December 20, 2002

Mr. William McCarty, Chairman
Indiana Utility Regulatory Commission
302 W. Washington Street, Suite E-306
Indianapolis, Indiana 46204-2764

Dear Mr. McCarty:

Enclosed is Jackson County REMC's response to the commission's data request concerning electric service quality.

Sincerely,

JACKSON COUNTY REMC

Jed Wheatley
General Manager

Enclosure

Electric Service Quality Rulemaking
Data Request

Reliability:
The area of reliability will include the examination of sustained outages, momentary outages, restoration of service following a sustained outage and power quality.

1. Is your utility participating in any EPRI (or other organizations) research projects relating to reliability or other service quality issues? If yes, please describe the project(s) you are involved in and how it relates to reliability issues addressed in this section of the data request.

   No.

Service Interruption and Outages

Sustained Outages:

1. How does your utility identify an outage? At what point does your utility consider an outage a "sustained" outage versus a "momentary" outage?

   A sustained outage is generally one considered to be greater than one (1) minute.

2. Please describe the response process once an outage is identified. Has your response process changed in any way over the past 5 years? Please explain those changes. What follow-up is done after service has been restored to determine that an individual customer, once again, has electric service?

   During normal business hours the dispatcher will contact the appropriate crew by phone, pager, or radio notifying them of the situation. After hours, our answering service will contact the duty crew by phone, pager, or radio notifying them of the situation. The crew will then travel to the site and restore service.

   Follow up phone calls have been initiated to consumers on the end of a line after a line tap has been restored to service. This not always occurs depending on several factors, time of outage, weather conditions, and cause of outage.

3. Under what conditions or circumstances does your utility report an outage to the Commission? Since January 2001, how often have you reported an outage to the Commission? How often did you provide updates on the outage and the restoration of service?

   IURC Rule 21: "… Whenever the service is interrupted other than intentionally in a major division or community the utility shall notify the Public Service Commission by telephone at the earliest practicable moment following discovery, giving the above information and confirming by a written report within five days thereafter, and shall submit such additional reports as the commission may require." --- There have been no such reports since January 2001.

4. Outages resulting from major weather events can somewhat be anticipated, please describe the weather event outage response from the time a weather situation is known or anticipated to exist through the time the last customer is brought back online. Please describe any facilities and/or procedures that are specifically used in anticipation or during a major weather event in case of widespread outages. Are the facilities and/or procedures different depending on the type of weather event, for example tornado conditions versus a potential ice storm? Are there non-weather related outage situations when these facilities and/or procedures are used?

   Predicting the extent of damage that may be caused by a major weather event is nearly impossible. Line crew personnel have been instructed to make themselves available in the event of an impending storm.
   We have an "Outage Restoration Policy" which details specific responsibilities for management and staff in the incidence of a major weather event.
   The Outage Restoration Policy is written to accommodate any type of weather event or non-weather related outage situation.

5. What other government (local, state, federal) agencies or organizations **must** your utility interact or communicate with during outage situations? Specifically, are there other agencies or organizations that your utility is required by law or regulation to report to or communicate with during outage situations?

   There are no other agencies.

6. Are there other agencies, organizations or companies that your utility typically interacts or communicates with during critical outage situations? Please describe the circumstances and types of interactions or communications that occur.

   Cinergy, our wholesale power supplier is contacted frequently during outages. Their control center is contacted whenever we need to transfer load to or from adjacent substations.

   We work closely with state and local law enforcement agencies on vehicle accidents involving our facilities. Closing roads so line crews can work on lines or poles safely is also coordinated with them.

   State and county highway departments are contacted to clear right-of-way (trees) or roads (snow) to aid in service restoration.

   SMP, underground locating company, may be contacted to provide locates for pole replacements in emergency conditions.

   If extra crews were needed, we would contact our contractors and Indiana Statewide REC.

7. What is the policy concerning the use of service crews from other utilities? Has the availability of crews or the willingness of other utilities to make crews available become more limited in recent years? Are non-utility crews being used or considered more routinely than requesting crews from neighboring utilities?

We have used crews from other cooperatives in the past for major storm restorations, but not since 1996. If outside crews become necessary, we would first call on our local contractors that we use regularly, and then upon Indiana Statewide REC, who coordinates crew sharing.

8. What type of information does your utility typically gather/report/analyze regarding sustained outages? How is this information used in the utility?

   Date/Time, Outage Location, Outage Type, Event Type, Event Cause, Duration, # Affected, and Employee.
   We use this information to prepare outage reports, analyze outages by several different parameters, and to gather historical outage information for analysis.

9. Does the utility attempt to quantify the financial costs of outages to customers and local communities? If so, please explain how this is done.

   No.

Momentary Outages:

1. Does your utility identify and track momentary outages? How is a momentary outage identified and/or defined?

   No.

2. What type of information does your utility typically gather/report/analyze regarding momentary outages? How is this information used in the utility?

   Our automated meter reading system (AMR) does have the ability to capture momentary outages. The AMR system does not have system wide coverage; therefore, momentary outages for all consumers are not available. We do use this system to indicate or confirm lines that have been experiencing momentary outages so that we can take corrective measures.

3. Other than the duration of the outage, are there operational or characteristic differences in a sustained outage versus a momentary outage?

   Yes, sustained outages generally are easier to identify the problem area or piece of equipment. Causes of momentary outages are hard to identify and locate. It takes considerable time to pinpoint an exact cause of a momentary outage on long rural lines.

<u>Performance Measures and Statistics</u>

1. Typical reliability performance statistics include SAIDI, CAIDI, SAIFI, etc. Does your utility routinely calculate these statistics? How is each of the variables in each of the calculations defined? Are these statistics calculated as part of your outage management system or through some other means?

   Yes, we calculate SAIDI, CAIDI, and SAIFI.
   CAIDI- Customer Average Interruption Duration Index-Represents, on average, the interruption duration for electric customers who actually experience an interruption.

SAIFI = System Average Interruption Frequency Index – Represents, on average, the number of times an electric utility customer may be interrupted during the year.

SAIDI = System Average Interruption Duration Index – Represents, on average, the duration of interruptions when spread across the entire electric customer base.

They are calculated from our in-house outage database.

2. Are there other reliability statistics your utility calculates? What are they? How are they calculated? How are the variables used to calculate them defined? Are these statistics calculated as part of your outage management system or through some other means?

   No

3. Does your outage management system calculate other reliability statistics that your utility does not routinely review? What are these statistics? How are they calculated? How are the variables used to calculate them defined?

   No

4. Reliability statistics are often calculated excluding storms or other major outage events. What are the advantages and disadvantages to excluding storms or other events? Do reliability statistics typically calculated by your utility include or exclude storms or major outage events? If these events are excluded, how do you determine when to exclude an outage event? How do you define the different levels of outage events?

   We typically include "major outage" events, but categorize them separately. Historically, we have defined a "major outage event" as one that took multiple days to restore service to all consumers.

5. How do service territory differences (e.g., rural versus metropolitan, high industrial concentration versus more residential) affect the calculation of reliability statistics? What statistic, if any, is most indifferent to the service area characteristics, in other words, what statistic(s) would most likely allow relevant comparisons among a wide variety of utility types?

   In rural areas the response time of crews to outage locations is greater due to increased distance of travel and service territory. Longer lines in rural areas lead to increased patrol times on lines to find the cause of the outage (Increases CAIDI and SAIDI).

   It would be hard to compare reliability statistics among all utilities when their service areas and system configurations are so different.

6. Can the calculation of reliability indices be standardized among Indiana utilities? Please explain how that might be done.

I don't see why the calculations can't be standardized among utilities. A set of specific detailed parameters would be needed. Software changes would need to be made to accommodate this.

7. Should utility size or other characteristics be taken into consideration when evaluating the reliability statistics from a company?

   The size of a utility could be a minor consideration in reliability statistics, but probably not that significant. Type of utility , MUNI, Coop, or IOU would be significant.

8. Are performance evaluations and the resulting compensation for any individual, groups of individuals or divisions of the utility tied to reliability statistic results? Please explain what reliability statistics are used and who is evaluated based on the results of those statistics. How are the acceptable levels of performance set and what are those levels?

   Not currently. We have tied bonus pay to consumer outages, but found it to be unsatisfactory since natural forces play such a dominant role.

Worst circuits

In order to prevent utilities from having "pockets" of poor service reliability, some state commissions require utilities to report the top 10-25 worst circuits and then address those problem areas.

1. Are there areas of your utility's service territory that are more prone to outages, either sustained or momentary, or other reliability problems, such as power quality, than others? How does your utility address this type of problem?

   There are areas in the system that could have a greater potential for longer outage times due to accessibility or circuit configuration (radial vs. loop). We typically attempt to build lines that are accessible at all times when installing new or rebuilding lines. Economics and property owner opposition often prevent this from occurring.

2. What are the advantages of identifying the top worst performing circuits of a utility?

   Could give you an idea where your maintenance dollars need to be concentrated.

3. What are the disadvantages of identifying the top worst performing circuits of a utility?

   Might identify lines that may require more maintenance than others, but hard to justify due to number of connected consumers and generated revenue.

Power Quality

1. Based on your utility's interaction with its customers, is power quality an important concern of your customers? What aspects of power quality are of particular concern (voltage sag, high or low voltage, voltage spikes and transients, flickers, surges, harmonics, other)? Please explain. Are there typical types of customers or customer classes that voice a greater concern about power quality than others? Please explain. How has your utility addressed these concerns?

All aspects of power quality are important to our customers.
Flicker and voltage spikes seem to be the most common concern we receive from our consumers.
Industrial customers tend to be affected more by "momentary outages" than residential customers. The types of equipment involved at most industrial locations are more sensitive to voltage fluctuations and power quality issues.
We have several pieces of recording instruments that we install at customers locations to document and verify their concerns about power quality.

2. Does your utility have any program or plan in place specifically addressing power quality issues? Please explain. How have these programs or plans changed over the last five years?

   We have several pieces of recording instruments that we install at customers locations to document and verify their concerns about power quality.

3. Does your utility collect/track any type of power quality related data? If so, what data is collected and how is it used by the utility?

   We record and keep on file any recordings we have done for our customers. Recording instruments usually capture voltage and current, some instruments also capture KW and power factor. We use the data to determine whether adequate service is being supplied and whether any corrective actions are necessary.

4. Is power quality data used as a performance measure for compensation for any person(s), groups and/or divisions in your utility? Please explain what data is used and why.

   No

<u>Leading Indicators</u>
While it's important to restore service as quickly as possible following an outage, when practical, it is better to prevent the outage from occurring.

1. What are good leading indicators of possible service outages? Does your utility routinely monitor specific aspects of the electric operations or system with the goal of preventing service outages? What do you monitor and why?

   Failing equipment such as insulators, poles, etc, could indicate that a section of line has a higher probability of future outages. We do investigate lines that have had multiple outages to determine what can be done to prevent additional occurrences.

2. Does your utility have a routine inspection and maintenance plan/procedure in place designed to prevent the possibility of service outages? Please explain the plan/procedure.

   We have several periodic maintenance programs in place to identify potential problem areas:
   - Pole and Line Inspection
   - Underground Facilities Inspection
   - Recloser Maintenance program
   - Switch Maintenance program

Hazard Recognition program
Survey meter reading/line patrol

3. Has this plan/procedure changed in the past five (5) years? Please explain the changes and why they were made.

   Pole Inspection program was updated two year ago to more closely follow RUS guidelines. Switch Maintenance program was initiated this year in response to a few failed switch installations.

4. Has your utility made any study or analysis as to how successful your inspection and maintenance plan/procedure has been in preventing service outage? Please explain.

   Switch Maintenance program found several instances of damaged equipment that could have resulted in outages if not found during maintenance.

5. Does your utility have a vegetation management plan/procedure in place designed to prevent the possibility of service outages? Please explain the plan/procedure.

   We have a vegetation spraying program and tree trimming program that runs on a four (4) year cycle. We send letters to affected account holders to announce the upcoming activity. We use contractors for trimming and our own personnel for spraying.

6. Has this plan/procedure changed in the past five (5) years? Please explain the changes and why they were made.

   We have recently begun using own employees for vegetation spraying in order to get a better job, both in terms of vegetation control and proper application. Otherwise, our procedures have seen only minor changes over the last several years.

7. Has your utility made any study or analysis as to how successful your vegetation management plan/procedure has been in preventing service outage? Please explain.

   Not specifically, but feel our plan reduces the number of outages from downed trees and limbs.

8. Does your utility identify/track the age of equipment used in the production and delivery of electricity to the customer? Why or why not?

   We do retain the age of certain equipment in our database, poles, meters, and transformers.

9. Could equipment age be used as a leading indicator of potential service outages? Would this be an effective indicator of potential service outages? Please explain.

   Age of a piece of equipment does not always indicate its condition. It might indicate areas of concern that would require further investigation.

10. Does your utility track equipment used in the production and delivery of electricity to the customer to identify equipment that tends to have a premature or unpredicted failure rate or degraded performance level? Why or why not?

    No presently known failures of specific equipment.
    If there are known types of equipment or manufactures of equipment that have poor performance records, then that particular piece of equipment could be monitored for future problems and corrective measures taken.

11. Could the identification of equipment with premature or unpredicted failure rate or degraded performance level be used as a leading indicator of potential service outages? Would this be an effective indicator of potential service outages? Please explain.

    Could be used to predict potential outages.
    Would be **extremely** difficult to administer a program to track **ALL** equipment by manufacturer. Not sure that the amount of collected data and the inherent problems with maintaining that data would prove to be advantageous in minimizing outages.

12. Are there any other methods (e.g., infra-red inspections or radio frequency inspections) you carry out to help maintain and/or improve system reliability? Please describe the methods you use.

    Our power supplier, Cinergy, periodically does infra-red inspections on the substations that serve our load. They do inspect our equipment inside and directly outside the substations. Underground facilities equipment and terminations are periodically heat checked.

Setting Performance Standards

1. Does your utility set any type of performance standards relating to service reliability and quality as a method of determining employee and/or division performance for compensation purposes? What are these standards? How are they measured? How do they affect the overall compensation for a(n) employee and/or division?

   No.

2. Could similar standards be set by the Commission to help evaluate and compare the service quality of Indiana utilities? Please explain why or why not.

   I can see some potential difficulty in trying to compare performance standards to all utilities. By type would be a better comparison.
   Too many situations arise that are out of the control of the utilities and can not be anticipated or designed to prevent.

3. If these standards are not appropriate to help evaluate and compare the service quality of Indiana utilities, please suggest some standards that would be appropriate.

   We have tried to discover a yardstick for an objective and suitably accurate measurement of service quality, but have not been successful.

4. To date there has been little or no use of I. C. 8-1-2.5 by utilities to propose performance based rates that would tie utility incentives/penalties to reliability and other measurable performance criteria. Is there a problem with how I. C. 8-1-2.5 is structured that makes it inappropriate or ineffective as a vehicle for performance based rates? Please explain. From your perspective (utility, customer group, other) what are the pros and cons of performance based rates?

   Performance based rates are a concept that seem to have little relevance for a customer owned and operated utility.

   Conceptually, we can see that it would be impossible to "normalize" performance statistics because of uncontrollable factors, e.g. weather, terrain, economic and cultural differences.

   Pros for PBR are that utilities may be more inclined to put dollars back into plant to improve reliability.

   Cons for PBR are that utilities that have poor performance records according to standards may not be financial able to spend dollars on maintaining plant if substantial penalties are imposed. Would penalize the utilities that are making every attempt to improve reliability but may need some time to see significant result from their actions.

Safety:

1. Is your utility participating in any EPRI (or other organizations) research projects relating to safety? If yes, please describe the project(s) you are involved in and how it relates to safety issues addressed in this section of the data request.

   The company safety director is actively involved in the National Utility Training & Safety Education Association and is a member of the distribution committee. He has served as an officer on this committee. This organization continually evaluates existing and proposed safety regulations for improvement. Consumer/public safety is an on-going effort. Topics discussed in the last year include: CDL regulation changes, OSHA record keeping, SPCC plans and Ergonomics.

2. What actions to ensure public safety are taken, both by the utility and other emergency resources, when a live power line has come down? Please explain the activities from the time a live power line is reported down until it has been repaired or rendered safe.

   <u>Part 1</u>
   Educate the public on this type of hazard.
   Assist in training emergency responders to guard these situations.
   Utility personnel guard, isolate, repair or de-energize downed live lines.
   Install fusing or circuit breakers to open the line during these events.

   <u>Part 2</u>
   Report of downed line is received.
   Emergency personnel are instructed to keep everyone away from line.
   Crew is dispatched to location.

Crew visually observes protective line devices on way to scene.
Crew arrives at scene, surveys the scene for safety, assists in guarding or isolating the line.
Line is tested, de-energized, grounded and then repaired.

3. In situations where live power lines may be down in multiple locations, how is public safety ensured?

   Public safety is not ensured until a REMC employee is on site to take control over the situation. We advise any emergency personnel, and the general public, who may be on site to stay clear of all lines and consider them energized until an REMC representative can arrive.

4. In critical weather situations where widespread areas may experience outages or down power lines, is there any central coordination (beyond each individual utility) of the restoration of service and the repair of down lines? Please explain who does the coordination and what organizations are involved.

   The Operations & Engineering Manager is ultimately responsible for coordinating the restoration of service. Contact with law enforcement agencies to advise them of estimated response times and the potentially hazardous situation.

5. What could be done to improve the public awareness of the hazards that may exist as a result of weather related power outage? How does your utility inform customers of these types of hazards?

   Public awareness and education is critical to ensuring the safety of the general public.
   We frequently include a safety message concerning the hazards of downed power lines in our monthly newsletter distributed to all members. Educational programs have been conducted in the local schools to emphasize the dangers involved. Meetings have been conducted with local fire departments to educate them on the hazards involved with downed power lines.

6. What is the most typical accident involving utility facilities that happens to utility personnel and to non-utility/customers/the general public? What has your utility done to help try and alleviate these types of accidents?

   Back injuries are the most typical among cooperative employees. We have increased awareness of this situation, encourage use of mechanical equipment for lifting or moving heavy items and implemented a back safety program. This has lowered our injury frequency rate.
   Vehicles hitting utility poles are by far the most common accident involving the general public. When rebuilding lines we attempt to get the poles set farther from the roadway. We frequently encounter opposition from property owners.

7. What is the current average term of employment for service and line crew personnel? Does your utility provide on-going safety training for your line and service crews? Please explain the types of training these crews receive.

12.3 years. Yes, job training and safety are on-going for an employees entire career. We currently train on 52 topics annually. Topics include: OSHA, DOT, EPA, Equipment, safety and health and job specific items.

8. Commission rules currently require utilities to report accidents resulting in death. Do you think this rule provides useful information to the Commission? Please explain. Do you have any recommended changes that would make this rule more useful? Please explain.

   The information would be useful if it was reported in detail and in summary fashion back to all utilities.

9. What other organizations or agencies must you report to when there has been an accident, injury or fatality? Please explain what must be reported, under what circumstances and in what time frame from when the incident occurred.

   OSHA - Report ASAP - Maximum allowable reporting time is within 8 hours of accident. Must report: Employee fatality(s) (includes on the job fatality due to a heart attack) or hospitalization of three or more employees. *Federated Rural Electric Insurance Exchange* - Report within 24 hours or next business day - Any investigation other than near misses. *Post Vehicle Accident Drug & Alcohol Testing* - Tests Required (Alcohol within 8 hrs. of accident, Drug within 32 hrs.) - When a fatality is involved or when the employee receives a citation for a moving violation arising from the accident that involves 1) an injury that requires medical treatment away from the scene or 2) one or more vehicles have to be towed from the scene

10. The Commission is aware that in preparation for Y2K utilities developed emergency operating plans (EOP). Does your utility continue to maintain and update an emergency operating plan? What circumstances or conditions is the EOP designed to cover? Is the EOP prepared and/or modified completely by utility personnel or do other organizations or agencies have input to the plan? Please explain how outside sources have input to the EOP. Does your utility routinely run drills on the EOP to check the effectiveness of the plan and to identify areas, which need improvement? Please describe your drilling procedure.

    Yes, a plan is updated and maintained. The plan was originally designed to cover emergency outage restoration due to storms, and was expanded for Y2K Since the terrorist attacks in the United States, we now have representation on the Jackson County Emergency Management committee which is attempting to tie all emergency plans together. No, we do not currently run drills to test the plan, but much of it is regularly practiced during our response to various storms throughout the year.

Customer Service:

1. Is your utility participating in any EPRI (or other organizations) research projects relating to customer service? If yes, please describe the project(s) you are involved in and how it relates to customer service issues addressed in this section of the data request.

   No.

2. Please describe your utility's customer service philosophy and how your utility implements this philosophy.

   As a not-for-profit organization, Jackson County REMC's entire reason for being is service to its members, who set policy and guide the organization via the member-elected board of directors.

3. How many employees are directly engaged in customer service types of activities and where do they fit in the utility's overall organizational structure? An organizational diagram maybe useful in responding to this question.

9 person customer-elected board of directors
- Set service policies
- Approve operational budgets

1 general manager
- Implement policies
- Interface directly with customers as needed.

49 operation and engineering personnel
- Take customer calls concerning outages and service quality.
- Engineering services for new line extensions and service rebuilds.
- Engineering design for quality system operation
- Line service personnel
- Construction crews
- Employee and public safety

2 customer information personnel
- Wiring and heating recommendations
- Weatherization and conservation recommendations
- Monthly newsletter publication
- Website maintenance
- School safety demonstrations
- 4-H project judging
- Diversified business services

12 customer service and accounting personnel
- Answer and direct customer calls
- Handle walk-in traffic
- Originate and terminate customer accounts
- Monthly bill production
- Bill inquiry response

4. Assuming there are a variety of activities that can be considered "customer service" please describe the different types of activities your utility classifies as "customer service" and how many employees are engaged in each activity.

   See previous response.

5. Please provide a brief description of the qualifications required by employees engaged in the various customer service activities described in response to the previous question. Have these requirements and protocols changed over the past five years? Please explain.

All positions require a mix of:

Inter-personnel skills
Variety of technological skills
Organizational skills

The need for technological skills is increasing for nearly all job classifications. Inter-personnel and organizational skills remain critical.

6. Please describe any equipment and/or facilities that are specifically designed to help the utility to communicate with its customers and to enhance customer service.

   Cell phones, pagers, email, two-way radios, laptops in the field with staking personnel in order to expedite new service applications, automatic meter reading equipment, substation control and data acquisition equipment, global positioning on service vehicles.

   Other forums of communications include monthly newsletter, annual meeting of membership, county fair booths, key account contacts, and website.

7. How does your utility evaluate the quality and performance of your customer service activities?

   Formally, we send customer satisfaction surveys monthly after we have provided various services for members.

   Informally, our board of directors, and our employees, are in daily contact with customers in communities throughout the service territory.

8. Is the compensation of employees, groups of employees or divisions tied to customer service performance? Please explain how this is done and whom this process affects.

   An annual performance bonus is entirely tied to receiving +90% favorable responses back from the customer service surveys identified in #7 above.

   Affects every employee at the cooperative

9. What methods or statistics are used to evaluate customer service performance? Please provide a description of the methods or statistics used.

   For employee performance bonus, we zero in on survey questions concerning employee effort and timeliness of service. Responses of “very good” or “good” are interpreted as positive for employee effort. Responses of “exceeded expectations” or “right on time” are interpreted as positive for timeliness of service. For a full bonus, at least 95% positive responses are required. For a partial bonus, at least 90%.