



H. EVALUATION ABSTRACT (do not exceed the space provided)

SEE ATTACHED

ABSTRACT

I. EVALUATION COSTS

1. Evaluation Team Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (US\$)	Source of Funds
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SEE ATTACHED

2. Mission/Office Professional Staff Person-Days (estimate) \_\_\_\_\_

3. Borrower/Grantee Professional Staff Person-Days (estimate) \_\_\_\_\_

COSTS

ATTACHMENT A

<u>E. Action/Decisions Approved By Mission</u>	<u>Name of Officer Responsible for action</u>	<u>Action Status</u>
(Action Required)	T.A. to be provided by NRECA/GC	Completed but ongoing
<u>A. Management System</u>		
1. The REB Directorate of Finance should be divided into two Directorates.	Brig. M.A. Halim Chairman, REB	
(1) Finance (2) Accounts		
Initial Status (10/9/86): Agreed. But still some problems exist which need to be rectified.		
2. REB should provide additional training for (a) PBS personnel in	Brig. M.A. Halim Chairman, REB & Team Leader, NRECA/GC	
(1) O & M in substation		Ongoing
(2) Work Order Accounting		
(3) Materials Management & Controls		
(4) Management Planning & Controls		
(b) Local construction contractors in building short distance lines		Ongoing but REB set ceiling on prices. Turnovers.
(c) Construction personnel to provide field technical services & assistance.		Ongoing

Initial Status (10/9/86): Agreed. All training is ongoing but turnovers are prevalent due to some difficult jobs and better benefits in other organizations.

3. Improvement work order accounting and training Brig. M.A. Halim Chairman, REB Ongoing

Initial Status (10/9/86): Agreed. Coordination lacking and is difficult. Problems in making decisions.

4. PBS adopt the REB system of bank collection of electric service bills when perfected. Brig. M.A. Halim Chairman, REB Ongoing

Initial Status (10/9/86): Agreed but resistance is left in PBS's due to billing clerks losing jobs

5. REB to recruit and train more General & Assistant Managers placing emphasis on interpersonal relations, team building, planning and control. Brig. M.A. Halim Chairman, REB Ongoing

Status (10/9/86): Agreed. Turnovers are extensive once training is complete

6. Communication between PBS management and members of PBS to be strengthened by: Brig. M.A. Halim Chairman Ongoing

- a) Holding quarterly or monthly meetings with meter readers to provide information to PBS members with whom they come in contact on PBS issues of common interest. Brig. M.A. Halim Chairman, REB
- b) More frequent meetings of the existing member Advisory Committees.
- c) Hold Board meetings at different locations in PBS areas.
- d) Hold open house yearly meeting at headquarters and district offices.
- e) Practice good member communication.

<u>E. Action/Decisions Approved By Mission</u>	<u>Name of Officer Res- possible for action</u>	<u>Action Status</u>
f) Provide a periodic news- letter to members.		
Status (10/9/86): Agreed. Loadshedding has affected this communication. REB has one monthly publication sent to all PBS's. However, only 15% of members can read. Village advisors are voluntary and in many cases this volunteer work caused difficulties due to time spent on their own activities. Some PBS's are more active in this respect than others. REB should help the PBS's themselves.		
7. PBS hold a security deposit equal to two month's bill for irrigation accounts to be applied to outstanding past due bills.	PBS Managers	Completed
Status (10/9/86): This system has been in action over 1 1/2 years.		
8. REB to do a study to deter- mine the cost-effectiveness of computer billing.	Brig. M.A. Halim Chairman, REB and Team Leader NRECA	Ongoing
Status (10/9/86): Agreed. The progress has been slow due to computer service.		
9. Studies to be performed to help members find ways of using electricity effectively.	Brig. M.A. Halim Chairman	Ongoing
Status (10/9/86): Agreed. The customers can't afford appliances etc. Electric supply varies.		
✓ 10. Strengthening existing training staff to meet personnel requirements associated with intensification.	Brig. M.A. Halim Chairman, REB	Later
Status (10/9/86): Agreed. This strengthening will be done gradually under Phase III		
11. REB should train PBS personnel to handle engineering situations, such as equipment failure.	Brig. M.A. Halim Chairman, REB	Ongoing
Status (11/9/86): Agreed. NRECA is working on this aspect of the project.		

12. PBS to provide adequate transportation for linemen for emergency services calls. PBS Managers Completed

Status (10/9/86): Agreed: All PBS's have some form of transport for emergencies.

13. Provide incentives and additional benefits to retain key personnel. Brig. M. A. Halim Chairman, REB Ongoing

Status (10/9/86): Agreed. Progress is being made as to a retirement program, insurance, better pay.

14. REB should continue its role with the PBS's as lender, expediter and helper and not become too closely involved in PBS daily operations. Brig. M.A. Halim Chairman, REB Later

Status (10/9/86). Agreed. But it appears it is too early in the life of the project, and REB and the PBS's to apply this.

#### B. System Planning & Engineering

1. Improve the detailed material standards for procurement of equipment. Team Leader, NRECA Ongoing

Status (10/9/86): Agreed. Consultant has completed four volumes of improved standards which are updated and improved continuously.

2. Customer education in use of electricity for irrigation systems only during specified hours to raise system COAR factor. Brig M.A. Halim Chairman, REB and PBS Managers Ongoing

Status (10/9/86): Agreed. Policy has been administered but continuous policy is not possible. Need to begin some form of continuous monitoring.

3. PBS's to rectify unmetered system losses. PBS Managers Ongoing

Status (10/9/86): Agreed. REB & PBS's are constantly policing the system but many customers steal.

4. Complete detailed material standards to meet needs of multiple donors. Team Leader/NRECA Ongoing

Status (10/9/86): Agreed. See B.1 above.

5. Improve material handling and inventory system of warehouse facilities possibly by computers. Brig. M.A. Halim Chairman, REB and the NRECA/GC Improving

Status (10/9/86): Agreed. Consultant will help REB improve the system - computer use will be later.

6. Improve the quality assurance of equipment and materials received through a random testing and measurement program and an electrical tests for electrical equipment. Brig. M.A. Halim Chairman, REB and the NRECA/GC Ongoing

Status (10/9/86): Agreed. Factories are inspected by consultant. REB has a test cell but improvements are needed.

7. Design criteria for distribution system and equipment specifications should be revised due to the present harsh operating environment. Team Leader, NRECA completed

Status (10/9/86): Agreed. Consultant has redesigned with provisions for revision of design criteria when approved APPLICABLE.

8. Engineering assistance will have to be given to the PBS's in substation operation and troubleshooting, line operation and troubleshooting, maintenance and repair. Brig. M.A. Halim Chairman, REB and NRECA/GC Ongoing

Status (10/9/86): Agreed. On the job training is being provided by consultant.

9. Smooth transition between RE II & RE III is critical for maintaining private sector firms for RE III. NRECA/GC and USAID To be done

Status (10/9/86): Agreed.

C. R.E. Tariffs and Energy

1. Government pricing policies to provide equivalency for energy prices. Brig. M.A. Halim Chairman, REB and HDG/ERD Ongoing

Status (10/9/86): Agreed. Tariff meeting to be held in 1986 to discuss and set new prices

2. Improvements in tariff structure to encourage efficient use: Brig. M.A. Halim Chairman, REB and BPDB officials Ongoing

a) BPDB increase bulk power tariff rate and include meter demand charge.

Status (10/9/86): Agreed.

b) PBS review of off-peak productive use rates to smooth load curves. PBS Managers Ongoing

Status (10/9/86): Agreed. Some work being done presently.

c) Should be more active application of demand charges and tariff penalties for low power factors. PBS Managers Ongoing

Status (10/9/86): Agreed. Better policing needed. Consultant is helping so that policy will improve gradually.

3. Twenty four person months of technical specialists are needed. Brig. M.A. Halim Chairman, REB and Team Leader, NRECA Later

a) Specialists in computerized billing, inventory and material storage.

b) Specialists in power usage.

c) Specialists in quality assurance.

Status (10/9/86): Agreed. Consultant will bring technical specialists when their services are needed.

4. Most critical areas in TA in RE III are material management, management and finance and operation and maintenance. Brig. M.A. Halim Chairman, REB and Team Leader, NRECA Later under RE III

Status (10/9/86): Agreed.

E. Economic, Social Impact

1. Possible joint study to analyze role of women in the cooperative ownership of Hullers under a new technology.

Brig. M.A. Halim  
Chairman, REB and  
Ford Foundation

Status ( )

2. Coordinate with REB Evaluation for reservoir of baseline data done in 1983 on objective data from sample village.

Brig. M.A. Halim  
Chairman, REB

Status (.....)

3. Coordination of REB evaluation and studies for USAID impact evaluation as per OAK Ridge National Lab. Report.

Brig. M.A. Halim  
Chairman, REB and  
USAID Project

Evaluation  
planned for  
fall 1987.

Status ( )

## PART I

### II. Evaluation Abstract

Project aims is to develop autonomous member owned rural cooperatives (PBSs). The purpose is to extend the public supply of electricity to rural areas to improve the quality of life and stimulate economic growth through the development of agriculture and small scale agro-industries. The project is being implemented by the Rural Electrification Board (REB) with the technical assistance of National Rural Electrification Cooperatives Association (NRECA) and Gilbert Commonwealth & Associates (GCA). This interim evaluation assessment was conducted on Nov. 1985 by a five member multidisciplinary team from the OAK Ridge National Laboratory on the basis of a review of project documents, visits to PBS's and discussions and interviews with REB, consultant and project officials. The major findings and conclusions are:

1. REB has become a substantial organization which has done an exceptional task in carrying out the project aim and purpose. But additional training will be necessary.
2. PBS's will have to be developed further with the help of REB, TA and training.
3. Technical assistance will be required to continue under the intensification of the present PBS systems.
4. Equipment and parts procurement by private sector firms has been good.
5. Tariff structure of system has to be improved by REB and PDB.
6. REB's warehouses will require improvements in materials handling and quality control tests.

The evaluator noted the following lessons:

- o The technical assistance has been successful in building the REB and PBS's into a viable institution.
- o The financial performance is generally strongest in those PBS's which supply large amounts of power to irrigation and industrial customers.
- o Training of REB & PBS staff and personnel should be continued and strengthened in all areas of operation.

I EVALUATION COSTS

1 Evaluation Team

<u>Name</u>	<u>Affiliation</u>	<u>Contract No. of or TDY Person Days</u>	<u>Contract Cost or TDY Cost (US \$)</u>	<u>Source of Funds</u>
Ms. Barbara Deverick	Blue Ridge Elec. Corp Lewoir, North Carolina	22 (Dhaka)	\$ 57,000	PDS
John Stevall	Energy Division OAK Ridge National Lab	22 (Dhaka)		PDS
Robert Shelton Team Leader, Study Team	Energy Division OAK Ridge National Lab.	22 (Dhaka)		PDS
Thomas A. Timberg	Robert R Nathan Assoc. Inc. Wash. D.C. 20004	22 (Dhaka)		PDS
Mark Gellerson	USAID/Wash		1,888	O.E.
Mission Office professional staff person days estimate				
Borrower/Grantee professional staff person days estimate				

PART II

J. Evaluation Summary

Rural Electrification II Project - Assessment 388-0054

1. USAID office of Project Development & Engineering, Dhaka Bangladesh.

Rural Electrification in Bangladesh: Management, Engineering and Financial Assessment - July 1986. The Economic and Social Impact of Rural Electrification in Bangladesh - July 1986.

2. Aim and Purpose of the Activity

The Rural Electrification II, an extension of RE I, aims to develop autonomous member owner rural electric cooperatives (PBS). It's purpose is to extend the public supply of electricity to rural areas to improve the quality of life and stimulate economic growth through development of agriculture and small scale agro industries.

3. Purpose of the Evaluation and Methodology Used Project

This assessment was done as an interim evaluation to assess progress, analyze problems, and recommend improvements in the performance of the Rural Electrification (RE) program in Bangladesh. The assessment team reviewed project and other donor documents, discussed problems with consultants, REB and project officials and visited the PBS's and REB warehouse areas with project personnel.

4A. Findings and Recommendations of Management, Engineering and Financial Assessment

1. REB has an excellent reputation among the general public and the Government agencies and public officials at the national, regional and local levels.

2. Directors in REB appear to have excellent job knowledge and skills to carry out their assigned responsibilities, however REB is thinly staffed.

3. The training of REB and PBS staff has been very good, however followup instruction needs to be undertaken at all levels and strengthened in all areas of operation.

4. Work order accounting and training is not functioning properly and needs to be improved as soon as possible.

5. PBS's have difficulty in retaining key managers. Incentives are needed to reduce personnel turnover.

6. PBS's should adopt system or bank collection of electric bills when perfected.
7. More communication required between PBS management and membership on current PBS issues and activities.
8. PBS should provide transportation for service personnel to carry out their duties.
9. Until BPDB develops adequate generating and transmission capacity, REB & the PBS's will have to monitor and understand the economic costs associated with load shedding.
10. BPDB is scheduled to have adequate generation and transmission capacity by the end of 1987. However there is some uncertainty associated with this goal based on the possibility of the load growing faster than forecasted.
11. Overall performance of procured equipment is good, but there is a need to improve detailed material standards for equipment purchases.
12. The low power factor has been recognized by the REB and corrective action is being undertaken.
13. REB has done an excellent job in adopting design and material standards.
14. The material handling at the warehouse facilities needs to be improved and the quality assurance of equipment and materials received need to be improved.
15. Substantial engineering assistance will have to be given to the PBS's in the area of systems operation for substation operation and troubleshooting, line operation and troubleshooting, maintenance and repair.
16. Maintenance of private sector firms for RE III procurement by having a smooth transition from RE II to RE III.
17. RE is primarily a substitute for petroleum products (diesel and kerosene) and as electricity prices are subsidized, government pricing policies should attempt to move energy prices toward equivalency.
18. Government agencies (REB & PDB) should make improvements to the tariff structures to encourage more efficient use of electricity.
19. PBS's enjoy significant subsidies and REB should set more realistic goals for each PDB to become financially self-sustaining.
20. PBS's should increase their tariffs to make the costs of electric energy slightly below alternate sources of energy.

21. Technical Assistance (TA) has proven to be a necessary part of the rural electrification program in Bangladesh. TA has been excellent.

22. REB should use TA to provide a transfer of knowledge to REB staffed.

23. The current TA staffing levels have been adequate but RE III will require three additional positions in the areas of maintenance and repair, materials handling and an additional financial analyst.

24. The initial organization of the PBS's by REB has been excellent.

#### 4B. Findings & Conclusions of Economic Social Impact Study

1. The impact of RE in terms of its broader social and institutional effect will take several decades to work itself out.

2. Subjectively, electrification is very popular with elders because of the energy cost savings it permitted; with the young because of the social possibilities it permits (late night study; TV; etc.).

3. The process of allocating connections is popularly perceived as highly political despite the PBS's well supported insistence that objective criteria are strictly applied.

4. The system efficiency of the REB-PBS system is very high, especially when compared with the previous BPDB delivery system in matters such as systems loss, bill collection, attention to customer complaints, planning, etc.

5. The PBS's are working cooperatives and highly participative, although the boards tend to be dependent in their decision making on the General Managers and REB.

6. Considerable cost savings are achieved by most commercial end users with electricity over alternatives, primarily diesel, which encourage somewhat greater use of electricity in irrigation and mechanized agro-processing.

7. Hours of shops, cottage industry, markets, study, etc., have lengthened due to the greater use of electric lighting and the heightened feeling of security in rural areas, bringing increased welfare and productivity.

8. Electrification contributes to a feeling of integration of the electrified areas with the modern sector of the economy.

9. Few entirely new industries and activities have been energized; however, these may appear when electrification is fully digested by society.

10. The present employment impact of RE industrial connections is highly negative, especially for women and positive thinking on counteracting this effect is required.

11. REB and PBS's have been able to deliver electricity in rural areas better than the alternatives as follows:

a. Though real financial self-sufficiency has not and will not be achieved, they constitute a lesser burden on general revenues than the BPDB would have been.

b. They have introduced a relatively participative mode of rural service provision.

c. They have represented models of efficiency putting pressure on BPDB and electrical equipment manufacturers to meet their standards.

d. They have generated some productive benefits:

(i) in terms of real energy cost savings and (ii) in terms of dynamic development effects, although these are still in their early stages. Some increases in rural production, some increases in hours for cottage production, as well as a few new activities, can be noted. (The largest new use,--rice mills--has doubtful productive and employment impacts.)

e. They have generated some positive social effects, clearly marked in subjective rural attitudes.

#### 4C. Recommendations from Socio Economic Impact Assessment

1. An assessment strategy

a. An AID project might jointly be sponsored with REB to study and analyze the use of women in the cooperative ownership of rice hullers and publicize the results.

b. USAID should request REB to provide final evaluation report areas and a stratified sample of villages to be served by PBS's from 1981-1986. The material from this report could be used for a USAID external evaluation.

c. A detailed study of two sets of paired villages - electrified and non-electrified one in a handloom area such as Sirajganj and one in a tubewell area such as Natore should provide socio-economic impact assessment material. Routine data collection by PBS's could be adjusted to permit easier assessment of benefits.

2. Social Impact Strategy

social uses. *Understand use development needs for cottage industries and*

b. Advance the development of productive uses of electricity by coordinating RE with other rural development programs.

c. Productive loads might be given rate preference over purely domestic connections as well as priority in securing connections they now have.

d. Attention should be given to developing small scale local workshops providing TA for quality and identification of parts the small shops might supply to PBS's through publication.

#### LESSONS LEARNED

1. Technical assistance is an essential tool in building viable and successful Government RE institutions and should be a requirement in future projects for up to 15 years.

2. In providing electrification facilities in developing countries, allowance in the development program should always be made for loadshedding caused by the insufficient generation units until sufficient energy is available through developing country's government generation program.

3. To develop viable RE cooperatives, sufficient time must be given to allow reduction in Government RE subsidies and slowly raising RE tariffs, while the cooperative is developing adequate productive uses for electricity.

#### COMMENTS BY MISSION

These assessment reports have provided the Government of Bangladesh, Mission officers and the Consultants with an indication of the progress of the project in terms of management, engineering financial technical assistance and socio-economic impact. The recommendation of these reports will be incorporated into the project. The mission believes the original project goal and objectives will require an additional five year term. The intensification of the PBS's required to meet project goals and purpose should be implemented during this five year extension and the assessment reports will be used as a management tool to do this.

#### COMMENTS BY RURAL ELECTRIFICATION BOARD

REB agrees in principle with the recommendations made in the AID Evaluation Summary. Some of the recommendations, such as bifercation of the Directorates of Finance and Accounts (A.I), collection of electric bills through the Banks (A.4), revision of the bulk tariff (C.I), etc. have already been implemented. Action programmes have also been instigated to implement the rest of the recommendations.

# A.I.D. EVALUATION SUMMARY PART I

(BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS)

19A 67687

IDENTIFICATION DATA

<p><b>A. REPORTING A.I.D. UNIT:</b>  <u>Bangladesh</u>                  (Mission or AID/W Office)                   (ES# _____ )</p>	<p><b>B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN?</b>                  yes <input checked="" type="checkbox"/> slipped <input type="checkbox"/> ad hoc <input type="checkbox"/>                  Eval. Plan Submission Date: FY <u>  9  </u></p>	<p><b>C. EVALUATION TIMING</b>                  Interim <input checked="" type="checkbox"/> final <input type="checkbox"/> ex post <input type="checkbox"/> other <input type="checkbox"/>  <u>XD-APP-515-A</u></p>										
<p><b>D. ACTIVITY OR ACTIVITIES EVALUATED</b> (List the following information for project(s) or program(s) evaluated; If not applicable, list title and date of the evaluation report)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Project # _____ Project/Program Title (or title &amp; date of evaluation report)</th> <th style="width: 10%;">First PROAG or equivalent (FY)</th> <th style="width: 10%;">Most recent PACD (mo/yr)</th> <th style="width: 10%;">Planned LOP Cost ('000)</th> <th style="width: 10%;">Amount Obligated to Date ('000)</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Project # 388--0054 0070 &amp; 0021  Rural Elec. Project Assessment by OAK Ridge Lab. Team Nov. 1985 (Updated status)</td> <td style="text-align: center; vertical-align: top;">1977</td> <td style="text-align: center; vertical-align: top;">9/88</td> <td style="text-align: center; vertical-align: top;">145</td> <td style="text-align: center; vertical-align: top;">113.7</td> </tr> </tbody> </table>			Project # _____ Project/Program Title (or title & date of evaluation report)	First PROAG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)	Project # 388--0054 0070 & 0021  Rural Elec. Project Assessment by OAK Ridge Lab. Team Nov. 1985 (Updated status)	1977	9/88	145	113.7
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Project # 388--0054 0070 & 0021  Rural Elec. Project Assessment by OAK Ridge Lab. Team Nov. 1985 (Updated status)	1977	9/88	145	113.7								

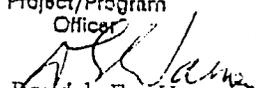
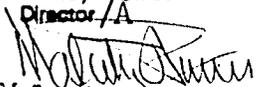
ACTIONS

<p><b>E. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR</b></p> <p style="text-align: center;">Action(s) Required</p> <p style="text-align: center; padding: 20px;">See Attachment A</p>	<p>Name of officer responsible for Action</p>	<p>Date Action to be Completed</p>
(Attach extra sheet if necessary)		

APPROVALS

**F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION:** mo 08 day 25 yr 88 (First update)

**G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:** Reviewed and approval updated 05/90

Project/Program Officer Signature:  Typed Name: <u>David E. Warner</u> Date: <u>May 90</u>	Representative of Borrower/Grantee Signature:  Arn Schwartz Date: <u>May 90</u>	Mission or AID/W Office Director/A Signature:  Malcolm J. Purvis Date: <u>May 90</u>
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H. EVALUATION ABSTRACT (do not exceed the space provided)

ABSTRACT

I. EVALUATION COSTS

1. Evaluation Team  
Name

Affiliation

Contract Number OR  
TDY Person Days

Contract Cost OR  
TDY Cost (US\$)

Source of  
Funds

COSTS

2. Mission/Office Professional  
Staff Person-Days (estimate) \_\_\_\_\_

3. Borrower/Grantee Professional  
Staff Person-Days (estimate) \_\_\_\_\_

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ATTACHMENT A

E. Action/Decisions Approved by Mission	Name of Officer Res- possible for Action	Action Status
(Action Required)	T.A. to be Provided by NRECA/GC	

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A. Management System

1. The REB Directorate of Finance should be divided into two Directorates.	Brig. M.A. Halim Chairman, REB	Completed
a) Finance b) Accounts		

Status (8/17/88): Small problems exist  
which are being addressed.

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2. REB should provided additional training for:	Brig. M.A. Halim Chairman, REB & Team Leader, NRECA/GC	
a) PBS personnel in (1) O & M in substation	Monthly continuing & as needed	
(2) Work Order Accounting	Training to be initiated	
(3) Materials Management & Controls	Training to start on Apr. of Mat. Adv.	
(4) Management Planning & Controls	Monthly, continuing, C&L training 2 persons for future training	
b) Local construction contractors in building short distance lines	Reg. train by PBBs. Rev. & Monitor. of Local Cont. by REB/NRECA	
c) Technical personnel located in the field to provide technical services and assistance in construction to REB & PBS's	Continuing on the job (DTB) training REB Tech. personnel located in field for O.T.J.T.	

Status (8/17/88): All training has  
been initiated except the a(3) above  
is ongoing. Turnovers have been  
reduced with REB providing better  
personnel benefits.

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3. Improvement on work order accounting and training	Brig. M.A. Halim Chairman, REB	Ongoing
Status 8/17/88) Coordination and emphasis in REB 1987-88. Improvement in procedure more improvement needed. Continuing.		
4. PBS adopt the REB system of bank collection of electric service bills when perfected.	Brig. M.A. Halim Chairman, REB	Completed
Status (8/17/88): System will be expanded.		
5. REB to recruit and train more General & Assistant Managers placing emphasis on interpersonal relations, team building, planning and control.	Brig. M.A. Halim Chairman, REB	Ongoing
Status (8/17/88): Turnovers have decreased due to new salaries & benefits.		
6. Communication between PBS management and members of PBS to be strengthened by:	Brig. M.A. Halim Chairman, REB	Completed but Ongoing
a) Holding quarterly or monthly meetings with meter readers to provide information to PBS members with whom they come in contact on PBS issues of common interest.	Brig. M.A. Halim Chairman, REB	
b) More frequent meetings of the existing member Advisory Committees.		Completed except that board meeting will still be held at Headquarters
c) Hold Board meetings at different locations in PBS areas.		
d) Hold open house yearly meeting at headquarters and district officers.		
e) Inform all employees on issues affecting members.		

f) Provide a periodic newsletter to members. Completed but

Status (8/17/88): Any existing restraints will be addressed by the new member services/power use adviser.

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7. PBS hold a security deposit equal to two month's bill for irrigation accounts to be applied to outstanding past due bills.	PBS Managers	Completed
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Status (8/17/88):

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8. REB to do a study to determine the cost-effectiveness of computer billing.	Brig. M.A. Halim Chairman, REB and	Continuing basis
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Status (8/17/88): The progress has been slow due to computer maintenance service and training difficulties.

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9. Studies to be performed to help members find ways of using electricity effectively.	Brig. M.A. Halim Chairman, REB	Ongoing
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Status (8/17/88): Member services/power use advisor will provide solutions.

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10. Strengthening existing training staff to meet personnel requirements associated with intensification.	Brig. M.A. Halim Chairman, REB	Ongoing
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Status (8/17/88): New Train. Advisor completed full evaluation of REB training to staff, programs, equipment etc. Strengthen.

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11. REB should train PBS personnel to handle engineering situations, such as equipment failure.	Brig. M.A. Halim Chairman, REB	Continuing basis
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Status (8/17/88): NRECA's system's advisor working on the job training.

12. PBS to provide adequate transportation for lineman for emergency services calls. PBS Managers Completed but Ongoing

Status (8/17/88): Completed where access is possible. However, there is no road access in many areas and there are still areas where vehicles can not travel.

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13. Provide incentives and additional benefits to retain key personnel. Brig. M.A. Halim  
Chairman, REB Completed

Status (8/17/88): There has been progress in providing retirement program, insurance and better pay.

---

14. REB should continue its role with the PBS's as lender, expeditor and helper and not become too closely involved in PBS daily operations. Brig. M.A. Halim  
Chairman, REB Continuing basis

Status (8/17/88): At older PBS's REB is reducing involvement in daily operations. Attention is toward newer PBS.

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3. System Planning & Engineering

1. Improve the detailed material standards for procurement of equipment. Team Leader, NRECA Completed

Status (8/17/88): Improved standards are updated and improved continuously.

---

2. Customer education in use of electricity for irrigation systems only during specified hours to raise system COAR factor. Brig. M.A. Halim  
Chairman, REB and  
PBS Managers Continuing

Status (8/17/88): New system-power use advisor conferences will add to customer education.

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3. PBS's to rectify unmetered system losses.	PBS Managers	Continuing
Status (8/17/88): There has been a marked decrease in the non technical losses in all PBS's due to increased policing actions. Tech. losses have been found to be 7-8% of total losses.		
4. Complete detailed materials standards to meet needs of multiple donors.	Team Leader/NRECA	Completed
Status (8/17/88): See B.1 above.		
5. Improve material handling and inventory system of warehouse facilities possibly by computers.	Brig. M.A. Halim Chairman, REB and the NRECA/GC	Continuing basis
Status (8/17/88): Material handling advisor has not been selected to date. Some assistance provided by PBS systems operation advisor.		
6. Improve the quality assurance of equipment and materials received through a random testing and measurement program and an electrical tests for electric equipment.	Brig. M.A. Halim Chairman, REB and the NRECA/GC	Ongoing
Status (8/17/88): REB test cell needs some improvements.		
7. Design criteria for distribution system and equipment specifications should be revised due to the present harsh operating environment.	Team Leader, NRECA	Completed
Status (8/17/88): Consultant has redesigned with provisions for revision of design criteria when applicable.		

8. Engineering assistance will have to be given to the PBS's in substation operation and troubleshooting, line operation and troubleshooting, maintenance and repair.

Brig. M.A. Halim  
Chairman, REB and  
NRECA/GC

Continuing  
basis

Status (8/17/88): Consultant providing on the job training to address these support needs.

C. R.E. Tariffs and Energy

1. Government pricing policies to provide equivalency for energy prices.

Brig. M.A. Halim  
Chairman, REB and  
BDG/ERD

Completed but  
ongoing

Status (8/17/88): Tariffs were levied with rate increases in July 1987.

2. Improvements in tariff structure to encourage efficient use:

Brig. M.A. Halim  
Chairman, REB and  
BPDB officials

Ongoing

a) BPDB increase bulk power tariff rate and include meter demand charge.

Status (8/17/88):

b) PBS review of off-peak productive use rates to smooth load curves.

PBS Managers

Continuing  
basis

Status (8/17/88): New system power use advisor to review and provide advice on rates.

c) Should be more active application of demand charges and tariff penalties for low power factors.

PBS Managers

Continuing  
basis

Status (8/17/88): Policing has improved. NRECA in continuously advising REB on further improvement TOD metering is not used by REB. Consultant is helping so that policy will improve gradually.

8. Engineering assistance will have to be given to the PBS's in substation operation and troubleshooting, line operation and troubleshooting, maintenance and repair.

Brig. M.A. Halim  
Chairman, REB and  
NRECA/GC

Continuing  
basis

Status (8/17/88): Consultant providing on the job training to address these support needs.

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C. R.E. Tariffs and Energy

1. Government pricing policies to provide equivalency for energy prices.

Brig. M.A. Halim  
Chairman, REB and  
BDG/ERD

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a) BPDB increase bulk power tariff rate and include meter demand charge.

Status (8/17/88):

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b) PBS review of off-peak productive use rates to smooth load curves.

PBS Managers

Continuing  
basis

Status (8/17/88): New system power use advisor to review and provide advice on rates.

---

c) Should be more active application of demand charges and tariff penalties for low power factors.

PBS Managers

Continuing  
basis

Status (8/17/88): Policing has improved. NRECA in continuously advising REB on further improvement. TOD metering is not used by REB. Consultant is helping so that policy will improve gradually.

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3. Twenty four person months of technical specialists are needed.

Brig. M.A. Halim  
Chairman, REB and  
Team Leader, NRECA

Continuing

a) Specialists in computerized billing, inventory and material storage.

b) Specialists in power usage.

c) Specialists in quality assurance.

Status (8/17/88): No request for short term advisor's to date. Power use advisor will over added strength for power use consumers power usage.

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4. Most critical areas in TA in RE III will be material management, management and finance and operation and maintenance.

Brig. M.A. Halim  
Chairman, REB and  
Team Leader, NRECA

Continuing  
basis

Status (8/17/88): Management & Finance Advisor has been app'd and is working in Bangladesh. Materials advisor has not been selected yet. O&M provided by system operating advisors.

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E. Economic, Social Impact

1. Possible joint study to analyze role of women in the cooperative ownership of Hullers under a new technology.

Brig. M.A. Halim  
Chairman, REB and  
Ford Foundation

Status (8/17/88): Preliminary socio-impact study being done by a Bangladesh consultant.

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2. Coordinate with REB Evaluation for reservoir of baseline data done in 1983 on objective data from sample village.

Brig. M.A. Halim  
Chairman, REB

Ongoing  
Evaluation

Status (8/17/88); PBS Financial Evaluation being done by Coopers and Lybrand.

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3. Coordination of REB evaluation and studies for USAID impact evaluation as per OAK Ridge National Lab. Report.

Brig. M.A. Halim  
Chairman, REB and  
USAID Project

Ongoing

Status (8/17/88): Final Assessment or PBS's in final stages. M&E system design will incorporate soc. impact study.

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## COMMENTS BY MISSION

The continuing monitoring of the RE project shows that 11 out of the 31 original evaluation report recommendations have been completed. All recommendations have been addressed and many are on a continuing basis. As more studies are completed to show progress in socio-economic areas and REB and PBS personnel obtain more experience and training, more programs should be implemented which are based on the evaluation report recommendations. The overall outlook of the project should become increasingly better. The mission believes that the project goal and objectives can be achieved within the PACD if the intensification program of RE III is carried out effectively.

## COMMENTS BY THE RURAL ELECTRIFICATION BOARD

The updated status of the Evaluation Summary of the Rural Electrification Project by USAID has been found to reflect the exact position of the project as it stands now as well as areas requiring further intervention in the future. While REB would agree on the Evaluation Summary, it may be mentioned that the BPDB's bulk supply tariff (BST) has been enhanced by Taka 0.05 per kwh effective from August 1, 1988. Due to this increase, present BST stands at Taka 1.19 per kwh against the previous BST of Taka 1.14 per kwh (Attachment C.1 of Summary Evaluation).

With the experience gained over the past years, REB has realized the need for improved Business Planning and has effected a determined policy to strengthen same; and, at the same time intensify the efforts to improve in key areas for a timely and effective implementation of RE-III project. REB would continue to utilize the services of both long and short term consultants and specialists to insure that nothing falls short of the desired standard in the implementation of the RE-III project.

Warner/PDE  
8/28/88-(0009E)