implement this integrated package during Year #3. This is due primarily to the new interest of the concerned REB officers responsible for these functional areas at REB. (Note this package has been ready for implementation but the inability of having the necessary hardware available so that each of these four Directorates could become engaged in this integrated approach, had delayed this for more than two years.)

Computer training at the PBS level has brought about significant improvements for users that the participating PBSs. Conducting the training on-site at the PBSs provides an opportunity for NRECA staff to help address various related problems that the PBS personnel might be facing due to their relatively limited computer experience. This training will continue to be provided to PBS personnel with a significant effort being made to enhance the capacity of the PBSs to move more quickly into the automated systems.

REB is preparing to form a IT Directorate in the coming months with the plan that this Directorate will assume the primary role of supporting the IT initiatives within REB and the PBSs. As this Directorate becomes active, there will be a requirement that some of resources available through NRECA's Computer Team will need to be involved in supporting the Directorate's development, as well as becoming the Team's counterpart at REB.

It must be noted that the success of NRECA's technical assistance in the area of computerization and IT development is heavily dependent on REB and the PBSs having the required hardware and in some cases software (Oracle) available at the respective REB office or the PBSs involved in the implementation of pilot testing of software modules. The same goes for the eventual rollout of the final software packages to additional PBSs. If the procurement of these items is hampered causing delays in the ability of NRECA's Computer Team to proceed as needed, there is potential that this will have negative impacts on the completion of various sub-tasks and activities.

The following specific sub-tasks are included in Yr #3 activities:

- 1) Continue with various task related to the development and implementation of the Consumer Information System (CIS).
 - Complete the implementation of this software package in two pilot PBSs including the relevant Zonal offices;

- Test the process of data communication between Head Quarters and the Zonal Offices and ensure that the integration of the databases can be accomplished smoothly;
 - Conduct the "post implementation review" of the software and complete any and all updates/revisions as may be required;
 - Test the 'aging of bills' modules of the CIS software package at a time of at least three month's after the first cycle of bill preparation at the pilot PBSs;
 - Assist REB in selecting Vendor implementers of the CIS package;
 - Organize workshops for the selected vendor implementers to provide an overview of the operation and functionality of the CIS software package;
 - Provide the necessary training and development of the vendors and lead them in the deployment CIS in their first PBS and continue to provide the ongoing support as needed; and
 - Monitor the ongoing implementation to ensure vendor implementation of the CIS.
- 2) Reactivate the work on the Material Management software package and pursue its implementation with the four concerned Directorates at REB.
- Reinitiate testing data validation and report consistency with the 'live' data from the five REB Directorates (MPSS, Procurement, CS&M, Accounts and Inspection and Testing) and Warehouses outside Dhaka;
(Note: The data communication among these sites is to be tested using the mini LAN system set up for this purpose until such time as the LAN is installed at the REB Headquarters.)
 - Conduct training for REB and warehouse personnel on the usage of the Material Management software package; and
 - Provide the relevant training for the REB Systems Analyst on the design and development process of the software so that he can make any enhancement that might be required in the software.
- 3) Initiate conversion of the existing software packages, PBS Payroll and PBS Statistical Database (Form 550) into Oracle and integrate with CIS as appropriate.
- This sub-task will require that all PBSs purchase Oracle RDBMS and requisite Hardware, especially a server that is capable of handling this database platform.
 - This transition to the new Oracle platform once the conversion of the software is complete will also require a certain amount of training that will need to be delivered for the PBS users.
- 4) Continue with the work being done for the preparation of a Strategic Plan for IT sector of the RE Program that was initiated by the Strategic Planning Workshop for IT conducted in January 2004.
- Proceed with the formal development of the Strategic Information Technology Plan based on the results of the Workshop and the Assessment Report and will present an appropriate exit strategy for NRECA's technical assistance in the IT area;
 - Present the draft Plan to the REB management for taking necessary decisions on the most appropriate short and long range strategies that will impact the framework for the RPPR II computerization efforts and the future IT sector; and
 - Finalize the Plan with incorporation of the feedback provided from the review meeting with the intent this will provide the direction of NRECA's computerization efforts through the conclusion of RPPR II.

- 5) Continue with the ongoing support to REB Payroll package, as well as the PBS Payroll package.
 - Complete the necessary conversion that will allow for its operation under an Oracle platform by the end of Year 3.
- 6) Work to reactivate the interest in the REB General Ledger Module so that it can be incorporated into REB's Financial Management system and thus become the initial module for the proposed Financial Management Information System (FMIS).
 - Conduct testing of this module of FMIS using the new REB Chart of Accounts when this new chart of accounts is ready.

(Note: The delay in having this software module implemented has been due to the inability of the REB Accounting Directorate to take a decision on what the "opening balance" should be when the module is activated.)
- 7) Provide ongoing support to the REB IT Directorate once it is established and work to enhance the capabilities of its assigned staff.

(Note: Specific details on the required support will depend on the personnel assigned to the newly established Directorate.)

The Activity for Project Year #3 will continue to rely significantly on the utilization of NRECA's Local Professionals who are specialists in the computer fields. The Team will receive its direction from the Team Leader and specific guidance from the expatriate Computerization Specialist who will provide input on various issues including assessment tasks and details of some of the software packages that are being developed. Details on personnel to be involved during this project year include:

◆ LTA - Team Leader	5.0 MM	Oct. 2004 - Sept. 2005 (PT)
◆ STS - Computerization Specialist	2.5 MM	Oct. 2004 - Sept. 2005 (PT)
◆ LPS - Director of Computer Systems	12 MM	Oct. 2004 - Sept. 2005 (FT)
◆ LPS - System Analysts (4)	48 MM	Oct. 2004 - Sept. 2005 (FT)
◆ LPS - Computer Training Specialist	12 MM	Oct. 2004 - Sept. 2005 (FT)

Program Activity D: Supplemental Tasks

Task D.1: Updating Engineering and Construction Standards

Advisor Assigned: Ray Thayer, Engineering & Operations Advisor
 Specialist Assigned: James VanCoevering, Utility Engineering Specialist

The overall objective of this Task is to review and revise the existing engineering, construction and procurement standards used by REB in light of the requirements for updating technology and responding to previously unanticipated requirements. The transfer of BPDB and DESA areas to REB has also created a need for construction standards that can be applied in urban areas, for substations of capacity greater than the normal 10 MVA REB rural substation, and for modified approaches to system design to address the prevailing theft of neutral conductors.

Limited time has been devoted to this task during the previous two years of RPPR II, largely due to other tasks taking precedence. However, this will change during year # 3, and a more focused effort will occur on this Task.

During Year #3 of RPPR II, the emphasis will be on the continuing review of existing standards and on recommendations of needed changes based on load requirements, needs for updates to reflect changes in technology, and on developing modified system designs that respond to neutral theft and the particular needs of urban construction. Development of specific documents and standards will be carried out during the second project year. Planned sub-tasks to be addressed in Year #3 include:

- 1) Complete report on recommended system changes required to deal with neutral theft based on the assessment work that was completed during RPPR I.
 - All background work is complete on this task. The written report will be completed and submitted during the first quarter of year 1.
- 2) Examine selected taken over areas as requested by the World Bank and recommend construction standards for substations, and power lines. These revised construction standards will be specifically designed to meet the needs of REB in the more densely populated, urban areas that are being taken over and absorbed into their systems.
- 3) Continue the review of distribution construction standards applicable in the less urbanized areas, in light of available materials and equipment, including an evaluation of the adequacy of materials actually in service.
 - Select local engineering firm and contract services for updating and revising engineering and line construction drawings and preparing new ones as required.
- 4) Continue the review of equipment specifications in light of current practice and performance experience and present recommended changes where necessary.
 - This will include assisting REB with the development of any new equipment specifications that may be needed as a result of item #2 immediately above.

The Engineering and Operations Advisor will be responsible for coordination, logistics, scheduling, and monitoring of the subtasks involved with the Task. As the long-term Engineer for RPPR II, the E&O Advisor will be available to advise and assist REB and the PBSs on general engineering issues, but the Engineering Specialist will be the primarily individual responsible for the execution of the detailed sub-tasks and activities associated with this Task with support being provided by one of NRECA's local engineering professionals as needed.

◆ LTA - Engineering and Operations Advisor	1 MM	Oct. 2004- Sept. 2005 (PT)
◆ STS - Utility Engineering Specialist	3 MM	Oct. 2004 - Sept. 2005 (PT)

Task D.2: Socio-Economic Impact Assessment

Advisor Assigned: James Ford, Team Leader
 Local Professional: Kamal Dey, Socio Economist

The overall objective of the Task continues to be the ongoing development of a "system" (Socio-Economic Baseline Database System – SEBDS) by which the PBSs can gather relevant socio-economic data that will be incorporated into a data base that can be used to measure the impact of the RE program and provide useful information to REB, the PBSs, GOB and members of the donor community. This effort will include completing tasks related to assisting with the

development of REB's existing Socio-Economic Monitoring & Evaluation Cell (SEMEC). This work will also include continued efforts to disseminate relevant socio-economic impact information that has been obtained during both Year #1 of RPPR II and RPPR I.

As indicated in earlier RPPR II Work Plans, the Socio-Economic Baseline Database System (SEBDS) is designed to ensure the collection and preservation of data from an average of approximately 70 new connection holders of four consumer classes in each month from the participating PBSs (17). Based on field-testing and input from the PBSs, a statistically valid minimum sample size was incorporated into the system to minimize the workload of the PBSs, while still maintaining the provision for having the system statistically valid. The impact of electricity is significant, and can be considered diversified and indirect. The data collection tools being used mostly consider the relevant and direct variables and avoid most of indirect issues, which also minimizing the burden of data collection for the lower level PBS enumerators who have other regular jobs such as Member Service staff and line man. During RPPR I, the system was established in the 8 "model" PBSs on a pilot basis, and efforts to strengthen the capacity of these PBSs has continued into Year #1 of RPPR II. Initial work on the deployment of the system will be extended to more nine PBSs and this effort was started during Year #2 under RPPR II and will continue in Year #3. The phased sub-tasks for Year #3 are as follows:

- 1) Continue with ongoing implementation of the Socio-economic Baseline Database (SBDB) system in the initial eight "model" PBSs (having 35 Zonal offices) through providing continuous supervision and troubleshooting supports as needed in order to institutionalization of the Baseline data collection and Data preservation system at PBS level. (On going - 9/05)
- 2) Continue with intensive follow up and necessary assistances to the PBS management in establishment of the SBDB, particularly in enhancing management and operation system for uplift performance in implementation of the Baseline data collection and Data preservation systems to the newly included more nine PBSs (having 17 zonal offices). (10/04 - ongoing)
- 3) Compile and management the SEBDS database that has continues to be populated with information collected by the involved PBSs over the course of both RPPR I and Years #1 and #2 of RPPR II. (09/04 - ongoing)
- 4) Prepare a report on PBS performance in baseline data collected during July 2003 to June 2004 and disseminate finding to involved PBSs and SEMEC. The findings create a basis for the refreshed training to the enumerators. (09/04 - 12/04).
- 5) Prepare a report on Domestic Consumers Benchmark Status on the basis of data generated during July 2003 to July 2004, which is required to judge data quality and also to know the household living status before getting access to electricity. (01/05 - 03/05).
- 6) Implement approximately 20-25 Refresher Training courses on data collection procedure and techniques for more than five hundred PBS enumerators (who are the linemen, line technician, wiring inspector, etc.) and more than fifty management staff (who are AGM-MS, AGM-COM, PUC, Junior Engineer, etc.) of nine PBSs who has been implementing the SBDB system since January 2004. (10/04 - 12/04).
- 7) Prepare 30 to 50 small Case Studies on where positive impact can be shown as a result of having access electricity and where specific examples can be noted. (10/4 - ongoing).

8) Assist REB's Socio-Economic Monitoring Cell (SEMEC/REB) in designing techniques and procedures for the socio-economic impact evaluation study of the IDA financed project. (09/04 – ongoing).

9) Continue to assist with strengthening the overall capacity of the SEMEC staff regarding socio-economic monitoring and impact evaluation. (09/04 - ongoing).

- Assist with the development an appropriate policy instruction related to the function of this Cell and in support of the implementation of various socio-economic monitoring activities, including the ongoing implementation of the Baseline Database System and support its formal approval by REB.
- Continue involvement of SEMEC personnel in establishment of the SEBDS activities at PBSs and Provide technical assistance and training as needed to strengthen the Cell's overall capacity to successfully perform the duties assigned to the Cell.
- Assist with the Cell's establishment of an automated system that includes installation of software for preservation and data management/analysis, including providing the required orientation/training of the relevant personnel on use of the software for data preservation/compilation and data analysis using the SPSS software package.
- Assist SEMEC in understanding the IDA financed project's socio-economic activities for tracking the assigned consulting firm in implementation the activities and generating outputs.

(Note: The development of the SEMCE/REB has been very slow due to a variety of reasons. Delays in the GOB's formal approval of the TAPP being funded by the World Bank project and the complications related to the selection of a competent local consultant has had a negative impact on what was to be accomplished during Years #1 and #2. Hopefully the situation will improve during Year #3 so that REB can benefit of the socio-economic expertise available through NRECA under the RPPR II Program.)

10) Continue sharing of ideas on the RE Program's socio-economic issues with various stakeholders of the donor community, assist the Bangladesh USAID Mission in regard to socio-economic information of the RE Program and do collaborative work with other sections of NRECA Dhaka office as per evolved needs. (09/04 - ongoing).

As in previous years, the Socio-Economist (LPS) will be the primary local professional responsible for this Task. NRECA's Team Leader with 1 MM of effort will provide general guidance and oversight for this Task throughout the life of the RPPR II Program. Another local professional who will function as the data management administrator will also support this Task. All of these LPS personnel are currently scheduled to work full-time on this activity through the end of Year #3. Personnel to be involved during this project year include:

- | | | |
|--|---------|-----------------------------|
| ◆ LTA - Team Leader | 1.0 MM | Oct. 2004 - Sept. 2005 (PT) |
| ◆ LPS - Socio-Economist | 12.0 MM | Oct. 2004 - Sept. 2005 (FT) |
| ◆ LPS – Data Management Administrator. | 12.0 MM | Oct. 2004 - Sept. 2005 (FT) |

IV. WORK PLAN EXHIBITS

A. Implementation Schedule

The Work Plan presents Program activities and subtasks for Year #3 of the five-year program. The implementation Schedules have been developed using *Microsoft Project* in order to monitor progress and modify as necessary. These are also used in the Quarterly Reports.

B. Budget Information

The Budget Information is presented as projected expenditures for Year #3 funded for USG FY 2004-05, covering the Program period of 10/01/04 through 9/30/05

EXHIBIT - A

IMPLEMENTATION SCHEDULE

Focus on Year #3

RPPR II Third Year Workplan and Implementation Schedule

ID	Task Name	2005											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Activity A: Planning & Engineering												
2	Task A.1: Develop Service Territory Database												
3	Select three PBSs & consulting engineers for 2nd Group of 3												
4	Identify PBSs & consulting engineers - Ongoing for 2nd Set of 3 PBSs												
5	Data collection seminar conducted for 2nd Group of 3 PBSs												
6	GIS landbase development for 2nd Group of 3 PBSs												
7	Purchase & process satellite imagery												
8	Develop land base from satellite imagery -												
9	Field Training and supervise field data collection during dry seasons												
10	Prepare GIS with field data for participating PBSs												
11	Continue & complete GIS development for PBSs from Yr. #2 - Ongoing												
12	Develop actual GIS for three new PBSs - Ongoing - Issue Data Problems												
13	GIS Training												
14	Assist REB w/hardware & GIS Software procurement - Delayed/ongoing												
15	GIS & ArcView orientation - GIS Cell and Consultants (Delayed - Ongoing)												
16	Task A.2: PBS Short and Medium Term Planning												
17	Monitor status on completed Work Plan for 1st PBS - Montgomer												
18	Continuous monitoring data collection for record keeping and ERC												
19	Develop Work Plan for 2nd PBS - Doha I												
20	Monitor data collection for accuracy - Problems surfaced earlier in 2004												
21	Prepare analytical models on Milsat												
22	Prepare Draft Work Plan with Plan to Finalize in Wplan #4												
23	Conduct seminar on new planning process - in Wplan #4												
24	Train consulting engineers on use of analysis software												
25	Assist REB & C. Egg w/purchase of H Ware & S Ware - Ongoing												
26	Continue S Ware training for REB & C. Egg - Some delays												
27	Test Electronic Record Card System & implement @ PBSs - Ongoing												
28													
29	Activity B: Operations and Maintenance Programs												
30	Task B.1: Preventative Maintenance Programs												
31	Enhancing O&M Policies and practices												
32	Routinely evaluate line & equipment maintenance practices												
33	Monitor and Train on revised line & substation inspection guidelines												
34	Submit Final Substation & Line O&M Guidelines for Approval - Deliverable	↓ 12/15											
35	Reinforce Preventative Maintenance Programs												
36	Support of ERC system (see Task A.2) for O&M purposes												
37	Conduct hands-on training during winter substation O&M period -												
38	Provide training on routine O&M for substations & lines - Ongoing												
39	Task B.2: Material Supply For O&M Program												
40	Continue evaluation of needs for materials under O&M work - Ongoing												
41	Identify delegations of authority & responsibility for material acquisition												

RPPR II Work Plan Year 05 10/04 to 09/05

Task: [Solid Bar] Progress: [Hatched Bar] Summary: [Dashed Bar] External Tasks: [Dotted Bar] Deadline: [Down Arrow]

Sub: [Dotted Bar] Milestone: [Diamond] Project Summary: [Dotted Bar] External Milestone: [Diamond]

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EXHIBIT - B

BUDGET INFORMATION

Focus on Year #3

RURAL POWER FOR POVERTY REDUCTION (RPPR) II PROGRAM

Monthly Financial Projection and Budget For Year #3 (Oct 2004 to Sept 2005)

Budget Information -- For Use with Year #3 Budget Obligation

Revision Date: 9/10/04; Supersedes: 6/23/04

	Budget													
Financial Category	October	November	December	January	Feb	March	April	May	June	July	August	September	Total	
	2004	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	Amounts
USAID Monthly	\$ 173,902	\$ 160,019	\$ 164,936	\$ 175,725	\$ 134,835	\$ 139,544	\$ 183,673	\$ 141,988	\$ 137,538	\$ 161,436	\$ 142,241	\$ 139,291	\$ 2,018,527	
FY Qtrs.		1st FY 05:	\$ 498,858		2nd FY 05:	\$ 450,104		3rd FY 05:	\$ 463,199		4th FY 05:	\$ 442,968	\$ 1,855,128	
Avg Burn			\$ 166,286			\$ 150,035			\$ 154,400			\$ 147,656	\$ 154,594	

- Notes:
- All figures shown for P.A. and L.C. for all months are budget figures for Grant Funding and in line with budget incorporated into the Contract between USAID and NRECA.
 - Budget figures are in line with information provided to REB for inclusion in the TAPP prepared to RPPR II that is in the approval process of the GOB.
 - The GOB charges are estimates for VAT, Insurance, etc. and equal a total of 5.6 lac for the year and are spread equally over all the months and included in the TAPP.
 - NRECA Arlington office indicates that as of August 2004 the amount billed was \$3,104,200.