



**Rural Energy  
Management  
Council**

*Richard Hackner - Chair  
Senior Project Manager  
GDS Associates*

**Council Members**

*Dr. Henry Anderson  
Chief Medical Officer  
WI Dept. Of  
Health & Family Services*

*William Brey  
Dairy Producer & President  
Wisconsin Farmers Union*

*Shannon Clark  
General Manager  
Richland Electric Cooperative  
Past President,  
Midwest Rural Energy Council*

*Mark Cook - Director  
Rural Electric Power Services  
(REPS) Program  
WI Public Service Commission*

*Dr. Vic Eggleston - President  
WI Veterinary Medical Association*

*Joe Hertel - Program Manager  
Safety and Buildings  
WI Department of Commerce*

*Marvin Hopp  
Roberts Irrigation Company, Inc.*

*Dave Jenkins - Manager  
WI Electric Cooperative Assoc.  
WI Federation of Cooperatives*

*Bob Lentz  
Dairy Producer & President  
Ridgeland-Chetek Cooperative*

*Nancy Lightfield - Coordinator  
Rock County Center  
Blackhawk Technical College*

*Dr. Willis Long - Professor  
Engineering Professional  
Development / Electrical &  
Computer Engineering Dept.  
UW-Madison*

*Daryll Lund - President & CEO  
Community Bankers of WI*

*Neil Matthes - President  
Duck Creek Engineering, Inc.*

*Jeanne Meier - Director  
Bureau of Ag Services, WDATCP*

*Wayne Peterson - Vice-President  
WI Public Service Corporation*

*Reuel Robertson - Dairy Producer*

*Lois Swain - Dairy Producer*

To promote safe, efficient and cost effective energy usage in Wisconsin rural communities.

**Mission:**

To promote safe, efficient and cost effective energy usage in Wisconsin Rural Communities.

**Objectives:**

1. To coordinate with various organizations on rural energy related issues.
2. To gather and review available information, including opinions, data and experiences in a neutral, unbiased manner.
3. To make recommendations to decision-makers regarding rural issues.
4. To identify collaborative opportunities for addressing rural energy needs and issues.
5. To act as a resource for overcoming any policy and market barriers or knowledge gaps that may hinder safe, efficient and cost effective energy usage in Wisconsin rural communities.

**Guidelines:**

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- Please wait for the chair or facilitator to call on you.
- Show respect for all members and their contributions.
- If you don't agree - - speak up. (No pocket vetoes.)
- Full participation is expected from ALL members.
- In order for Council to be successful, we need commitment to participate in Council meetings. Only appointed Council members can vote and respond to Council actions.
- We encourage a diversity of opinions and ideas, but do not accept criticisms of individuals.

**Standing Committees:**

- ~ Education (Chair, Nancy Lightfield)
- ~ Energy Conservation (Chair, Jeanne Meier)
- ~ Other Electrical Phenomena (Chair, Vic Eggleston, DVM)
- ~ Professional Services (Chair, Shannon Clark)
- ~ Research (Chair, Prof. Willis Long)
- ~ Stray Voltage (Chair, Mark Cook)
- ~ Utilities (Chair, Wayne Peterson)

Note: Mission and objectives approved at 5/2/00 Council meeting. Guidelines were revised at the 8/1/00 Council meeting. Committee structure approved at the 2/1/00 Council meeting. Members list updated 3/14/01.



**1999-2000 Annual Report  
of the  
Rural Energy Management Council**

**November 2, 1999 to November 7, 2000**



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To promote safe, efficient and cost effective energy usage in Wisconsin rural communities.

November 6, 2000

**Executive Summary**

Established in late Fall of 1999 from a series of meetings and discussions between State Representative Al Ott, Secretary Ben Brancel of the Department of Agriculture, Trade and Consumer Protection, and many others, the Rural Energy Management Council (REMC) is concluding its first year of existence. During the first year the 18-member council has focused on establishing its purpose and structure, and began addressing several key issues.

Rural electrification has a 60+ year history in Wisconsin. During this time agriculture and rural areas, in general, have progressed and been challenged on numerous fronts. The energy-related challenges, as well as opportunities, facing today's Wisconsin rural communities led to the formation of the Council. The mission of the Council, "*To promote safe, efficient and cost-effective energy usage in Wisconsin rural communities*" seems straightforward on the surface yet has the potential to generate much needed discussion. Questions such as: How safe is "safe?" and What is considered "cost effective?" imply that value judgements need to be made. The purposes of the Council are to create a forum to search for information, discuss issues, and make recommendations to other organizations and stakeholders. In turn it is hoped these organizations and stakeholders will use the information provided, apply their own criteria, and make further decisions and take appropriate action to address the rural communities energy needs.

Communication is central to the Council carrying out its Mission and good communication is key to the Council being successful. To foster better communication the Council took steps early on to create a safe atmosphere to exchange ideas and to have multiple opportunities for input from Council members, the public and other stakeholders. Meeting ground rules were established, and are periodically updated, by the Council to promote better communication. Public input is encouraged in written form and since the second quarterly meeting time has been explicitly allotted for verbal public input during the meeting.

Recognizing the diverse set of issues being considered the Council established seven Standing Committees to cover topic areas ranging from energy conservation to education and to infrastructure. Further, to continue expanding input beyond the Council additional stakeholders, including public representatives, were added to each Standing Committee along with at least two Council members.

During the past year the Council and the Standing Committees began addressing several issues including: University of Wisconsin-Madison research on the topic of stray voltage as called for by the State's 2000-2002 biennial budget; reinforcing the importance of meeting rural energy needs within the Publics Benefits program emerging from the Reliability 2000 legislation; and

recognizing the critical need to address on-farm wiring as a key first step toward resolving stray voltage problems present on some Wisconsin farms.

Establishing and maintaining trust, cooperation, and collaboration amongst a diverse set of stakeholders are keys to meeting the energy needs of Wisconsin's rural community. Momentum is being established by the Council to work toward real solutions and be a real asset as was envisioned by the Council's originators.

Respectfully submitted on behalf of the Rural Energy Management Council,

A handwritten signature in black ink, appearing to read 'Rich Hackner', with a long horizontal line extending to the right.

Rich Hackner  
REMC Chair

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## **I. Rural Energy Management Council Established**

On August 4, 1999 State Representative Al Ott, Chair, Assembly Agriculture Committee called for a Roundtable on Energy Management. A variety of interested parties (32 individuals) were invited to this meeting. The Roundtable discussed both the recent electrocution in Adams County of Mr. Olson and the thoughts of the Roundtable participants on the future direction of stray voltage and other developing energy issues. This discussion was a follow-up to the Stray Voltage Summit hosted by Secretary Ben Brancel of the Department of Agriculture, Trade and Consumer Protection (DATCP) in November 1998. The concept of a Council to consider the board range of rural energy management issues was proposed and unanimously endorsed at the Chairman's Roundtable.

The proposal outlined the nature of the independent Rural Energy Management Council to be formed to advise State agencies and legislators. The proposal called for an 18 member Council to be appointed by the DATCP Board and administratively supported by the DATCP. The Council would be run by a Chair elected by the Council and meet at least quarterly. Standing committees established by the Council would do the work of the Council and report to the Council. The committees at a minimum should have two Council members and two non-Council members in addition to a Council member chairing the committee.

The Rural Energy Management Council replaced the existing Stray Voltage Advisory Council that existed at DATCP. The staff support position came from the Rural Electric Power Service (REPS) program. Al Ott, Ben Brancel, Mark Cook and Steve Sauer developed the first list of potential Council members to be considered by the DATCP Board. These individuals were approved by the Board and held their first meeting of the Council on November 2, 1999.

At the November 2, 1999 meeting, Richard Hackner was elected to be the first Council Chair. The first order of business was for the Council to identify the issues for the Council to consider and the standing committees which would address these issues. Key issues identified at the Chairman's Roundtable formed the core issues for committees to study.

At the February 1, 2000 meeting, the Council formulated its mission, objectives and basic guidelines on how meetings would be conducted. Appendix A, Rural Energy Management Council Overview, contains the Council's mission, objectives and guidelines.

The Council also approved a standing committee structure, assignment of issues to committees and appointments of committee chairs at this meeting. Appendix B, Standing Committees, Issues and Chairperson Assignments, summarizes this activity. In addition to the issue list from the round table, new issues from both Council members and the public were solicited. One new committee was added to the suggested list of Committees.

The Other Electrical Phenomena Committee is to deal with electrical phenomena other than traditional stray voltage.

The Council also accepted the request from Dr. Elton Aberle, Dean of the University of Wisconsin College of Agricultural and Life Sciences to assist the College with their stray voltage research project. A more detailed discussion is in the next section of this report.

At the May 2, 2000 meeting, the Council heard a presentation from John Marx, Administrator of Division of Energy, of the Department of Administration. He spoke on the development of the new public benefits program at the Department of Administration. This program is to manage energy funds for energy conservation, renewable energy and low-income assistance projects in Wisconsin. The Council expressed considerable interest in the direction the Wisconsin public benefits program takes towards assisting rural and agricultural interests.

The August 1, 2000 meeting in Green Bay focused on the issues facing wind energy in Wisconsin. Richard Hasselman of the Energy Center of Wisconsin gave a presentation to the Council on small to intermediate scale wind energy systems as they relate to farmers and rural residents. A pre-meeting tour of a large wind farm near Green Bay highlighted some of the issues facing rural residents who live near these facilities.

The November 7, 2000 meeting included various presentations, reports and proposed position statements for consideration. Besides (adopting/reviewing) the Annual report, two formal position statements were considered.

**REMC Position Statement No. 1:** The Council (accepted/denied) the proposed position statement: "Endorsement of the Department of Agriculture, Trade and Consumer Protection's response to the Department of Administration's Request for Information (RFI) on the Public Benefits Program dated July 18, 2000". Appendix C has the full position statement. This position statement expresses the Council's concern that the current process proposed by DOA will result in agriculture and rural residents being underserved in the public benefits program unless a more inclusive approach is taken.

**REMC Position Statement No. 2:** The Council (accepted/denied) the proposed position statement: "Endorse the Funding and Hiring of Two New State Electrical Inspectors". Appendix D has the full position statement. This position statement endorsed the Department of Commerce 2001-2003 biennial budget request for two additional state electrical inspectors.

In the year ahead, the Council will consider additional proposals from the Committees that are presented to the Council for action. The Council will continue to bring additional experts to their meetings to present materials of interest to the Council. The Council will continue to follow the progress of the UW stray voltage research project. Another pre-meeting field trip to a research site or demonstration project will also be considered.

## **II. Council Assisted University of Wisconsin System's Development of a Stray Voltage Research Project**

During the February 1, 2000 meeting, Dr. Elton Aberle, Dean of the University of Wisconsin College of Agricultural and Life Sciences explained the nature of the state funding for stray voltage research by the University of Wisconsin System. Appendix E has a detailed chronology of the state's funding decision-making. At this meeting, Dean Aberle requested that the Rural Energy Management Council participate as an avenue for public input into their research development and implementation efforts.

The Council accepted this request as a special project since the Committees were not fully established and the University's need to get the funds awarded and project(s) started before the end of their fiscal year. Two full council teleconferences, in addition to the quarterly meetings, were held to provide the University with the required feedback in a timely manner.

The Council assisted the University in three ways:

1. Discussed the focus for research proposal request (Completed)
2. Shared opinions on the proposal awarded the state research funds (Completed)
3. Providing feed back on research implementation (On-going)

The first of the state funded stray voltage research team presentations to the Council was presented at the November 7, 2000 meeting. More presentations and discussions with the University of Wisconsin research team are anticipated at various junctures in the research project.



### **III. Highlights of Standing Committee Activities**

The Rural Energy Management Council consists of seven standing committees.

They are:

Education, Energy Conservation, Other Electrical Phenomena,  
Professional Services, Research, Stray Voltage, Utilities.

Appendix B, Standing Committees, Issues and Chairperson Assignments, gives a more detailed summary of the committees purposes.

The committees are at various stages of development. Below is a summary of highlights of the activities of the committees in their first few months of existence. Each of them is taking on major significant issues facing rural and agricultural customers. A number of items will be coming out of the committees for full council consideration this coming year.

#### **Education, Chair Nancy Lightfield**

The Council's Education Committee has drafted the following mission:

“Develop and coordinate a plan to provide educational opportunities and information for rural energy consumers, energy professionals and service providers in collaboration with the Rural Energy Management Council (REMC).”

The Committee will be working to build educational resources and structures by developing coordination among new and existing educational systems that have a focus on the educational issues of concern to the Council. Appendix F, “Education Committee's Primary Mission/Projects Chart” has a diagram showing the refined key educational focus areas and their relative relationship to the Committee.

The future objective of the Education Committee is to investigate other agencies and institutions to learn how they might be involved with rural energy education with the intent to identify educational opportunities and key areas needing assistance. The Committees three areas for future action are:

1. Make an inventory of educational materials and opportunities currently available
2. Form relationships with key education groups
3. Affirm direction of Committee through full Council

#### **Energy Conservation, Chair Jeanne Meier**

Committee focus is to gather information regarding practical energy saving technologies or practices which can be utilized on farms. Information will be compiled and disseminated through a variety of materials, in concert with the education committee. Target audience is farmers and the farm professionals who work with them. The committee will work with the University and others to develop cost/benefit analysis worksheets for energy saving systems and other cost saving measures, including farm energy audits and farm wiring upgrades.

### **Other Electrical Phenomena, Chair Chet Rawson, DVM**

The Council's Other Electrical Phenomena Committee has identified four issues to be addressed and placed a priority for those issues;

1. Review recent scientific information of effects of animal exposure to external currents: electric fields, magnetic fields or step potentials (body currents).
2. Effects of animal exposure to low-level impulse and harmonic energy.
3. General power quality impact on farm electronics.
4. Develop a process to evaluate mitigative procedures.

A basic list of publications relative to the effects of animal exposure has been developed for review.

Mr. David Stetzer has met with the committee and discussed his observations on effects of animal exposure to low-level impulse and harmonic energy. Mr. Stetzer also shared a video with the committee in support of his observations. Mr. Stetzer invited the committee to a field presentation of his procedures. Attempts to meet with Mr. Stetzer and develop a video documentation of his procedures have been unsuccessful to date. See attached letter, Appendix G. "September 29, 2000 Letter; Hickmann Law Office to REMC Other Electrical Phenomena Committee".

### **Professional Services, Chair Shannon Clark**

The Professional Services Committee of the Rural Energy Management Council has reviewed three issue statements assigned to this committee by the full council.

Briefly, the three issues considered were; Consumer protection offered farmers by DATCP; the need for a mandatory certification of electricians performing electrical work in Wisconsin and the need for mandatory inspection of all electrical work performed within Wisconsin.

**ISSUE #1 – Review consumer protection programs as related to farms.**

The committee has determined that while farm businesses are not typically protected by DATCP because of their business to business relationships they can seek recourse through the same mechanisms as other businesses. In order for farm businesses to be served by the consumer protection division within DATCP, major overhauls would be required including expanding authority through the legislative process. Other significant obstacles would also have to be overcome including many additional resources. In light of the scope of this issue, and given that recourse is available the committee has chosen to remove this matter from our agenda unless otherwise directed by the full council.

**ISSUE # 2- Review the need for mandatory certification of electricians in Wisconsin**

The committee has reviewed the need for mandatory certification and/or licensing of electricians performing work in Wisconsin. The committee has not formed an official position statement on this issue. There are many external factors to consider when developing a position on this issue. Since Wisconsin currently has a voluntary certification program in place and many existing electricians are seeking this certification, the committee has chosen to defer further action on this

issue until a position statement on the issue of mandatory inspection has been developed.

ISSUE #3 – Review the need for mandatory inspection of electrical work performed. Mandatory inspection of electrical work performed in Wisconsin was another issue assigned to this committee. The committee has produced a position statement that endorsed the funding of two additional electrical inspectors employed by Department of Commerce. There has also been a consensus formed that investigating if a need exists for mandatory inspection should be our highest priority for the upcoming year. This issue also has a significant amount of external factors to consider not the least of which include cost and logistics. The committee has begun to explore the benefits of mandatory inspection and how, if implemented it would affect the other two issues that were assigned to our committee.

All three of the issues we reviewed are extensively related. We realize that we must not only address the issue at hand but also anticipate the impact on other related issues.

#### **Research, Chair Professor Willis Long**

The Council's Research Committee members have focused their initial attention on the council's special project of providing input regarding the selection by the University of Wisconsin of a stray voltage research proposal to receive the State funding.

The following mission statement has been adopted by the Committee:

“The principal role of the Research Committee is to consider and propose research activities that can be expected to bring significant benefits to rural energy users in the State of Wisconsin.

Within the Rural Energy Management Council, the Research Committee will report its activities at the quarterly meetings, soliciting comments and recommendations from the REMC members.

The Research Committee will be in regular communication with other REMC committees, including but not limited to the Stray Voltage and Other Electrical Phenomena committees, in order to:

1. Assure that there are not conflicting or overlapping activities, and
2. Solicit their ideas for research projects that are out of their purview.

The Research Committee will, when appropriate, consider and recommend funding sources and/or cooperative research activities with other organizations.”

## Appendix

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## Appendix B

### **Rural Energy Management Council (REMC) Standing Committees, Issues and Chairperson Assignments**

#### **Education (Chair, Nancy Lightfield)**

- Education, page 17
- Energy Related Financial Assistance, page 36
- Standards for Farm and Primary Systems, page 30

#### **Energy Conservation (Chair, Jeanne Meier)**

- Distributed Generation, page 19
- Utilization of Existing Conservation Technologies, page 20
- What works/What Doesn't , page 21

#### **Other Electrical Phenomena (Chair, Dr. Chet Rawson, DVM)**

- Other Electrical Phenomena, page 22
- What works/What Doesn't, page 21

#### **Professional Services (Wiring/ Safety) (Chair, Shannon Clark)**

- Farm Consumer Protection, page 25
- Professional Liability, page 26
- Regulation and Licensing, page 27

#### **Research (Chair, Prof. Willis Long)**

- Electric Pollution (PECFA-like fund), page 40
- Emerging Technologies for Farm Use, page 31
- Standardized Protocol for Estimating Human Exposure to Electricity, page 32
- UW Research, page 33

#### **Stray Voltage (Chair, Mark Cook)**

- Stray Voltage, page 34
- What Works/What Doesn't, page 21

#### **Utilities (Chair, Wayne Peterson)**

- Network Expansions and Upgraded, page 37
- Timeliness of Service by Utilities, page 38
- Utility Deregulation, page 39

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Education (SC), Safe Energy Use on Farms (WP)

*Roundtable issues: 1. Education on farm safety, 8. Isolation on demand is available now, 11. Definition of stray voltage, 12. Education is the best management approach to avoid stray voltage problems*

**ISSUE STATEMENT:**

(SC) The topic of education is multifaceted, as it will be required for every topic addressed by the Wisconsin Rural Energy Management Council. Some topics are ready to begin or continue education of Wisconsin consumers and others individuals. Other topics will certainly come to the forefront as progress continues within the Council. Immediate topics to address include Farm Safety, Isolation on Demand policy, New Technologies and others.

(WP) Research shows that farming is a hazardous occupation. These hazards include accidents that are caused by unsafe use of electricity and other energy sources such as natural gas or liquid propane. With the widespread use of these resources on the farm, farmers and their families should be aware of the potential dangers involved in using them. By increasing the awareness level of this topic, the number of actual accidents could be decreased.

**SUGGESTED RESOURCES:**

University of Wisconsin (e.g., Biological Systems Engineering, Farm Safety Program)  
Midwest Rural Energy Council  
Department of Agriculture, Trade and Consumer Protection (DATCP)  
Utilities and Rural Electric Cooperatives (RECs)  
Wisconsin Technical Colleges  
Neighboring states  
National Farm Electric Council  
U.S. Department of Agriculture

**COMMENTS:**

(SC) The education committee will have to work with all committees to help them carry out their mission. The education committee should address the idea of a standards as well. They should work to help create definitions of various terms used throughout the Council so as to eliminate confusion. The education committee should also address the issue of educating Council members. Industry jargon and terms should be avoided and placed in language that is understandable by all Council members. They should work with the media and encourage them to report factual accounts of the issues being addressed.

(WP) Specific topics that could be addressed are working safely in the vicinity of overhead power lines, safely using electrical and gas powered equipment, the importance

of maintaining these systems, safe operation of standby power systems, safe operation of electric motors, lightning protection of facilities, etc.

There may be an existing committee addressing these issues at this time, within the DATCP or another organization. If that is the case, it would be beneficial to have a representative from this Rural Energy Management Council to sit on that committee.

## **STANDING COMMITTEE: EDUCATION**



**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Distributed Generation (WP)

**ISSUE STATEMENT:**

(WP) As farmers address effective ways to manage farm waste, means of converting it to an energy source are becoming available. As utilities seek alternative generation sources, farms and allied industries may have opportunities to become sources of distributed generation.

**SUGGESTED RESOURCES:**

U.S. Department of Energy (DOE)  
Electric Power Research Institute (EPRI)  
Iowa Energy Center, BECON facility  
U.S. Department of Agriculture (USDA)  
Chariton Valley Project

**COMMENTS:**

(WP) There are many technical and economic challenges to be considered in the conversion of farm waste to energy including application of the appropriate technologies, optimum energy conversion to electricity and /or heat, management of the on-farm energy system, interconnection of the generator to the utility system, electrical purchasing options, and others.

This topic will require an understanding of manure and other biomass issues, anaerobic processes, electrical system protection issues, electrical metering and pricing issues, and existing emerging technologies such as microturbines, fuel cells, sterling motors, digestion technologies, etc.

**STANDING COMMITTEE:  
ENERGY CONSERVATION**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Utilization of Existing Conservation Technologies (WP)

*Roundtable issues: 9. Energy efficiency and 16-hour lighting, 22. Focus on what works and what doesn't work on farms*

**ISSUE STATEMENT:**

(WP) There continues to be a need to assess existing and emerging technologies and their potential applications to improve efficiency on farms in Wisconsin. Promotion of proven time and energy saving technologies has dropped off in recent years. A reliable and easily accessible resource on these times needs to be identified and promoted to the agricultural community.

**SUGGESTED RESOURCES:**

Energy Center of Wisconsin  
University of Wisconsin – Department of Biological Systems Engineering  
Midwest Rural Energy Council  
Center for Dairy Profitability  
National Food and Energy Council  
Wisconsin Utilities Association  
EnSave Energy Performance, Inc.  
Cornell Agricultural Energy Program (CAEP)

**COMMENTS:**

(WP) An important aspect of this effort would be cost/benefit analyses that should be completed and forwarded to potential farm users.

**STANDING COMMITTEE:  
ENERGY CONSERVATION**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** What Works/What Doesn't (NM)

*Roundtable issue: 22. Focus on what works and what doesn't work on farms*

**ISSUE STATEMENT:**

(NM) I think that the most important issue for the committee to address is point #22. What works and what doesn't. This gets very involved because some methods work in one facility and not in another.

**SUGGESTED RESOURCES:**

**COMMENTS:**

(NM) I sincerely hope that this new committee concept works. It has always been my hope that we could get into the nuts and bolts with this issue of stray voltage. Discuss what actually works and why. Also what does not work and why.

**STANDING COMMITTEE:  
STRAY VOLTAGE  
ENERGY CONSERVATION  
OTHER ELECTRICAL PHENOMENA**

## Wisconsin Rural Energy Management Council Issue Submittal

**ISSUE NAME:** Other Electrical Phenomena (Council coordinator), Electrical Phenomena other than Stray Voltage (WP), Various Electrical Phenomena (SC), Power quality (WP)

*Roundtable issues: 10. Address ground currents, 15. Keep core program of classic stray voltage while addressing other issues*

### **ISSUE STATEMENT:**

(WP) Stray voltage has been defined by the Public Service Commission of Wisconsin, by regulatory authorities from other states, by universities, and the United States Department of Agriculture. These definitions are consistent with one another. Since the early 1980's there has been widespread recognition that stray voltage can be present at levels that affect herd health and production. Also since the early 1980's there have been numerous and repeated allegations that electrical phenomena other than stray voltage is causing herd health and production problems on today's dairy farms. Presently, things of electrical nature that are believed by some to be harmful include: magnetic fields, electric fields, short duration transients (e.g. 1 microsecond), high frequencies (e.g. 100 megahertz), low frequencies (e.g. sub-synchronous resonance or resonance of frequencies below the 60 Hz power frequency), harmonics of the 60 Hz power frequency (e.g. the third harmonic, 180 Hz), and earth currents. While there is no convincing evidence that any of these electrical phenomena are problematic at levels found on dairy farms, dairy farmers are often sold services and mitigation devices to address these concerns. The utilities, the Public Service Commission of Wisconsin, and the Department of Commerce have found that installation of these mitigation devices often make farm wiring systems less safe. In a state with no licensing requirements for electricians and no requirement for electrical inspection in rural areas, this is an issue that deserves attention.

(SC) The term stray voltage has become the melting pot of all electrical related concerns. No longer is the term stray voltage interpreted as it was several years ago. Research related to stray voltage as defined by the PSC several years ago is being misapplied to new concerns such as, ground currents, harmonics, EMF and a myriad of other concerns. The result is a lack of solid communications among all parties due to differing definitions. This issue must be divided into individual definitions. A considerable amount of research has been completed on some of the topics including "classical stray voltage" while other topics have only anecdotal information. The Chairman's Roundtable listed as one of its issues *Keep core program of classic stray voltage while addressing others*. The Roundtable also listed *Address Ground Currents, Definition of Stray Voltage, Research Based Agreement on Impacts* as issues. This demonstrates the need to separate these issues and provide for research, mitigation and education on an individual basis.

(WP) Power quality is becoming an increasingly important issue on farms. This is the result of a change in the type of electrical equipment used on farms. Computers and other microprocessor based equipment that contain electronics can be sensitive to power disturbances, whereas motor and other traditional farm loads are not. Power quality disturbances can be caused by outside sources such as weather, normal utility operations,

or neighboring facilities. These disturbances are also often caused by on farm sources such as unsound wiring, improper grounding, large motors, variable frequency drives, laser printers, and fax or copy machines. As agricultural businesses rely more heavily on computers and electronics for their daily operations, the need to reduce unwanted disturbances becomes apparent. Typical farm equipment that may be sensitive to electrical disturbances includes: computers, cow identification systems, data acquisition equipment, controllers, and electronic timers and clocks. Damage to any of this equipment can be costly and can result in equipment damage, loss of valuable business information, or downtime. If proper precautions are taken, these damages can be avoided.

#### **SUGGESTED RESOURCES:**

Public Service Commission of Wisconsin (Dockets 106, 108 & 115)  
University of Wisconsin System (specifically listed – Department of Biological Systems Engineering)  
U.S. Department of Agriculture (USDA)  
Cornell University  
McGill University  
Minnesota Public Utilities Commission  
National Farm Electric Council  
Midwest Rural Energy Council  
Connecticut Department of Public Utility Control  
Wisconsin Utilities Association  
Wisconsin Electric Cooperatives Association  
ASAE, American Society of Agriculture Engineers  
IEEE, Institute of Electrical and Electronics Engineers  
Wisconsin Dairy Farmers  
Wisconsin Electric Trades Council  
Electric Power and Research Institute (EPRI)  
Edison Electric Institute  
Energy Center of Wisconsin  
There are also many manufacturers that would have information on this topic.

#### **COMMENTS:**

(WP) The issue of electrical phenomena other than stray voltage is, unfortunately, a moving target. Experience has shown that the allocation of resources to address a specific electrical concern often results in modification of the allegation (e.g. a third harmonic concern becomes a fifth harmonic concern). Those making the unsubstantiated allegation need only state that something is problematic. No burden of proof is required. To avoid the pitfalls of this issue, it is recommended that the Rural Energy Management Council adapt the Commission definition of stray voltage and then form two committees to address the electrical concerns of dairy farmers and their “consultants” – a stray voltage committee to discuss and report on issues of stray voltage, and a separate committee to discuss and report on issues related to electrical phenomena other than stray voltage. In doing so the council will ensure that only relevant and important issues (issues with some basis in accepted science) make use of limited council resources.

(SC) All of the various issues should come under the stray voltage committee but must at a minimum be addressed by individual subcommittees. The separation is necessary to assure that only quality information is brought into the process. It may be advisable to create an entirely separate standing committee for issues other than classic stray voltage and allow the stray voltage standing committee to build on the foundation already in place.

(WP) Resolving power quality issues is a well document subject. Information on the topic is readily available.

## **STANDING COMMITTEE: OTHER ELECTRICAL PHENOMENA**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Farm Consumer Protection (SC)

*Roundtable Issue: 18. Fraud on technologies used to address farm electric problems*

**ISSUE STATEMENT:**

(SC) Farms are currently considered as businesses in Wisconsin (law) and therefore lack a consumer protection agency. The majority of Wisconsin farmers are better considered as individuals and should be afforded the same protection as an individual. Wisconsin farmers are being approached by less than scrupulous individuals about a variety of issues and if they fall victim to a consumer fraud scheme they often are unable to seek recovery, usually due to the cost. Wisconsin farmers deserve to know that they can seek out information and if necessary, recovery of damages caused by consumer fraud schemes.

**SUGGESTED RESOURCES:**

- \* Department of Agriculture, Trade and Consumer Protection (DATCP)
- \* Wisconsin Attorney General
- \* U.S. Consumer Protection Agency
- \* Department of Commerce

**COMMENTS:**

(SC) Farm consumer protection is probably best placed in the Wiring/Safety/Power Quality/Professional Service arena. There needs to be a mechanism in place to protect farmers. If the protection can't be arranged through DATCP, which is ideally suited to do this, then alternatives would have to be sought out. At a minimum an educational effort regarding various scams that have taken place and also a fast acting consumer alert process directed at the farm community needs to be developed.

**STANDING COMMITTEE:  
PROFESSIONAL SERVICES**

## **Wisconsin Rural Energy Management Council Issue Submittal Format**

**ISSUE NAME:** Professional Liability (Council Coordinator), Potential liability for those investigating or working on electrical systems (RH)

*Roundtable issues: 4. Electrician reluctance to service farms, 5. Liability and a possible window of "Hold Harmless", 16. Re-instill trust and cooperation, 23. Address litigation and the effect of its threat and reaction*

**ISSUE STATEMENT:**

(RH) The potential liability of electrical contractors, utilities, and others when investigating or working on electrical systems presents a potential barrier to the rural communities access to timely, comprehensive, and quality services. This issue has been raised in several forms within the August 4, 1999 meeting Issues Summary. Certainly the rural community and the aforementioned groups have an interest in finding solutions to the issue, in addition, the insurance carriers and legal representatives for all parties also have an interest/stake in any resolution.

The underlying premise is that it is in the best interests of all parties to resolve whatever problem(s) are identified regardless of their source.

**SUGGESTED RESOURCES:**

(RH) Further, legal counsel available through the State agencies may be useful in providing alternatives.

**COMMENTS:**

(RH) The notion of "giving up" any present or future legal claims is generally not well received by any party. The potential to raise a multitude of "what if ..." scenarios may preclude the ability to establish an all inclusive agreement that is fair and acceptable to all parties. An alternative approach may be to define an agreement for a narrowly defined set of parameters that may be appropriate for a majority of cases. This may provide a starting point that could be expanded to include other situations as the level of trust by all concerned parties increases.

## **STANDING COMMITTEE: PROFESSIONAL SERVICES**



**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Regulation and Licensing (NL), Mandatory Electrician Certification (WP), Mandatory Electrical Inspections (WP), Electrical Certification and Inspection (SC), Improvement of ON-farm wiring (WP)

*Roundtable issues: 2. Farm inspections with credible enforcement, 6. Certification of electricians and continuing education, 13. Inspection of primary (utility) side, 14. Certification and continuing education of utility personnel, 24. Consultant certification*

**ISSUE STATEMENT:**

(SC) The Chairman's Roundtable identified *Farm Inspections with credible enforcement* and *Certification of electricians and continuing education* issues. The two issues are directly related and should be approached as single issue. The area should be broadened so as not to impact only farm related wiring, it should address all wiring in the state. It is often an issue for the agricultural electric consumer when a neighboring residence or occupancy creates an electrical hazard due to improper wiring. The successful implementation of new technologies will require competent individuals in order to realize the maximum benefit. Without consideration of a certification and inspection requirement many of the concerns faced by farm consumers and others cannot be properly addressed due to a lack of understanding by the electrician.

(NL) There are inconsistencies in the licensing, inspection, and deregulation of electrical installations throughout Wisconsin, particularly between the rural and urban areas. Electrical hazards exist in many rural areas because of lax regulations. Uniform regulation and licensing of all electrical installations, based on National Electrical Code (NEC) requirements, should be explored.

(WP) Individuals and/or contractors performing electrical wiring in areas of Wisconsin that presently do not have specific certification requirements should be certified by the state as knowledgeable and experienced. This certification should be mandatory and should only be awarded following the successful completion of exams. Certification should be provided as a result of completion of three stages of knowledge and experience: work under supervision of an experienced electrician, completion of an exam and additional years of work experience, and successful completion an appropriate exam resulting in certification.

(WP) There is a strong realization in the state of Wisconsin that farm wiring is in poor condition. This can be attributed to several factors: the tendency for some farmers to perform wiring on their own, the harsh environmental conditions of farms, inexperienced or unlicensed electrical contractors, and lack or required electrical inspections.

(WP) Current electrical codes do not require electrical wiring inspections of rural Wisconsin facilities. Mandatory electrical inspections of rural facilities would drastically improve safety and should be required before these systems are put into service. The inspections should be performed by state certified inspectors.

### **SUGGESTED RESOURCES:**

- \* International Brotherhood of Electrical Workers
- \* Associated Builders and Contractors
- \* AGC – Wisconsin Chapter
- \* National Fire Protection Agency (Author of NEC requirements.)
- \* Public Service Commission of Wisconsin (Dockets 106, 108, and 115)
- \* Wisconsin Department of Commerce – Electrical Division
- \* United States Department of Agriculture (USDA)
- \* University of Wisconsin – Department of Biological Systems Engineering
- \* National Farm Electric Council
- \* Midwest Rural Energy Council
- \* Wisconsin Utilities Association
- \* Wisconsin Electric Cooperatives Association
- \* Insurance Companies
- \* Municipal Governments with programs in place
- \* Wisconsin Technical Colleges
- \* National Electrical Safety Code (NESC)
- \* Wisconsin Farm Bureau
- \* Energy Center of Wisconsin
- \* National Electrical Contractors Association
- \* Neighboring states: Many states have implemented mandatory certification of persons performing electrical work and they can assist us in development of a program and also provide us with their historical perspective.

### **COMMENTS:**

(NL) This issue fits best under the Wiring/Safety/Power Quality/Professional Services Committee.

(WP) The absence of mandatory certification requirements for electricians in rural areas has resulted in substandard and often unsafe electrical wiring in homes and on farms. The customers paying for electrical services from unqualified individuals are often unaware of the safety implications associated with wiring dangers of improper secondary wiring practices in violation of electrical codes. The electrical complexity of today's farms and the inherent dangers of improper secondary wiring has resulted in the need for a mandatory certification of electricians and electrical contractors. Mandatory certification will help to insure the safe and efficient use of electricity in the homes and agricultural businesses of rural Wisconsin.

(WP) Electrical system inspection is necessary to insure that users of electricity in rural Wisconsin are provided quality electrical services that are safe and meet the state electrical code. Experience has shown that even new dairy facilities wired by state certified master electricians have serious code violations. This requirement would be beneficial and should be pursued in addition to mandatory electrician certification.

(SC) This is an issue for the Wiring/Safety/Power Quality/ Professional Services Committee. There will need to be a subcommittee for this project as it will be a large

undertaking. Upon recommendations being received from this committee there likely will need to be support from other committees including Education and Utilities. The goal the subcommittee should keep in mind is to answer two questions: Is there a benefit to consumers to require mandatory electrician certification and inspection? If the committee feels that substantial benefits exist then they will need to determine the course of action necessary to implement such a program and to what extent. If substantial benefits don't exist then the committee must consider how the existing program can be improved, if at all.

(WP) There are certainly other qualified groups or individuals who could contribute knowledge and experience to farm wiring issues. This is a very serious issue that needs to be addressed.

## **STANDING COMMITTEE: PROFESSIONAL SERVICES**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Standards for farm and primary systems

*Roundtable issue: 20. Standards for farm and primary systems*

**ISSUE STATEMENT:**

(Council Coordinator) Improving the general understanding of what standards are required and what both farm and primary systems practice could help some feel that they are getting the required service or system. Electric codes can be easily be misunderstood and are frequently quoted out of context.

**SUGGESTED RESOURCES:**

Wisconsin Department of Commerce – Electrical Division  
Public Service Commission

National Fire Protection Agency (Author of National Electric Code)

Institute of Electrical and Electronics Engineers (IEEE, Author of the National Electrical Safety Code)

**COMMENTS:**

(Council Coordinator) The Council review of existing standards will help enlighten those not aware of the codes, lead to discussion of existing codes, and hear complaints or of suggested changes that the Council may wish to pass on to the code developers. Both of the major electric codes are routinely modified to resolve some of the conflicts they are causing or reflect the changes in technology that have been made available since the last writing of the code.

**STANDING COMMITTEE:  
EDUCATION**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Emerging Technologies for Farm Use (RH), (WP)

*Roundtable issue: 17. Explore emerging energy technologies for farm use*

**ISSUE STATEMENT:**

(RH), (WP) Many new technologies designed specifically for farm applications or that could be adapted for farm use are in various stages of commercialization. However, the agricultural community needs good information on the cost and benefit(s) associated with the technology. Further, widespread application of a technology need to have the proper support structures in place for successful application. The support may include targeted education or training, demonstration sites, dealer networks, financing programs, etc. or combinations depending on the particulate technology and state of development.

**SUGGESTED RESOURCES:**

Many organizations currently exist to support technology transfer including:

U.S. Environmental Protection Agency (EPA) – AG Star Program

U.S. Department of Energy (DOE) – Vision 20/20

University of Wisconsin System

New York State Energy Research and Development Authority

Iowa Energy Center

Energy Center of Wisconsin

Midwest Rural Energy Management Council

All of the above organizations represent potential collaborators and sources of information. Please note this is only a partial listing of the resources that are available.

**COMMENTS:**

(RH) (WP) The R&D Standing Committee is the likely home for this issue. Priorities need to be established for what technologies should be explored and to what extent. Further, mechanisms/information sources need to be established to get “early notification” of technology development.

The Education committee will need to be apprised of what education-related efforts need to be initiated as part of the infrastructure development.

In many cases, the information may already be available and the real task of the committee will be to judge the relevance to Wisconsin farm communities and what packaging/presentation of the material is most appropriate. In other instances there may be a need to encourage collaboration among several organization/associations to co-sponsor research or development efforts.

**STANDING COMMITTEE:  
RESEARCH**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Standardized Protocol for Estimating Human Exposure to Electricity  
(HA)

**ISSUE STATEMENT:**

(HA) Concerns about the effect of low levels of electricity on human health necessitate the development of a standardized protocol for estimating human exposure to electricity. To investigate potential associations between electricity and human disease, a case-control study is needed. A case-control study looks at differences in the incidence of human disease across different exposure groups. Therefore, investigating any potential link between electricity and human disease will require a standard method for estimating the exposure to electricity. The method should be validated by measuring the potential for exposure to electricity in various regions of Wisconsin.

**SUGGESTED RESOURCES:**

University of Wisconsin System

**COMMENTS:**

**STANDING COMMITTEE:  
RESEARCH**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** State Funding for Research to Investigate Problems of Stray Voltage on Wisconsin Farms. (WL)

**ISSUE STATEMENT:**

(WL) The 1999-2001 State Biennial Budget provided the University of Wisconsin Board of Regents with research funding of \$175,000 in FY 2000 and \$175,000 in FY 2001 to conduct stray voltage research. The UW-Madison has been assigned responsibility for organizing and conducting the research, expenditures for which may be made over the current biennium (1999-2001) and next biennium (2001-03). The University is asking the Council to be the primary advisory group to this research effort -- helping to identify research problem areas of greatest significance, and advising on selection of research proposals that might be generated through a research funding proposal call.

**SUGGESTED RESOURCES:**

(WL) The budget allocation of \$350,000 will support direct research project costs. The University, through faculty salaries, space, research libraries and other research infrastructure will also contribute substantially to the indirect costs involved in the research effort. Beyond these resources, research projects may seek cooperation and support from relevant state agencies, industries and farm families.

**COMMENTS:**

(WL) Electrical phenomena popularly referred to as "stray voltage" have been for many years a source of great controversy in Wisconsin's agricultural community. Given the amount of research funding available and the time in which the research must be done, the University cannot address all of the suggested phenomena or their possible effects on animals and humans. The University wishes to rely upon the Wisconsin Rural Energy Management Council to gather input from the various interested parties, and to assist in prioritizing research problems of greatest current importance. In the end, the research projects selected for funding will be a melding of problem priorities, research feasibility, and funding and time constraints.

**STANDING COMMITTEE:  
Initially Special Project for Review of  
Current Stray Voltage Research Funding at UW  
RESEARCH**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Stray Voltage (WP) (LS), Stray Voltage – Can it be eliminated? (SL)

*Roundtable issues: 11. Definition of stray voltage, 12. Education as a best management approach to avoid stray voltage problems, 15. Keep core program of classic stray voltage while addressing other issues, 22. Focus on what works and what doesn't work on farms*

**ISSUE STATEMENT:**

(WP) Stray voltage is a well understood electrical phenomena. It is the result of an electrical code requirement to establish a connection between the neutral conductor of the farm electrical system and the metallic structures of the animal confinement facility. The required connection is for safety reasons. In a properly wired animal confinement facility stray voltage from on and off farm sources will always be present at some level. Levels which may affect herd health and production have been adequately researched and are well understood. Stray voltage investigative and mitigation techniques are also well understood. Stray voltage educational efforts have been ongoing for more than fifteen (15) years. However, for many dairy operators stray voltage remains a mystery. It is often used as an explanation for herd health and production difficulties even though determined to be at levels far below perception. To the detriment of the dairy community, a number of individuals have learned to profit from the misinformation and misperceptions that surround this issue.

(SL) This Council would not be here if it weren't for the stray voltage issue. There are four groups that are involved voluntarily or involuntarily with voltage; power companies, agriculture, commercial and residential (including rural residential). This means that there are 4 groups responsible for stray voltage. It's time to quit hassling over "Do I have stray voltage?" because it seems to come and go depending on weather (ground) conditions and usage. "How much is OK?" because it seems to vary depending on the test day and many other conditions. "What can I do to get rid of it?" It appears there are different procedures that can take place; isolators (power companies and independents), grounding grids, grounding circles, but there is no way of guaranteeing that stray voltage will be eliminated.

**SUGGESTED RESOURCES:**

Public Service Commission of Wisconsin (Dockets 106, 108, & 115)  
University of Wisconsin – Department of Biological Systems Engineering  
U.S. Department of Agriculture (USDA)  
Cornell University  
Minnesota Public Utilities Commission  
National Farm Electric Council  
Midwest Rural Energy Council  
Connecticut Department of Public Utility Control  
Wisconsin Utilities Association  
Wisconsin Electric Cooperatives Association  
Dairy farmers with experience with it



Other State and/or Countries that have different electrical codes and systems  
Electrical engineers  
Local electricians  
Local producers

**COMMENTS:**

(WP) Assignment of this issue to a stray voltage committee will provide a mechanism for determining which stray voltage related items have been properly addressed in the past and which may require additional attention. Those items determined to require additional attention can then be brought back to the council for further consideration. This will narrow the scope of stray voltage matters before the council and provide the council with additional time to address other important issues which impact the agricultural community.

(LS) From the brief introduction that has been presented and my limited knowledge, I feel stray voltage is the big concern!

I am not familiar with what has been done in the past but new enthusiasm needs to be put into this area NOW!

I also feel that farmers who have experienced stray voltage problems need to be sincerely included in our group.

I saw some real hostility expressed at the end of our first meeting. Hopefully I could help us work toward better relationships and some progress on solutions to their concerns.

(LS) There are probably 4-5 committees that could all work on this issue. If this council can solve this issue alone, its credibility will skyrocket. All of the publicity to date has been negative to the power companies, farmers, rural communities and farmer committees. Why? Because no definite solution has been found.

There is a lot of information published, research that has been conducted and articles written. It will be up to this council to wade through the politics, emotions and garbage of the issue and come up with a solution.

**STANDING COMMITTEE:  
STRAY VOLTAGE**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Energy Related Financial Assistance (WP), Electric Pollution (BL)

*Roundtable issues: 7. Brining farms up to current code and money to do so., 19. Low-income loan programs.*

**ISSUE STATEMENT:**

(WP) There are many financial resources available to assist farmers in meeting financial demands such as electricity bills and capital investments in energy related upgrades. Farmers may not be aware of these resources. Improving the awareness level of the various resources and programs that exist at this time may help farmers to remain efficient and competitive in the agricultural industry.

**SUGGESTED RESOURCES:**

- \* Wisconsin Energy Assistance program
- \* WEC (a weatherization program)
- \* ALL utilities
- \* Wisconsin DATCP Farmer Assistance Network
- \* Agricultural lenders including Farm Credit Services FMHA, and banks
- \* Government low interests loans for beginning farmers
- \* Dairy 2020

**COMMENTS:**

(WP) Some improvements and upgrades are capital intensive and financial paybacks tend to be long and/or marginal. Assistance is needed to insure a stable and diverse base of agricultural producers in Wisconsin. There is a need to support the farm operations in Wisconsin since they are a important part of the economy and provide employment in rural communities, among other reasons.

(BL) Is there a possibility of using a PECFA like fund to fund stray voltage clean-up and/or repair.

**STANDING COMMITTEE:  
EDUCATION**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Network Expansions and Upgrades (RK), Rural residential: How much is too much for the existing network? (SL)

**ISSUE STATEMENT:**

(RK) The building of a new transmission line is getting a lot of attention in my part of the state. Process of determining the need for the line and location of the line is being challenged by some as not addressing the concerns of the rural customers along the line. I am also aware of the fact that urban sprawl has more power being drawn off of older lines that were built a number of years ago for only a few farms. It would be timely to do a review of the process used to determine the need for upgrading or building new transmission and distribution lines with the interest of what protections exist in the process to serve rural residents.

(SL) I am sure that somewhere along the line, there is a limit as to what existing electrical network can handle. What is that limit? What is being done if and when we hit that limit? Does overloading take place? What happens to an overloaded line? *(System reliability)*

**SUGGESTED RESOURCES:**

- \* Utilities
- \* Electrical engineers
- \* Public Service Commission of Wisconsin

**COMMENTS:**

(RK) Most of you are probably aware of the recent controversy. The ag press has been doing a good job of sharing the intense emotions felt by some over the current Duluth – Wausua transmission line proposal. This debate is having an intense impact on community relations and breaking down many relationships. Maybe the process could be modified to ease the impact on the local communities divided over the debate.

(SL) It just seems to me that we keep building and adding to the system. Were the systems “overbuilt” years ago when they were installed? Can they handle these new loads correctly? It’s a question in my mind.

**STANDING COMMITTEE:  
UTILITIES**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Timeliness of Service by Utilities

*Roundtable issue: 3. Timeliness of service by utilities*

**ISSUE STATEMENT:**

(Council coordinator) I am not aware of the specific concern that resulted in this issue being added to the Roundtable's list of issues. Investor owned and municipal utilities service activities are covered by Public Service Commission's Docket 113. The rural electric cooperatives are not regulated by the state, but typically follow industry standards for timeliness of service.

**SUGGESTED RESOURCES:**

Public Service Commission (Docket 113 & 115)  
Wisconsin Electric Cooperatives Association  
Wisconsin Utilities Association  
Concern farmers

**COMMENTS:**

(Council coordinator) A review of industry standards, actual farm experiences and Public Service Commission's Docket 113 may be all that is required. If the standards within Docket 113 are not being addressed by investor and municipal owned utilities, a regulator response by Public Service Commission would be required. If problems exist with the rural electric cooperatives, may be another approach will need to be considered.

**STANDING COMMITTEE:  
UTILITIES**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Utility Deregulation (JM)

**ISSUE STATEMENT:**

(JM) Summary from a TVA Rural Studies program report;

“As with the airlines, banking, and telecommunications, deregulation of electric utilities will likely affect rural areas significantly and in different ways than larger, urban areas. Contrary to the popular notion that deregulation always leads to cheaper, more efficient service, deregulation in these industries has resulted in some rural areas paying higher prices, receiving lower quality service, or in losing service altogether. The same could prove true for electricity if policy makers fail to take into account several key factors.

Changes in regulations inevitably lead to winners and losers. Unfortunately based on past experience and current conditions, rural areas appear more vulnerable to the adverse effects of deregulation and less likely to capture its benefits. Obviously, results will vary – even across rural areas.”

**SUGGESTED RESOURCES:**

- \* California Public Service Commission’s Energy In Agriculture Program resources like publication NEW OPTIONS FOR AGRICULTURAL CUSTOMERS
- \* Department of Energy, Energy Information Administration’s Electric Power Industry Restructuring study group
- \* Federal Energy Regulatory Commission
- \* National Association of Regulatory Utility Commissioners
- \* National Council on Competition and the Electric Industry
- \* National Rural Electric Cooperative Association (NRECA), example is NRECA Report by TVA Rural Studies program THE CONSEQUENCES OF CHANGING ELECTRICITY REGULATIONS FOR RURAL COMMUNITIES IN KENTUCKY
- \* Public Service Commission of Wisconsin
- \* UW Electrical Engineering Department (Prof. Chris DeMarco or Prof. Fernando Alvarado) and Business College (Prof. Susan Straton)

**COMMENTS:**

(JM) Discussion of deregulation continues at both the national and state level. The rural community needs to keep current and potentially respond to protect its interest. In a deregulated environment, rural consumers are going to need to learn much more about the nature of their utility service. Similar educational programs as those in California, Pennsylvania and Kentucky will be required. Utility standing committee would be appropriate group to study this issue.

**STANDING COMMITTEE:  
UTILITIES**

**Wisconsin Rural Energy Management Council  
Issue Submittal**

**ISSUE NAME:** Electric Pollution (PECFA-like fund) (BL)

*Roundtable issue: 7. Brining farms up to current code and money to do. 19. Low-income loan programs.*

**ISSUE STATEMENT:**

\*

**SUGGESTED RESOURCES:**

\*

**COMMENTS:**

(BL) Is there a possibility of using a PECFA-like fund to fund stray voltage clean-up and/or repair.

**STANDING COMMITTEE:  
RESEARCH**



To promote safe, efficient and cost effective energy usage in Wisconsin rural communities.

**Rural Energy Management Council**

**Richard Hackner - Chair**  
Associate Director  
Energy Center of Wisconsin

**Council Members**

**Dr. Henry Anderson**  
Chief Medical Officer  
WI Dept. Of  
Health & Family Services

**William Brey**  
Dairy Producer & President  
Wisconsin Farmers Union

**Shannon Clark**  
General Manager  
Richland Electric Cooperative  
Past President,  
Midwest Rural Energy Council

**Mark Cook - Director**  
Rural Electric Power Services  
(REPS) Program  
WI Public Service Commission

**Joe Hertel - Program Manager**  
Safety and Buildings  
WI Department of Commerce

**Dave Jenkins - Manager**  
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**Bob Lentz**  
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**Nancy Lightfield - Coordinator**  
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**Dr. Willis Long - Professor**  
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Development / Electrical &  
Computer Engineering Dept.  
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**Daryll Lund - President & CEO**  
Community Bankers of WI

**Neil Matthes - President**  
Duck Creek Engineering, Inc.

**Jeanne Meier - Director**  
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**Wayne Peterson - Vice-President**  
WI Public Service Corporation

**Dr. Chet Rawson, DVM**  
Past President  
WI Veterinary Medicine Assoc.

**Reuel Robertson - Dairy Producer**

**Lois Swain - Dairy Producer**

**Position Statement Number   1**

**Title:** Endorsement of the Department of Agriculture, Trade and Consumer Protection's response to the Department of Administration's Request for Information (RFI) on the Public Benefits Program dated July 18, 2000.

**Date Presented to Council:** November 7, 2000

**Date Action taken by Council:** November 7, 2000

**Presented to Council by:** Ben Brancel, Secretary Department of Agriculture, Trade and Consumer Protection (DATCP)

**Action taken by Council:**

Voice vote taken: 15 Approved; 0 Disapproved; 0 Sustain; 3 Absent members

**Summary of Discussion:**

Council does not want to restrict nature of any future communications with the Department of Administration or actions they may consider but desired stronger language in statement. Endorsement accepted with the one edit: Changed 'should consider:' to 'should provide:'.

**Position Statement:**

The Rural Energy Management Council endorses the Wisconsin Department of Agriculture, Trade and Consumer Protection's response to the Department of Administration's Request for Information (RFI) on the Public Benefits Program. Specifically we feel the Department of Administration's public benefits program should provide consider:

1. A mechanism to obtain rural and agriculture opinions and insights into their program development, implementation and review process.
2. Statewide wiring assistance that will give farmers the ability to transition into the use of new and existing technologies in an effort to make them more competitive in the marketplace. This assistance would also promote energy conservation and safety concerns for farms or low-income residents.

**Background:**

The Department of Agriculture, Trade and Consumer Protection's response to Department of Administration is attached.

The council is concerned that the current process will result in agriculture and rural residents being underserved in the public benefits program unless a more inclusive approach is taken. The most effective rural development will involve those most directly impacted.

Building wiring and other secondary wiring affects the safety and reliability of the power system to the final user. In many cases, before the adoption of energy saving electronics or methods can be done, the wiring needs to be upgraded. An example is low-income homes with the old knob and tube wiring do not qualify for insulation assistance until the wiring is upgraded. Another would be the delaying of the installation of a variable speed motor and controller for the milk vacuum system until the wiring is upgraded to handle the needs of the new system.



State of Wisconsin  
Tommy G. Thompson, Governor

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Department of Agriculture, Trade and Consumer Protection  
Ben Brancel, Secretary

August 4, 2000

John Marx  
Administrator  
Division of Energy and Public Benefits  
Department of Administration  
PO Box 7868  
Madison, WI 53707-7868

Dear Mr. Marx:

We are grateful for an opportunity to respond to the July 18, 2000 Request for Information (RFI). Enclosed you will find Department of Agriculture, Trade and Consumer Protection's response to the RFI on Department of Administration's Public Benefits Program.

The Department requests that in the process of further development of the programs and administration of the Public Benefits Program the Department of Administration take a more proactive role to include organizations that represent agricultural producers, agribusiness representatives, and rural residents so that strong agricultural and rural program components are part of the final package of programs. The Department is concerned that the current process will result in agriculture and rural residents being underserved in the public benefits program unless a more inclusive approach is taken.

Please contact David Hansen if you have any questions or need any further assistance in this matter. David can be reached at 608-224-5055; e-mail [david.hansen@datcp.state.wi.us](mailto:david.hansen@datcp.state.wi.us); or in care of the REPS program, PO BOX 8911, Madison, WI 53708-8911.

Sincerely,

Ben Brancel  
Secretary

cc: Michelle New, Newgroup  
David Hansen, REPS Program Manager



# Department of Agriculture, Trade and Consumer Protection

## REQUEST FOR INFORMATION

For the

Department of Administration, Division of Energy

### Introduction

This document is being submitted by the Department of Agriculture, Trade and Consumer Protection in response to the Request for Information issued July 18, 2000 under the Public Benefits Program. The Department requests that in the process of further development of the programs and administration of the Public Benefits Program the Department of Administration take a more proactive role to include organizations that represent agricultural producers, agribusiness representatives, and rural residents so that strong agricultural and rural program components are part of the final package of programs. Of special importance is the need to ensure that potential organizations that serve rural and agricultural interests are invited to participate as program administrators. The Department is concerned that the current process will result in agriculture and rural residents being underserved in the public benefits program unless a more inclusive approach is taken.

Targeted funding and specialized programs are needed to provide rural areas with the ability to advance, upgrade, and improve upon their energy resource conservation. Promotion of modern technology in areas of conservation, renewable energy and safety are necessary, and farmers and rural consumers should have equal access to these new opportunities. That is why we are stressing the importance of taking action to provide access to farmers and rural residents to the types of programs the public benefits law intended so that they enjoy benefits equitably with their urban counterparts.

Under s.16.957(2)(b)1.a, Wis. Stats., the department shall give priority to proposals directed at **the sectors of energy conservation or efficiency markets that are least competitive** and at **promoting** environmental protection, **electric system reliability** or **rural economic development**. (Emphasis added).

### Need for Agricultural and Rural Program Emphasis

Economic and financial pressures on Wisconsin's agriculture and rural population are unprecedented. Low prices for commodities and goods, coupled with higher operating costs are squeezing margins and incomes for farmers. The depressed farm economy also adversely affects rural residents as direct stakeholders in rural communities.

Rural residents tend to have lower incomes and therefore have limited resources as well<sup>1</sup>. With limited resources, farmers are constantly seeking methods and techniques to improve and increase the profitability of their operations. Their limited resources and those of rural residents can be stretched through reduced energy needs and reduced energy consumption.

As farms increasingly expand and modernize in order to survive, farmers inevitably face the barriers of tying old infrastructure with new. In most cases, total rewiring and upgrades would be the most energy efficient solution. Farms and rural residents need to be included in the ever-growing trend to ensure safe energy management and at the same time promote conservation and alternative renewable resource practices. The Public Benefits Program should focus on improving rural energy services, which will require specialized program design and administration compared to metropolitan and easier to serve market segments.

### **What This Integral Program Element Can Accomplish**

The DOA through its administration of the Public Benefits Program has been given the opportunity and obligation to serve more of the rural population, and to promote Wisconsin as one of the first states to encompass all of its residents when addressing energy conservation and safety. This effort will require ensuring that key potential service providers and administrators are involved in the RFP process that is scheduled in the near future under the Public Benefits Program.

### **Farming Population Needs**

Dairy farmers are among the highest users of energy in the farm sector (See Attachment 1, Estimated Energy Use in Minnesota Agriculture). Energy costs per cow have been estimated by the Center for Dairy Profitability in a 1998 study on Wisconsin dairy farms<sup>2</sup>. The following table provides a break down of milk production income per cow verses the utility costs per cow, based on herd size categories.

Herd size	Net farm Income/cow	Total costs Average/cow	Utilities costs per cow		
			Average	Maximum	Minimum
50 cow or less	\$694	\$2,577	\$71.11	\$191.73	\$10.78
51 to 75	\$800	\$2,714	\$67.95	\$185.25	\$19.03
76 to 100	\$862	\$2,860	\$66.94	\$129.74	\$27.24
101 to 150	\$742	\$2,990	\$65.02	\$106.86	\$23.77
151 to 250	\$631	\$2,977	\$54.35	\$106.86	\$32.13
More than 250	\$607	\$3,346	\$49.24	\$100.48	\$10.33

<sup>1</sup> State of Wisconsin Department of Administration and Department of Commerce, "2000 Consolidated Plan: For the State's Housing and Community Development Needs" February 11, 2000

<sup>2</sup> Gary Frank and Jenny Vanderlin, "Milk Production Costs in 1998 on Selected Wisconsin Dairy Farms" July 23, 1999 plus notes from a presentation to the REMC, April 27, 2000.