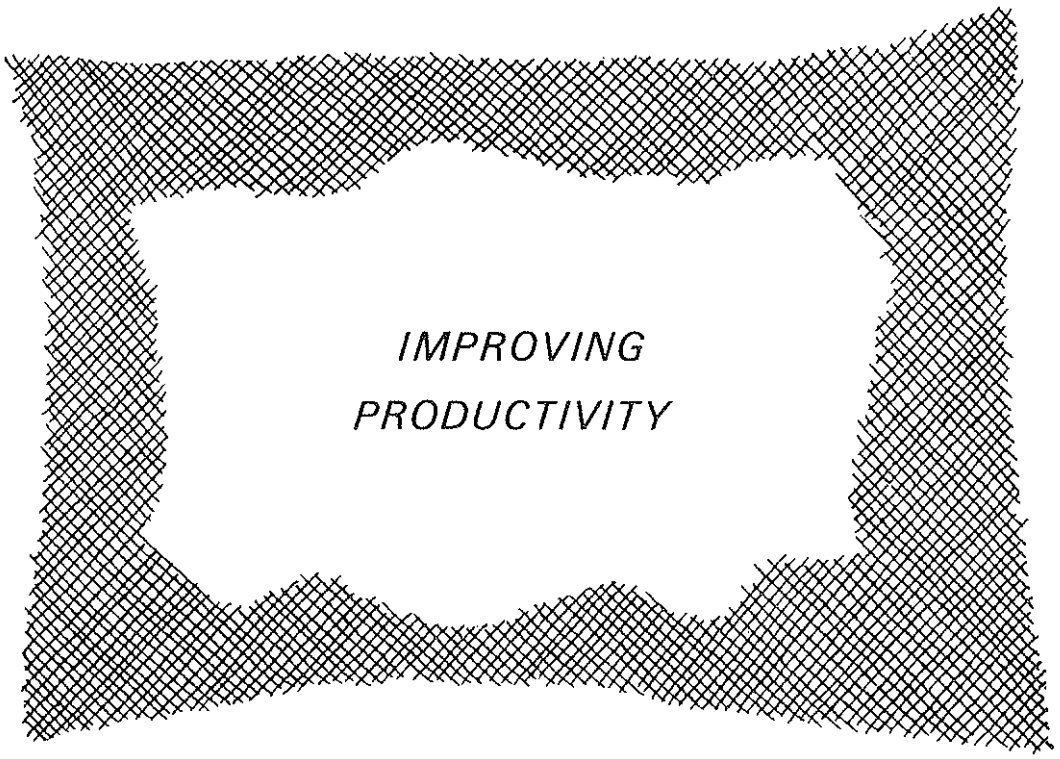
File

Proceedings of the

22nd Annual Conference

of

The Rural Electric Management Development Council



Hilton Head, South Carolina

May 21 - 25, 1979

PROCEEDINGS OF THE

22nd ANNUAL CONFERENCE

of

THE RURAL ELECTRIC MANAGEMENT

DEVELOPMENT COUNCIL

Hilton Head, South Carolina

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S C O P E

S C O P E (Continued)

COUNCIL PREAMBLE

In March 1969 the NRECA membership adopted viewpoints and objectives for rural electrification as prepared by the Long Range Study Committee. This action has significance only when member systems identify with, and develop programs in support of, these viewpoints and objectives. Success in the implementation of such action programs is dependent upon excellent leadership and the effective management of resources, especially human resources.

NRECA, through its Management Services Department, has carried on effective training and development programs for rural electric system managements, both elected and employed, and the results of these programs are obvious in the upgrading of the quality of management in recent years. However, NRECA has limited resources for the research, experimentation, and innovations in management practices that will be required to meet the demands of a rapidly changing social order. Moreover, REA continues to withdraw its advice and assistance to borrowers.

Thus, it is clear that some systems must assume a more active role in assuring competent, dynamic management for the future. There are people within the program who are qualified and willing to see that the necessary study and research are undertaken toward this end. Such people have formed the Rural Electric Management Development Council and the following statements express their viewpoints and objectives.

RURAL ELECTRIC
MANAGEMENT DEVELOPMENT COUNCIL

STATEMENT OF VIEWPOINTS

1. We believe that the objectives of the Rural Electric Program can best be achieved through dynamic management and leadership that is based on sound cooperative philosophy coupled with modern management principles and techniques.

2. We believe that cooperative philosophy and management principles and techniques must be under constant study and review and that research and development of new concepts and approaches must be undertaken if rural electric systems are to effectively fulfill the responsibilities inherent in the objectives of the Rural Electric Program.

3. We believe that there exists within the rural electric cooperatives, and their associated organizations, the knowledge, experience and point of view necessary to identify these needs and to determine required changes.

4. We believe that there exists among rural electric cooperatives, and their associated organizations, those who are willing to innovate, study and improve present cooperative and management principles and practices and to translate the results of such studies into meaningful programs.

5. We believe that rural electric system management will be enhanced where there has been a maximum exchange of ideas and experiences between those organizations that are innovating, studying and applying up-to-date principles and techniques.

6. We believe that all consumer-owned rural electric systems should have the opportunity to share in the results of such innovations in management practices and that this opportunity for sharing can best be provided through NRECA and other associated organizations.

RURAL ELECTRIC
MANAGEMENT DEVELOPMENT COUNCIL

STATEMENT OF OBJECTIVES

1. To bring together key rural electric management people who have demonstrated their application of up-to-date cooperative philosophy and management principles and techniques and who evidence an interest and willingness to participate in and contribute to study, research and innovation in the application of effective management concepts and techniques in rural electric system operations.

2. To contribute to the strengthening of overall rural electric system management by undertaking management research in areas of current concern and interest.

3. To develop new cooperative management concepts, approaches and techniques that will enable the management of rural electric systems to identify necessary resources and to provide the leadership required for meeting the needs of the people in an ever changing environment.

4. To develop the means whereby the beneficial results of the application of such management research and innovation can be interpreted and widely disseminated to rural electric systems and to encourage its effective application.

RURAL ELECTRIC
MANAGEMENT DEVELOPMENT COUNCIL

MEMBERSHIP REQUIREMENTS

The Rural Electric Management Development Council is established to provide a forum for those rural electric systems who have developed organizations built on the application of cooperative principles and modern management principles and techniques.

The Viewpoints and Objectives of the Council, attached hereto, identify more specifically the beliefs and purpose that all members of the Council subscribe to. The Council's primary purpose is one of research and innovation. Research and innovation within the parameters of the established Viewpoints and Objectives.

The Council does not intend to provide a forum for teaching basic cooperative philosophy and basic management principles and techniques. Adequate training opportunities for this are provided by NRECA and other organizations.

Thus, to assure that the limited time available for the conduct of research and the exchange and discussion of innovative ideas can be utilized to the maximum productive extent possible, it is necessary that those systems who wish to apply for membership in the Council, those who wish to sponsor systems for membership and those systems who are currently members of the Council be fully aware of the criteria for initial and continuing membership.

A. Initial Membership

Any rural electric system or association of rural electric systems may apply and be considered for membership in the Rural Electric Management Development Council.

The criteria for initial or continuing membership shall be adopted by the Council members at the Council's annual meeting. Any amendments or changes in this criteria shall be approved by the Council membership.

Representatives of NRECA, CFC, and REA and current members of the Council will be encouraged to nominate rural electric systems or other associations that are believed to meet all of the criteria for membership.

All applications for membership shall be subject to the review of the Nominating Committee. The Nominating Committee shall meet twice each year to review applications for membership and to recommend those applicants who meet the membership criteria for approval for Council membership.

Those applying for initial membership shall be requested to submit the following:

1. Evidence of having demonstrated their application of up-to-date cooperative philosophy and management principles and techniques. This evidence shall include the following:

   a. An Organization Profile - Documentation of the existence of an organization plan for the system. The documents required will be specified and should accompany the application.

   b. A System Profile - A recitation of the financial and operating characteristics of the system, including evidence of the existence of short and long range plans in specified areas.

c. A Corporate Profile - An identification of programs and activities designed to involve the members and the public. Evidence of a recognition and pursuit of goals designed to enhance the consumer ownership and public responsibility of the system.

d. A Growth and Development Profile - Evidence of specific programs and activities undertaken by the system to go beyond normal requirements for management, individual development and member involvement. This should include the identification of beneficial results therefrom.

2. A statement of a commitment to participate in and contribute to study, research and innovation in the application of management in rural electric system operations.

3. A statement of the system's willingness to pay the dues or other approved assessments of the Council, to attend and participate in Council meetings and to accept committee or program assignments.

4. An expression of willingness to share your individual management innovations with the Council for information and evaluation purposes.

B. Continuing Membership

All members of the Council shall be subject to continuing membership review at least every five years.

Those systems subject to continuing membership review shall be notified at the Council's annual meeting preceding the review.

Continuing membership applications shall include the following:

1. A refiling of the initial membership application.

2. A recap of Council meeting attendance.

3. A recap of participation in Council activities, including study and research and innovative programs locally undertaken, with reports and presentations on such activities at Council meetings. Also, evidence should be furnished of the acceptance of Committee assignments and participation in activities consistent with the objectives of the Council.

The nominating committee shall receive all applications for continuing membership by September 1 of each year and make their review and recommendation to the Chairman by January 1 of each year.

C. Honorary Membership

The following individuals, or their designated representative, are considered as continuing honorary members of the Management Development Council. The Council encourages their active participation in all Council projects and activities.

Director of Management Services - NRECA
Borrowers' Operations Office - CFC
Director-Electric Borrowers' Management Division - REA

D. Interim Membership

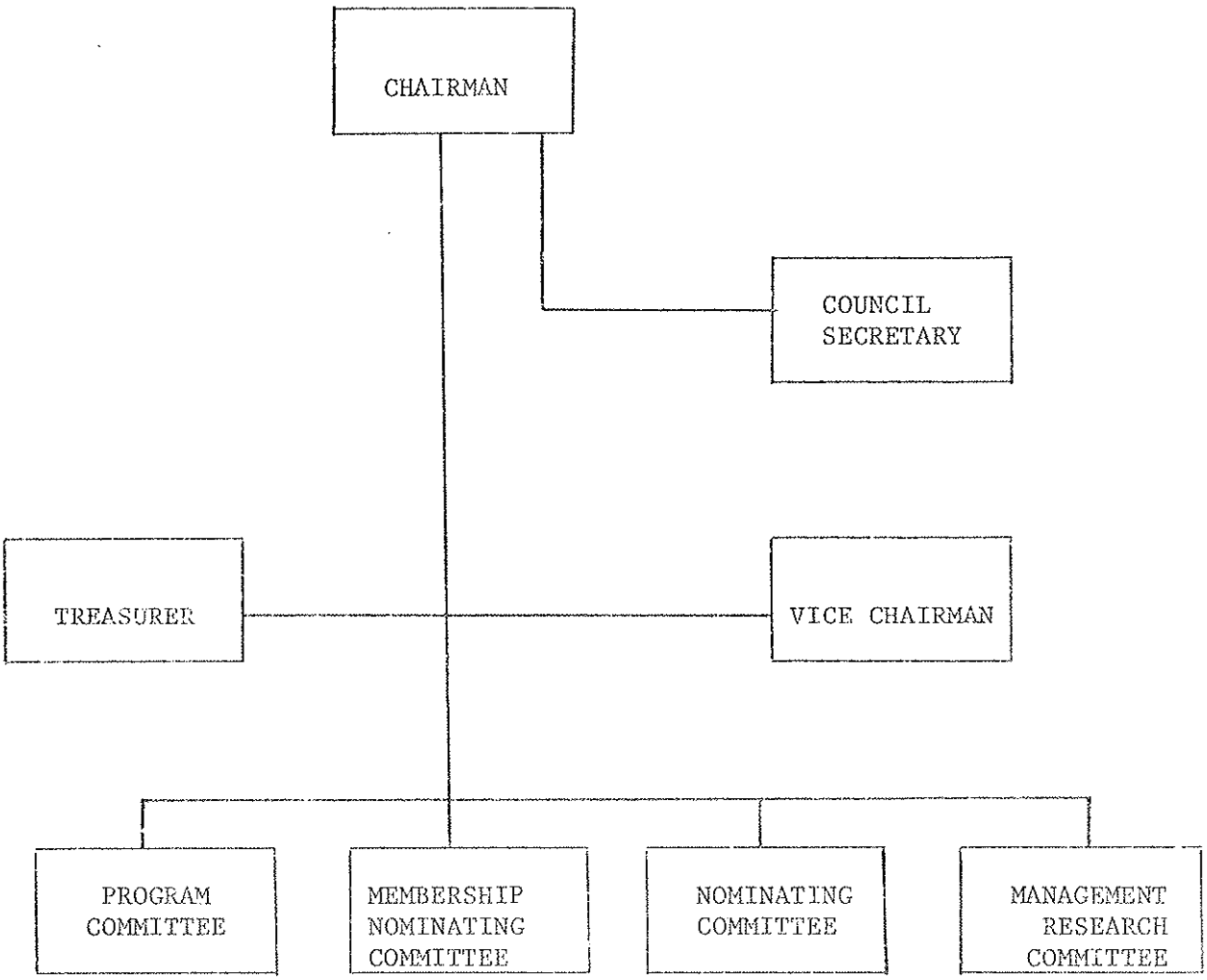
Organizations named in the first paragraph of Item A, Initial Membership, are eligible to become interim members for a period not to exceed two years by

D. Interim Membership (Continued)

notifying the Council of their desire to become a member, paying their dues and participating in Council meetings. At the end of two years such members must seek membership certification in order to retain membership in the Council.

Note: Council dues are $300 annually, payable prior to the REMDC annual meeting. Payment of dues permits a member system to have two persons in attendance at the REMDC meeting and the Advanced Management Conference at no additional fees.

RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL



Note: A Coordinating Committee composed of the Chairmen of the standing committees and one member at large also functions to coordinate REMDC and Advanced Management Conference programs.

FUNCTIONS

CHAIRMAN — To act as general coordinator of the activities of the Development Council and preside at all business meetings. To issue notice of all regular meetings of the membership or special meetings of the cabinet. (The cabinet to be composed of the chairman, vice chairman, treasurer, and all committee chairmen.) To represent the Development Council in relation to other organizations. Term of office to be three (3) years.

VICE CHAIRMAN — To assume all duties of the Chairman in the absence of or inability of that officer. Term of office to be three (3) years.

TREASURER — To collect all monies due the Development Council including regular membership dues and special assessments. To pay all bills submitted in proper form. To prepare an annual financial statement and forward to the Secretary for inclusion in the annual conference summary. Term of office to be three (3) years.

SECRETARY — To be appointed annually by the Chairman. To keep a record of all proceedings, prepare, publish, and distribute annual conference summary. (May be assisted by Management Services Department of NRECA.)

COMMITTEES

All committees except the Advanced Management Conference Program Planning Committee, to be composed of a chairman and three (3) members. The chairman to be nominated by the Nominating Committee. All committee chairmen and committee members to serve staggered terms of three (3) years each.

PROGRAM COMMITTEE — To determine program content and format for the annual conference and secure appropriate participation from the membership. To provide for subject continuity in programming when desirable. The committee chairman shall preside at all program sessions and serve as ex-officio member of the Advanced Management Conference Planning Committee. To select the time and place for the annual council meeting in coordination with the Advanced Management Conference Planning Committee.

MEMBERSHIP NOMINATING COMMITTEE — Under the criteria established for admission to membership, select organizations each year who are actively engaged in management in the rural electrification field who will be nominated for membership in the Development Council. Evaluate compliance of member systems with criteria.

NOMINATING COMMITTEE — To nominate all officers and committee chairmen, as necessary for submission to the annual conference for election. All nominations shall be submitted in writing, certified by the chairman of the committee, and deposited with the conference secretary.

MANAGEMENT RESEARCH COMMITTEE — To identify research areas and initiate recommendations for projects to be carried out by the council. To work with NRECA in identifying management areas in the rural electric program which need additional research and/or development and training programs and determine how council can assist in meeting needs in cooperation and coordination with NRECA, making use of the Advanced Management Conference where possible.

OFFICERS AND COMMITTEES FOR 1979 DEVELOPMENT COUNCIL

Chairman.	Derl Hinson	Term expires in 1981
Vice Chairman	L. P. "Bill" Beverage	Term expires in 1979
Treasurer	Allen Ritchie	Term expires in 1980
Secretary		Appointed annually by chairman

Standing Committees

Program		
Chairman.	Elmer Stocker	Term expires in 1980
	Roger Geckler	Term expires in 1981
	Tom Townsend	Term expires in 1979
	Barbara Deverick	Term expires in 1981
Nominating		
Chairman.	Richard Seger	Term expires in 1979
	James Kiley	Term expires in 1981
	Clyde Hukills	Term expires in 1981
	Jack Hicks	Term expires in 1980
Membership		
Chairman.	Virgil Herriott	Term expires in 1980
	James Golden	Term expires in 1981
	Marvin Athey	Term expires in 1979
	Wayne Kump	Term expires in 1980
Management Research		
Chairman.	Everette Bristol	Term expires in 1980
	Robert Roberts	Term expires in 1979
	Cecil Viverette	Term expires in 1979
	Charles Overman	Term expires in 1981

Advanced Management Conference
Planning and Coordination (1)

Chairman.	Everette Bristol
	Virgil Herriott
	Richard Seger
	Elmer Stocker
	Jack Wood
	Derl Hinson, Ex-Officio

A. All committee members and officers elected for a 3-year term except as noted.

B. Chairman of each standing committee except Advanced Management Conference Program Planning Committee, named by the Nominating Committee and serve for three years when elected.

(1) Advanced Management Conference Program Planning and Coordination Committee appointed by the Council chairman. Council Chairman serves as ex-officio member of the committee.

RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL
1979 ANNUAL CONFERENCE REGISTRATION

Adams Electric Cooperative, Inc.
P. O. Box 130
Gettysburg, Pa. 17325
Lloyd Geer, Mgr. Engr.
J. Wayne Kump, Staff Asst.

Blue Ridge Electric Memb. Corp.
P. O. Box 112
Lenoir, N. C. 28645
C. E. Viverette, Exec. V. Pres.
Barbara Deverick, Mgr. Org. Planning, Adm. Asst.
Ron Knouse, Mgr. Member & Public Relations Dept.
Henry S. Parker, Mgr., Finance
Wayne Keller, Mgr. of Engr.

Cornhusker Public Power Dist.
P. O. Box 9
Columbus, Nebraska 68601
Norman Hoge, Gen. Mgr.
Allan Henning, Oprs. Mgr.

Cotton Electric Co-op.
P. O. Box 38
Walters, Oklahoma 73572
William Miller, Gen. Mgr.
Don Crabbe, Staff Asst.

East Central Electric Assn.
412 North Main
Braham, Minnesota 55006
Jerome Haider, Manager
Marvin Athey, Asst. Mgr.

Four County Elec. Memb. Corp.
P. O. Box 667
Burgaw, N. C. 28425
L. P. (Bill) Beverage, Gen. Mgr.

KEM Electric Cooperative, Inc.
P. O. Box 904
Linton, North Dakota 58552
John Allensworth, Asst. Gen. Mgr.

Linn County REC
P. O. Box 69
Marion, Iowa 52302
Jack Hicks, Manager
Phyllis Barber, Staff Asst.

Lumbee River Elec. Memb. Corp.
P. O. Box 830
Red Springs, N. C. 28377
Derl J. Hinson, Gen. Mgr.
Paul Dallas, Dist. Mgr.

Mecklenburg Electric Co-op.
Chase City, Virginia 23924
Elwood Blackwell, Staff Asst.

Morgan County Rural Elec. Memb. Corp.
P. O. Box 716
Martinsville, Indiana 47951
Jon R. Elkins, Oprs. Mgr.
Earl Belcher, Engr. Mgr.

Oklahoma Electric Co-op
P. O. Box 1208
Norman, Oklahoma 73069
Clyde Rudolph, Manager

Pioneer Rural Elec. Co-op, Inc.
P. O. Box 604
Piqua, Ohio 45356
Robert L. Roberts, Manager

Shenandoah Valley Elec. Co-op
P. O. Box 8
Dayton, Virginia 22821
Mark McNeil, Gen. Manager
Allen Ritchie, Staff Asst.

Sioux Valley Empire Elec. Assn, Inc.
P. O. Box 216
Colman, South Dakota 57017
Virgil Herriott, Gen. Mgr.
Jim Kiley, Asst. Mgr.
Lloyd Hollister, Dir, Acct. Serv.

West Plains Electric Co-op, Inc.
P. O. Box 1038
Dickinson, North Dakota 58601
Emil Wiege, Gen. Mgr.

White River Valley Elec. Coop, Inc.
P. O. Box 969
Branson, Missouri 65616
Bert Montgomery, Consumer Ser.
Clifford Robertson, Area Mgr.

1979 Rural Electric Management Development Council Registration (cont.)

Whitley County R.E.M.C.
P. O. Box 171
Columbia City, Indiana 46725
Elmer Stocker, General Manager
Galen Eberhart, Dir., Mbr. Rel.

Yampa Valley Electric Assn., Inc.
P. O. Box 1218
Steamboat Springs, Colorado 80477
James Golden, General Manager
Ev Bristol, Chief Engineer

Guest Registration - 1979

Clark County REMC
609 East Utica Street
Sellersburg, Indiana 47172
William L. Smith, Gen. Mgr.

Flint Electric Membership Corp.
P. O. Box 308
Reynolds, Georgia 31076
Harold Smith, Gen. Mgr.

Mid-Carolina Elec. Co-op, Inc.
P. O. Box 68
Lexington, S. C. 29072
Jim Lane, Asst. Manager

Southeastern Illinois Elec. Co-op.
P. O. Box 251
Eldorado, Illinois 62930
Roger C. Lentz, Manager

Southside Electric Co-op.
P. O. Box 7
Crewe, Virginia 23930
Dick Ritscher, Staff Asst.

Guest Registration - 1979 (Continued)

Jack Wood, Manager
Training and Consulting
National Rural Elec. Coop. Assn.
1800 Massachusetts Avenue, N. W.
Washington, D. C. 20009

Ervin Baker
Management Consultant
National Rural Elec. Coop. Assn.
1800 Massachusetts Avenue, N. W.
Washington, D. C. 20009

Don Smith
Government Relations Department
National Rural Elec. Coop. Assn.
1800 Massachusetts Avenue, N. W.

Christine Newman
Member Relations & Communications Consultant
National Rural Elec. Coop. Assn.
1800 Massachusetts Avenue, N. W.
Washington, D. C. 20009

Robert D. Archibald
Lecturer in Mgt. Science & Industrial Design

Roger D. Blackwell
Professor of Marketing
College of Administrative Science
Ohio State University

Paul G. Craig
Professor of Public Administration & Economics
Ohio State University

John Goodman, Consultant

James H. Healey, President
Management & Business Services, Inc.

THE RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL 1979 MEMBERS

Charles Overman, General Manager
Adams Electric Cooperative, Inc.
P. O. Box 130
Gettysburg, Pennsylvania 17325

Cecil Viverette, Executive Vice President
Blue Ridge Electric Membership Corp.
Caller Service 112
Lenoir, N. C. 28645

Willard Grager, General Manager
Cass County Electric Co-op, Inc.
P. O. Box 8
Kindred, North Dakota 58051

Jack Goodman, General Manager
Central Kansas Electric Coop., Inc.
1025 Patton Road
Great Bend, Kansas 67530

Norman Hoge, General Manager
Cornhusker Public Power District
P. O. Box 9
Columbus, Nebraska 68601

William B. Miller, General Manager
Cotton Electric Cooperative
226 North Broadway
Walters, Oklahoma 73572

Jerome Haider, Manager
East Central Electric Association
412 North Main
Braham, Minnesota 55006

L. P. (Bill) Beverage, General Mgr.
Four County Electric Membership Corp.
P. O. Box 667
Burgaw, North Carolina 28425

James Campbell, Manager**
Jackson Purchase Electric Co-op. Corp.
P. O. Box 3188
Paducah, Kentucky 42001

Clyde Hukills, General Manager
Kay Electric Cooperative
P. O. Box 607
Blackwell, Oklahoma 74631

George Cornog, General Manager
KEM Electric Cooperative, Inc.
Linton, North Dakota 58552

Jack Hicks, Manager
Linn County REC
P. O. Box 69
Marion, Iowa 52302

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Red Springs, N. C. 28377

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Mecklenburg Electric Cooperative
Chase City, Virginia 23924

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Mid-Carolina Electric Co-op., Inc.
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Lexington, S. C. 29072

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Morgan County Rural Elec. Memb. Corp.
Martinsville, Indiana 46151

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Shenandoah Valley Electric Cooperative
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Southside Electric Cooperative
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Crewe, Virginia 23930

Virgil H. Herriott, General Manager
Sioux Valley Empire Elec. Assoc., Inc.
P. O. Box 216
Colman, South Dakota 57017

Emil Wiege, General Manager*
West Plains Electric Cooperative, Inc.
1260 West Villard
Dickinson, North Dakota 58601

Larry Frayzier, Manager
White River Valley Electric Cooperative, Inc.
P. O. Box 969
Branson, Missouri 65616

Elmer Stocker, General Manager
Whitley County R. E. M. C.
P.O. Box 171
Columbia City, Indiana 46725

David P. Larson, Manager
Wright-Hennepin Cooperative Electric Assoc.
Maple Lake, Minnesota 55358

James Golden, General Manager
Yampa Valley Electric Assoc., Inc.
Box 1218
Steamboat Springs, Colorado 80477

* Attended 1979 Meeting - 1979 dues not received prior to meeting

** Dues received after 5-13-79

22nd ANNUAL CONFERENCE
of
THE RURAL ELECTRIC
MANAGEMENT DEVELOPMENT COUNCIL

Quality Inn, Hilton Head Island, South Carolina

May 21, 22 and 25, 1979

Monday, May 21

1:00 Registration

1:15 Opening Remarks - Derl Hinson

1:30 Presentation by Research Committee - "Productivity" - Ev Bristol

3:30 Break

3:45 Presentation #1 - "New Concept for G & T Billing" - Jack Hicks, Linn County REC

4:30 Adjourn

Tuesday, May 22

8:30 Presentation #2 - "Achieving Organizational Effectiveness" - C. V. Viverette and Barbara Deverick, Blue Ridge Electric Membership Corp.

9:15 Presentation #3 - "Incentive Approach to Safety" - William Miller, Cotton Electric Cooperative

10:00 Break

10:15 Presentation #4 - "Computerized Staking & Work Order Procedures" - Allen Ritchie, Shenandoah Valley Electric Cooperative

11:00 (Presentation #5 - "Update Load Management" - Willard Grager, Cass County Electric Co-op.) out > Discuss Research Project

11:45 Lunch (on your own)

Tuesday Afternoon, Wednesday, Thursday -- May 22, 23, 24

Advanced Management Conference

Friday, May 25

8:30 Evaluation of Advanced Management Conference

9:45 Break

10:00 Business Session

Adjourn before noon

R.E.M.D.C. RESEARCH PROPOSAL

OUTLINE

I - TITLE

Internal Organization and Staffing of
Rural Electric Systems Now and in 1995.

II - EVIDENCE OF NEED FOR RESEARCH

History has shown that changes have come about at an ever increasing rate. Changes in staffing our organizations have not been exceptions. The following factors will necessitate changes in organization and staffing of rural electric systems in the forseeable future:

A - Changing role of R.E.A.
B - Mergers and consolidations
C - More and stronger federations
D - Increased government regulations
    1 - Affirmative Action
    2 - Environmental
    3 - OSHA
    4 - ERISA
    5 - Public service commissions
E - Lower population growth rate
F - Conservation of energy and resources
G - Automation

III - OBJECTIVE

To define the changes which will need to take place in the internal organization and staffing of rural electric distribution systems through 1995. This objective can be met only through careful long-range personnel planning.

IV - SCOPE OF WORK AND GENERAL METHODOLOGY

A - This study will be limited to anticipated changes in rural electric distribution cooperatives. Investor-owned utilities, public power, and G & T cooperatives will be excluded except where their inclusion would impact the conclusions to be drawn for distibution cooperatives.

B - Mail and telephone (WATS) surveys, and personal interviews will be conducted on a sample basis. Care must be exercised to insure an adequate cross-section of size, region and other important characteristics. From the information and opinions obtained a consensus and ultimate conclusions will be drawn in the form of direction (objective) rather than place in time (goal).

V - SUGGESTED INSTITUTIONS, FIRMS, AGENCIES OR PERSONS TO CONDUCT THE RESEARCH

This research can be accomplished by members of R.E.M.D.C., with cooperation from statewide organizations, G & T's, N.R.E.C.A., C.F.C. and R.E.A.

VI - NATURE AND FORM OF FINAL REPORT

Results of the survey and conclusions drawn therefrom, in summary form in total, by region and by size groupings.

VII - UTILIZATION, IMPLEMENTATION AND/OR DISTRIBUTION OF THE RESULTS

A - Report will be made available upon request to all rural electric distribution cooperatives for implementation as they see fit.

B - Personnel Planning Workshops could use this study as a guide.

VIII - GENERAL TIME FRAME - TENTATIVE SCHEDULE

Preliminary draft	February 19, 1979
Final draft	May 21, 1979
Membership approval	May 25, 1979
Committee planning session	July 31, 1979
Survey preparation	August 31, 1979
Survey completion	November 30, 1979
Survey summary and draft report	January 31, 1980
Final report	March 31, 1980
Presentation to membership	May, 1980

IX - ESTIMATED COST OF THE RESEARCH PROJECT AND SOURCE OF FUNDS

Committee meeting expenses	$1,000
Materials, postage and telephone	1,000
Reproduction	500
Total cost estimate	$2,500

Prepared by:
Robert L. Roberts 2/15/79
Pioneer R.E.C. - Piqua, Ohio

RESEARCH PROPOSAL NUMBER 2

February, 1979
By: Cecil E. Viverette

I. TITLE - The Challenge to Rural Electric Cooperative in providing Electric Service in Their Service Area The Year 2000

II. RESEARCH NEEDS

A. Need for demographic projections by states and indivudual Coop service areas.

B. Electric energy growth by states and individual Coop service areas.

C. Effectiveness of Cooperatives in meeting present-day member energy needs.

D. Effect of energy conservation the next twenty years.

E. Probable obstacles to be dealt with in meeting the members energy needs in the next twenty years.

F. Other.

III. OBJECTIVE

To provide guides for effective planning by rural electric Cooperatives and to identify cooperatives having severe problems and help them deal effectively with such problems.

IV. SCOPE OF METHODOLOGY

A. Scope could include all Cooperatives or a cross-section of Cooperatives in each state.

B. Methodology - A work task group composed of REA - NRECA - CFC people could perhaps best do this job with input from statewides and individual Cooperatives and their consultants.

V. WHO DOES IT

A. Could be:

(1) A university

(2) A consulting firm.

(3) REA

(4) NRECA

(5) CFC

(6) Combination of the above.

VI. FINAL REPORT FORM

A. A general overview of all Cooperatives.

B. Report on each state.

VII. DISTRIBUTION AND UTILIZATION

A. Distribute to all rural electrics and their consultants.

B. Use by NRECA Management Services, CFC, REA, and statewides in developing training programs that will meet identified needs.

C. Use by individual cooperatives.

VIII. TIME FRAME

Approximately two years.

IX. COST

A. Depending on the depth of the research from $5,000 up to $250,000 for a meaningful study.

B. I would suggest $5,000 for a look-see and further expenditure on a cost justified basis.

February, 1979

Carl G. Thor
Vice President
American
Productivity Center, Inc.

"Productivity"

Summary of remarks of Carl G. Thor at the Rural Electric Management Development Council, Hilton Head, SC, May 21, 1979

Productivity has become headline news. Leaders from government and business have unanimously deplored the poor performance of the United States in productivity improvement in the last decade. However, reading between the lines, it is clear that many of these leaders are not too sure exactly what they are deploring. Productivity is a widely misunderstood concept. It is related to virtually every other economic concept in one way or another, but most of the standard economic solutions do not directly address productivity.

My objective in this discussion is that everyone will leave the room understanding what productivity is, recognizing the importance to the United States and to your firm of increases in productivity, and preparing to do something about productivity improvement back at your own firm. Improvement in productivity can mean increased profits, higher real wages, more jobs, and a generally higher standard of living. Productivity improvements benefit all segments of our economy; labor, management, consumers, and government.

However, there are many problems associated with productivity, that are effectively blocking progress. Our basic growth rate is slowing down, foreign competitors are making inroads, our production costs are increasing, government regulations are increasing, and there is a general lack of understanding about productivity. Yet, productivity should be of direct interest to businessmen, since productivity represents the difference between cost increases and price increases. The only way to keep whole in a situation where costs are going up faster than prices are permitted to rise is to make productivity improvements.

In the twenty years after World War II, productivity increased at an average rate of 3.2% per year in the United States. In the last ten years, that rate has been cut to approximately 2.0% per year. In 1978, productivity improved only 0.4% versus 1977. The performance varies from industry to industry. The man-made fiber industry increased productivity at the rate of 8.5% per year. On the other hand, coal mining productivity actually decreased at the rate of 3.2% per year from 1967-77.

Though the United States is last in its rate of productivity growth among large industrialized nations, the United States is still first among these nations in level of productivity, but the other countries are rapidly catching up, and it is clear that many nations will pass us between 1985 and 2000 if we do not improve our performance.

There are certain things that the Federal government can do to get us back on the track of productivity improvement, but I will emphasize in my remarks what an individual firm or plant can do to make its own share of the needed improvement. Basically what is needed is an organized, comprehensive productivity improvement program. There are eight key basic elements in a productivity improvement program as defined by the APC. They are: necessity for top management support, recognition of the importance of employee participation, adoption of productivity as part of the objectives, strategies and tactics of the organization, development of performance measures, assignment of responsibility for productivity improvement, monitoring and feedback of progress, assurance that norms of job security will not be violated and finally, the existence of monetary or non-monetary incentives plus appropriate training. Rather than get into the details of these elements, I would like to spend some time on one of those eight; development of good productivity measurements. In the course of describing and defining a good measurement system, you will also get a better idea of exactly what productivity is and what productivity is not.

Productivity is output divided by input, a very simple statement covering over a very complex subject. The most commonly used productivity ratio is output per man-hour. This is only a "partial" productivity measure; the output used is total output, but the input used is only the labor factor. There are other factors, such as capital, energy and materials, that in many industries may be more significant than labor. Nevertheless, largely for historical reasons, the government statistics are based on the labor partial measure. To avoid distortions and problems associated with using one partial factor measure, the APC recommends the use of total productivity measures where possible. These are measures where the output is the total output of the process and the input is the sum of all factors; labor, materials, capital and energy. Though this is obviously a more complicated calculation to make, in many industries it is the only effective way that an analysis can be made of a productive process, including

the correct treatment of possible trade-offs from one factor to another. After all, as you are well aware in the feeds industry, a major source of productivity improvement is the substitution of capital for labor. Concentration on a labor partial measure will show much greater progress than is actually the case, because increasing levels of capital are not recognized.

Let's consider what productivity is not. Productivity is not production. Production is the numerator of the fraction output over input. An increase in production in itself says nothing about the input factors that went into making up that increase in production. Also productivity does not equal profitability, although the two are related closely in the long run. Profitability includes the effects of inflation in both output and input, marketing and promotion expenditures which fluctuate violently, arbitrary accounting regulations, methods of valuing inventory, and extraneous effects from procurement of supplies. Though all these things have a direct bearing on the level of profitability, and they mean real money in your pockets, they do not have any direct effect on the efficiency with which the productive process is operated. It is that level of efficiency which is being monitored with proper productivity statistics.

The American Productivity Center makes its analysis of changes in quantities, prices and values using the concepts of profitability, price recovery, and productivity. They are related by the equation profitability equals productivity times price recovery. Productivity represents a relative change in quantity of input as compared to the change in quantity of output. Price recovery refers to a relative change in the cost of an input versus the change in the price of the output. Profitability refers to the comparative value relation. These concepts can be illustrated by looking at the performance of two companies, company A and company B. Both have equal profitability records, but in the case of Company A that profitability comes as a result of productivity improvement. Price recovery lags; in other words, the company has been unable or unwilling to pass on its full cost increase to its price of its final product. However, it continues to improve its profitability because of productivity improvements. Company B on the other hand makes its profitability improvement because of price recovery. In other words, it more than passes on its cost increases to price of output. But this is partially offset by dragging productivity. "Excessive" price recovery is usually eaten away rapidly by competition or government price

control. An analysis that concentrates entirely on profitability would not see the distinction between companies A and B. But in fact the long range strength of two companies as described above would be very different. The ability to analyze productivity and price recovery is crucial to effective long range planning.

Many of you do productivity measurement at the level of the individual or the specific small production group. It is quite common to use work measurement techniques to optimize the layout and physical operation of individuals or small groups. This is a completely valid form of measurement, but is difficult to extend to larger groups, much less accompany to the division or the company level. However, partial productivity ratios and total productivity measures can be used at these higher levels as a useful complement to the work measurement systems that you may already have. Partial measures can be made of almost any kind of productive operation. We are all familiar with measures such as value added per employee, sales to payroll, units produced per employee and so on. But it is also valid to use the same kind of measures to monitor the performance of engineers, accountants, typists, salesmen, and the indirect work force. There is an increased difficulty in coming up with proper output measures, because the outputs are not always so explicit and clear, but with a certain sensitivity to the difficulties, good measures can be developed.

IBM, in its analysis of staffing levels within plant indirect labor categories, provides a example of possible relevance to and use by your association. For each job category, of which there are 160, IBM selects an indicator that corresponds as closely as possible to either the output of that job category's personnel or is at least a surrogate for the input of that category. For each of many independent plant operations a regression plot is made of the number of people involved in the job category on the one hand against the level of the indicator on the other. The regression line that results sets an informal standard against which each plant can compare its performance. The results are then aggregated by plant and by function for top managers.

The possible application to your association is that, much like the study already done by the REA on costs by function vs. characteristics of the operation, this technique would allow you to compare number of people in various job categories against indicators of their performance. Since there are more than

900 rural coops, a significant body of observations is available to make the regression line even more significant than it was in the case of the IBM example.

There are two problems of partial measurement that are worth mentioning. First and foremost is the problem of quality variation. As long as there is only one type of output and one type of input, there is no problem in this regard, but where outputs are of different "quality" levels, it is not possible to add up units any more. The different kinds of output must be aggregated in some form which requires some method of weighting more valuable with less valuable, bigger with smaller, difficult with easy, and so on. The same thing is true on the input side. When something is measured on the basis of per man-hour, you are making the assumption that every man-hour is equivalent. But, it would be dangerous to say that the man-hour represented by the Janitor is as valuable as the man-hour of the Chairman of the Board. So a basis must be developed to aggregate in a carefully weighted manner.

A second problem of partial measurement is inflation removal. If dollars are used for weighting as is often done, care must be taken to insure that inflation is taken out of any dollar statistics that are used. Sales per employee is commonly used as a partial labor measure. However, sales is obviously affected by inflation whereas the number of employees is a physical number which does not change with inflation. Thus, in today's inflationary environment, there is a substantial built-in annual increase in that so-called "productivity measure". This can be removed using the proper deflators or price series data.

Partial measures can be developed in the other areas also. In capital, sales to assets is a common ratio that is useful if inflation has been removed. Other capital ratios are utilization of square footage, truck fleet statistics, machine hours statistics, and output related to invested capital. In materials a very common sort of measure is loss ratios. Energy is also important, increasingly so since the mid '70s. Energy used per ton of output is quite common. Where there is more than one energy source, the different types of energy can be weighted on an BTU-content basis.

Having talked now about partial measures, we can proceed to total productivity. There are two kinds of total productivity. The most common is output divided by the sum of all the inputs (labor, capital, energy and materials). An alternative, which might be of value to your association, is total factor productivity which uses a value-added approach. In this, output minus materials is divided by labor plus capital. Thus the output being studied is not the gross sales, but rather the operating margin of the business.

The major problem in total productivity measurement is that capital is not an annual expense in the same sense as labor, energy and materials. Though depreciation is routinely included as an expense, proper analysis also requires inclusion of some measure of capital return. This annual return expense is the product of a quantity and a price, as are all the other measures used in this analysis. The appropriate capital quantity would be some measure of present value of assets or replacement value as opposed to an uncorrected book value. The proper return rate is the best estimate of the basic earning power of the whole business. This might be some "normal" return, it might be the average cost of capital, but it is certainly not the incremental hurdle rate typically associated with capital budgeting.

Once capital is annualized, then it is possible to proceed to a complete analysis. The American Productivity Center has developed a performance measurement system that relates the quantity and price performance in each input factor category with change in total output. The change in quantity of output relative to input is productivity. The change in price of output as compared to the change in unit cost of input is price recovery. The overall system provides in columnar form an analysis by input factor of the impact on profits of productivity and price recovery.

The American Productivity Center was founded about two years ago by Jack Grayson, who was price controller during phase two of the price controls from 1971-73. He came away from that experience convinced that controls do not work and they do not solve the fundamental causes of inflation. Seeing productivity as the best route to a solution, he established the American Productivity Center with contributions from more than 150 corporations and foundations.

The APC has created courses in How to Plan and Organize a Productivity Improvement Program, Productivity Measurement, Incentives and Gainsharing, Cooperative Labor/Management Efforts, and several other topics of direct interest to productivity improvement programs.

The APC is prepared to create for your association an interfirm comparison of productivity performance of all Rural Electrification Co-ops. This program would gather operating data at the "plant" level using the association as an intermediary. Data would be gathered using a mail questionnaire, which would be developed by APC and industry specialists. This sort of measurement is a supplement to existing finanical comparisons and to the work already done by the REA. The comparison would provide analysis of both level and trend of productivity.

The first comparisons would be productivity comparisons: output vs. input. The outputs used would be megawatt hours, either unweighted or weighted (to reflect different prices for residential vs. industrial or for peak vs. normal). Another output would be revenue adjusted to a constant dollar basis. Inputs would be energy, materials, labor, capital, and if appropriate, a weighted average of all. In addition, these ratios themselves could be compared with characteristics of each "plant". These characteristics are such things as: industrial vs. residential percentage, geographic area, customer density, miles of line, and age of equipment. These characteristics can in turn be compared with cross relationships of the input factors such as: maintenance as a percent of revenue, fuel as a percent of revenue and labor cost per hour.

The printout would then demonstrate the performance of each "plant" in level and trend of productivity for each of the ratios, cross relations and characteristics involved. Where data permits, the individual plant would not simply be compared against the industry average, but a quartile or decile analysis would be developed to more precisely indicate the relative performance of the entity.

The APC is prepared to develop such a comparison system in cooperation with appropriate consultants, government agencies or any other relevant sources. The measurement report itself could be closely coordinated with various activities

in explanation to and training of the people involved in preparing analyzing the data.

We all feel the effects of continued inflation, threat of recession, unemployment, lower real wages, greater social tensions, and above all, the erosion of our private enterprise economy. It is from within this private sector that improvements must come. Each of you must examine your own firm or organization and try to find ways to improve your productivity. Peter Drucker believes "Productivity is the first test of management competence". What are you doing about productivity in your firm?

A NEW CONCEPT FOR G & T BILLING

Jack K. Hicks
Linn County REC
Marion, Iowa

The costs of energy, all kinds of energy, is a topic of great interest to everyone today. The cost of energy to a distribution cooperative determines the outcome of the monthly operating statement. Each year that slice of the pie continues to grow.

With this, the fact of our time, a rate study committee from the 14 distribution cooperatives of our Generating and Transmission Cooperative, CIPCO, was appointed by the G & T board. I am one of the five distribution Managers appointed to this rate study committee.

The purpose of our committee was to recommend a rate making methodology that would produce a more equitable rate structure which would meet the needs of the future, while maintaining the advantages of our present system. This rate structure should utilize the capabilities of the existing CIPCO mag-tape metering and the CIPCO computer. We also wanted to obtain information on cost of service and time-of-day pricing for information relative to State Commerce Commission studies.

Our first big decision was "we needed outside help." I was familiar with the work of Ernst & Ernst of Washington, D.C. who worked on a Department of Energy, D.O.E., grant to the State of Iowa. This study had involved load characteristics of the investor owned and rural electrics throughout Iowa.

Our committee requested a proposal from Ernst & Ernst and with our recommendation, the CIPCO Board concurred that Ernst & Ernst would develop a methodology that would meet all our established criterion.

Our present billing system is the same system written into the original contract of the late 1940's. The fixed costs are allocated as demand charge and the energy charge is passed on as energy with no mark up.

With this rate structure all demand charges are collected except fuel costs. The demand charge is collected seasonally on a winter-summer demand charge. The basis of these charges are the portion of contribution each distribution cooperative has to CIPCO's coincident peak. The cost of fuel, or energy charge, is recovered on a 12 month average cost.

The advantages of the present system is that CIPCO is guaranteed the revenue they require. The fixed costs are determined and pro-rated monthly and the energy costs are passed on, thus the G & T, CIPCO, recovers all its costs for the year and the board has an annual determination of dollars.

Disadvantages of the present system are the use of load control devices and unscheduled load reduction. By using these, a distribution cooperative will contribute nothing to the fixed charges if they are using only a little power at the time of CIPCO's coincident peak. This is where there is a real need for more equitable distribution charges.

The Ernst & Ernst methodology was developed to assist the G & T in determining cost base rates. By cost basing rates a G & T can provide an equitable basis to bill each of its distribution cooperatives as costs are passed on to those who are incuring them.

With this flexability both CIPCO and CIPCO distribution members can determine what kind of loads they want to start to develop.

The Ernst & Ernst generating cost model determines the incremental cost by hour for 8,760 hours, on one year in advance. From this model a forecast of megawatt hour demand by hour, month and year can be made henceforth by computer.

After each hourly cost was determined these were averaged by hour by month and balanced by season to determine summer-winter costs as there is a difference in the value of energy costs by hour in the seasons.

Marginal costs by time-of-day on the CIPCO system were determined with an "off peak" from 1:00 a.m. through 6:00 a.m.; "shoulder", 7:00 a.m. through 5:00 p.m.; "peak", 6:00 p.m. through 9:00 p.m.; "shoulder", 10:00 p.m. through 12:00 midnight. This shows the system has a three part structure rather than the on peak and off peak that time-of-day rates are usually based on.

In application, November through April is the winter season, however seasonal peak may only be set in December, January or February. Similarly, Summer season is May through October, with peaks set in either June, July, or August. If January is the month during which the coincident system seasonal peak is set, then the highest shoulder and off peak consumption is also set in January. On the basis of the coincident time-of-day peaks the percent of coincident peak for each member system is determined.

With additional study, and considering the difference in this three part structure and the varable of summer-winter, benefits could be worked out for both the G & T and distribution cooperative as well as the distribution member-consumer.

The annual demand charges are related operating expenses are also based on the off peak, shoulder, peak hours and combined with the energy costs on an annual basis. In other words, the methodology

uses the generating cost as a method of allocating the remaining costs. The additional G & T charges, such as customer charge would be divided equal by the distribution cooperatives. The transmission charge and delivery point charge would be based on the number of metering points of each distribution cooperative.

We are conducting further study of the Ernst & Ernst methodology for G & T billing and hopefully our G & T will soon have a rate structure based on costs, and this cost based rate structure will be equitable to each distribution cooperative.

ORGANIZATIONAL EFFECTIVENESS

Presented at REMDC Meeting
Hilton Head, S.C.
May 22, 1979

Cecil Viverette, Executive Vice President
Barbara Deverick, Mgr. Organizational Planning
Blue Ridge EMC, Lenoir, N. C.

While most REC managers would agree that the pursuit of organizational effectiveness is a basic managerial responsibility, it is doubtful that a concensus could be obtained from the group present on a definition during the few minutes which we have to discuss the subject. So for the purpose of the discussion we will define our use of the term and our remarks will be directed toward organizational effectiveness in this context. Organizational effectiveness is the utilization of all resources available to the enterprise to achieve the goals of the enterprise. As a further elaboration, we think of goals in terms of feasible goals, not an ultimate goal in evaluating effectiveness.

From a basic point of view it may be enough to define organizational effectiveness in terms of attaining operative goals, however, we believe organizational effectiveness is a process which involves three related components. These three components must function together if an organization is to be effective. Thus by utilizing an analysis of (1) Goal attainment - or optimization of goals; (2) A systems perspective - or a view of interrelationships between the various parts of the organization and its environment as they jointly influence effectiveness; and (3) Behavioral emphasis - or the impact of the behavior of indidual employees upon the organizational goal attainment, we have a multi-dimensional approach to viewing more comprehensively the effectiveness of an organization.

Perhaps before going further we should emphasize the fact that we believe organizational effectiveness is a continuing process rather than an end state and that managers have a continuing responsibility to recognize environmental changes and to restructure available resources, to modify technologies, to develop employees and to do other things necessary to use the talents at their disposal to attain the goals of the enterprise which are themselves in a perpetual state of change.

Before discussing how we seek to achieve organizational effectiveness in the rural electric cooperative we represent, we will mention briefly the three parts of the process of evaluating organizational effectiveness. However, first we need to say that effectiveness, from our point of view, is different from efficiency. While we recognize the importance of and interrelation between the two, we define effectiveness as the extent to which operative goals can be attained and efficency as the cost/benefit ratio involved in the pursuit of these goals. We believe further, that increased inefficiency would at some point have an effect on effectiveness and for this reason it is likely that the more costly the goal effect becomes, the less likely the business is to be effective. Efficiency is therefore an important element of organizational effectiveness.

In looking at goal optimization, the first part of the three part process, we must recognize that different organizations pursue widely divergent goals, even within the rural electric program. We may have similar goals in some areas, and totally different goals in other areas. In evaluating success in terms of the extent to which "desired" goals have been achieved we recognize that a series of identifiable and irreducible constraints (for example, money, technology, power supply, personnel, other goals, etc. that serve to inhibit goal maximization must be taken into consideration and that goals which are used must be "optimized" goals, that is, desired goals within the constraints dictated by the resources available). We then evaluate against a feasible goal given the situation rather than against an ultimate goal when judging effectiveness. This approach permits the basic recognition of the fact that an organization has multiple and often conflicting goals,(for example, productivity and job satisfaction).

We must also recognize the different weights managers place on the various goals which they set for their organization and take this into consideratic in the evaluation of the organization's effectiveness. There exists also a series of constraints which impede progress toward achievement of goals which may be impossible to alleviate in the short run. (Examples: limited finances, people, technology, etc.). As goals change and the constraints associated with them change, new evaluation criteria will be provided for determining organizational effectiveness. By utilizing feasible goals, computer simulation modeling can be utilized to analyze the impact of changes on the resulting facets of effectiveness and from this, managers can make more meaningful decisions which affect the future of the enterprise.

In the systems perspective part of the process we have four major categories of influences on effectiveness. These are (1) organizational characteristics, such as structure and technology; (2) environmental characteristics; (3) employee characteristics, and (4) managerial policies and practices. We know that these four sets of variables influence effectiveness. We believe that they must be relatively consonant if effectiveness is to be achieved. Managers have the responsibility to understand the nature of the environment in which they perform and to set realistic goals that accommodate and/or exploit that environment. Given these goals, the more effective organizations will tend to be those that successfully adapt structure, technology, work effort, policies, and so on to facilitate goal attainment.

The role of the behavior of the individual as it affects the organizational process is the final aspect of the process approach to evaluating organizational effectiveness. We would stress individual rather than the "macro" approach to behavior of employees. Where the organization goals and the personal goals of an individual employee are compatible the employee is very likely to exert a high level of effort to achieving the organization goals, where these are /conflict there is little reason to expect maximum effort on the part of the employee. Therefore, when we examine organizational effectiveness it is important to recognize and account for/ the people who ultimately determine the quality and quantity of the organization's response to environmental demands (members, government, public, in the case of REC's).

The remainder of our presentation will not dwell on goal setting or attainment except in general, but will rather focus on our system of organization and the behavioral aspect of our organizational effectiveness. Our approach to organizational effectiveness gives heavy emphasis to the behavioral approach to management but also includes emphasis on process, quantative as well as qualitative, system and contingency approaches. The human aspect of organizational effectiveness in a rural electric system involves essentially three groups of people - (1) Members (owners-consumers); (2) Board of Directors: and (3) Employees. Our basic concern is how to develop synergy with and between all these groups to assure all efforts are directed toward achieving the system goals (objectives).

The foundation fororganizational effectiveness which involves these three groups includes (1) Place of the participant in the organization; (2) Organization structure; (3) Technology; and (4) Management Processes.

Formal organization involves all three groups of people and the management processes and structure do also. Technology is used to enhance the management process to produce organizational effectiveness.

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HOW MEMBERS, BOARD AND EMPLOYEES CONTRIBUTE TO ORGANIZATIONAL EFFECTIVENESS

Members

Organizational effectiveness begins with the member. Members are oriented from the moment they become a member of the Cooperative as to their role. This is done first through new member orientation discussion and the packet of information provided to the member at that time. Information is provided each month, through contacts with employees, news bulletins, radio announcements and other means to keep members advised of actions they should take in carrying out their member responsibilities. Their member member responsibilities include paying their bills on time, advising the Cooperative promptly of any problems or questions they might have regarding their service with the Cooperative, attending and participating in member meetings and sharing information with other members.

Members serve on numerous Member Committees which the Cooperative has both on a continuing and ad hoc basis. We presently have four continuing Member Advisory Committees which meet quarterly and more frequently if the groups decide they need to do so. These committees serve as advisors to the Board on matters relating to the membership's concern and interest regarding their cooperative. Members serve on Annual Meeting planning committees, Member conference planning committees, project committees and of course the Nominating Committee. We find members eager to participate and at our most recent member conference we had 65 fine women who discussed many subjects from procedures used to handle delinquent accounts to nuclear generation and gave positive and constructive input to the board on each of these subjects. The suggestions made by this group are a part of the handout you will receive following this presentation.

The involvement of our members in assisting us to evaluate the effectiveness of the organization and planning how to be even more effective is becoming increasingly valuable to us. For many years we have been making an annual survey of our members to obtain their opinions and suggestions and these have been used in re-defining goals and developing operational plans for achieving the goals. All employees know the membership is the reason the Cooperative exists and that therefore the member is each employee's first consideration.

Board of Directors

Because our Board serves as the master planner and the policy maker, it is most important to organizational effectiveness. The Board develops the strategic plan which is a directional guide for the Manager and his staff in developing the operational plan. The Board also develops such policy guides as it determines are needed to give the Manager guidance in the management of the organizational resources.

The Board develops for itself an annual work program which assures that the Board and the individual directors will have a structured plan to follow in achieving the goals which have been set for the Board and its development. The Board holds two or more self-improvement meetings each year to assure its members keep abreast of the changes in the environment and also within the organization so that they may be effective in carrying out their responsibilities. This past year, two such sessions dealt with organizational structure and policies, their purpose and intent. The Board also assures that its members participate in off-system training and informational programs to provide a broad perspective of their role and the environment in which they operate. The board participates in meetings with members through the Member Advisory Committees, Member/Director days in the district offices, the Annual Meeting, and special member meetings and conferences. Each contact with a member or members by directors is arranged to meet a specific objective with regard to information exchanged with the member.

The Board has five standing committees - Member Relations - Finance and Budget - Manpower - Policy - Audit - through which it operates. These committees study and evaluate programs and bring recommendations to the Board.

How EVP Works with the Board

To assure information flow between the Executive Vice President and the Board the Executive Vice President has the following planned means of communication with the Board:

(1) EVP/Director Day each month: The Executive Vice President and one director spend the day together in the Director's district visiting members, discussing system operations and any issues of concern to the Director or the Executive Vice President.

(2) Monthly Newsletter to the Board: The Executive Vice President sends a monthly newsletter, usually limited to one or two typewritten pages of information of current interest to Directors about the organization, its operations and its employees.

(3) Monthly Written Report of System Operations: Sent in advance of monthly board meeting by the Executive Vice President and gives brief assessment of system operations and evaluation of results against standards in key result areas which the Board has determined it needs, monthly, quarterly, and semi-annually, and annually. Some discussion may be had at Board meeting on items contained in the written report in response to questions or for further elaboration.

(4) Information Meetings: Special meetings held for the purpose of discussing indepth items of interest to the Board or for which the Executive Vice President feels more time should be taken

than is normally available for such discussion in a regular Board meeting. Example: Presentation of the Annual Work Program and Budget.

The Board has adopted a policy on Board-Manager Relationships which includes an addendum on how board is to handle member inquiries and complaints. A copy of this policy and the addendum is included in the handout material.

To aid in organizational effectiveness as it relates to structure, planning and control, the four key staff members responsible for planning and control - the Manager of Operations, the Manager of Member and Public Relations, the Manager of Finance, and the Manager of Organizational Planning and Personnel Services, attend all board meetings and serve as resource people to the Executive Vice President and the standing committees of the Board. This gives the Board an opportunity to evaluate the effectiveness of the Management Staff and gives the staff an opportunity to hear the thinking of the Board first-hand. There is a good understanding by both the staff and Board members of the role of the staff planners and their relationship, through the Executive Vice President, with the Board.

How Executive Vice President Works With Staff

The first step in developing a synergistic and effective organization is to hire the right people; however there can be little organizational effectiveness where there is poor delegation, little authority given, and no real accountability. Therefore, a major concern of a manager who wants organizational effectiveness is to first assure that he has competent people reporting to him and then delegate, give commensurate authority and hold people accountable for results achieved. This we have endeavored to do in our Cooperative. We have clearly defined position guides, position standards and a system of reporting. Since the manager is the linking pin in the communications system of the organization, at whatever level he may be - Executive Vice President, department manager, section or unit manager - it is important that a good system of communications be established which includes - systematic staff meetings, one-on-one discussions - systematic reporting and appraisal and counseling sessions which result in personal development plans for the subordinate and perhaps even the manager himself.

In our organization we have four key staff managers who, together with their staffs, are the chief planners and evaluators in the organization. We have then, four districts, and the personnel there are the chief doers of the organization with respect to meeting the needs of the members. As a result of this arrangement, we have as one of our operating policies, a statement on joint accountability. Operating statements are

Administrative tools of the Executive Vice President which provide continuity and uniformity within the organization where needed. A copy of this operating policy is in the handout material. In essence, the policy states that both staff manager and the line (doer) manager has a responsibility in carrying out the necessary activities to assure the desired results and are held accountable for their delegated responsibility. We find that this concept of joint accountability works well for us.

To assure that operating personnel working with the membership have sufficient guidelines to carry out their work, we have instituted a system of written operational practices which is rather extensive. These practices cover the major areas of operations and are issued under the headings of - Personnel - Electric and General Plant Operations - Office and Accounting - and Member and Public Relations. These practices give explicit statements of procedure and assure a high degree of uniformity in our basic operations throughout the system and especially in our four districts. These practices are updated annually and more frequently if circumstances require. This assures current guidelines for our operating personnel and becomes a valuable aid to all personnel. These practices serve as training aids for new personnel and also simplifies job rotation among our personnel.

To keep all employees informed of current operational concerns and give them opportunity to discuss all areas of operations we carry out a continuing series of employee meetings. Staff managers and their key people hold systemwide meetings, one at each district office and one in the general office to cover all employees. These meetings are held on a monthly basis and cover a wide range of topics. They are held to one hour and are in addition to the regular weekly safety and department employee meetings. The Executive Vice President also holds a monthly employee round table with randomly selected employees and also utilizes the system news center bulletin boards for personal messages to all employees. On the district/director/member day, the Executive Vice President and directors also interact with the employees in the district to find out their concerns and discuss with them issues of importance to the Cooperative. Annual employee opinion surveys are made and the information obtained in these surveys is utilized with all supervisory personnel to assist in making the total communication and personnel program more effective. I obtain a high degree of personal satisfaction from the employee round table and believe that the participants do also. They have confirmed this in comments to their colleagues and also to me.

One of the key elements of organizational effectiveness as we have already mentioned is working with the individual employee, and this is one of the major responsibilities of any manager to assure the effectiveness of his staff. Sometimes, it is necessary, even with the highly professional personnel which a manager of a rural electric cooperative generally has on his staff, to confront a situation of poor performance. When this confrontation is necessary, the facts of the situation must be laid out and the employee dealt with forthrightly, fairly, and firmly. It is better to get to the "bottom line" early in such a discussion so that the individual will not be left wondering just what the manager is

trying to say. Directives or commitments made in such a session should be committed to writing and deadlines established, otherwise the manager will have no meaningful way to determine just when constructive change occurs. A manager must be able to discipline effectively, and reward performance at the appropriate time. He must know that the system of organization is working effectively.

A manager must create an atmosphere which will assure that his staff is open with him, can honestly disagree with him and share their feelings and concerns with him and each other in a constructive manner if the organization is to function effectively. Only the manager can provide the leadership to accomplish this.

As I see it, one of the major responsibilities of a manager to bring about organizational effectiveness is to assure that all key management personnel have a systems perspective - that is, they understand how the organization is supposed to function and what their role is in making it function effectively. If a manager does this, then holds this group, individually and collectively, accountable for results, the organization will be effectively operated.

HOW THE ENTERPRISE IS STRUCTURED TO BE ORGANIZATIONALLY EFFECTIVE

The basic purpose for organization is to develop an intentional structure of roles for effective performance and provide a network of decision communication centers from which to secure coordination of the individual effort needed to achieve the goals of the enterprise. It is not possible to develop an effective organization structure without first having knowledge of the goals of the enterprise. Basic principles of organization must be applied; however, these must be applied after taking into consideration the background of the enterprise and its operational needs. In other words, an organization structure must be tailor-made to fit the particular company (cooperative). This means taking into consideration the capabilities of the personnel available, and after developing the organization around the goals of the company, making the necessary modifications for the human factor. Adjustments can be made to come more nearly to the ideal organization structure as there is attrition of personnel.

At our Cooperative, we have utilized and refined the concept of line and staff in a rather de-centralized organization. We make extensive use of functional authority throughout the organization and give great emphasis to the complete authority of the individual supervisor as it relates to personnel reporting to that supervisor. This may appear at first glance to be somewhat in conflict, but the way in which these principles of line and staff authority are interpreted and utilized in our organization have been very effective.

Functional Authority

We make use of the definition of functional authority given by Koontz and O'Donnell which states, "Functional authority is the right which an individual or department may have delegated to it over specified processes, practices, policies, or other matters relating to activities undertaken by personnel in departments other than its own. If the principle of unity of command were followed without exception, authority over these activities would be exercised by their line managers, but numerous reasons - including (1)Lack of special knowledge; (2) Lack of ability to supervise processes; (3) Danger of diverse interpretations of policies - explain why they occasionally are not allowed to exercise this authority. In such cases, line managers are deprived of this limited authority. It is delegated by their common superior to a staff specialist or a manager in another department.

"Functional authority is not restricted to managers of a particular type of department. It may be exercised by line, service, or staff department heads, more often the latter two, because they are usually composed of specialists whose knowledge becomes the basis for functional controls."

Functional authority generally means that the person delegated that authority is to prescribe processes, methods, and, in some cases, even policy to be followed in all sub-divisions of either staff or operating departments. Functional authority must be restricted in its use because a very thin line sometimes divides what should be controlled by the expert and what should be under the jurisdiction of the operating manager. In any event, the position of operating manager or supervisor must not be weakened. This requires a good understanding of working relationships and a constant effort to maintain open lines of communication.

Tools for Organizational Effectiveness

Tools used in our organization to help assure everyone involved understands the goals and the guidelines which are to be utilized in achieving these goals begin with our organization manuals. We have three basic manuals. The first manual contains a statement of beliefs and objectives of the Cooperative , State and Federal Rural Electrification acts, Bylaws, and Board Policy, functions of the Board, system attorney, and Executive Vice President. The second manual contains operating policy and practices; and the third manual, the position guides by departments and sections, and work standards. Other tools include Work plans and budgets, responsibility accounting reports by departments and sections, monthly reports to department managers, Executive Vice President and Board, meetings of various kinds including staff, planning, problem solving, task force, and of course departmental and system employee meetings.

What and Who Causes Organizational Effectiveness

The Executive Vice President meets monthly with the eight people who report to him in a structured staff meeting. He meets weekly with the four staff managers. The four staff managers meet at least monthly, and more frequently if the need arises, for the purpose of coordinated planning and evaluation of progress. The key to the effectiveness of the organizational effort rests with the personnel who report to the staff managers and the district managers - the staff directors and district supervisors. These are the real implementers of the programs of the organization. They are the auditors, the inspectors, the supervisors, the resource procurers, the gatherers of information and the communicators. In other words, they are the key to the entire operation of the Cooperative.

The staff managers, together with the Executive Vice President, are the chief operational planners of the organization and utilize the data provided by the staff directors to plan and re-plan. The District Managers are the principal member relations persons in the districts. They see that the district operations flow effectively to meet member needs. They are not experts in electric plant operations or internal office procedures and accounting control, nor are they system planners. They are the principal representatives of the cooperative in the districts and participate in public affairs to a large degree. They exercise functional authority in the district with regard to member relations and plan the district member relations program within the context of the total system member relations program. Staff managers plan all major system programs, staff directors, utilizing the advice and counsel of the operating supervisors, plan how these programs will be implemented and see that they are implemented through the operating supervisors, providing them resources, technical assistance, and professional advice, and giving them feedback as to how well they are doing.

Four of the principal staff directors meet weekly to evaluate progress and do operatioal planning. All staff directors meet monthly. Staff directors meet bi-monthly with all district supervisors -with the operations supervisors one month and the member services supervisors the next month. The staff directors are in the districts weekly to inspect, audit, evaluate, counsel with and give assistance to the operating personnel in implementing system programs. Emphasis is placed on one-on-one discussions between supervisors and staff directors to obtain understanding and enhance the efforts of both.

Periodic evaluations are made by staff managers and district managers of the effectiveness of the working relationships of the staff directors and district supervisors. The key to the effectiveness of this working arrangement is good communication between the district and the staff department personnel. This must be constantly nurtured and strengthened. For example, a staff director always touches base with the district manager when he is in the district to give him a quick report on how he finds things and his reason for being in the district. The District supervisors keep their district managers informed through staff meetings and one-to-one reports as well as monthly written reports on the progress in their various sections. Staff managers are constantly seeking feedback from the districts on the effectiveness of the staff directors in their roles

and providing guidance to the staff directors on ways to improve their work with the districts.

We believe that there is good understanding by all key management personnel, including supervisors at every level regarding the definition and use of functional authority in the organization. When the Director of Communications tells the Manager of Finance that a communications statement he had prepared to inform the members about the refund of capital credits is not adequate and must be changed, he is simply carrying out the functional authority which has been delegated to him. When a district manager advises the Operations supervisor reporting to him that he is holding him accountable for operating the electric plant facilities in the district in accordance with the guidelines provided by the Director of Operations in the staff operating department, he is giving the supervisor a directive which he follows. This simplifies the work of the Director of Operations because when he gives operational guidance to the supervisor, he knows he will work constructively with him. Staff departments are responsible for the level of system performance and are held accountable for this. The major question which is always asked if there is a question of who has responsibility for an action is, "Who does the Executive Vice President hold accountable?" When this question is resolved, then there is clear understanding about who has the authority to act or direct that specific action be taken. A good understanding and positive application of functional authority strengthens organizational effectiveness for our Cooperative.

Staff Assistant's Role in Organizational Effectiveness

The staff assistant becomes the catalyst to making the organization function effectively. The Executive Vice President is involved in up-and-out activities as a major part of his role and thus, must depend on the staff assistant to see that all the tools for organizational effectiveness are timely, understood and utilized within the organization.

This work is performed with and through others. All policies, practices and major system work guidelines flow through the office of the staff assistant to assure that they are compatible to the entire system of organization and that the mechanisms for communications and understanding and acceptance are properly functioning.

Personnel Administration

These mechanisms include information and training programs for employees involved in implementation, system of feedback and evaluation to assure desired results are achieved from the implementation, and necessary replanning action is taken. The staff assistant becomes in effect the "Arranger of the Situation" to assure the organization functions. Since people are what makes the organization function, the staff assistant must assure that the personnel practices and programs developed meet the needs of the organization and assist supervisors to provide an opportunity for the individual employee to make their maximum contribution to the achieving of the system goals. This means giving constant attention to

how these people respond to the environmental demands on the job. This gives challenge to the total human resources management program of the organization. Therefore, it is important that good personnel policies and practices be developed, understood and implemented. This, in our organization, is a primary responsibility of the staff assistant.

Meetings

To make maximum utilization of the knowledge, experience and skills of all personnel much use is made of specialized meeting - planning, evaluating, problem solving, reporting discussion, etc. to direct the capabilities of people and focus their attention on current needs. We make constant use of the Task Force concept of organizational management. This enables us to utilize and focus needed experience, knowledge and skills from all levels and departments of the organization on current problems and find solutions with the very people who will be applying the solution to the problem.

Why the System Works for Our Cooperative

By focusing on systems which will effectively combine the knowledge, skills and talents of people at points of need through clear delegations, giving commensurate authority, and holding people accountable, we have achieved the results we sought in meeting system goals. The key to organizational effectiveness is the general manager or the chief operating officer of any organization, and it is especially true in a rural electric cooperative. He must provide the leadership and set the pace, and the staff assistant must be his chief resource person in this effort.

Basic Conclusions From Our Efforts To Have Organizational Effectiveness

The general manager is the key to the effort. The manager has a continuing responsibility to recognize environmental changes, to re-structure available resources, to modify technologies, to develop employees, and so forth, in order to use the talents at their disposal to attain goals that are themselves in a perpetual state of flux. Organizational effectiveness is a continuing process rather than an end state. Bringing all the resources together in a goal-directed effort is an unceasing task for managers and must be recognized as such with frequent check points established for re-evaluating and re-defining goals to assure efforts are not mis-directed.

Here are some questions a manager may wish to ask himself and his key staff about the appropriateness of decisions on resource allocation to achieve operative goals.

(1) How are we applying our limited resources toward the attainment of our goals? Are they in balance?

(2) Is there a clear relationship between the amount of resources we spend on the goals and the importance of that goal?

(3) What kind of return on investment, per goal, are we getting on our resources?

(4) Is the entire organization working together for goal attainment?

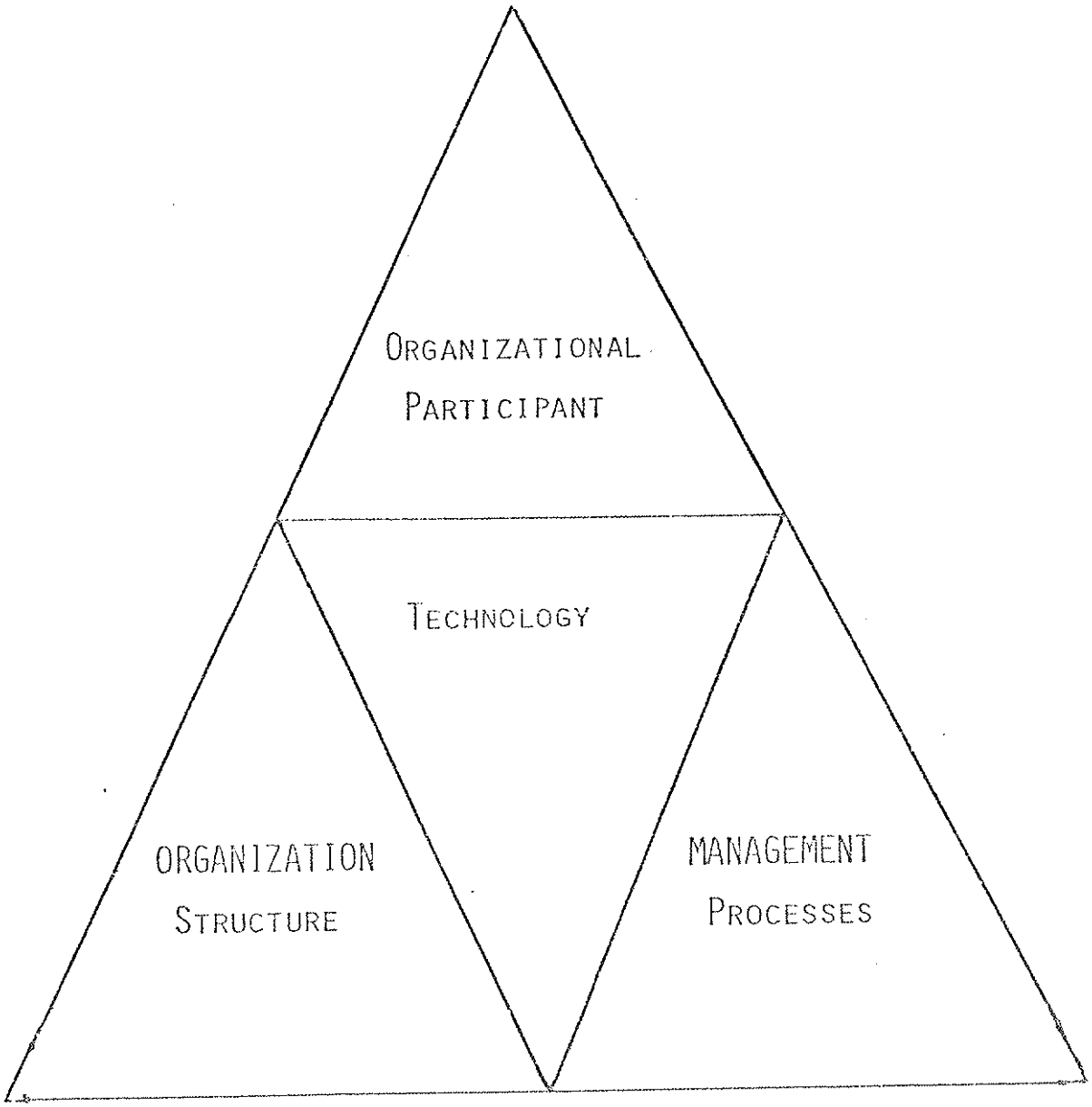
(5) How does the organization "fit" the external environment? Is it flexible?

The use of a "systems perspective" will permit explicit recognition of ways in which the various organizational factors blend together to facilitate or inhibit the achieving of a goal. Managers are forced to analyze why the organization succeeded or failed in the achievement of a particular goal. System perspective facilitates a broader view of the nature of the problems and their possible solutions. When this approach is not used, the manager focuses on symptoms rather than causes.

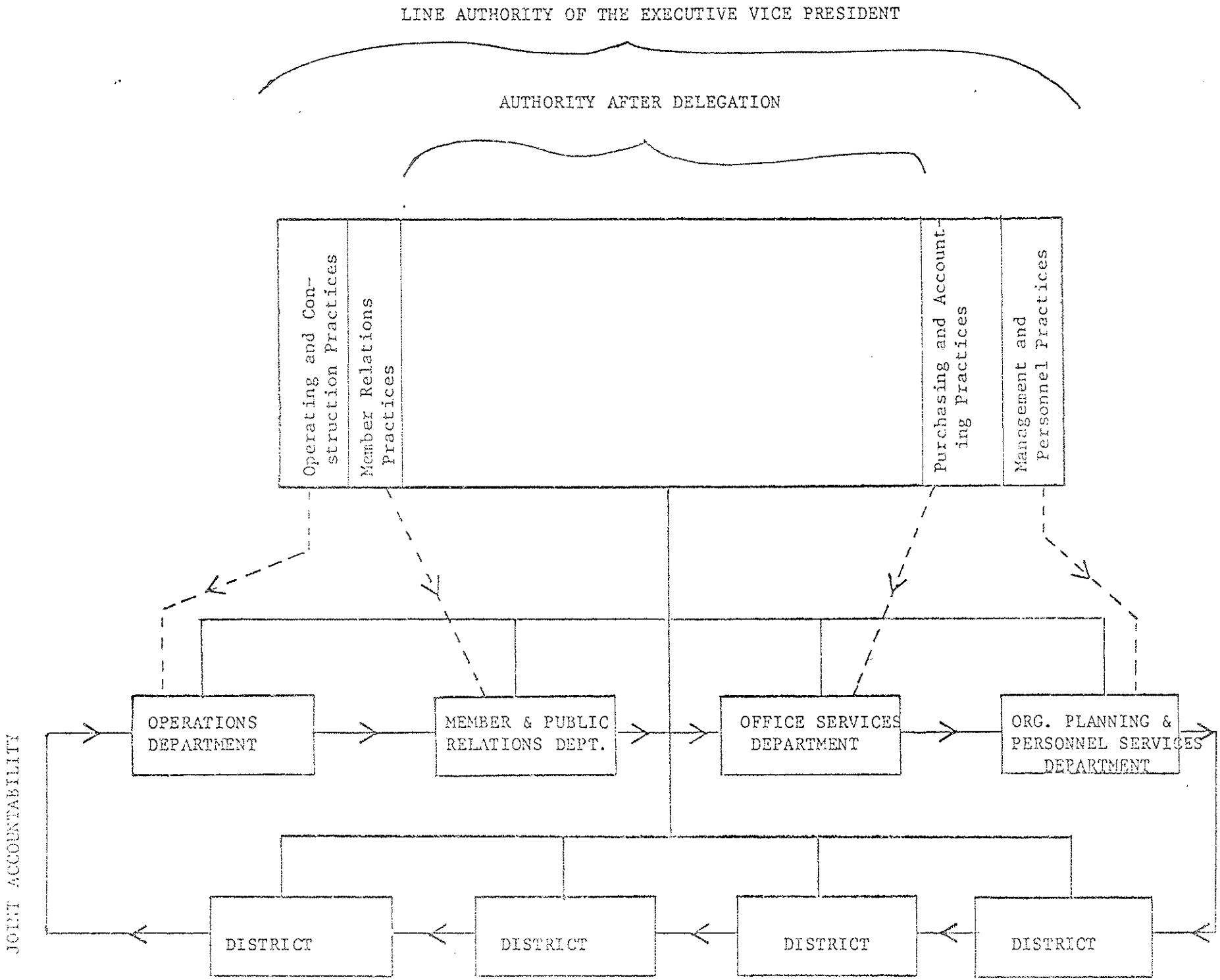
Managers must, in the final analysis recognize the important link between individual behavior and organizationwide performance because the primary determinant of the ultimate organizational performance is the employees of the organization. The program of management by objectives is one program which some companies utilize in an attempt to coordinate the efforts of various employees toward specific organizational objectives.

The three related factors of - (1) Feasible or optimized goals; (2) A Systems perspective; and (3) The behavior of the individual employee- should help managers to understand the ways in which their organizations move toward or away from goal attainment and organizational effectiveness.

-End-



FOUNDATION FOR ORGANIZATIONAL EFFECTIVENESS


LINE AUTHORITY OF THE EXECUTIVE VICE PRESIDENT
AUTHORITY AFTER DELEGATION
Operating and Construction Practices
Member Relations Practices
Purchasing and Accounting Practices
Management and Personnel Practices
OPERATIONS DEPARTMENT
MEMBER & PUBLIC RELATIONS DEPT.
OFFICE SERVICES DEPARTMENT
ORG. PLANNING & PERSONNEL SERVICES DEPARTMENT
DISTRICT
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JOINT ACCOUNTABILITY
JOINT ACCOUNTABILITY
FUNCTIONAL AUTHORITY DELEGATION

Selected Bibliography

Understanding Management Policy and Making it Work - Victor Z. Brink, AMACOM, 1978 - 135 West 50th Street, New York, New York

Putting It All Together - A Guide to Strategic Thinking - William Rothschild. 1976, AMACOM, New York, New York

Organizational Behavior, Fred Luthans, 1977, McGraw-Hill, Inc., New York, New York

Management - a Systems and Contingency Analysis of Managerial Functions, Koontz & O'Donnell, 1976, McCraw-Hill, Inc., New York, New York

Synergistic Management - Creating the Climate for Superior Performance, Michael Doctoroff, 1977, AMACOM, New York, New York

How Managers Make Things Happen, Georgs S. Odiorne, 1977, Prentice-Hall, Inc., Englewood Cliffs, New Jersey

Managing for Results, Peter F. Drucker, 1964, Harper & Row, New York, New York

New Patterns of Management, Rensis Likert, 1961, McGraw- Hill, New Yo , New York

Organizational Planning and Development, William F. Gluek, 1971, AMACOM, New York, New York

Management Organizational Behavior, Hersey & Blanchard, 1972, Prentice-Hall, Englewood Cliffs, N. J.

The Human Nature of Organizations, J. Douglas Brown, 1973, AMACOM, New York, New York

The Managerial Choice - To be Efficient and be Human, Frederick Herzberg, 1976, Dow-Jones, Irwin, Homewood, Illinois

Organization, Ernest Dale, 1967, AMACOM, New York, New York

The Human Side of Enterprise, Douglas McGregor, 1960, McGraw Hill, New York, New York.

Mind to Mind Management, Stanley Peterfund, 1977, AMACOM, New York, New York

Organizational Effectiveness Under Stress, Chris Argyris, 1960, Harvard College, Cambridge, Massachusetts

Articles from Organizational Dynamics, AMACOM, New York, New York

When is an Organization Effective, Richard Steers, Autumn,1976, Page 50

Organizations as Phrog Farms, Jerry B. Harvey, Spring, 1977, Page 15

Organization Design: Organizations as Self-Designing Systems, Karl E. Weick, Autumn, 1977

What is the Right Organization Structure:, Robert Duncan, Winter,1979

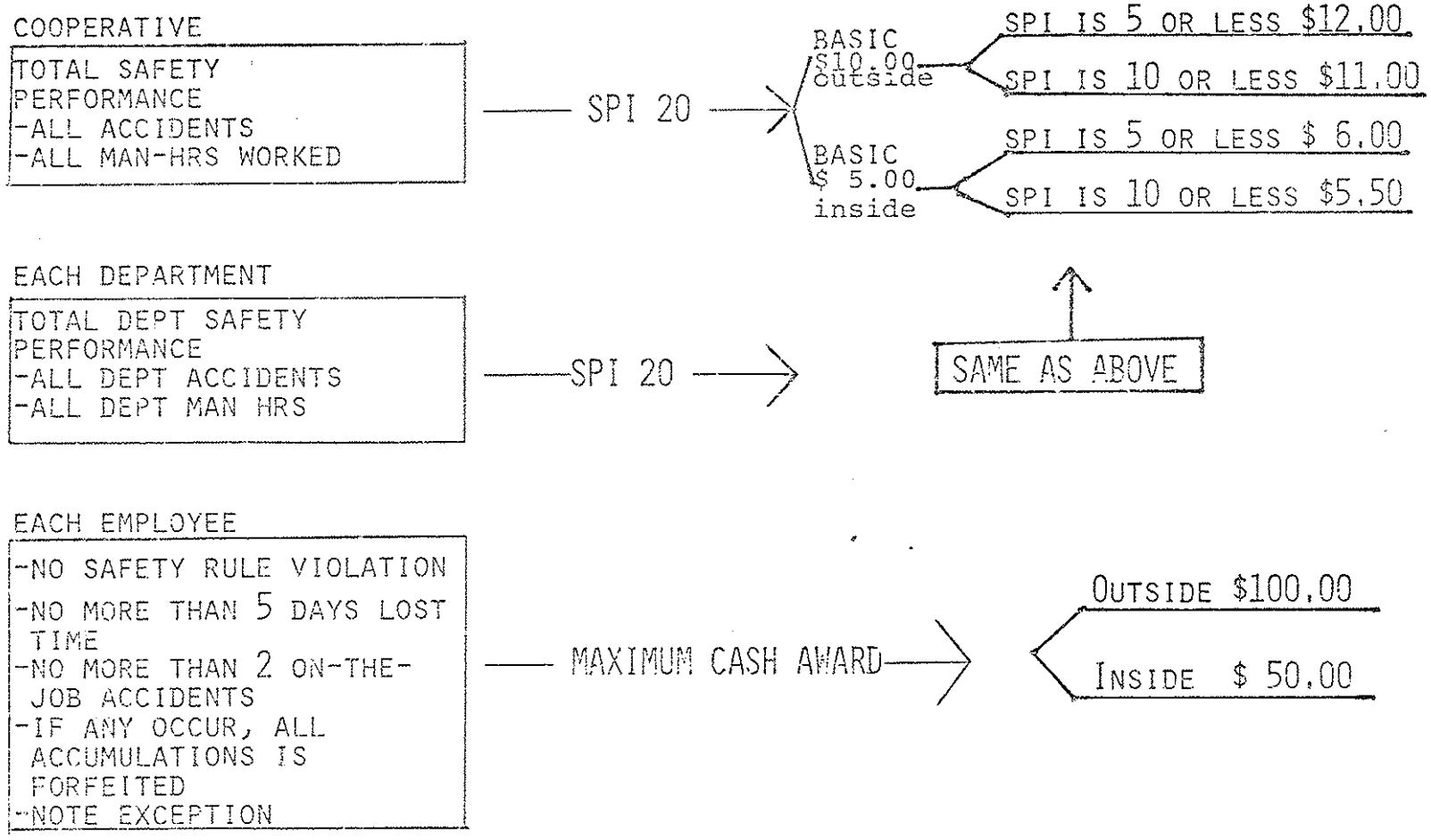
People Processing: Strategies of Organizational Socialization

COTTON ELECTRIC COOPERATIVE

WALTERS, OKLAHOMA

MAY, 1979

HOW INCENTIVE PROGRAM WORKS



PENALITIES FOR FAILURE TO OBEY SAFETY RULES

COTTON ELECTRIC COOPERATIVE

WALTERS, OKLAHOMA

MAY, 1979

COOPERATIVE SAFETY PERFORMANCE SINCE POLICY WAS IMPLEMENTED

YEAR	DII	SPI	NO. LOST DAYS	WRITTEN SAFETY RULE VIOLATIONS	5 OR MORE DAYS LOST TIME	COMMENTS
1974	3.47	9.12	76	2	2	SAFETY AWARDS
1975	1.14	2.42	5	2	1	FOREMAN LOST AWARD
1976	.21	.79	8	0	1	WAS SAFETY ACCREDIATED
1977	0	0	0	0	0	BEST RECORD IN HISTORY OF COOP
1978	2.78	5.52	46	4	4	WAS RE-ACCREDIATED

-DEPARTMENT LOST SAFETY AWARD FOR ONE YEAR
-INJURED EMPLOYEE LOST ALL ACCUMULATIONS
-SUPERVISOR LOST ALL ACCUMULATIONS (35 YRS.EXP)
-TWO EMPLOYEES LOST ANNUAL AWARD

1979 TO DATE	0	0	0	0	0	SEVERE STORM, LOST 415 POLES.

COTTON ELECTRIC COOPERATIVE

WALTERS, OKLAHOMA

MAY, 1979

POLICY APPLICATION FOR 1978

TOTAL COOPERATIVE

TOTAL MAN-HOURS WORKED:

126 EMPLOYEES X 2000 HRS = 252,000

10 SUMMERTIME-EMPLOYEES X 500 HRS = 5,000

257,000

ADJUSTED FREQUENCY RATE:

257,000 ÷ 50,000 = 5.14

13 ACCIDENTS - 5.14 = 7.86

MAN-DAYS LOST = 46

$$F.R. = \frac{200{,}000 \times 7.86}{257{,}000} = 6.17$$

$$S.R. = \frac{200{,}000 \times 46}{257{,}000} = 35.80$$

$$SPI = \frac{6.17 \times 35.80}{40} = 5.52$$

COTTON ELECTRIC COOPERATIVE

WALTERS, OKLAHOMA

MAY, 1979

POLICY APPLICATION FOR 1978

CONSTRUCTION DEPT.

24 EMPLOYEES X 2000 HRS. = 48,000

2 SUMMERTIME-EMPLOYEES X 500 = 1,000

MAN-DAYS LOSS 8 49,000 MAN HOURS

ADJUSTED FREQUENCY RATE:

49,000 ÷ 50,000 = .98

6 ACCIDENTS - .98 = 5.02

$$F.R. = \frac{200,000 \times 5.02}{49,000} = 20.49$$

$$S.R. = \frac{200,000 \times 8}{49,000} = 32.65$$

$$SPI = \frac{20.49 \times 32.65}{40} = 16.72$$

* * * * * * * * * * * * *

ASSUME 2 ACCIDENTS

ADJUSTED FREQUENCY RATE: 2-.98 = 1.02

$$F.R. = \frac{200,000 \times 1.02}{49,000} = 4.16$$

$$S.R. = \frac{200,000 \times 8}{49,000} = 32.65$$

$$SPI = \frac{4.16 \times 32.65}{40} = 3.39$$

COTTON ELECTRIC COOPERATIVE

WALTERS, OKLAHOMA

MAY, 1979

POLICY APPLICATION FOR 1978

MAINTENANCE DEPT.

25 EMPLOYEES X 2000 HRS. = 50,000

2 SUMMERTIME-EMPLOYEES X 500 HRS. = 1,000

MAN-DAYS LOSS 38 51,000

ADJUSTED FREQUENCY RATE 51,000 ÷ 50,000 = 1.02

6 ACCIDENTS MINUS 1.02 = 4.98

$$F.R. = \frac{200{,}000 \times 4.98}{51{,}000} = 19.52$$

$$S.R. = \frac{200{,}000 \times 38}{51{,}000} = 149.01$$

$$SPI = \frac{4.98 \times 149.01}{40} = 72.71$$

COTTON ELECTRIC COOPERATIVE
Policy Bulletin 10-4

SUBJECT: Safety

OBJECTIVES:

A. To protect the personal health and welfare of employees by maintaining an effective accident prevention program.

B. To keep frequency of accidents at a minimum in an effort to reduce the potential of a severe injury.

C. To establish and maintain a safety incentive system that will recognize individual employees for good safety performance together with promoting a "team" effort among the various departments and throughout the entire Cooperative.

D. To establish Cooperative responsibility for developing and maintaining an effective safety program.

E. To maintain close adherence to the Cooperative's safety rules, OSHA's safety standards pertaining to electrical companies and other safety standards that may be applicable.

F. To meet all standards set out by the NRECA Safety Accreditation Program.

G. To participate in the State Safety and Job Training Programs.

POLICY: It shall be the policy of the Cooperative to work toward the objectives outlined above, by establishing the following safety rules and provisions:

A. Cooperative Resporsibility

1. To maintain membership in and cooperate fully with the Oklahoma Job Training and Safety Program sponsored by the Oklahoma Association of Electric Cooperatives and Electric Municipalities in cooperation with Oklahoma State University and the State Board of Vocational Education.

2. To schedule regular monthly safety meetings on Cooperative time.

3. To send employees to special schools and workshops for training in their job requirements and responsibilities.

4. To make available the necessary approved safety equipment such as hard hats, grounding chains, hand lines, rope blocks, road signs, rubber gloves, safety glasses and seat belts, etc., and provide for periodic inspection thereof.

5. To inspect cooperative owned vehicles on a regular schedule, insuring that they are maintained in a safe condition.

6. To establish and maintain an effective safety program.

7. To provide for testing rubber gloves every 90 days.

8. To submit required reports of accidents to the Oklahoma Job Training and Safety Department, REA and other applicable federal and state agencies.

9. Request the Oklahoma Job Training and Safety Instructor to call the attention of the Safety Committee and Manager to unsafe practices being followed by the Cooperative.

B. Department Superintendent Responsibility

1. To insure that on-the-job accidents are reported promptly to the Department Superintendent concerned.

2. To designate one man as crew chief regardless of the number of men on the crew and be responsible for observance of safety rules.

3. To insure close and uniform observance of all written safety rules for the protection of the employees in his department.

4. To promote effective and safe working habits among the employees.

5. To see that each fire extinguisher assigned to his respective department is inspected on a monthly basis, and a written report of such inspection is submitted to the Safety Co-ordinator.

C. Safety Rules

1. Rubber Gloves and Hot Line Insulated Handles

A. 30,000 volt (Class-3) rubber gloves must be worn from the ground up on all structures supporting energized conductors in excess of 600 volts and while working with hot sticks.

B. 1,000 volt (Class-0) rubber gloves may be used while working voltages not exceeding 600 volts, when the supporting structure does not contain conductors of more than 600 volts.

C. Rubber gloves must not be used for direct hand contact on any structure with voltages above 600 volts to ground.

D. Rubber gloves must be worn when changing out and replacing meters regardless of the voltage when bases are energized.

E. Personal handling butts of poles or any object which might come in contact with energized conductors of apparatus must wear rubber gloves of 30,000 volt rating.

F. Rubber gloves must be worn until transformer is de-energized when changing transformer taps.

G. No employee shall be permitted to approach or take any conductive object without an approved insulating handle closer than two (2) feet to exposed energized parts while working on voltages from 2.1 KV to 15 KV phase to phase except while working from an approved insulated aerial device, or the employee is insulated or guarded from the energized part (gloves or gloves with sleeves rated for the voltage involved shall be considered insulation of the employee from the energized part).

2. Head Protection

A. Class B protective hard hats shall be worn by all employees who are exposed to the hazards of falling objects, electric shock or burns.

B. Eye and/or face protection must be used by all employees when grinding, chipping, opening or closing hot line electrical equipment (except ground operated air break switches), or any other time when there is a reasonable probability of flying objects, glare, liquids, etc.

3. Grounding

a. All de-energized conductors and apparatus must be grounded with adequate approved ground-jumpers on all sides within sight on overhead lines. This must be done before further work on conductors or apparatus involved is begun.

b. Line jumper shall not be used as a ground, but may be used in addition to the grounding jumper.

c. When attaching grounds, the ground end shall be attached first, and the other end shall be attached and removed by means of insulated tools.

d. Pole setting truck and basket equipment must be properly grounded with approved ground cables when working, setting or pulling poles in or near energized lines.

e. All mobile generating units shall be grounded to the system neutral with approved insulated grounding cable.

4. Poles

a. All poles shall be checked before climbing.

b. Poles shall not be raised or lowered with transformers and oil circuit reclosers attached.

5. Operating of Switching Devices

An approved hot stick must be used to open or close OCR's, cutouts, or switches being used as a disconnecting device.

6. Cooperative Vehicles

a. Vehicles shall be operated in compliance with Oklahoma State traffic laws.

b. Seat belts must be used by all occupants in Cooperative vehicles.

c. Road signs shall be used when trucks are parked and employeees are working near public roads, highways and streets.

d. Each vehicle driver shall make a daily inspection of their vehicle and insure that it is in safe operating condition.

7. Aerial Basket Truck

a. This vehicle may become energized (or grounded) when the boom or the aerial device itself comes in direct contact with energized (or grounded) conductors or equipment, respectively.

b. Truck frames shall be grounded while the aerial device is in use in the proximity of high voltage lines. (The term "high voltage" shall mean any voltage in excess of 600 volts.)

c. Rubber gloves and rubber sleeves of proper rating must be worn while working energized conductors or equipment from an aerial device in addition to any other cover-up material on conductors and equipment.

d. A body belt having a secured safety strap (or an approved equivalent) shall be required for any work from an aerial device.

e. Only employees who have been especially trained and authorized by the company shall be permitted to operate an aerial device in the vicinity of energized lines or equipment.

f. All personnel should stay clear of pressurized oil or air which is escaping from a ruptured line or fitting. No attempt shall be made by an employee to stop or slow such a leak by using his hands, feet or other parts of his body. The pump, compressor or engine should be stopped as soon as a leak is detected.

g. The manufacturer's load limits of the boom or aerial device shall never be exceeded.

h. The truck, upon arriving at the work area, shall be legally parked in accordance with Oklahoma State laws while the appropriate warning signs, lights, and barricades are being placed.

i. Uniform-flashing warning lights, amber lens, shall be used on the vehicle when in operation at the job site.

j. If necessary to get within reach of energized conductors or equipment, the employee shall wear rubber gloves and/or rubber sleeves in accordance with company policy.

k. Energized conductors and equipment shall be covered with protective devices in the same manner as if the work were done from the supporting structure.

l. The employee shall not stand on top of the basket, on planks placed across the top of the basket or on ladders placed in or on the basket while performing work.

m. The employee shall not belt into an adjacent pole, structure, or equipment while performing work from the aerial device.

n. Transferring from the aerial device to a pole or structure, or from a pole or structure to the aerial device shall not be allowed.

o. All signals used in the operation should be thoroughly understood by all persons concerned.

p. All hand signals shall be given by the employee operating the aerial device.

q. Except in emergency situations, the lower controls shall not be operated when men are working aloft unless so requested by the men in the aerial device.

D. Employees Working Alone

1. An employee working alone shall not climb or otherwise bring himself to within reaching distance of any conductor or apparatus energized at more than 600 volts.

2. Neither shall any employee lift more than he can safely lift alone without risk of injury.

3. In no case shall an employee attempt to change transformers on poles, splice high tension conductors or makeshift any apparatus to accomplish work that normally requires two or more persons.

4. When any condition or job arises that requires two or more persons, the employee shall contact his supervisor or dispatcher for the necessary help to accomplish the job safely.

5. When a line employee is at a location by himself, he shall notify the dispatcher when he will be away from his radio for an extended length of time (15 minutes or more) giving the expected length of time he will be away and upon return shall immediately notify the dispatcher of his return.

E. OSHA Safety Rules and Regulations

The safety rules and regulations, operational procedures and safety specifications pertaining to electrical distribution systems in the Occupational Safety and Health Act of 1972, are set out in Appendix B of this policy.

The OSHA Safety rules in Appendix B together with the Cooperative safety rules set out in this policy shall be followed by all the employees of the Cooperative. In the event there is a conflict between the Cooperative safety rules and the OSHA safety rules, then the OSHA safety rules shall prevail, with two exceptions:

Exception one:

Paragraph C-1-f of the Cooperative's safety rules, pertaining to hot line insulated handles, shall be observed, in lieu of OSHA rules paragraph 1926. 950, subparagraph (c) entitled "Clearances."

Exception two:

Paragraph 1926. 955, subparagraph (e) OSHA rules, pertaining to live line bare hand work is deleted in its entirety--the Cooperative Policy does not allow any live line bare hand work.

F. Annual Safety Award Program

The Cooperative Safety Awards Program is designed to promote a "team" effort throughout the Cooperative and the various departments. The safety program will also recognize those employees with outstanding accident prevention records, which not only contribute to the employee's personal safety and welfare, but also to the Cooperative's overall effort toward maintaining an effective accident prevention program.

The Cooperative Safety Award Program shall be made up of three parts. First, the Cooperative measure of safety performance; second, the individual department measure of safety performance; and third, the employee's own safety record.

1. Cooperative Measure of Safety Performance

Before the employees of any department can become eligible for an Annual Safety Award, as set out in Paragraph 3 below, the Cooperative must first achieve an overall annual adjusted Safety Performance Index of twenty (20). The formula used to determine the S.P.I. is similar to the formula used by NRECA in determining a Cooperative's eligibility for National Safety Accreditation. The formula uses three factors in determining safety performance. (See Appendix A)

- Frequency of on-the-job accidents.
- Severity of each accident.
- Number of man-hours worked.

The Cooperative shall adjust the total on-the-job accidents by subtracting from the total, one accident for every 50,000 man hours worked.

2. Department Measure of Safety Performance

Although good overall Cooperative safety performance is necessary to maintain an effective safety program, it is also recognized that each department can be an effective organizational unit in promoting a "team" effort, which will contribute not only to the effectiveness of the overall safety program, but also to the individual's own safety performance.

The S.P.I. formula outline in paragraph (1) above will also measure the safety performance of each department. Therefore should the Cooperative's S.P.I. standard be achieved, the department then must achieve its own S.P.I. standard of twenty (20) or less before any of the employees in the department can become eligible for their individual basic safety award as set out in paragraph 3 below.

Should the Cooperative's and department's S.P.I. standard be achieved for the year, then the individual basic award outlined in paragraph 3 below may be increased in accordance with the following schedule.

a. 10% increase in the individual basic award for each employee when the department's S.P.I. is (10) ten or less.

b. 20% increase in the individual basic award for each employee where the department's S.P.I. is (5) five or less.

3. Individual Basic Awards

For the purpose of establishing safety awards, the employees shall be divided into two groups consistent with the degree of risk and accident exposure by the two groups. The two groups shall be known as the inside group and the outside group.

a. Outside Basic Award

Employees in the Outside Job Group will be awarded $10.00 provided the Cooperative's and Department's S.P.I. standard of twenty (20)

or less is achieved for each year. Thereafter, they shall be awarded an additional $10.00 not to exceed a total annual award of $100.00 per employee except as specified in Paragraph 4 below.

b. Inside Basic Award

Employees in the Inside Job Group will be awarded $5.00 provided the Cooperative's and department's S.P.I. standard of twenty (20) or less is achieved. For each year thereafter, they shall be awarded an additional $5.00 not to exceed a total annual award of $50.00 per employee except as specified in Paragraph 4 below.

4. Penalties for Poor Safety Performance

Should an employee have more than two on-the-job accidents in one calendar year or more than (5) five days of lost time* resulting from on-the-job accidents in one calendar year, then the employee involved shall forfeit his annual safety award, together with his previous years accumulated for safety award purposes. On January 1, of the following year, he shall begin with his annual base rate depending on his respective safety classification.

If an employee receives an on-the-job injury which results in lost time* and the accident was caused by another person, an animal, an insect or from faulty materials or equipment, the employee involved may have the lost time removed from his individual record by following the procedures outlined below.

a. The employee's immediate supervisor must present to the Employee Safety Committee the complete circumstances surrounding the accident.

b. The Committee may investigate the accident in an effort to secure additional information on which to base their decision.

c. Based on the evidence, the Committee will then decide if the employee had no control over the conditions that caused the accident.

d. If the Committee awards in favor of the employee, then the lost time that resulted from the accident will not be charged to the employee's record for determining his individual annual safety award. Also, the lost time will not be charged to the respective department or the Cooperative in figuring the S.P.I.

*Lost Time: Every calendar day beginning the day after an employee is injured through and including the day before he returns towork, excluding holidays, Saturdays and Sundays.

G. Penalties for Failure to Obey Written Safety Rules

1. When an employee violates a written safety rule his immediate supervisor or department head shall complete a written report outlining the safety rule broken and the date of the violation. One copy of this report shall be given to the employee involved, one copy to the Department Head involved, and one copy filed in his personnel jacket. The employee involved shall forfeit his annual safety award, together with all the previous years accumulated for safety award purposes. On January 1 of the following year, he shall begin at the annual award base rate for his respective department, and safety classification.

2. Should the same employee violate the same or another written rule for a second time within the same calendar year, his immediate supervisor and department head shall complete a written report outlining the safety rule broken and the date of the violation. One copy of this report shall be given to the employee involved, one copy filed in his personnel jacket. The employee involved shall be subject to the same penalty outlined in Paragraph 2 above in addition to a one week lay off from employment without pay.

3. Any additional violations of written safety rules within the same calendar year may result in the employee's termination.

H. On-The-Job Accident-Investigation

The Department Superintendent together with the Safety Co-ordinator and Chairman of the Employee Safety Committee shall investigate each accident. If the accident resulted from a safety rule violation, the penalties outlined in Paragraph G are to be impartially applied. Where the investigation reveals that such violation occured with the knowledge of the foreman or supervisor in charge, the same penalty

shall apply to the supervisor as applied to the employee involved.

The Safety Co-ordinator shall have the authority to ask other members of the Safety Committee or other employees to assist in any accident investigation.

I. Employee Safety Committee

An employee Safety Committee shall be established and consist of seven (7) employees appointed and supervised by the General Manager.

Committee Membership: The Employee Safety Committee shall comprise of the Safety Co-ordinator, four (4) department heads and two (2) employees with a journeyman's rating or higher.

Tenure:

-The Safety Co-ordinator shall be permanent member of this Committee.

-Each department head shall serve on a continual basis until such time a replacement is appointed by the General Manager.

-Each employee shall serve a six (6) month term.

Committee Structure and Responsibilities

1. The General Manager shall appoint the Chairman of this Committee, the Chairman shall be responsible for scheduling committee meetings and reporting all committee activities to the General Manager and/or Safety Co-ordinator.

2. The Committee shall elect a member of the committee as secretary, who will record official minutes of each meeting.

3. Will meet on a monthly basis.

4. Monitor the overall Cooperative Safety Program.

5. Develop and plan Safety Programs.

6. Hear and review special circumstances involving an on-the-job accident as set-out in paragraph F-4 of the Cooperative's Safety Policy.

7. Perform other safety activities as necessary.

J. Safety Coordinators Primary Responsibilities:

1. To promote the effective implementation of this safety policy.

2. To see that applicable written safety reports are made to REA, NRECA, OSHA and the State Job Training and Safety Agency.

3. Serves as permanent member of the Employee Safety Committee.

4. To keep the General Manager advised of all on-the-job accidents and activities relating to the Cooperative's Safety Program.

5. In the absence of the Safety Coordinator, the Chairman of the Employee Safety Committee shall serve as Safety Coordinator.

RESPONSIBILITY: Management, Staff, employee safety committee and all employees.

This policy supersedes and cancels all other existing policies or instructions which may conflict with its provision.

Date Adopted: March 15, 1960

Date Amended: February 17, 1976
January 17, 1978
March 20, 1979

Review Date: March-Annually

Attested: Melvin Robison, Secretary

APPENDIX A

Measure of Safety Performance Formula

Adjusted Accident Frequency Rate

The total number of on-the-job accidents, less one accident for every 50,000 man-hours worked.

Man-Hours Worked

The number of regular employees multiplied by 2,000, plus the number of summertime employees multiplied by 500.

Severity Rate

The total number of man-days lost in a year. Does not include weekends or holidays.

Frequency Rate Formula

$$FR = \frac{200,000 \text{ X Adjusted Accident Frequency Rate}}{\text{Man-Hours Worked}}$$

Severity Rate Formula

$$SR = \frac{200,000 \text{ X Number of Man-Days Lost}}{\text{Man-Hours Worked}}$$

Safety Performance Index

$$SPI = \frac{FR \text{ X } SR}{40}$$

Shenandoah Valley Electric Cooperative's

COMPUTERIZED WORK ORDER PROCEDURE
and
ASSOCIATED MANAGEMENT INFORMATION SYSTEM

Presentation For 22nd Annual Conference

RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL

Hilton Head Island, South Carolina

May 22, 1979

COMPUTERIZED WORK ORDER PROCEDURE
AND
ASSOCIATED MANAGEMENT INFORMATION SYSTEM

Introduction

When Elmer Stocker, Program Committee Chairman, requested participation in the program, we replied that we could give a 20 to 30 minute presentation depending upon group participation and questions. According to the tentative program, he has allowed us 45 minutes, which leads me to believe that there will be considerable group participation. I hope to make this presentation as informal as possible and please feel free to interrupt with questions, comments, etc., at any time.

The presentation will not deal with the actual computer programs but will concentrate on the procedures, the changes in procedures that were implemented, the management approach which was taken to arrive at our system and the management information system which we built into the accounting or prescription system. A handout is provided which includes copies of the reports which are generated along with the one essential input form. Included as EX-A of the handout is the flow chart of the complete procedure. Instead of going over the complete flow chart, we will deal with it by phases in much the same way that the procedure was constructed.

Background

(Give Info about Cooperative - Size, miles of line, districts, employees)

The Cooperative owns a System 3, Model 10, IBM computer. It is equipped with two 5445 disc drives plus one removable 5444 disc along with the fixed disc of the same size. The total on-line storage being approximately 44 megabytes.

We purchased this system in July 1977, after leasing it for 18 months. Prior to this system, The Cooperative owned a 360 Model 20, computer. At the time of the computer change, the staff of the Cooperative had invisioned the possibility of computerizing as much of the manual work order procedure as possible. Even on the Model 20, we had certain portions of the accounting work order system computerized, such as payroll distribution and summary of finished and unfinished costs. As our construction program continued to expand, it became evident that we would have to make modifications in our existing procedure to handle the increased work load. At the same time, it became more and more necessary to be able to have some control and accumulate accurate records on the construction costs and to be able, to some extent, measure these costs against some performance standard.

After several staff discussions involving the Operations Manager, System Engineer, Office Manager, Data Processing Supervisor, Accountant and myself, this group became convinced that the computerization of the complete work order procedure was possible on the new data processing system and would meet the required goals for both the accounting function and the management information system. After discussions with our District Superintendents, Staking Engineers and other personnel who would become involved with the procedure, the group then approached Mr. McNiel, our General Manager, with the proposal which he supported, thereby giving management total committment to the new procedure. This was a very important and necessary first step.

I do not mean to imply that this procedure or presentation is entirely our own ideas. The employees of our Cooperative had been to various meetings, such as the Data Processing Conference where several cooperatives, especially a member of this council, Blue Ridge Electric Membership Cooperative, made presentations on their procedure. After deciding essentially what was necessary

and what was desired in our procedure, we visited Blue Ridge and spent a day reviewing their procedure, which was working. It was amazing how similar the approaches which our Cooperative had thought about taking were to those of Blue Ridge. Their personnel explained the procedure and pointed out some of the problem areas that they were still working with and where they felt the procedure was weak. We discussed these areas together and hopefully the day spent at Blue Ridge was beneficial to their personnel because we are certain that it was well worth our trip to the cooperative.

Design Approach

An opportunity to hire, on a part time basis, a graduate electrical engineer, who was extremely well versed in programming, presented itself to the Cooperative. The Cooperative also had already in its part time employee a student taking computer courses and pursuing a management degree. It was decided to combine these part time employees and to make them directly responsible for the actual computer programming of the work order procedure. Input would be through task groups which met regularly and/or as the need arose. The Staff Assistant served as the coordinating agent between the programmers and the task groups or individuals within the task groups.

The procedure was divided into three phases. Phase I consisted of the initial input from the staking sheet originated by the staking engineers through standard costing and the comparison of actual cost to those standard costs. Phase II consisted of the material listing and its interaction upon the Cooperative's already existing inventory procedure. The final phase would consist of the actual work order accounting, its relationship to the CPR and hopefully resulting in a computerized REA Form 219.

This breakdown into three areas allowed for the tying together of the new procedure with segments already in existence and allowed the Cooperative to make certain that one phase was operating correctly before implementing the second phase, even though programming and research work had already begun on that phase. Thus, we could parallel segments of each phase or the complete phase itself with the existing system.

Design Criteria

Certain design criteria were established which were essential to the development of the system. These criteria were:

1. Since the Cooperative has three district offices, it was important that the turn around time between the staking engineers finishing the staking sheet, the submission of the summary sheet to data processing and the return of the standard costing and material listing which would enable the districts to perform the actual construction work, should be no more than three days including mail delivery.

2. The total amount of paper work involved in the existing system must be reduced by the computerized system.

3. The computerized system must be designed to give the actual construction personnel what was needed to help them in the actual job performance rather than having these personnel drastically change their methods to fit the new procedure.

4. The new procedure should be designed to the maximum extent to generate all possible information and reports and later reduced if certain reports were found to be unnecessary rather than adding programs to produce essential reports at a later date.

5. The new procedure should be as flexible as possible to allow for extraordinary conditions that would be required to deviate from the normal procedure.

The System

The essence of the entire system involves around the initial data summary sheet filled in by the staking engineer and three library disc files. These files include the standard costs of each construction assembly unit, the material explosion of each construction assembly unit and the conversion file of construction units into CPR units.

All input except exceptions would be from the summary of staking sheets which is entered in the data processing system only one time. An example of this summary sheet is EX-C. The staking sheet from where that summary was taken is EX-B and examples of the library files are EX-P and EX-Q.

Phase I

Phase I of the procedure deals with the standard costing of each job and the comparison of that standard cost to the actual cost to complete that job. On the work order flow chart, EX-A, this is outlined by a broken line. After the summary sheet is filled out by the staking engineer, it comes to the data processing department where jobs are run on a daily basis and the system for each particular job begins. The processing results in two reports being generated, which are forwarded to the district for scheduling, or elsewhere, such as to the System Engineer, if so noted. EX-D is an example of the initial standard cost before construction for a particular job. It gives both the construction and retirement for that job. Also included on the report is the standard expected manhours needed for completion of both the construction and retirement portion of a job. This, we feel, gives the

personnel in the district information essential to the scheduling of the job and also the particular crew or crew size needed for the job. Another beneficial use of the initial standard costing is that we will be able to give a consumer a fairly accurate cost estimate of a job requiring a contribution or advance payment. The standard cost for construction is now updated once a year but we have the ability to update it at any time with only a minimum amount of effort.

At the same time this report is generated, we add to our standard cost disc file the calculated standard cost for that particular job. After the job has been let for construction, we have the ability to change those standard costs if for some reason the staking sheet must be changed to reflect different construction assemblies. When the job is completed and the actual cost of that job is gathered through the work order system, a comparison of the actual job cost to the standard job cost as corrected is run. An example of this comparison is EX-H. Each District Superintendent and the System Engineer receive a detailed comparison by job on a monthly basis. On the comparison, the ratio of actual cost to standard cost are calculated for both material, labor, overhead and total job cost.

Each district or county, the System Engineer and Operations Manager receive a summary of the standard vs. actual cost for all jobs completed within a month. The Operations Manager and or the System Engineer, after reviewing the total summary, requests from the District Superintendent, information as to what caused certain deviations. An example of the district summary for a month is included as EX-I. We have already noticed such things as carelessness in recording time, transposition of job numbers, extra trips to the construction site, additional costs caused by the consumer not being ready to accept service when we construct the facility and so forth. The General Manager receives, on a monthly basis, a one sheet summary of construction and operational costs

along with the deviation of standard. Therefore, any questions as to what caused these deviations, from the General Manager to the District Superintendent, can be answered by referring to the individual job analysis and determining the foreman and crew responsible for that job.

Phase II

Phase II of the procedure deals with the material issue and its effect on the inventory. The original input data comes from the summary of the staking sheet as did the original standard costing. When the original standard cost is produced and returned to the district, the material listing for that particular job accompanies. An example of the material listing is EX-E. Essentially, the program takes construction units, breaks them into the required material and summaries like material by stock item number. This material listing is forwarded to the district where the district storekeeper then can lay out the material for the construction crew to pick up. The storekeeper only notes items laid out that are different from what was originally called for. He receives the original and one copy. The original is returned to data processing, indicating transactions of that day and the storekeeper retains the copy on which he can make record of any transaction that occurs from the time the first list was returned to the time he received the next listing. These are processed on a daily basis. The storekeeper has the option of laying out all, part or none of the material. The last listing he receives shows the activity that has transpired on that job, material wise, to that point and what, according to the standard, is remaining. Therefore, the storekeeper is continually aware of the material status on an individual job basis. EX-F shows the same job after five listings, which in this case, covered the completed

job. The storekeeper then has the actual material listing per job compared against the standard for that job when the job is completed, construction wise, but before the job is shown in the completed work orders.

In designing this phase of the work order procedure, we asked the storekeepers what they wanted and they were essentaily responsible for the design of the material listing report. This listing took the place of material tickets which we had formerly been using. We implemented the material listing procedure on a district per district basis refining it as we progressed. I would say that, of the reports produced by our data processing section, this report is the most widly used and most enthusiastically accepted, mainly, for the reason that the people responsible for its use had the majority of input of its design. As a matter of fact, after paralleling in two of our districts for two months and one month respectively, the remaining district was switched without parallel. When the operation of this new material listing system was compared against the material tickets, we found the differences to be errors in the existing system. Several of the warehouse personnel have made statements as to why this was not done sooner and are continuing to make suggestions for its improvement. An example of this is that we originally designed the listing program such that credits would be written in by hand on the initial listing and warehouse personnel made the observation that it would be impossible to have a credit without first having a charge. Therefore, to eliminate some of their write in work, they suggested that we just reproduce the charge material in the credit section of the report. Thus, they would only check the amounts actually credited.

This system is now in complete operation for all districts within our system. Some of the benefits which we see already is an improvement in our inventory control, such that the absolute value of the deviation between physical inventory and book inventory, on a percent basis of inventory, has

decreased. Possibly, one of the greatest benefits that has occurred from this system is one that we had not recognized in the beginning. It is that of standardization on the construction practices and procedures of all three of our districts into a more uniform system approach. That is, a specific assembly will be constructed using the same materials and procedures in each district.

The actual inventory is updated on a monthly basis, but, we have two inventory files. One being the actual inventory and the other being the working or allocated inventory file. Each time a new job is processed, the material required for the job updates that particular material item in the allocated material file. When the material is actually taken from inventory, the allocation is reduced, therefore, we can check the allocated file at any time to determine how much of a particular item will be needed for all jobs that are presently staked. Comparing this to the actual inventory gives us some indication as to purchases required. At the same time, we are obtaining actual usage quantities for each material item. Once this history of usage is built up, we can determine items of inventory not used and also the economical order point of the material used.

The material for construction of a specific assembly can be changed by changing library contents for that particular assembly. This occurs after operational meetings with the District Superintendents, Operations Manager and System Engineer and after a consenses and construction policy has been agreed upon. We plan to integrate with Phase II a purchase-on-order-received file.

Phase III

Phase I and Phase II are now completely operable within the Cooperative. Phase III is operating in segments. These operating segments include unitization of construction assemblies by plant account as shown in EX-K and EX-L, the retirement work orders, EX-M and EX-N, and the summary of retirement work orders by individual accounts, EX-O. Essentially, these are nothing more than the computerization of what was formerly manual calculations fulfilling the prescription account requirements.

The key for conversion of construction units to CPR units and the actual inclusion of these costs to the appropriate plant account will be accomplished by the third library which will list CPR units by construction units. Since all of the information required for the accounting purposes have already been generated, this will require nothing more than shifting or summarizing and recording to the proper existing computerized records.

Results

Besides the benefits already mentioned, other advantages have been observed. These include a speeding up of the work order process, a reduction in keypunch labor associated with the total work order process, a reduction in the number and effect of careless errors, the acceptance of a computer based system which effects practically everyone at the Cooperative either directly or indirectly. With the changes that will be made in the standard cost from year to year based upon the actual experience and the corresponding changes in the manhours required for each assembly for construction, this will be an indication of the Cooperative's productivity in the construction sector.

LOAD MANAGEMENT TODAY

By

Lawrence Moderow, Assistant Manager

Cass County Electric Cooperative, Inc.

Kindred, North Dakota

May 21-22, 1979

For

Rural Electric Management Development Council

Hilton Head, South Carolina

LOAD MANAGEMENT TODAY

FOREWORD

Since its organization, members of the Rural Electric Management Development Council have been in agreement that the degree of success of any rural electric had a correlation with how well it was managed in accordance with its goals and objectives. And -- all progress in the attainment of those goals and objectives centered around selected key performance areas. However, a recent turn of events has singled out and caused most rural electrics to devote "prime time" to just one key performance area, and that one deals with power supply and its cost.

At last year's annual conference of this Council, Cass County Electric Cooperative reported on the manner in which it was approaching that objective. The reason this objective is so important to most rural electrics is that they are a consumer-oriented utility. The same cannot be said of all other sectors of the electric utility family because they are stockholder-oriented. Even though they, too, accept the responsibility of providing for the power needs of their customers, the return to the investors is more of a motivator than the price of their product.

BACKGROUND UPDATE

Today, CCEC has been invited to relate the latest happenings in its load management and energy conservation program. For those new members of the group, I must make an identification. CCEC is a North Dakota rural electric located in the southeastern section of the state. The east one-half of its service area is within the Red River Valley. Agriculture is the prime industry of the area. Since last year, CCEC has grown by 545 consumer services. Its 9899 services are contained in a 4788 square mile area in the southeastern section of North Dakota. These services include consumers in 30 incorporated towns, 84 residential subdivisions and areas within the franchised areas of the cities of Fargo, population 60,000, and West Fargo, population 8,500. (Figure 1)

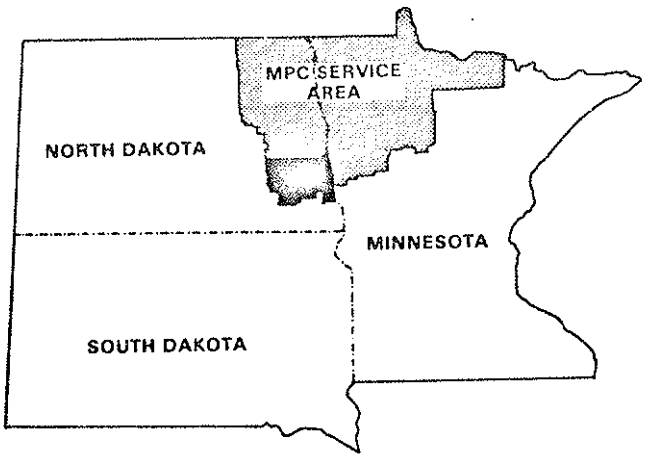


Figure 1: Dotted area is the location of Minnkota Power Cooperative, a generating and transmission cooperative serving CCEC and eleven other RECs. Dark area is CCEC's service area.

CCEC's electric distribution system contains 5000 miles of line, 20 percent of which is underground. That utility plant is valued at $21 million.

In 1978 the Cooperative sold 223.4 million kilowatt hours, a 12.4 percent increase over 1977. The average selling price to the consumer-owners was 2.6 cents per kilowatt hour and the wholesale cost of power was 13.1 mills.

Our projections for 1987 indicate the following will exist:

* Have 13,000 members - 41 percent increase

* Sell 450 million KWHs - 100 percent increase

* Have a $45 million plant - 116 percent increase

* Have a 4.26¢ average KWH selling price - 63 percent increase

It is interesting to note that, apart from the migration of people from the city to obtain the serenity of rural living, another influence has played a role, and that is the availability of water service from rural water associations. During the past four years, CCEC has worked with the organization and initial operation of three county-wide associations. When the final phases of the original project are completed next year,

there will be an investment of $19 million in user-owned rural water associations covering about 75 percent of CCEC's service area.

We presented these statistics to illustrate that CCEC is among those rural electrics experiencing high user growth, accelerated capital investment, and unprecedented increases in future investment and cost of wholesale power.

Then, too, it should be noted that the growth of electric heating has been responsible for an increasing winter peak for the generation and transmission cooperative of CCEC. This winter peaking is the prime reason that Minnkota Power Cooperative is faced with a 40 percent annual load factor and the main cause for an annual load duration curve wherein 90-100 percent of its 1976 load existed for less than 10 percent of the year. (Figure 2)

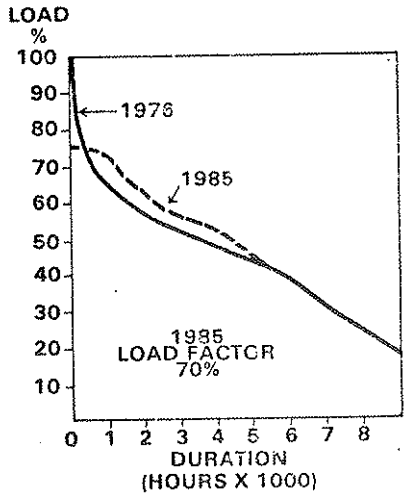


Figure 2. MPC's load duration curve showing the impact of a low annual load factor. By 1985, load management efforts of its rural cooperatives are expected to shave peak demands and move from a 40 percent to a 70 percent load factor.

Therefore, a few years ago MPC resolved to face the problem of a low annual load factor, highly sensitive to escalating costs of new generating plants, by the adoption of a power rate that would promote efforts of its member-owner cooperatives to improve that situation.

As a result they adopted a power rate that contains a 100 percent annual ratchet on demand. The ratcheted demand is based on the member cooperative's system demand coincidental with MPC's annual

peak. In an effort not to peanlize the cooperatives with low growth, this demand rate contains a two-step feature, as described below:

Step 1 of the demand rate was applied to the base load allocation of each rural electric. This base was determined by averaging the highest monthly demand for the years of 1974, 1975 and 1976 and adding 10 percent as a credit for growth.

Step 2 of the demand charge was to have a higher rate. In effect, the cooperatives that have rapid growth and placed a demand on added high cost generating plants or power purchases were faced with the higher priced demand rate.

To illustrate the application of the two-step demand rate, CCEC's base load was determined in the following manner:

1974	-	33,649 KW
1975	-	36,671
1976	-	43,634
		113,954 KW divided by 3 years X 10% growth factor

Therefore, CCEC's present monthly wholesale power rate is as follows:

Substation service charge:	$416.67
Demand charge:	$2.50 per month X 41,784 (base KW demand) plus $5.00 per month X excess KW demand *
Energy charge:	6.25 mills per KWH

* The 100 percent ratchet is applied to the amount of the demand charge based on the system peak of CCEC coincident with MPC's highest annual peak. MPC peaked on January 5, 1979, at 6:00 p.m. CCEC's coincidental demand was 50,589 KW. As such, the ratcheted monthly demand through December 1979 will be $148,485. (41,784 base demand X $2.50, plus 8,805 excess demand X $5.00.)

In furtherance of its original efforts to improve the annual load factor, through a rate design, MPC offered a centralized load control system to its member cooperatives. The "ripple control" system was

purchased from Landis & Gyr, Inc., and 5000 ripple receivers were supplied to the member cooperatives on a pro rate basis. CCEC's allocation was 600 receivers.

Briefly, the ripple control system will control loads by superimposing a 220 hz control signal on the normal 60 hz power frequency; the control signals generated at MPC's Grand Forks headquarters are injected into the power system network and travel over the consumer-owners' wiring system. The signal, upon reaching the "ripple" receiver installed on the consumer's wiring, activates any one of three 30 Amp relays that can connect or disconnect selected electric loads. In cases where the selected electric load exceeds the 30 ampere rating of a relay, contactors are used.

Minnkota estimates, when the expected 11,000 "ripple receivers" are installed, the installed cost of the receivers and control system will carry an average cost of $66 per kilowatt. That cost is far less than providing "peaking" capacity or capital investment in base load capacity. (Figure 3)

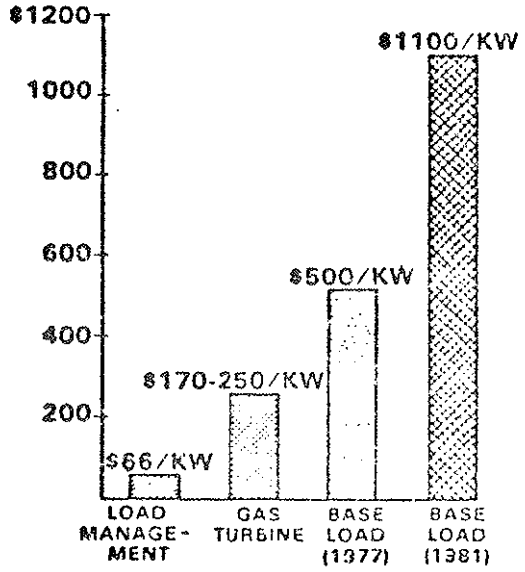


Figure 3. Comparative costs of capacity.

With this background of prevailing conditions facing CCEC, it was apparent that from selfish reasons alone, the Cooperative should seek to get its allocation of ripple receivers installed as rapidly as possible

and utilize this equipment to reduce peak period demands. By managing that peak, the effect of the high step demand rate could be reduced. This, of course, would lower power costs, and the saving could be made available to participants in the load management program through refunds and to the other members through lower overall rates.

Then, too, the Cooperative felt a moral obligation to lend its effort to combat the forecasted shortage of gas and oil through the promotion of off-peak coal-generated electric energy as a replacement of oil and gas. So -- CCEC's load management program was born!

The encouragement and motivation of CCEC's consumer-owners to participate in a load management program was the offer of a 3/4¢ discount on the annual kilowatt hour consumption of energy used which could withstand short to medium periods of disconnection during the peaking periods of MPC. A one cent discount was then offered to those users that could withstand necessary long-term disconnections. Of course, long-term control would require a dual-fired heating system with an electric system for the prime source of heat and an oil or gas unit for the secondary or backup source.

Coupled to the available discounts was CCEC's offer to loan up to $1000 at 6 percent interest to finance the cost of retrofitting existing heating systems to a dual system or for the initial installation in a new home or structure. Repayment of the loan is through CCEC's withholding of the earned discount and applying same toward amortization of the loan and interest. Experience shows that payback should be from three to five years. The average additional cost to the homeowner to retrofit or install a new dual system is about $1000 to $1800.

As reported to you last year, the Cooperative took one more step in its load management program and that was to amend its conditions of service wherein no new service extension or no increase in service capacity of existing service will be made to accommodate electric space heating unless the electric heating can be interrupted during peak use periods, and the member agrees to provide an alternate heating system during the interruption period.

This was a bold step but deemed necessary in response to a 12-month ratchet on a $4.00 and now $5.00 per KW demand charge.

Under the present demand charge, the diversifed KW load of an electric heating system with an installed capacity of 30 KW would be about 20 KW. If allowed, uncontrolled, this would create an annual charge of $1000 in demand costs alone.

PROGRAM TODAY

During the 1977-78 heating season, CCEC had 225 dual energy heating systems in which 7000 KW of load was being controlled. In addition, controls on water heating, clothes dryers and dishwashers numbered 202 and controlled 929.9 KW of load. Electric load control for the period restricted the Cooperative's increase in system demand to 2.1 percent at the time coincidental with our power supplier's annual peak. Without control, the non-coincidental peak demand experienced by CCEC increased 14 percent. Based on the reduction of demand coincidental with that of the power supplier, CCEC credits load management with a $235,000 reduction in power costs during 1978. Refunds to members participating in the program amounted to $28,188, and with that credit their average cost of all the kilowatt hour purchases was 1.6¢ per KWH. On a systemwide basis, CCEC consumers paid an average of 2.6¢ per KWH in 1978.

During the 1978-79 heating season, CCEC has experienced a continuation in the voluntary control of consumer-owner use of electric energy as a result of appeals via radio and television announcements on those days when MPC anticipated a system peak condition. In addition, the Cooperative has increased the number of controlled electric heating systems to 698 and has a controlled load totaling 16,069 KWs. The controlled clothes dryers, dishwashers and water heaters numbered 542, with an additional 2571 KW of controlled loads.

Following is a comparison of CCEC's coincidental or billing peak for 1978 and 1979 and a breakdown of the controlled electric loads which reduced the billing demand below that which existed without any control.

ANALYSIS CCEC CONTROL/NON-CONTROL PEAK

	1979	1978	Increase
Coincidental peak	50,589 KW	49,566 KW	+2%
Off-peak heating shopping center	3,600 KW	2,300 KW	+56.5%
Off-peak electric heating	12,469 KW	4,743 KW	+162.8%
Off-peak water heaters, dryers, dishwashers	2,571 KW	929 KW	+176.7%
Voluntary off-peak user loads	2,500 KW	2,500 KW	-0-
System peak without voluntary and controlled demand	71,729 KW	60,038 KW	19.4%

The preceding analysis indicates that CCEC's coincidental or billing demand increased from 49,566 KW in 1978 to 50,589 KW in 1979. This is a 2 percent increase, whereas the peak for the same period would have increased 19.4 percent without the benefit of load controls and the continuation of voluntary load management.

It was interesting to note that the increase of 2 percent in billing demand from 1978-1979 followed a 12.5 percent increase in KWH sales for 1978 and a 4.4 percent increase in members.

Applying the $60/KW "ratchet demand" to the 15,000 KW of controlled loads, excluding the 3,600 KW shopping center load that pre-dated the load management program, it can be said that $900,000 was eliminated from CCEC's 1979 power bill. Through March 1979, program participants have earned $102,000 in rebates for the 1978-79 heating season.

MEMBER REACTION

Cass County Electric Cooperative has been pleased with the response that its members have shown toward its load management efforts.

Late in 1977, when the Cooperative was in its initial phases of its load management efforts, a sample survey mailed to members indicated the following:

70 percent indicated a willingness to use certain appliances only during off-peak hours

74 percent considered automated load management a good idea

84 percent favored load management over increasing the rates to cover costs realized without load managment

We have no indication that the results of this 1977 survey do not exist in 1979.

A survey sent to 400 particpants in CCEC's load management program asked the following questions and revealed still another measure of consumer reaction to the load management program itself:

1. Did your automated control system operate during recent control periods?

2. Did the control function create any discomfort or inconvenience in your normal life style?

3. I (do)___ (do not) ___ understand the program and request that a utility representative advise me accordingly.

Approximately 80 percent of the mailed questionnaires were returned. A tabulation of the returns resulted in the following:

	Yes	No	Total
Question #1	219	4	223
Question #2	27	198	225
Question #3	(do) 183	(do not) 7	190

Comments relating to "No" answers of Question #1 revealed that improper installation of controlled electric equipment by installers was at fault. The "Yes" answer to Question #2 was primarily associated with the absence of hot water due to inadequate storage for the family demands during a controlled period. The "do not" answer to Question #3 was found where a home occupant was not the original party involved in the installation.

In efforts to correct the cause of the problems indicated, continuing training sessions are planned for the installers of controlled equipment, extra effort is made to emphasize 80 gallon water heaters, and a plan to forward load management information to new connect orders at locations involved in the Cooperative's load management program.

During the 1977-78 heating season, electric loads were faced with nine control period days for a total of 45 hours of "off time." During the 1978-79 heating season, there were 21 control period days for a total of 105 hours.

Our latest input of member reaction to our load management program came from the response and inquiries at the nine district membership meetings held during the first quarter of 1979.

There wasn't a single report of dissatisfaction from those participating in our load management program, and the interest of the non-participants was high.

A few things evident at all of our meetings were:

1. Even though we were satisfied with the publicity we had given our load management program, there existed some misinformation and the lack of understanding by the membership of the program.

2. Some consumers have been programmed into accepting inflationary trends of all necessities of life and the feeling was no different about electric energy.

3. A few consumers are still disbelievers of the forecasts of energy shortages and the expected runaway prices of energy.

4. The members were complimentary of the efforts of the Cooperative in their behalf and felt an obligation to aid their Cooperative in its efforts to reduce power costs.

1979 - 1980 FORECAST

There were moments during the past couple years when the "crystal ball" was the only guide to how the Cooperative's load management would develop and what results would be accomplished. Someone once said that if you don't know where you are going, any road will get you there.

Frankly, this could have described some moments during the planning phases of our own load management program.

As we stated earlier, CCEC's growth, the structures of its wholesale power rate, its member relations and some other factors may not be the same for another rural electric cooperative, and therefore CCEC's program may not be as suitable as some other program. However, there should be little doubt in anyone's mind that some form of better utilization of the available sources of energy warrants everyone's attention.

We are pleased with the accomplishment of the program to date and we expect to have 1078 controls in place and operational during the 1979-80 heating season. We anticipate that we will be able to have control of 30,000 KWs during MPC's annual system peak. Without that control, our 1980 power bill could be $\$1\frac{1}{2}$ million greater than it would be without any control.

BENEFIT TO NATIONAL ENERGY NEEDS

It was noted earlier that Cass County Electric Cooperative felt a moral obligation to aid the efforts of our nation to conserve the gas and oil needs through substitution of coal-fired generation of electric energy.

During the life-span of the Cooperative's load management program, electric energy derived from coal and hydro generation has replaced oil and gas energy as the prime energy for space heating. Instead it has become the energy for the backup of a dual heating system and has released 836,000 gallons of fuel oil and made this available for transportation and fuel for our farm tractors.

Even though our nation is concerned about nuclear energy for generating electric power, it is an alternative that should not be discounted. Without the nation's eight nuclear plants, an additional seven million gallons of fuel oil would be needed each day as a replacement of that energy.

NOT ALL PROBLEMS SOLVED

It has been said that if our populous runs out of problems, don't hold your breath, they will create new ones.

We have received some "flak" from mobile home purchasers and builders of apartment complexes over our policy not to extend electric service unless electric space heating can be controlled for off-peak operation. Although other energy for heating can be selected, electric resistance heating is preferred.

In response to the apartment complex builders, who prefer not to install a dualized central heating system, we are in the process of researching the application of a demand-limiting device on the service to each apartment, in lieu of controlling the total demand of electric space heating through a dual system. Accordingly, the rate for such a service would be one that would compensate for this compromise.

For the mobile home, where space is a premium, we are researching methods whereby a backup system can be utilized with the common electric warm air system. One such method is an outdoor hydronic boiler with a heat exchanger installed into the air handling section of the warm air system.

CONCLUSION

The experience that has been gained by CCEC through its load management and energy utilization program illustrates the advantages to the electric utility, the consumer and our nation.

It should be noted that the benefit of a load management program to CCEC or any other utility faced with a "ratchet demand" can be substantial. But for the utility, not faced with a 12-month "ratchet demand," a program for the management of demand is worthy of serious consideration.

During the first quarter of 1978 the three-month load factor on CCEC's 25 substations was 74.3 percent; for the same period in 1979 that load factor has been increased to 85.0 percent. Exhibit 1 on Page 13 gives a detailed breakdown of that result. Demand increased by 1.7 percent while the increase in KWH sales was 16.3 percent. And -- that's the story -- control that demand and gain a greater benefit from the increase in sales.

It should be recognized that our nation's historic consumption of energy is paralleled by our nation's gross national product. A significant change in one will make a change in the other. Therefore, we should keep our priorities in order. We should not be mislead by the short term benefit in conserving energy through thermostats set back, window caulking, and more insulation as the answer in keeping up with our nation's appetite for increasing energy. Our nation's appetite for gasoline and fuel oil is growing at a rate where supply will fall far below minimum acceptable levels. (Exhibit 2 and Exhibit 3)

Finally, Cass County Electric Cooperative feels comfortable with its load management program wherein abundant energy sources are harnessed to the benefit of depleting sources and where conservation means, "Doing Better, Not Being Without." It means increasing your energy efficiency and productivity; reducing our waste; reducing our natural resources to more appropriate uses; and matching the kind of energy to the task. Electricity is the cheapest, most flexible and most environmentally acceptable energy resource we have.

EXHIBIT 1

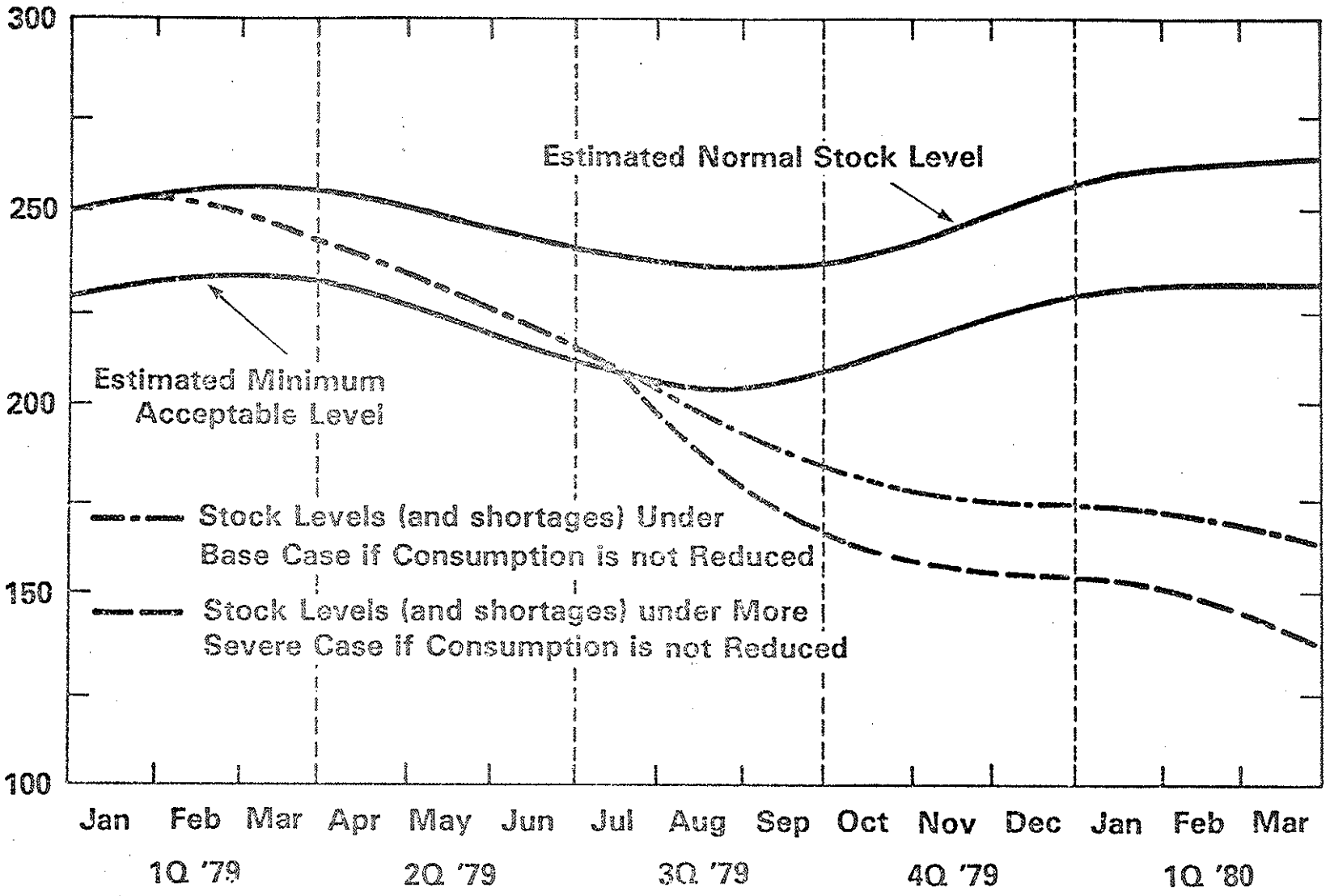
Cass County Electric Cooperative, Inc.

COMPARATIVE WHOLESALE POWER PURCHASES

1st Quarter - 1978 and 1979

	January thru March, 1978			January thru March, 1979		
Substation	Billing Demand	KWH Purchases	3-Month Load Factor	Billing Demand	KWH Purchases	3-Month Load Factor
Alleghany	949	1,488,457	77.7%	928	1,593,000	79.4%
Arthur	2,783	4,330,800	72.0	2,716	4,708,800	80.2
Chaffee	1,637	2,600,400	73.5	1,715	3,016,800	81.4
Colfax	2,319	3,508,200	70.0	2,014	3,600,000	82.7
Cuba	976	1,446,000	68.5	1,016	1,540,800	70.2
Enderlin	1,069	1,558,800	67.5	1,061	1,677,600	73.2
Gardner	1,220	1,962,000	74.5	1,194	2,113,200	81.9
Grandin	1,315	2,386,800	84.0	1,510	2,682,000	82.2
Hi-Liner	1,939	2,838,600	67.0	1,856	3,094,200	77.2
Kindred	1,273	2,197,800	79.9	1,200	2,444,400	94.3
Leal	--	--	--	624	1,764,000	130.8
Leonard	2,217	3,506,400	73.2	2,222	3,753,000	78.1
Lisbon	3,102	4,571,520	68.2	3,139	4,752,000	70.0
Litchville	1,617	2,413,800	69.1	1,572	2,608,200	76.8
Oxbow	1,082	1,569,600	67.1	835	1,450,800	80.4
Page	900	1,382,400	71.1	1,035	1,822,800	81.5
Pillsbury	1,335	2,299,200	79.7	1,349	2,544,000	87.3
Prosper) Reed)	5,074	7,768,800	70.8	4,885	8,662,800	91.2
Rogers	1,966	3,154,800	74.2	1,705	3,301,200	89.6
Saunders	4,069	6,523,200	74.1	3,953	7,346,400	86.0
Tower City	1,004	1,678,800	77.4	964	1,693,200	81.3
Warren) Horace)	2,944	4,744,800	74.6	3,231	6,382,800	88.5
West Acres	8,933	15,950,400	82.6	9,864	20,198,400	94.8
Total KW-KWH	49,723	79,881,597		50,589	92,964,600	
Average Load Factor			74.3%			85.0%

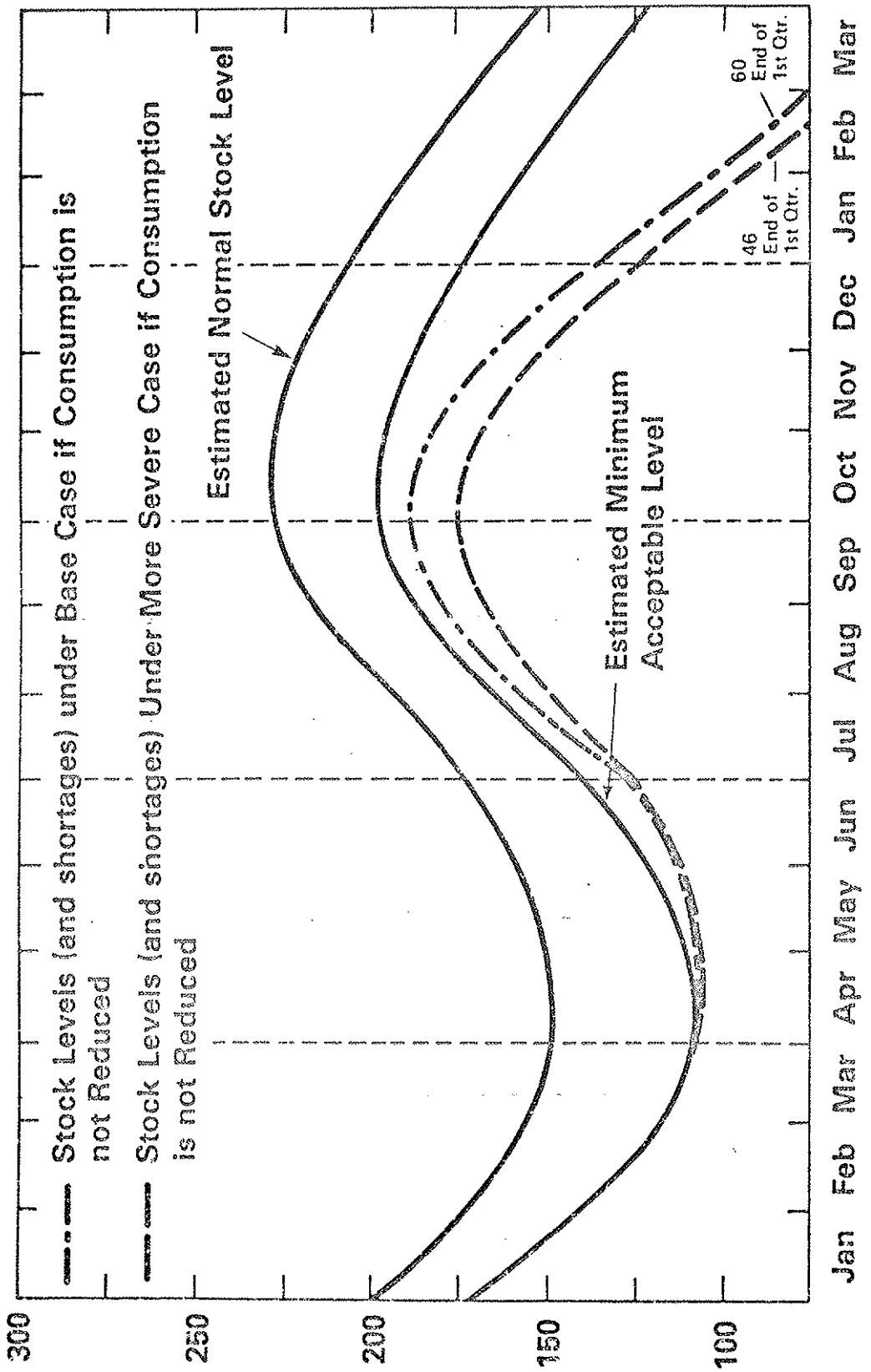
Gasoline Stocks at Primary Level
(Millions of Barrels)



The stock levels below the Estimated Minimum Acceptable Level are hypothetical since stocks would actually be maintained at minimum levels through curtailments in supply.

EXHIBIT 2

EXHIBIT 3



The stock levels below the Estimated Minimum Acceptable Level are hypothetical since stocks would actually be maintained at minimum levels through curtailments in supply.

MINUTES OF THE 1979 RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL MEETING

The 1979 Rural Electric Management Development Council was held at the Quality Inn Motel, Hilton Head, South Carolina, May 21, 1979 - May 25, 1979. Derl Hinson, Council Chairman, opened the meeting at 1:15 P.M. and welcomed the members to Hilton Head. Cecil Viverette gave the invocation. The chairman recognized special guests at the Council Meeting, including Jack Wood, Don Smith, and Ervin Baker of NRECA and Joe Hanson of REA.

Interim Appointments

The Chairman reviewed the preamble of the REMDC and quoted from the objectives of the Council and urged the members of the Council to think about what the Council is all about. Chairman Hinson stated that the Chairman of the Nominating Committee, Richard Seger, has been unable to attend the Council meeting and that he had asked Jim Kiley to serve as acting chairman of the committee and present the report at the business session and he appointed Bob Roberts to take Clyde Hukills place on the Nominating Committee to serve at this meeting only.

Social Invitations

Invitations to members of the Council and their families for a social hour at their villas were extended by Cecil Viverette and Don Smith.

Research Committee Report

Chairman Hinson then recognized Everette Bristol, Chairman of the Research Committee, for the report of the committee. Ev reported that the Research Committee had worked to carry out the mandate to the committee, realizing that research and experimentation is a standard part of the basic objective of the Council. He stated that when the Council gave directions to the committee, the only thing it did not give was money and that therefore the committee had worked on ideas. He said that the committee had taken the recommendations which it had received and developed them to present for consideration by the Council as possible research areas.

(1) Internal Organization and staffing of a rural electric cooperative now and in 1995.

(2) Status of Rural Electric Cooperatives and their role in providing energy in the 21st century.

(3) Productivity - Need for productivity measurements in the cooperative due to co-ops coming under regulation and consumer members asking questions about operational effectiveness and productivity.

He stated that the committee had worked closely with the program committee and NRECA in the development of the REMDC program and the Advanced Management Conference to provide emphasis on productivity and working effectively. He presented Robert (Bob) Roberts and Cecil Viverette, members of the Research Committee who presented outlines of proposed research projects Nos. 1. and 2. Ev then introduced Don Smith of NRECA, who presented Carl Thor, Vice President of the American Productivity Center, Inc. of Houston, Texas, who make a presentation on productivity in the United States and commented on the work of the Center.

Following his presentation, Ev thanked the committee for its assistance and the fine support of the work, and Mr. Thor for his fine contribution.

Chairman Hinson thanked the chairman and the committee for their work and stated that the Council Members would discuss the research projects which the committee proposed during the business session later in the week.

Recognitions

Chairman Hinson then recognized his secretary, Mrs. Joan Watson and thanked her for her assistance in making arrangements for the meeting. He thanked on behalf of the Council, Barbara Deverick for providing a report of the 1978 council proceedings and appointed Barbara to serve as Secretary for the 1979 REMDC meeting.

The Chairman then presented the Chairman of the Program Committee, Elmer Stocker. Elmer stated that the program committee had chosen to emphasize productivity improvement in the 1979 program.

REMDC Program

The REMDC program continued as indicated by the program outline on Page 15, followed by the Advanced Management Conference which had for its theme, "Productivity and its Impact on REA". The Advanced Management Conference was co-sponsored by NRECA and the REMD Council.

Further Report from R & D Committee

At the conclusion of the REMDC program presentations, Chairman Hinson again recognized Everette Bristol, Chairman of the Research Committee, to continue the report of the research committee. Everette and members of the committee shared information with the REMDC members relating to the work of the Research Committee in trying to determine which project or projects should be pursued. It was pointed out that for the past two years the Council had co-sponsored with NRECA the Advanced Management Conference, that in assisting NRECA in developing the program for the Advanced Management Conference in 1978, which was the "Top Management Experience" by the Mader group, the REMDC had realized its objective of furthering the management curriculum of NRECA. The question was raised as to whether or not the Council should scale back on the Advanced Management Conference sponsorship and undertake other research projects. The Chairman outlined considerations and constraints which should be dealt with in making a decision, including the availability of limited funds. It was stated that the role of the council included (1) Direct Research; (2) Contribution of funds to research, etc.; (3) Relationship with other research groups - EPRI, etc. Ev Pristol then stated that he would like the members of the committee to share with the council members their thinking regarding possible projects. He stated that in examining various projects, the committee had developed a basic guideline to follow - (1) Choose subject - title; (2) Present evidence of needs; (3) Establish objectives: (4) Give scope and methodology; (5) Decide who does the research; (6) Develop reporting form; (7) Determine distribution and utilization of results; (8) Define time frame; (9) Determine cost and source. Ev then asked Bob Roberts and Cecil Viverette to briefly review the recommendations which had been developed by the committee.

Suggestions on Research projects

Bob dealt with the recommendation on staffing in the REC's now and in 1995. Cecil dealt with the REC's role in providing energy in the 21st Century.

Don Smith of NRECA discussed the proposal of the American Productivity Center on developing productivity measurements.

The basic thrust of the recommendations made by Bob and Cecil was to have people in the Council carry out the basic research necessary to arrive at the conclusions in the two projects they had explored. Don Smith stated that should APC be asked to carry out the productivity project, it could cost from $10,000. to $20,000; that some exploratory work could possibly be done for less than $10,000. He stated that APC would be willing to work on "as work is performed" basis with regard to costs. He pointed out that REA, CFC, and NRECA are most interested in productivity. He reported that EPRI also had great interest in this area.

Ev Bristol concluded the report by stating that these overviews gave the group some idea of the possibilities for research and these could be discussed during the meeting and perhaps some new ideas would be generated.

Virgil Herriott stated that we needed to re-emphasize the Council's financial position and this should be kept in mind as the suggested research projects were considered, that the small amount of funds in the REMDC's treasury put some constraints on the funding of research projects. Derl Hinson stated that the possibility of putting together a joint research project with REA, CFC, and NRECA was being investigated, that Don Smith had indicated that NRECA and REA could possibly provide "in kind" services. The suggestion was made to investigate the availability of possible grant funds to finance the balance needed to carry on the project.

At this point, the discussion was discontinued to be taken up at the business session following the conclusion of the Advanced Management Conference.

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Business Session

On Thursday, May 24, 1979, following the conclusion of the Advanced Management Conference, Derl Hinson, Chairman, reconvened the REMD Council for the annual business session. Chairman Hinson recognized the following visitors to the Council and stated they were potential members: William Smith, General Manager, Clark County REMC, Sellersburg, Indiana; Harold Smith, General Manager, Flint Electric Membership Corporation, Reynolds, Georgia; Jim Lane, Assitant Manager, Mid-Carolina Electric Cooperative, Lexington, S. C.; Roger C. Lentz, Manager, Southeastern Illinois Electric Cooperative, Eldorado, Illinois; Dick Ritscher, Staff Assistant, Southside Electric Cooperative, Crew, Virginia.

Potential Members

Treasurer's Report

Chairman Hinson then recognized Allen Ritchie, for the presentation of the Treasurer's Report. Allen reported a new loss for the year of $1,190.01, with a total of 23 recorded paid members as of May 13, 1979. He stated that Jackson Purchase REMC had paid dues for 1979 following this date and their dues were not included in the income statement. A copy of the treasurer's report showing a cash balance of $16,850.23 is attached and made a part of these minutes. Allen reported that Ozarks Electric Cooperative had resigned from the Council. Motion was made and seconded that the Treasurer's report be accepted and adopted by the members present.

Chairman Hinson thanked Allen for his fine work as treasurer.

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Membership Committee

The Chairman recognized Virgil Herriott for the report of the Membership Committee. Virgil reported that the Council had developed and adopted some three years ago, criteria for membership in the Council. He stated that ten systems had met the criteria for continuing membership at the 1978 REMDC Annual Meeting and had been so certified. He stated that this year four applicants had submitted information for continuing membership certification and it was the recommendation of the committee, after reviewing the data submitted by these four systems, that these systems be certified as continuing members of the Council. He recognized these systems and their general managers as follows: Linn County REC, Iowa, Jack Hicks, Manager; Cotton Electric Coopertive, Oklahoma, William Miller, Manager; Kay Electric Cooperative, Oklahoma, Clyde Hukills, Manager; Shenandoah Valley Electric Cooperative, Virginia, Mark McNeil, Manager.

Certification for Continuing Members

Motion was made and seconded and adopted by the Council to approve these systems as continuing members. Virgil stated that certificates would be mailed to each of these cooperatives attesting to their certification as continuing members of the Council.

Systems volunteering to submit data for continuing membership prior to the 1980 Annual Meeting of the Council were: Lumbee River Electric Membership Corportion, North Carolina, Derl Hinson, Manager; Mecklenburg Electric Cooperative, Virginia, Ronnie L. Johnson, General Manager; Cornhusker Public Power District, Nebraska, Norman L. Hoge, General Manager.

Virgil recognized the members of the Membership Committee, Jim Golden, Marv Athey, and Wayne Kump, and thanked them for their work.

Chairman Hinson thanked Virgil and the committee on behalf of the Council for their report and urged other systems to begin work on their certification as continuing members of the Council.

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Discussion on Research Project

Ev Bristol, Chairman of the Research Committee, was recognized for the recommendation from the Committee on Research projects for the Council. Ev stated that the committee was still open for suggestions, however the concensus of the group present seemed to be for a project related to productivity. Ev stated that there was great interest in productivity, that the average productivity of the electric utility industry is about 60%, between 50% and 70%. He stated that in REC's, management and members are concerned about productivity and that state utility commissions and bankers are also concerned about the REC's productivity. He stated that there was great need for productivity emphasis in REC's which are faced with power supply shortages and inflationary trends. He stated that the project objective would be to develop a set of key indicators for each of the key performance areas which were defined and the establishing of a process for setting up the appropriate standards for each of the key indicators. The scope of the project would include the use of the basic data and information already available - making use of the management evaluation manual and using the REA and CFC data base, other research which is taking place and the gathering of data from the council members. From this could be developed meaningful Key Indicators. The Research Committee would serve as a project coordinator and engage a group or organization to do the basis research and development, encouraging the participation in the project by REA, CFC, and NRECA. The output would be a printed report with background information developed with interpretation. Use of the report

would include wide distribution to encourage each REC to undertake their own productivity improvement program, use of the report by NRECA in training and consulting, use of the report by CFC and REA in administering their loan programs. The time for the project, possibly one or two years. The source of funding would include the appropriate use of the Council's funds allocated to the Research Committee.

How far the project would get depends upon the involvement of the Council group, CFC, REA, and NRECA. During the discussion relating to the committee recommendation it was pointed out that productivity is a very timely subject and the project could serve as a catalyst for all REC's to get into an evaluation of their productivity. Bill Beverage moved that the recommendation of the research committee concerning a research project on productivity be approved. The motion was seconded. Following discussion the group adopted the motion.

Approve Productivity Research Project

Project Funding

The question regarding funding of the project was raised and Cecil Viverette, member of the committee, stated that it was felt that the committee would work within a budget of $6,000. A question about possible funding assistance from CFC was raised. Chairman Hinson stated that the committee would contact CFC and that possibly CFC could use some of its education funds to assist with the project. Hinson stated that both Don Smith of NRECA and Joe Hanson of REA have agreed to lend assistance in the project. Bill Miller moved that the committee be authorized a budget of $6,000.00. It was stated that this would be start-up money for the project and would serve as seed money for the committee. Jim Kiley asked if the committee had a handle on the scope of the project, and Chairman Bristol stated that it did not, that the project could be a $40,000 or $50,000. project. The motion to fund the project in the amount of $6,000. was adopted by the council members.

Chairman Hinson thanked Ev and members of the Research Committee for their work.

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Chairman Hinson asked Jim Kiley, Acting Chairman of the Nominating Committee, to present the report of the committee. Jim recognized the members of the committee, who were present, Jack Hicks and Bob Roberts.

Nominating Committee Report

Jim reported that the committee had met and made the following nominations to fill vacancies created by term expirations or resignations:

Vice Chairman - Bob Roberts - Term expires in 1982.
Program Committee Member , Bill Miller - Term expires in 1982.
Nominating Committee Member, John Allensworth - Term expires in 1982.

Election

Nominating Committee Chairman, Jack Hicks, Term expires in 1980.
Membership Committee Member, Bill Beverage, Term expires in 1982.
Management Research Committee, Dick Seger, Marvin Athey - Term expires in 1982.
Advanced Management Conference Planning and Coordinating Committee to be composed of the Chairman of the standing committees and the Council Chairman, who will be an ex-officio member.

The chairman called for nomination from the floor. There were no nominations. Virgil Herriott moved that the nominations be closed and the nominees be elected by acclamation. The motion was seconded and adopted by the Council Members. The chairman then declared the slate to be the

duly elected officers and committee members to serve with the carry over officers and committee members for the coming year.

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Chairman Hinson thanked Elmer Stocker and the program committee for the fine work in the development of the program for the REMDC meeting.

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1980 Program & Meeting Location

Chairman Hinson stated that the floor was open for discussion for the 1980 program and location for the council meeting. The question was raised as to whether the Council was committed to the joint REMDC and Advanced Management Conference. Virgil Herriott pointed out that this 1979 meeting had required six days away from home and had ended up with the time available for the Council being pushed into the background. The questions to the council were: (1) Shall we continue to hold joint meetings?; (2) If so, how long?

Bob Roberts stated that the primary purpose for his being there was the REMDC meeting. He would like more time for the Council. It was pointed out that the Council needs money and the question was raised, "Could the REMDC and Advanced Management Conference be split." Jack Wood agreed with what had been voiced, stating the the meetings could be split, that NRECA was flexible. Virgil Herriott stated that the Council had about a $7,500 annual income and had committed $9,000 to NRECA and $6,000 to the Research Project. Allen Ritchie asked what NRECA had made from the Advanced Management Course and how the REMDC shared in any profits. Wood stated that the budget for this year's Advanced Management Program was over $20,000, and that the Mader Program, the Top Management Experience, would break even this year. Bill Miller stated he would give up the Co-sponsorships of the Advanced Management Conference to keep the Council effective.

Chairman Hinson said that he had heard from the discussion that the concensus was one or one and one-half days for the Advanced Management Conference. Jim Kiley stated that he felt the Advanced Management Conference had met the purpose of the Council's research and development. He asked if 1½ days would limit NRECA in testing an Advanced Management Program. Jack Wood stated that the ideal time is 2½ days, that NRECA did not want to lose the value of working with the REMDC group, that NRECA was not after the dollar, but rather the support and involvement of the group. Jim Golden asked if we could maintain the value and still split the sessions, that perhaps we should try splitting the sessions. Virgil Herriott stated that the motion regarding REMDC support of the Advanced Management Program in the amount of $9,000. should be rescinded and consideration of support for the Advanced Management Conference put in the hands of the committee.

Bill Beverage stated that he would like to see the REMDC go back to the old format with one day given to innovation, one day to REC's present programs, and one-half day to business. It was stated that NRECA did need some commitment. Mark McNeil stated that the Council needed to be flexible as did NRECA. Chairman Hinson stated that perhaps a motion empowering the Program Planning Committee to take whatever action was necessary to develop an appropriate format for the meeting.

Motion on Meeting

Mark McNeil moved that the Program Planning Committee develop a format for the next REMDC meeting. The motion was seconded. The motion was amended to include the Program Committee and the Advanced Management Conference Planning and Coordinating Committee and that joint planning be done for the 1980 REMDC meeting. The amendment was seconded and adopted. The main motion, as amended, was adopted.

Flexible Dues Formula Recommendation

A motion was made that these committees develop a recommendation to the Council on a flexible dues formula to accommodate a range of dues which would permit the Council to have a flexible program. The motion was seconded. The treasurer asked if this would affect the 1980 dues. Chairman Hinson said it would have to be for 1981 dues. He further explained that the Council was not committed to $9,000 to NRECA for 1980. The motion on the dues study recommendation was adopted.

1980 Meeting Location

Bill Beverage stated that the Council should try to meet in a more central place Virgil Herriott moved that the council meet in Minneapolis in 1980. The motion was withdrawn, to permit the planning committee greater flexibility.

Approval of Interim Expenditures

A motion was made, seconded and adopted that the Council officers be authorized to approve reimbursement of interim expenditures for committees as they determine such need.

Time of 1980 Meeting

Suggested dates for the 1980 meeting were discussed. It was determined that the meeting should be the second or third week in May and that the dates should be set soon for the 1980 meeting for planning purposes and that all council members should be notified as soon as the dates have been set.

There being no further business to come before the Council, Chairman Hinson thanked the officers, committee chairmen and committee members, and council members, NRECA staff and program participants for their contribution to the 1979 Council program and meeting.

Thanks were extended to Chairman Hinson for his efforts in making the arrangements for the meeting place and recreational arrangements. He was commended for his leadership to the Council.

The meeting adjourned.

THE RURAL ELECTRIC MANAGEMENT
DEVELOPMENT COUNCIL

OPERATING STATEMENT

May 13, 1978 to May 15, 1979

Income:

1978 Dues (Schedule A)	$ 900.00
1979 Dues Members (Schedule B)	6,300.00
1979 Interim Memberships (Schedule C)	600.00
Interest from Investments	535.55
Total	$8,335.55

Expenses:

1978 Meeting	
NRECA - Portion on 1978 Advance Management Conf.	$9,000.00
NRECA - REMDC Coffee and Refreshments 1978 REMDC Meeting Crown Center	317.21
Other	
Blue Ridge EMC - 1978 REMDC Proceedings	208.35
Research Committee Expenditures	-0-
Total	$9,525.56
NET INCOME	($1,190.01)

THE RURAL ELECTRIC MANAGEMENT
DEVELOPMENT COUNCIL

BALANCE SHEET

May 15, 1979

ASSETS

	May 15, 1979	May 12, 1978
Current:		
Cash in Bank - Checking	$ 7,030.73	$ 7,756.29
Investments (Note 1)	9,819.50	10,283.95
Total	$16,850.23	$18,040.24

MEMBERS' EQUITY

Members Equity:		
Retained Earnings	$18,040.24	$14,409.52
Net Gain (Loss)	(1,190.01)	3,630.72
Total	$16,850.23	$18,040.24

Note 1 - Investments

First Virginia Bank - Planters, Dayton Branch

Time Deposit, Open Account 5 1/2 Compound 90 Day $9,819.50

THE RURAL ELECTRIC MANAGEMENT
DEVELOPMENT COUNCIL

Schedule A

1978 Dues Paid After May 12, 1978

Cornhusker PPD	$ 300.00
Oklahoma Electric Cooperative	300.00
East Central Electric Association	300.00
Total	$ 900.00

Schedule B

1979 Dues Paid as of May 15, 1979

Pioneer REC	4-04-79	$ 300.00
Adams EC	4-04-79	300.00
Oklahoma EC	3-30-79	300.00
Wright-Hennepin EC	4-09-79	300.00
Four County EMC	4-09-79	300.00
Blue Ridge EMC	4-10-79	300.00
Cotton EC	4-09-79	300.00
Lumbee River EMC	4-09-79	300.00
Yampa Valley EA	4-12-79	300.00
Shenandoah Valley EC	4-12-79	300.00
KEM EC	4-12-79	300.00
Cornhusker PPD	4-17-79	300.00
Cass County EC	4-17-79	300.00
Linn County REC	4-17-79	300.00
White River Valley EC	4-17-79	300.00
Whitley County REMC	4-17-79	300.00
Sioux Valley Empire EA	4-17-79	300.00
Morgan County (Ind)	4-26-79	300.00
Kay EC	4-27-79	300.00
East Central EA	4-27-79	300.00
Central Kansas EC	5-07-79	300.00
Total		$6,300.00

Schedule C

1979 Interim Memberships Paid as of May 15, 1979

Mid Carolina EC	4-12-79	$ 300.00
Southside EC	5-15-79	300.00
Total		$ 600.00

THE RURAL ELECTRIC MANAGEMENT DEVELOPMENT COUNCIL

ATTENDANCE RECORD

Cooperative	Years									
	'71	'72	'73	'74	'75	'76	'77	'78	'79	
Adams Electric Coop	0	X	X	X	X	X	X*	X	X	
Blue Ridge EMC	X	X	X	X	X	X	X	X	X	
Carroll Electric Cooperative Corporation			X	X	X	X	X	X	–	
Cass County Electric Coop	X	X	X	X	X	0	X	X	0	
Central Kansas	X	0	X	0	0	0	X	X	0	
Chugach Electric Assn., Inc.				0	0	0	0	0	–	
Cornhusker PPD	X	X	0	0	0	0		0	X	
Cotton Electric Cooperative				X	0	X	0	X	X	
Cumberland EMC	0	0	0	X	0	0	0	–	–	
Douglas County EMC	X	0	X	X	0	0	0	–	–	
East Central Electric Association			X	X	0	0	–	0	X	
First Elec. Coop						X	–	–	–	
Four County EMC	0	0	X	X	X	0	X	0	X	
Haywood EMC						0	0	–	–	
Jackson Purchase REC	0	X	0	X	0	0	–	0	0	**
Kay Electric Coop	0	X	X	X	X	X	0	X	0	
KEM Electric Coop	X	0	X	X	0	0	X	X	X	
Linn County REC					X	X	X	X	X	
Lumbee River EMC					0	0	0	X	X	
Mecklenburg Electric Coop	0	0	X	X	0	0	X	0	X	*
~~Morgan County REA (Colorado)~~	X	X	X	X	X					
Morgan County REMC (Indiana)	0	0	X	X	0	X	X	X	X	
Oklahoma Elec. Coop					X	0	0	0	X	
Ozarks Electric Coop	X	X	X	X	X	X	X	X	Withdrew	
Pioneer REC						X	X	X	X	
~~San Isabel Electric Services~~	X	X	X	X	X	X				
Shenandoah Valley Electric Coop	0	0	X	X	X	X	X	X	X	
Sioux Valley Empire Electric Assn.	X	X	X	X	X	X	X	X	X	
Tri-County Electric Cooperative, Inc.			X	0	0		–	–	–	
United REMC					X	0	0	Withdrew		
Wake EMC								–	–	
West Plains Electric Coop	X	X	X	X	X	X	X	X	X	*
White River Valley Electric Coop	X	X	X	X	X	X	X	X	X	
Whitley County REMC					X	0	X	X	X	
Wright-Hennepin Elec.						X	X	X	0	
Yampa Valley Electric Assn.	X	X	X	X	X	X	X	X	X	
Mid-Carolina EC									X	
Southside EC									X	

Code: X - Paid - Attended
0 - Paid - Did Not Attend

*Attended - dues not paid
** Received after 5-13-79

OFFICERS AND COMMITTEES FOR 1980 DEVELOPMENT COUNCIL

Chairman.	Derl Hinson	Term expires in 1981
Vice Chairman	Bob Roberts	Term expires in 1982
Treasurer	Allen Ritchie	Term expires in 1980
Secretary		Appointed annually by chairman

Standing Committees

Program		
Chairman	Elmer Stocker	Term expires in 1980
	Roger Geckler	Term expires in 1981
	Bill Miller	Term expires in 1982
	Barbara Deverick	Term expires in 1981
Nominating		
Chairman	Jack Hicks	Term expires in 1980
	James Kiley	Term expires in 1981
	Clyde Hukills	Term expires in 1981
	John Allensworth	Term expires in 1982
Membership		
Chairman	Virgil Herriott	Term expires in 1980
	James Golden	Term expires in 1981
	Bill Beverage	Term expires in 1982
	Wayne Kump	Term expires in 1980
Management Research		
Chairman	Everette Bristol	Term expires in 1980
	Dick Seger	Term expires in 1982
	Marvin Athey	Term expires in 1982
	Charles Overman	Term expires in 1981
Advanced Management Conference Planning and Coordination		
Chairman	Everette Bristol	
	Virgil Herriott	
	Jack Hicks	
	Elmer Stocker	
	Jack Wood	
	Derl Hinson, Ex-Officio	

A. All committee members and officers elected for a 3-year term except as noted.

B. Chairman of each standing committee, except Advanced Management Conference Program Planning Committee, named by the Nominating Committee and serve for three years when elected.