STATE OF IOWA

DEPARTMENT OF COMMERCE

UTILITIES BOARD

IN RE: MR. AND MRS. GREGORY SWECKER, Complainants, vs. MIDLAND POWER COOPERATIVE, Respondent.	DOCKET NO. FCU-99-3 (C-99-76)

PROPOSED DECISION AND ORDER

(Issued March 28, 2000)

APPEARANCES:

MR. WALLACE L. TAYLOR, Attorney at Law, 118 – 3rd Avenue, SE, Suite 326, Cedar Rapids, Iowa 52401, appearing on behalf of Mr. and Mrs. Swecker

MR. JOHN A. GERKEN and MR. THOMAS W. POLKING, Attorneys at Law, Wilcox, Polking, Gerken, Schwarzkopf, Hoyt & Copeland, P.C., 115 East Lincolnway, Suite 200, Jefferson, Iowa 50129-2149, appearing on behalf of Midland Power Cooperative

MS. JENNIFER C. EASLER, Attorney at Law, Office of Consumer Advocate, 310 Maple Street, Des Moines, Iowa 50319-0063, appearing on behalf of the Office of Consumer Advocate, Iowa Department of Justice

MS. LISA DAVIS COOK, Iowa Citizen Action Network-ICAN, 3520 Beaver Avenue, Suite E, Des Moines, Iowa 50310, appearing on behalf of the Iowa Citizen Action Network

MR. BOB WELCH, Welch Motels, Inc., Welch Oil, Inc., I-35 at Exit 144, Williams, Iowa 50271, appearing on behalf of himself

MR. DENNIS L. PUCKETT, MR. JOHN T. WARD, and MR. MICHAEL P. JOYNT, Attorneys at Law, Sullivan & Ward, P.C., 801 Grand Avenue, Suite 3500, Des Moines, Iowa 50309-2719, appearing on behalf of Central Iowa Power Cooperative and the Iowa Association of Electric Cooperatives

STATEMENT OF THE CASE

The Complainants in this case are Mr. and Mrs. Swecker, who live on a farm in Greene County near Dana, Iowa. (Tr. 27, 29) In 1998, Mr. and Mrs. Swecker installed a wind generator on their farm, and requested three-phase electrical service from their electric service provider, Midland Power Cooperative (Midland), a rural electric cooperative. (Tr. 29) This led to a dispute between the Sweckers and Midland over which tariff provisions should apply, and ultimately to disconnection and reconnection of power to the farm. The Sweckers filed complaints with the Iowa Utilities Board (Board) (Informal Complaint File C-99-76), and with the U.S. Federal Energy Regulatory Commission, but those complaints were not resolved to the satisfaction of the Sweckers.

On May 5, 1999, Mr. Swecker filed a request for formal complaint proceedings regarding the dispute with Midland. The entire informal complaint file C-99-76 is a part of the record in this formal complaint proceeding. The Sweckers were unrepresented by legal counsel. In their request, the Sweckers alleged that Midland violated Iowa Code § 476.21 by establishing a separate tariff for wind generators, and by refusing to connect the Sweckers' wind generator to Midland's system under tariff 26.11, the general tariff for residential/farm small commercial three-phase

electric service. The Sweckers argued that Midland denied them service based on the Sweckers' intended use of a renewable energy source in violation of § 476.21, and that tariff 26.16, the tariff for members with self-generation, subjects them to prejudice and disadvantage, in violation of the same code section. The Sweckers alleged that the rate under tariff 26.16 is higher than that under tariff 26.11. The Sweckers further argued that Iowa Code § 476.8 provides that utility charges and services are to encourage the use of energy conservation and renewable energy sources. Finally, the Sweckers alleged that Midland illegally disconnected their electric service based on their intended use of a renewable energy source in violation of § 476.21.

On June 23, 1999, the Board issued an order granting the Sweckers' request for formal complaint proceedings, and assigning the case to the undersigned administrative law judge. On June 28, 1999, the undersigned issued an order establishing a procedural schedule and setting the case for hearing.

This case contains an extensive procedural record. All of the details will not be recited here, but a complete list of the filings is attached to this decision.

On July 12, 1999, Mr. Bob Welch filed a request to intervene in the case. Mr. Welch has a wind generator installed at his business, Welch Motels, Inc., and his electric service provider is Midland. Mr. Welch is unrepresented by legal counsel.

On July 16, 1999, Ms. Lisa Davis Cook of the Iowa Citizen Action Network (ICAN) filed an appearance and a petition to intervene. Ms. Cook is not an attorney,

and ICAN is unrepresented by legal counsel. The Iowa Association of Electric Cooperatives (IAEC) and Central Iowa Power Cooperative (CIPCO) also filed a petition to intervene on July 16, 1999.

The Sweckers filed what Mr. Swecker characterized as a brief on July 26, 1999. The brief contained a mix of legal argument and what should have been characterized as prepared direct testimony of Mr. Swecker and exhibits. The OCA filed prepared direct testimony of Ms. Christine Collister and exhibits on July 26, 1999. Ms. Lisa Davis Cook filed direct testimony on July 26, 1999. In an order dated July 28, 1999, the undersigned ruled that the portions of the Sweckers' brief which contained factual information would be considered to be prepared direct testimony and exhibits, and the portions of the brief, which contained legal argument, would be considered to be a legal brief.

Mr. Swecker filed a motion to determine rates and to provide backup power to a QF facility on August 23, 1999. In the motion, Mr. Swecker also requested that the alternate energy production facility (AEP) net billing rule (199 IAC 15.11(5)) be enforced against Midland.

An order dated August 27, 1999 granted the petitions to intervene filed by Mr. Welch, ICAN, the IAEC, and CIPCO, and set up a procedural schedule for the intervening parties.

On August 30, 1999, Midland filed prepared testimony and exhibits of Mr. Robert Greneman, and prepared testimony and exhibits of Mr. Roger Wieck.

Midland also filed a request that its cost-of-service study (one of the exhibits filed with the prepared testimony of Mr. Greneman) be held confidential pursuant to the Board's rules, and a request that it be allowed to file prepared surrebuttal testimony. These requests were filed on August 30, 1999.

On September 1, 1999, Midland filed a resistance to the Sweckers' motion to determine rates and to provide backup power to a QF facility.

On September 2, 1999, the OCA filed a response to Midland's motion for surrebuttal testimony and requested the opportunity to respond to new issues and arguments presented in such surrebuttal testimony.

On September 7, 1999, CIPCO and the IAEC filed a response to the Sweckers' motion to determine rates and to provide backup power to a QF facility, and requested dismissal of the motion. Also on September 7, the Sweckers filed an objection to Midland's request for surrebuttal testimony.

In an order issued September 9, 1999, the undersigned ruled that Iowa Code §§ 476.41-.45 apply only to rate-regulated electric utilities, and since Midland is not a rate-regulated utility, Iowa Code § 476.43 could not be used as the basis for setting rates in this case, or as a basis for requiring Midland to provide power to the Sweckers as requested in the motion. (Mr. Swecker referred to a QF in his motion, which is a term used in the federal statute and regulations. For the purpose of the Iowa statutes and Board rules, the term to be used is an alternate energy production facility (AEP)). The order also held that the AEP net billing rule applies only to sales

and purchases of electricity between qualifying alternate energy production facilities and rate-regulated utilities. Therefore, the order denied the Sweckers' motion to set rates, provide backup power, and enforce the AEP net billing rule.

On September 9, 1999, the Sweckers filed a response to the intervenors' (CIPCO and the IAEC's) request for dismissal of the Sweckers' motion to determine rates and to provide backup power to a QF facility. On September 10, 1999, the OCA filed a response to the Sweckers' motion to determine rates and to provide backup power to a QF facility.

On September 14, 1999, Midland filed a supplement to its cost-of-service study, which had been attached as an exhibit to the prepared testimony of Mr. Greneman.

Two orders were issued on September 15, 1999. The first, issued by the Board, granted Midland's request for confidentiality of its cost-of-service study. The second, issued by the undersigned, granted Midland's request to file surrebuttal testimony, and granted the OCA's request that it and the Sweckers be allowed to file testimony responding to new issues and arguments raised in the surrebuttal testimony.

On September 16, 1999, Mr. Bob Welch filed his prepared testimony in the form of a letter.

Also on September 16, 1999, CIPCO and the IAEC (the Intervenors) filed a partial motion to dismiss.

The Sweckers filed rebuttal testimony on September 20, 1999. The OCA filed a statement in lieu of testimony on the same date.

On September 22, 1999, the undersigned sent a letter to the Sweckers, with a copy to all parties, answering the question Mr. Swecker asked whether the undersigned had ever worked for a law firm representing CIPCO. The letter also addressed a conversation held between a Board staff member and an employee of one of the intervening parties, enclosed a copy of the memo setting forth the conversation, and provided instructions designed to prevent ex parte communication.

An order regarding responses was issued on September 28, 1999. The order held that Iowa Code § 476.1A applied to Midland, and that the section provided that Midland could not make or grant any unreasonable preferences or advantages as to rates or services to any person, and could not subject any person to any unreasonable prejudice or disadvantage. The order clarified that the Board and the undersigned have the authority to review whether Midland has violated § 476.1A, but that § 476.1A does not provide authority to allow the Board or the undersigned to set rates for Midland. The order provided that § 476.1A is similar to § 476.21, which allows the Board to review Midland's rates and services to determine whether they are discriminatory as to the Sweckers and Mr. Welch, or whether Midland discontinued services or subjected the complainants to any unreasonable prejudice or disadvantage based on the complainants' use of renewable energy sources. The order also addressed the argument of the Sweckers and the OCA that Iowa

Code §§ 476.41-.44 apply to Midland, and affirmed the ruling of September 9th that those code sections apply only to rate-regulated electric utilities.

On September 29, 1999, a second amended procedural order and notice of hearing was issued setting the hearing for November 23, 1999.

On September 30, 1999, Mr. Wallace Taylor, attorney at law, filed an appearance on behalf of the Sweckers. The Sweckers also filed a resistance to the Intervenors' partial motion to dismiss on the same date. The OCA also filed a response to the motion to dismiss on September 30, 1999.

On October 1, 1999, Midland filed prepared rebuttal testimony of Mr. Donald Severson.

On October 4, 1999, the undersigned sent a letter to the OCA, with copies to all parties, addressing a conversation between staff of the OCA and staff of the Board, and enclosing a memo which set forth the conversation.

Midland filed a motion to strike and disregard portions of Mr. Welch's testimony and a motion for an order determining that it need not defend against any new issues raised in Mr. Welch's testimony on October 6, 1999.

On October 8, 1999, an order denying the Intervenors' partial motion to dismiss was issued.

On October 11, 1999, an order was issued which denied Midland's motion to strike and disregard portions of Mr. Welch's testimony.

The OCA filed rebuttal testimony, exhibits, and an electronic file (disk) of Ms. Christine Collister on October 18, 1999.

On October 20, 1999, the IAEC and CIPCO (Intervenors) filed an appeal from the order denying their partial motion to dismiss. The Intervenors requested that the Board review and reverse the order denying the partial motion to dismiss, and pending such review, that further action in the contested case be stayed.

On October 29, 1999, the OCA filed a response to the Intervenors' appeal from the order denying the partial motion to dismiss. The OCA requested the Board to affirm the order denying the partial motion to dismiss.

On October 29, 1999, the Board issued an order denying the Intervenors' request for a stay pending ruling on the appeal from the order denying the partial motion to dismiss.

Midland filed prepared surrebuttal testimony and exhibits of Mr. Donald Severson, Mr. Roger Wieck, and Mr. Robert Greneman on November 1, 1999. Midland also filed a request that all evidence in the Sweckers' informal complaint file (C-99-76) be accepted as evidence in this formal complaint proceeding on the same date.

The OCA filed a reply to surrebuttal testimony and exhibit of Ms. Christine Collister on November 10, 1999. Also on November 10, 1999, the Sweckers filed prepared testimony of Mr. Tyler McNeal. On November 15, 1999, the Sweckers filed prepared testimony of Mr. Thomas Wind, and surrebuttal testimony of Mr. Swecker.

On November 17, 1999, an order was issued which contained the administrative law judge's questions to be answered by the parties.

On November 18, 1999, Midland filed a motion to strike and disregard portions of prepared testimony of Mr. Wind and Mr. McNeal. Midland argued that portions of the prepared testimony by Mr. Wind and Mr. McNeal were irrelevant, not responsive to new issues and arguments raised in Midland's surrebuttal testimony and therefore not proper rebuttal testimony, and included hearsay. Midland also argued that portions of the testimony were argumentative. Midland detailed which portions of the testimony it considered improper in the motion. In its motion, Midland requested that if the undersigned allowed any of the specified testimony into evidence, that it be allowed to present additional testimony and evidence to rebut new issues raised in the testimony of Mr. Wind and Mr. McNeal.

On November 23, 1999, just prior to the hearing, Midland filed answers prepared in response to the ALJ's questions, and a number of exhibits.

The hearing in this case was held on November 23 and 24, 1999. Midland's electric tariff was officially noticed pursuant to Iowa Code § 17A.14 (1999). (Tr. 8)

On December 10, 1999, the OCA filed its response to Midland's answers prepared in response to the ALJ's questions and an exhibit. On December 13, 1999, Midland filed additional testimony and exhibits of Mr. Roger Wieck, and additional testimony and exhibits of Mr. Robert Greneman. On December 21, 1999, the Sweckers filed responsive testimony of Mr. Gregory Swecker and Mr. Thomas Wind.

On January 10, 2000, the Office of Consumer Advocate filed its Initial Brief. Midland filed its Post-Hearing Brief on the same date. The Iowa Citizen Action Network filed its Brief on January 10, 2000. The IAEC and CIPCO also filed their Initial Brief on January 10, 2000. On January 14, 2000, Midland filed a Corrected Post-Hearing Brief. On January 18, 2000, the Sweckers filed their Post-Hearing Brief.

The Sweckers filed their Reply Brief on January 31, 2000. Midland, the OCA, and CIPCO and the IAEC filed Reply Briefs on February 1, 2000.

The record in this case includes all of the above filings, testimony and exhibits, orders, letters, transcript of the hearing, and briefs. Attached to this decision are: a) a list of exhibits filed in the case; b) a list of prefiled testimony in the case; c) a list of filings made prior to the hearing; and d) a list of orders and correspondence issued in the case prior to the hearing. All items listed on the attachments are part of the record in the case.

At the beginning of the hearing, after hearing argument of the parties, an oral ruling on Midland's motion to strike and disregard portions of prepared testimony of Mr. Wind and Mr. McNeal was issued. The motion was partially granted and partially denied. Testimony filed by the Sweckers on November 10 and 15, 1999, was supposed to address new issues and arguments raised in surrebuttal testimony filed by Midland on November 1, 1999. Portions of testimony by Mr. Wind and Mr. McNeal were stricken as not relevant or responsive to issues in the case.

Exhibits 4 and 5 were stricken, because they related to the issue of whether Mr. Welch's meter was accurate. The accuracy of Mr. Welch's meter was not an issue in the case, and Mr. Welch was referred to the provisions of 199 IAC §20.6 for procedure to follow if he wished to question the accuracy of his meter. With respect to testimony which was not stricken, Midland was given the opportunity to cross-examine witnesses and present rebuttal testimony, and if Midland determined rebuttal testimony was necessary, the Sweckers were given the opportunity to present final testimony on those points.

Throughout the parties' testimony and this decision, the terms "member-consumer with generation", "generator", "co-generator", "qualifying facility", and "QF" have been used essentially interchangeably. Although the terms "co-generator" and "qualifying facility" have specific meanings in federal statutes and regulations other than as used by the parties, for the purposes of this case and decision, it is assumed they are equivalent. The terms "regular member", "regular customer", "normal member", and "normal customer" are used as equivalent to the term "member-consumer without self-generation". The terms "members", "member-consumers", and "customers" are equivalent.

DISCUSSION OF THE EVIDENCE

A. Mr. and Mrs. Swecker

Mr. and Mrs. Swecker live on a farm near Dana, Iowa, and their electric service provider is Midland Power Cooperative. (Tr. 27, 29, 30, 67) Midland is a

nonprofit distribution rural electric cooperative with about 6,800 members. (Tr. 504-5) Midland's Board of Directors sets the rates for the cooperative. (Tr. 505)

Midland does not generate its own electricity. (Tr. 506) It buys energy from two generation and transmission cooperatives, Central Iowa Power Cooperative (CIPCO) and Corn Belt Power Cooperative. (Tr. 506, 532) In establishing its present rate structure, Midland blended its wholesale power costs to create uniformity throughout the Midland system. (Tr. 506)

In April 1998, the Sweckers requested Midland to install three-phase electric service to their farm. (Tr. 29) The Sweckers had single-phase electric service up to that point. (Tr. 68) The Sweckers wished to have three-phase electrical service installed so they could run a wind generator, which they installed at the farm in 1998. (Tr. 40, Informal Complaint file) The wind generator is a 65 kW Windmatic 15S wind turbine on an 80-foot tower. (Tr. 116) The generator requires three-phase service to operate. (Tr. 116, 522, 770) The generator is used, and is about 10 to 15 years old. (Tr. 123)

Although Mr. Swecker does not know how much energy the wind turbine will produce, he hopes it will considerably reduce the amount of power he must purchase from Midland. (Tr. 78, 87) He is hopeful the turbine will supply 90 percent of his energy, but there is no hard data, so he does not know how much of his energy use will be supplied by the wind generator. (Tr. 78) Marketing pamphlets for wind generators estimate savings of 60-90 percent. (Tr. 88)

The Sweckers also have a hog confinement facility with electric fans, grain-drying facilities, and shop equipment to repair farm equipment that require three-phase electrical service. (Tr. 40, 181; Informal Complaint file) Because of the disagreement between the Sweckers and Midland, three-phase service has not yet been installed at the Swecker farm, and the Sweckers have not been able to run their wind generator and shop equipment. (Tr. 29, 40, 41; Inf. Comp. file)

Midland offered to provide three-phase service to the Sweckers pursuant to its tariff 26.16. (Tr. 523; Inf. Comp. file) Tariff 26.16 is for single-phase or three-phase member-consumers of the cooperative with electric generating capacity of 100 kW or less. (Tr. 220; Midland Tariff 26.16) The tariff says it is available to all co-generators and small power producers that are qualifying facilities (QFs) under federal law. (Tariff 26.16) Tariff 26.16 contains several different rates, depending on whether the customer needs single or three-phase power, and the size of the customer's generating capacity. (Midland Tariff 26.16) Rate 4 would apply to the Sweckers. (Midland Tariff 26.16; Tr. 515)

Tariff 26.16 Rate 4 requires customers to pay a monthly service charge of $86, payable at the end of the month. (Midland Tariff 26.16; Tr. 76) It also requires members to pay a coincidental demand charge of $15.90/kW/month. (Midland Tariff 26.16) The coincident peak period for tariff 26.16 is the one-hour period of highest use by Central Iowa Power Cooperative (CIPCO) recorded between 4 p.m. and 9 p.m. during each month. (Tr. 533; 12/13/99 Wieck testimony p. 8;

Tariff 26.16) If the member is using energy from Midland during the coincident peak period, the member has to pay the coincident demand charge that month. (Tr. 534; Tariff 26.16) If the member is not using energy from Midland during the coincident peak period, the member does not have to pay a coincident demand charge that month. (Tr. 534-5; Tariff 26.16) Tariff 26.16 also requires members to pay a $0.03/kWh energy charge. (Tariff 26.16)

Members subject to tariff 26.16 must sign a two-year contract, called an "Agreement for Electric Service to a Qualifying Facility and for Purchase of Surplus Demand and Energy from a Qualifying Facility," pay for equipment required to interconnect with Midland's system, and purchase a one million-dollar liability insurance policy. (Tariff 26.16, 5.28; Tr. 518-9, 529) Under tariffs 26.16 and 5.28, the Sweckers would have to pay a one-time service charge of $2,000 to have three-phase service installed. (Tr. 524, 731; Midland Tariff 5.28, Ex. 5.28(A); Inf. Comp. File) They would also have to pay for a special meter and associated equipment which costs $2,763.97, 8-hours labor (meter installation) at $200, overhead line conversion at $1 per foot for 500 feet, and sales tax of $248.20. (Inf. Comp. File) The amount for the meter and equipment includes a 40 percent markup. (Inf. Comp. File; Tr. 635) The Sweckers would have to pay a total of $5,712.17 to have Midland install three-phase service to their farm under tariff 26.16. (Inf. Comp. File; Tr. 732-3)

All members who request three-phase service must pay the costs to connect pursuant to tariff 5.28, and they must pay these costs up front. (Tr. 524) The only difference in cost between the Sweckers' request for three-phase service for co-generation and a request for regular three-phase service is the cost of the metering requirement. (Tr. 525-6)

The Sweckers objected to the amount quoted by Midland for three-phase service for the generator. (Tr. 523) The Sweckers do not want to receive power under tariff 26.16. (Tr. 41) They wish to be connected pursuant to Tariff 26.11, which is a tariff for three-phase power for residential/farm and small commercial customers without generation. (Midland Tariff 26.11; Tr. 76, 220) Under tariff 26.11, customers must pay a $36 monthly service charge, payable at the end of the month. (Midland Tariff 26.11; Tr. 76, 232) Members subject to tariff 26.11 pay a declining block energy charge of $0.12/kWh for the first 500 kWh, $0.083/kWh for the next 1,500 kWh, and $0.056/kWh for amounts over 2,000 kWh. (Tariff 26.11; Tr. 232) There is no separate coincident demand charge in tariff 26.11. (Tariff 26.11)

To convert from single-phase to three-phase power under tariff 26.11, members pay a $2,000 installation charge plus line conversion costs of $1 per foot (overhead lines) to interconnect with Midland. (Midland tariff 26.11, 5.28) The Sweckers would have a total installation charge under tariff 26.11 of $2,500, which includes a $2,000 installation fee and a line extension fee of $500. (Inf. Comp. File)

During 1998 and early 1999, the Sweckers repeatedly requested Midland to provide three-phase service pursuant to tariff 26.11, and Midland repeatedly refused. (Inf. Comp. File) In a letter dated August 27, 1998, Midland told the Sweckers the cost to provide three-phase service would be $5,712.17, and that they would have to pay the cost before Midland would schedule construction. (Inf. Comp. File; Tr. 524) Midland also told the Sweckers that the cooperative would have to receive a signed contract before construction, and a certificate of insurance before Midland would energize the service. (Inf. Comp. File)

On December 1, 1998, Mr. Swecker sent a letter, contract, and check for $2,100 to Midland requesting three-phase service under tariff 26.11. (Inf. Comp. File) Midland returned the contract because it had been altered and the check because it was not for the full amount. (Inf. Comp. File)

On December 23, 1998, Mr. Swecker filed a complaint with the Iowa Utilities Board regarding Midland. (Inf. Comp. File) He alleged Midland's separate rate treatment for renewable energy was discriminatory and violated the Public Utility Regulatory Policy Act of 1978 (PURPA). (Inf. Comp. File)

B. The Sweckers' Disconnection and Reconnection

On January 12, 1999, Mr. Swecker sent a letter to Midland requesting three-phase service and enclosed a check for $2,500. (Inf. Comp. File) $2,000 was for three-phase service under tariff 26.11, and $500 was for a 500-foot line extension. (Inf. Comp. File) Mr. Swecker also threatened to withhold payment for his current

single-phase service for "damage for failure to provide service." (Inf. Comp. File) In the letter, Mr. Swecker stated "If Midland fails to provide the three-phase service by January 20, 1999 this constitutes failure of Midland to perform it's required duties by law and their forfeiture of payment of electrical service." (Inf. Comp. File)

Midland returned the check with a letter dated January 21, 1999. (Inf. Comp. File) Midland told Mr. Swecker that it needed to know whether he planned to connect his wind generator to the three-phase service so proper equipment could be installed. (Inf. Comp. File) Midland stated that in order for the Sweckers to receive the service they requested, they would have to provide Midland the necessary information, a signed service agreement, and proper payment. (Inf. Comp. File)

The parties continued their communication without resolution, and the Sweckers filed complaints with the Iowa Utilities Board and FERC. (Inf. Comp. File)

The Sweckers did not pay their bill for single-phase service. (Inf. Comp. File) On March 19, 1999, Midland sent a letter to Mrs. Swecker stating that the cooperative had delayed disconnecting her service for nonpayment in order to review once more the complaints of unjust treatment and discrimination. (Inf. Comp. File) In the letter, Midland notified Mrs. Swecker that the cooperative would disconnect the Sweckers' single-phase service for nonpayment unless payment was received by March 22, 1999. (Inf. Comp. File) Midland stated the three-phase service issues were "separate from the charges for energy which you have already received, and for which you have failed to pay." (Inf. Comp. File) Midland posted a notice of the

disconnection at the Sweckers' at 1:45 p.m. on March 19, 1999. (Inf. Comp. File) The notice stated the Sweckers' service would be disconnected unless payment of $389.30 was received by 8:00 a.m. on March 22, 1999. (Inf. Comp. File) The payment amount included a $52.50 trip charge. (Inf. Comp. File)

On March 21, 1999, the Sweckers left a letter and check for $2,889.30 in Midland's after-hours drop box. (Inf. Comp. File) Mr. Swecker stated in the letter that $389.30 was for the past-due bill and $2,500 was for connection of three-phase service within five days. (Inf. Comp. File) Mr. Swecker also billed Midland $3,500 for failure to provide three-phase service for seven months. (Inf. Comp. File) The memo line on the check stated that $2,500 was for three-phase service and $389.30 was for the past due bill. (Inf. Comp. File)

On March 22, 1999, Midland sent a letter to the Sweckers and returned the check. (Inf. Comp. File) Midland stated it had tried to call the Sweckers, had left a message, and would try to contact the Sweckers again that day prior to disconnection. (Inf. Comp. File) In the letter, Midland stated that "Because it appears you are tendering a payment with restrictions upon its acceptance, Midland Power does not accept and will not cash your check #413 in the amount of $2,889.30. Furthermore, Midland Power denies it owes to you any monies for what you allege to be "non-compliance for providing service." (Inf. Comp. File) Midland reiterated that to obtain service to their wind generator, the Sweckers would need to "sign the co-generation contract, arrange for the insurance coverages and

appropriate disconnection switch referred to in the contract, and meet its other terms. In addition, you need to make appropriate payment for the costs of extension of service to you." (Inf. Comp. File) Midland stated that the issues of three-phase service were separate from the Swecker's failure to pay for the electric service already provided, and unless payment of $389.30 for the past-due bill was received without restriction, the Sweckers' service would be disconnected. (Inf. Comp. File)

On March 22, 1999, Don Severson, Midland's general manager, attempted without success to contact the Sweckers. (Inf. Comp. File) Midland then disconnected the Sweckers' single-phase service for nonpayment at 2:13 p.m. on March 22, 1999. (Inf. Comp. File) Midland provided the Sweckers with a written notice of the disconnection which stated the amount due to reconnect service was $853.45 during office hours, and $989.95 after hours. (Inf. Comp. File) These amounts included $722.20 due for electric service since December 1998, a $52.50 trip charge, and a reconnect fee of $78.75 during office hours or $215.25 after hours. (Inf. Comp. File)

In a letter to Midland dated March 23, 1999, Mr. Swecker stated "There were no restrictions placed on the check except paying the past due amount which included the $50 service charge and requesting three-phase electrical service." (Inf. Comp. File) Mr. Swecker reiterated his views of why Midland was in violation of federal law for not providing him three-phase electrical service pursuant to tariff 26.11, and why he billed Midland $3,500. (Inf. Comp. File) He also stated he

had provided Midland with information regarding equipment necessary to interconnect, and that the meter and associated equipment required by Midland was not necessary for safety. (Inf. Comp. File)

Mr. Swecker then filed a complaint against Midland with the Board in letters dated March 29, 1999 and April 2, 1999. (Inf. Comp. File) In his complaint, Mr. Swecker stated he had repeatedly requested service under Midland tariff 26.11 and had been repeatedly refused. (Inf. Comp. File) He stated he did not think he should have to pay his past due electric bill since Midland had failed to provide three-phase service to him. (Inf. Comp. File) Mr. Swecker did not mention his wind generator in the complaint letters. (Inf. Comp. File)

In its letter responding to the complaint, Midland stated it had disconnected the Sweckers' service for nonpayment of the past two months of electric bills, and that Midland "was not willing to accept the payment for fear of Swecker then arguing that Midland Power had agreed to his terms for the service extension, including a date of performance that would have been difficult if not impossible to meet (about 4 days)." (Inf. Comp. File) Midland explained it had not furnished three-phase power to the Sweckers because the Sweckers had a wind generator, tariff 26.16 was the applicable tariff, and the Sweckers had refused to comply with its terms. (Inf. Comp. File)

After working with Customer Service staff of the Board, the Sweckers paid their past due electric bill without forfeiting their right to continue the complaint

regarding three-phase service and whether Midland could charge a reconnection fee. (Inf. Comp. File) Midland restored single-phase service to the Sweckers on April 21, 1999. (Inf. Comp. File)

Midland tariff Section 6 governs disconnection of service to members. (Midland Tariff 6) Written notice must be given which sets forth the reason for the disconnection and the date by which the member must take action to avoid the disconnection. (Midland Tariff 6) Nonpayment of the member's bill is a reason Midland may disconnect service, so long as the cooperative has made a reasonable effort to collect the amount owed, the member is given at least twelve days to settle the account, and the member is given a summary of rights and remedies to avoid disconnection. (Midland Tariff 6) When disconnecting service, Midland must have made a diligent attempt to contact the member by telephone or in person. (Midland Tariff 6) During November 1 to April 1, if the attempt at contact fails, Midland must post a notice at the premises informing the member of the pending disconnection and the members rights and remedies at least one day prior to disconnection. (Midland Tariff 6) The member must be given a reasonable opportunity to dispute the reason for the disconnection. (Midland Tariff 6) Section 6.4, which contains customer rights and remedies to avoid disconnection, states that "Disconnection for nonpayment may occur only after we have sent a written notice of disconnection by regular mail postmarked at least twelve days before service is to be shut off." (Midland Tariff 6)

Section 12 of Midland's tariff contains requirements regarding collections. (Midland Tariff 12) The section provides that whenever a cooperative employee must make a trip to the member's premises for reasons other than normal operation and maintenance inspections, the cooperative may charge a $50 trip charge. (Midland Tariff 12) Section 12.3 provides that the disconnected member must pay a reconnection fee of $75 if the trip is completed on regular time, and a fee of $205 if the trip is on overtime. (Midland Tariff 12)

The only evidence in the record shows Midland gave the Sweckers three days to settle their account before service was disconnected. (Inf. Comp. File) There is no evidence in the record that Midland gave the Sweckers the required twelve-day notice. In all other respects, Midland complied with its tariff regarding the disconnection. (Inf. Comp. File)

The Board rules at 199 IAC 20.4(15) provide that notice must be given not less than 12 days prior to disconnection. Since Midland gave the Sweckers notice only three days prior to disconnection, the disconnection was not lawful. 199 IAC 20.4(15) Therefore, Midland may not charge the Sweckers the $52.50 trip fee for the disconnection or a reconnection fee.

C. Mr. Welch

Mr. Welch is the owner of Welch Motels, Inc. and Welch Oil, Inc. (Tr. 302) Mr. Welch operates a 65 kW wind generator which supplies electricity to his 30-unit motel. (Tr. 163, 304)

Mr. Welch's wind generator is identical to the Sweckers'. (Tr. 116) He installed his wind generator in late summer of 1996. (Tr. 304) Mr. Welch is currently the only customer with self-generation on Midland's system. (Tr. 86, 506)

Prior to October 1996, Mr. Welch was billed under tariff 26.12. (Tr. 585) Since October 1996, Mr. Welch has been billed under co-generation tariff 26.18, rate 4, which is essentially equivalent to tariff 26.16, rate 4. (Tr. 585) Mr. Welch testified he is confused about the applicable tariffs. (Tr. 316)

Mr. Welch testified Midland's $86 per month service fee and $15.90 demand rate (doubled from his previous demand rate of $8) have resulted in "shockingly high monthly invoices." (Tr. 305) Mr. Welch apparently does not understand that his previous $8 demand rate was based on non-coincident demand, while the $15.90 demand rate is based on coincident demand. (Tr. 305, 723-4; Ex. 103) He objects to the change in rates because he previously had three-phase power and did not cause any additional cost to Midland by installation of his wind generator. (Tr. 316, 318-9) He believes Midland's policies and rates are unfair and discriminatory, make it difficult to economically produce his own electricity, and destroy any benefit of co-generation. (Tr. 305)

Mr. Welch testified Midland told him there would be a $50 per month meter reading fee, but this has not started yet. (Tr. 305) He was also told he had to buy a meter for $2,800, to which he objected. (Tr. 305) The price was reduced, and eventually dropped. (Tr. 305, 726-7) Mr. Welch did not have to pay for his meter.

(Tr. 305, 317-8, 726-7; Exs. 210, 211, 212) This was the result of correspondence between attorneys for Mr. Welch and Midland. (Tr. 727) The language of Tariff 26.18 is no longer the same as it was at the time of the attorneys' correspondence, and the current tariff is clear that the co-generator must pay for the specialized meter. (Tariff 26.18; Exs. 210, 211, 212)

Mr. Welch believes Midland's goal is to do whatever it takes to discourage co-generation. (Tr. 306, 319-24) He testified in April 1995, he used 6,920 kW, and was billed $527.96. (Tr. 305, 313) In April 1998, after the wind generator was installed, he testified he used 6,680 kW, and was billed $516.43, even though he produced 9,580 kW that month. (Tr. 305, 313) Mr. Welch was not sure what Corn Belt paid him for the energy he produced. (Tr. 312-3) Overall, Mr. Welch believes there has been a slight reduction in his bills for the motel. (Tr. 319)

It should be noted that according to Mr. Wind's Exhibit 3, in April 1998 Welch Motels used 4,520 kWh, paid $226.08 to Midland, which included the $86 service charge, and was paid $138.68 by Corn Belt for the 6,934 kWh he provided. (Ex. 3) In May 1998, Welch Motels used 6,680 kWh, paid $490.65 to Midland, which included the $86 service charge, and was paid $88.96 by Corn Belt for the 4,448 kWh he provided. (Ex. 3)

According to Midland, for May 1998, Mr. Welch was billed $516.23 for 6,680 kWh. (Tr. 578; Ex. 226) According to Midland's records, Midland received 6,934 kWh from Welch Motels for April 1998. (Tr. 578; Ex. 227) Midland has no way

of knowing the total energy production of the wind turbine, because it only meters the surplus power not used by the motel coming onto Midland's system. (Tr. 568, 578, 734)

Mr. Welch does not use electricity to heat the motel. (Tr. 743) In May or June of 1999, Mr. Welch changed the secondary line to six 175 watt high-pressure sodium security lights at his motel. (Tr. 307) It is unclear from the testimony whether this could have affected Mr. Welch's usage.

Occupancy rates of Mr. Welch's motel were stable from 1994 through 1997. (Tr. 308) During 1998, he had a six-percent increase in occupancy rates due to increased occupancy from mid-April through October 1st. (Tr. 308) He made no other changes that could have affected his electricity use from 1994 through 1998. (Tr. 309)

Mr. Welch's demand and energy figures from 1994 through 1998 are contained in Exhibits 3 and 209. (Tr. 723, 750; Exs. 3, 209) Mr. Welch signed the co-generation agreement in October 1996. (Tr. 723) Prior to October 1996, Mr. Welch paid an $8/kW non-coincident demand charge, which resulted in bills for demand ranging from $130.50 to $514.75. (Tr. 723-4; Exs. 3, 209) After October 1996, under the co-generation tariff, Mr. Welch paid a $15.90/kW coincident demand charge, which resulted in bills for demand ranging from $0 to $574.10. (Exs. 3, 209) However, for ten out of the twenty-seven months, coincident demand was less than

one kilowatt, which meant Mr. Welch paid less than $16 for demand. (Tr. 724; Exs. 3, 209)

A comparison of Mr. Welch's bills under tariff 26.18 with what they would have been under tariff 26.12 shows Mr. Welch's per kWh rate went down. (Tr. 241, 263-4, 296, 325, 728-9; Exs. 103, 209) Mr. Welch incorrectly believes that this per kWh drop in cost does not include the $86 per month service charge. (Tr. 325; Exs. 103, 209) Unlike tariff 26.11, tariff 26.12 is a demand and energy rate, based on non-coincident demand. (Tr. 242, 264, 573, 723-4) These figures do not establish what would happen to a customer who is coming from an energy-only rate such as 26.11 to a demand-metered rate such as 26.16/26.18. (Tr. 264)

Mr. Wind testified Midland's bi-directional meter at the Welch Motel measures the amount of energy consumed or produced by the motel and wind turbine. (Tr. 163) If the combination of motel and wind turbine consumes energy from Midland at any instant, it is measured and accumulated by the incoming meter register (Meter A) and represents purchases from Midland. (Tr. 163-4) If the wind turbine generates more than the motel uses at any instant, the excess power flows back to Midland's system and is recorded and accumulated by the outgoing meter register (Meter B) and this represents excess sales to Corn Belt. (Tr. 164, 568) As Midland's wholesale power supplier for the Welch Motel, Corn Belt purchases any excess power from the facility and directly pays Mr. Welch $0.02 per kWh for this excess power. (Tr. 164) There is no payment for capacity associated with these excess sales. (Tr. 164) At

any one time, only one of the registers on the bi-directional meter is recording, and the other is not. (Tr. 164) There is a third meter (Meter C) which measures the total amount of energy generated by the wind turbine. (Tr. 164, 207)

Mr. Wind in effect testified that with this particular metering set-up, the motel's total kWh usage can be determined by subtracting the kWh sold to Corn Belt (Meter B) from total kWh generated by the wind turbine (Meter C), and adding this remainder amount to the kWh purchased from Midland (Meter A). (Tr. 164) Due to timing differences when the meters are read, there will be month-to-month discrepancies, but over a year's time the calculation should be accurate. (Tr. 164) Mr. Wind entered metering data (interpolating for the months Mr. Welch did not read Meter C) and billing information for Welch Motels into a spreadsheet and created Exhibit 3. (Tr. 164-5, 208-9)

Mr. Wind testified the wind turbine has done a good job of reducing the motel's and Midland's monthly coincident peak. (Tr. 166; Ex. 3) He testified the motel's coincident peak with Midland was almost always reduced, and sometimes it was zero, which indicates the wind turbine was normally reducing Midland's peak demand and sometimes even putting power back onto Midland's lines at the time of Midland's peak. (Tr. 166) Mr. Wind compared the difference between Mr. Welch's non-coincident demand and his coincident demand, and testified he was surprised that the wind turbine reduced Mr. Welch's coincident demand as much as it did. (Tr. 211-2) He used this difference as the basis for estimating the impact the wind

turbine would have on the Sweckers. (Tr. 212) It must be noted that there was no measurement of coincident demand of Welch Motels prior to installation of the wind generator, and the only available demand data prior to installation is for non-coincident demand. (Ex. 3) Therefore, we do not actually know whether there was a reduction in Mr. Welch's coincident demand after installation.

D. Alternate Energy Production (AEP) Facility Net Billing

The Sweckers believe Midland should use net billing with generating customers. (Tr. 101) Mr. Welch also wants Midland to use net billing, and it is not being used now. (Tr. 163, 304, 324) He testified that Mr. Don Severson, manager of Midland, agreed he would use net billing, and failed to keep his promise. (Tr. 304) Mr. Welch does not have anything in writing to show Midland had agreed to net billing. (Tr. 309) Mr. Severson testified he did not tell Mr. Welch Midland would allow him to use net billing because it would have been contrary to Midland's filed tariffs. (Tr. 719-20) In addition, Corn Belt, not Midland, purchases the surplus power generated by Welch Motels, and the power produced by a wind generator is not firm power. (Tr. 719-20) Mr. Welch testified that Midland "steals" the first kW he produces each month, apparently because Midland does not use AEP net billing. (Tr. 305, 312, 314-5) Corn Belt Power directly pays Mr. Welch $0.02 per kWh for excess energy he produces over the amount consumed by the motel. (Tr. 311, 568-9)

AEP net billing has the effect of encouraging investment in alternative energy production facilities, including wind generators. (Tr. 324, 330, 333) However, the Board's AEP net billing rule at 199 IAC § 15.11(5) only applies to sales and purchases of electricity between qualifying alternate energy production (AEP) facilities and rate-regulated utilities. 199 IAC § 15.2(1)(c). Since Midland is not a rate-regulated utility, the rule does not apply to Midland, and cannot be enforced against it. 199 IAC § 15.2(1)(c).

E. Development and Structure of Tariffs 26.11, 26.12, 26.16, and 26.18

Midland Power was created by a consolidation of the Greene County Rural Electric Cooperative and the Hardin County Rural Electric Cooperative effective January 1992. (Tr. 510) The rates being charged by each of the two former cooperatives remained the same for three years. (Tr. 510) Midland's cost-of-service study was done as a part of the merger process to determine appropriate rates for the new cooperative as a whole, and it was done before wind generation existed on Midland's system. (Tr. 205, 510)

When Midland established current tariffs 26.16 and 26.18 in 1996, there were no co-generators on the system, and Midland had no data regarding co-generators. (Tr. 45, 86, 205, 232, 535, 543) Therefore, Midland used the cost data available for its three-phase customers without self-generation from its 1995 cost-of-service study to develop tariffs 26.16 and 26.18. (Tr. 205, 232, 535, 543, 548-9)

Exhibit 201 is the cost-of-service study prepared for Midland by the Iowa Association of Electric Cooperatives in early 1995 for the test-year ending September 30, 1994. (Tr. 351, 510) Mr. Roger Wieck provided data for Midland that went into the study. (Tr. 511)

There is no classification for co-generators in the cost-of-service study because Midland did not have any co-generating customers on its lines at the time the cost-of-service study was completed. (Tr. 516, 595-6) The cost-of-service study was undertaken before tariffs 26.16 and 26.18 were adopted. (Tr. 383, 516, 519, 543) The cost-of-service study had no data or information concerning how a co-generator would affect Midland's cost of service, because a cost-of-service study attributes costs to existing customer classes, not to future or prospective customer classes, and Midland had no co-generators in the test year. (Tr. 384, 516, 591)

The cost-of-service study compiled Midland’s operational costs for the test year. (Tr. 513; Ex. 201) In the cost-of-service study, all costs were divided into four functions: internal customer, internal capacity, external capacity, and external energy. (Tr. 352)

Internal customer costs are incurred by the virtue of the fact that there are customers connected to the system, and they include costs associated with meters, services, meter reading, billing and collecting, plus a portion of distribution lines and line transformers. (Tr. 349-50, 352)

Internal demand or capacity costs are those costs that are associated with receiving power and energy from Midland's suppliers and distributing it to customers, and include substations and a portion of distribution lines and line transformers. (Tr. 233, 349-50, 352, 722)

External demand or capacity costs are those wholesale power costs that have been designated as demand costs that Midland must pay to its wholesale suppliers, Corn Belt and CIPCO, for generation and transmission capacity that are billed on a demand basis. (Tr. 233, 350, 352, 354, 532)

Generating plants, transmission substations and lines, and distribution substations and lines are demand-related because the cost of these facilities are related to their capacity to deliver power under peak load conditions. (Tr. 349)

Energy-related costs are those costs that vary directly with the amount of kWh produced or sold. (Tr. 349) Midland does not have its own generation, and has long term contracts to buy 100 percent of its energy from Corn Belt and CIPCO. (Tr. 233, 532) Therefore all of Midland's energy-related costs are external energy costs. (Tr. 350, 352, 532) Midland receives monthly power billings from CIPCO and Corn Belt, and the external energy costs are those costs designated as energy costs in the billings. (Tr. 350, 352, 532)

The cost-of-service study allocated or assigned all of Midland's costs to different classes of consumers, so Midland could design its rates to recover its costs from the different classes of consumers. (Tr. 514) Internal customer costs were

allocated based on the number of customers in each rate class. (Tr. 354) Internal demand costs were allocated to customer classes based on their non-coincident demands. (Tr. 354) External demand costs from both suppliers were allocated to customer classes based on their coincident peak demands, in order to reflect the manner in which Midland is billed for power. (Tr. 354-5) Demands for the non-demand-metered classes, such as the three-phase class, were estimated using Rural Electrification Administration (REA) AB methodology. (Tr. 354) The total allocated costs for the three-phase class were $622,126, and proposed revenues were $669,019. (Tr. 355)

Mr. Wieck testified the reason Midland developed tariff 26.16 even though it had no co-generators was because in the industry there was increased interest in wind generation. (Tr. 517) He testified that if members were interested in generating their own power, Midland wanted to be ready to serve them. (Tr. 517)

When Midland determined it needed to create rates for co-generators, it did not conduct a new cost-of-service study because Midland had no operating history for any co-generators on its system on which to base an allocation of costs. (Tr. 516) A cost-of-service study is based on allocation of costs that have already occurred. (Tr. 516) Midland could not do a cost-of-service study until it had data on co-generators for which it wished to create a new rate. (Tr. 516)

Mr. Wieck first testified neither the Sweckers nor any other member had contacted him about installing wind generation before tariff 26.16 was adopted.

(Tr. 520) However, he later clarified that he meant no one had contacted him personally, not that no one had contacted Midland before tariff 26.16 was adopted. (Tr. 583-4) Mr. Welch contacted Midland and spoke with Mr. Borchers and Mr. Severson about installation of a wind generator in the fall of 1995 and the spring of 1996, prior to the adoption of tariffs 26.16 and 26.18. (Tr. 583-4, 718; Ex. 228) Tariff 26.16 was adopted by the Midland Board of Directors August 21, 1996, to be effective October 1, 1996. (Tr. 519)

Because of the manner in which CIPCO and Corn Belt buy surplus power from co-generators, it was necessary to establish two different tariffs for co-generators. (Tr. 541-2)

Tariff 26.16 applies to members with self-generation in the former Greene County REC service territory. (Tr. 220, 541; Tariff 26.16) Central Iowa Power Cooperative (CIPCO) supplies power to Midland in the former Greene County REC service territory. (Tr. 541, 718) The Sweckers live in the former Greene County REC territory, so tariff 26.16 would apply to them. (Tr. 541, 718; Tariff 26.16)

Tariff 26.18 applies to members with self-generation in the former Hardin County REC service territory. (Tr. 541; Tariff 26.18) Corn Belt Power Cooperative supplies power to Midland in the former Hardin County service territory. (Tr. 541, 718) Mr. Welch lives in the former Hardin County REC territory, so tariff 26.18 applies to him. (Tr. 541, 717-8; Tariff 26.18)

Midland is billed monthly by its two wholesale suppliers, CIPCO and Corn Belt. (Tr. 532) The billings are based on Midland's coincident peak demand and energy usage for the month. (Tr. 532, 563)

Midland is billed for demand based on monthly coincident peak periods. (Tr. 533, 563) Midland's coincident peaks are measured separately by CIPCO and Corn Belt. (Tr. 565) For CIPCO, this billing peak can occur between 4 p.m. and 9 p.m. on any day of the month, and for Corn Belt, it can occur between 5 p.m. and 7 p.m. on any weekday of the month. (Tr. 533, 563, 565) For both CIPCO and Corn Belt, the coincident peak is based on a one-hour interval. (Tr. 677-8; 12/13/99 Wieck testimony p. 8; Ex. 240) When the supplier's coincident peak occurs, Midland is billed for its total demand on the supplier's system at that time. (Tr. 533)

To the extent economically feasible, Midland bills its members under the same coincident demand criteria that its suppliers use to bill Midland. (Tr. 533) However, for regular three-phase customers, Midland does not install meters capable of measuring demand. (Tr. 534) It is not economically feasible to install demand meters for the smaller users because of the cost. (Tr. 533) For these customers, Midland recovers its demand costs through energy charges. (Tr. 533) For cost allocation purposes, Midland estimated the average monthly demand of regular three-phase customers to be 7.31 kW, based on Rural Electric Administration (REA) AB methodology. (Tr. 354, 533) (Note this number was changed to 6.01 kW in post-hearing testimony. (Greneman 12/13/99 testimony))

Tariff 26.11 applies to members with three-phase power and would apply to Mr. Swecker if he did not have self-generation. (Tr. 220; Tariff 26.11) The $36 per month service charge in tariff 26.11 recovers only part of the allocated customer and internal demand costs. (Tr. 233; Exs. 203, 235) The remainder of those costs, and the external demand costs and energy costs, are recovered through declining block energy charges. (Tr. 233, 532; Exs. 203, 235) The rates were designed to recover target revenues for the class of $669,019. (Tr. 356)

Current tariffs 26.16 and 26.18 set out the terms by which Midland provides service to member-consumers who desire to produce electricity for their own use. (Tr. 507, 544, 717) Rates 26.16 and 26.18 are general co-generation rates, and are not specific to wind generators. (Tr. 452) Tariffs 26.16 and 26.18 are essentially equivalent. (Tr. 542, 545, 718; Tariffs 26.16, 26.18) The only significant difference between the two is that the coincident peak period for tariff 26.18 is based on the Corn Belt coincident peak and the coincident peak period for tariff 26.16 is based on the CIPCO coincident peak. (Tr. 533, 563, 674; Tariffs 26.16 and 26.18) Other than this, there is no difference in what a co-generator pays for services to Midland under either tariff. (Tr. 542)

Tariffs 26.16 and 26.18 include the rates Midland charges for either single phase or three-phase service. (Tr. 507, 515, 542) Because of the size of their wind generator, the Sweckers would only qualify for Rate 4 under tariff 26.16, which is for

generators with a capacity between 12.5 kW and 100 kW. (Tr. 515) Welch Motels is billed under tariff 26.18, rate 4. (Tr. 541, 546)

Member-consumers under tariffs 26.16 and 26.18 do not sell power directly to Midland, because Midland has entered into "all power requirements" contracts with CIPCO and Corn Belt. (Tr. 507) By contract, Midland is not free to purchase any power except from CIPCO and Corn Belt. (Tr. 507-8) Midland purchases the power it supplies to the Sweckers from CIPCO. (Tr. 508) Midland is involved in the purchase of excess power from the Sweckers only because Midland's power lines connect CIPCO with the Sweckers' wind generator. (Tr. 508) CIPCO determines what it will pay the Sweckers for surplus power. (Tr. 508)

Rate 4 of Tariff 26.16 was based upon Midland's normal three-phase rate because under rate 4, a co-generator is supplied three-phase power. (Tr. 516) Mr. Wieck testified Midland believed the costs of supplying service to members using three-phase power would be the best basis for establishing rate 4 until it had operating data upon which to conduct a new cost-of-service study and establish a new rate for customers with self-generation. (Tr. 516)

Rate 4 of tariffs 26.16 and 26.18 starts with the same allocated costs for three-phase customers used in the design of tariff 26.11. (Tr. 233, 535, 543, 594) Co-generators create the same customer costs and internal capacity costs to Midland as regular three-phase customers. (Tr. 594) The $86 monthly service

charge collects almost all of the customer and internal demand costs imposed on Midland by the three-phase class. (Tr. 233, 531, 552, 722; Exs. 203, 235)

Midland recovers the cost of what it pays its wholesale suppliers, CIPCO and Corn Belt, through demand charges and energy charges. (Tr. 532) The $15.90/kW coincident demand charge is billed for customer kW demand that occurs at the time of CIPCO's coincident peak or Corn Belt's coincident peak. (Tr. 564, 566) The remaining costs are recovered through the $0.03/kWh energy charge. (Tr. 234, 532, 552) There is no difference in these charges between tariff 26.16 and 26.18. (Tr. 542)

Prior to installing his wind generator and receiving service under tariff 26.18, Mr. Welch received service under tariff 26.12, which is three-phase service for large power member-consumers without self-generation in the former service area of Hardin County REC. (Tr. 559, 569-70, 573; Ex. 103; Tariff 26.12) Under tariff 26.12, members pay $8 per kW of billing demand, plus an energy charge of $0.05 per kWh for the first 400 hours of use per month per kW of billing demand, and $0.039 per kWh for the balance. (Tariff 26.12) The billing demand is a non-coincident demand based on the member-consumer's highest demand during any single 15-minute period during the month. (Tr. 573; Tariff 26.12)

Mr. Greneman testified that tariff 26.11 would apply to Mr. Welch. (Tr. 378) However, Mr. Wieck testified that if Mr. Welch were not under tariff 26.18, he would be under tariff 26.12, NOT 26.11. (Tr. 680) Since Mr. Wieck is Director of

Finance/Office Services for Midland, and he was specifically asked the question, it is assumed that Mr. Wieck is correct.

At the hearing on cross-examination by the OCA, Mr. Wieck agreed that prior to adopting the current co-generation tariffs 26.16 and 26.18, Midland adopted earlier versions of the tariffs effective April 26, 1995. (Tr. 617; Ex. 114) Mr. Wieck testified that when he submitted prepared testimony that tariff 26.16 was not adopted until October 1, 1996, he had not remembered that Midland had adopted an earlier version of 26.16. (Tr. 685) These earlier versions were issued February 20, 1995. (Tr. 617) The cost-of-service study was completed when Midland issued these tariffs. (Tr. 662) Midland did not have any co-generators at the time these tariffs were issued. (Tr. 617-8) There may have been even earlier versions of tariffs 26.16 and 26.18. (Tr. 619)

The 1995 version of tariffs 26.16 and 26.18 had no separate rate structure for co-generators such as that in current tariffs 26.16 and 26.18. (Tr. 619-20, 661) Under these versions, co-generators would have paid the same rate as regular customers. (Tr. 661) Under the previous tariffs, co-generators were paid for capacity and for surplus energy they produced. (Tr. 639) CIPCO and Corn Belt set the wholesale rates to be paid to co-generators. (Tr. 638) Co-generators are no longer compensated for capacity. (Tr. 640, 656) One reason they are not compensated for capacity under tariff 26.16 is that CIPCO has excess capacity. (Tr. 640, 656)

Mr. Wieck testified when Midland developed current tariffs 26.16 and 26.18, in addition to the cost-of-service study, Midland considered the text of the tariff for co-generators used by Woodbury County REC. (Tr. 548-9, 551, 587; Ex. 223) Midland did not receive any load information with respect to co-generators from Woodbury County REC. (Tr. 588, 600) Mr. Wieck testified Woodbury County REC has a minimum charge for co-generators of $150 per month. (Tr. 531, 601)

Mr. Wieck testified Midland was also guided by Corn Belt's PURPA Implementation Plan for allowing qualified co-generation facilities to interconnect when it developed 26.16 and 26.18. (Tr. 549, 551, 588-9, 602; Ex. 221) Corn Belt filed the plan with FERC and it was approved. (Tr. 589; 12/13/99 Wieck testimony p. 9; Ex. 241) CIPCO has not filed such an implementation plan. (Tr. 603)

Corn Belt’s Implementation Plan at page 4 states it is the policy of Corn Belt to permit any QF to sell energy and capacity to Corn Belt at rates equal to Corn Belt’s full avoided costs. (Ex. 221) The FERC Order approving Corn Belt’s plan states that Corn Belt must be “ready and willing to purchase energy and capacity at rates which comply with Part 292." (Ex. 241)

Midland is required to follow Corn Belt's plan. (Tr. 648) However, the plan states that Corn Belt or a member (i.e. Midland) may modify the plan to the extent authorized by law if such utility determines that the modification is reasonably necessary. (Ex. 221) It also states the plan shall be modified to comply with

requirements imposed by governmental entities having jurisdiction over Corn Belt or the members (i.e., Midland). (Ex. 221)

Midland looked at the implementation plan for requirements regarding insurance and interconnections. (Tr. 589) Mr. Wieck testified Midland does not require any additional metering equipment beyond that required in Corn Belt's plan. (Tr. 652; Ex. 221)

Mr. Wieck testified Midland also used the services of Mr. Gary Pfann of the Iowa Association of Electric Cooperatives to help develop tariff 26.16/26.18. (Tr. 504, 517, 549, 551, 589) Midland visited with Mr. Pfann regarding available tariff information they could use. (Tr. 589-90, 668-70)

Mr. Wieck testified additional data to develop the rates included projected and expected load characteristics of a co-generator, as well as appropriate rate designs based upon all of the above information. (Tr. 549, 551, 590) Projected and expected load characteristics of a co-generator referred primarily to internal discussions within Midland as to the type of load characteristics and effect co-generation would have on a particular load. (Tr. 590, 651, 670-1) The projected and expected load characteristics of a co-generator were the assumptions made by Midland based on general consensus within Midland. (Tr. 603, 605)

When asked what data Midland relied on to separate co-generators from regular three-phase customers and structure their rates differently, Midland only

provided the sources listed above. (Tr. 550-5) There is no other accurate information or specific data on which Midland based its co-generation tariffs. (Tr. 603)

Although tariffs 26.16 and 26.18 would allow Midland to charge co-generators a $50/month meter reading fee, Midland has no plans to charge Mr. Welch this fee and would not anticipate charging the Sweckers such a fee. (Tr. 576, 725-6; Tariffs 26.16 and 26.18) This fee is not included in the $86/month service fee because it reflects additional costs for reading and translation of the specialized metering equipment. (Tr. 576) Standard costs of meter reading under tariff 26.11 are recovered under the tariff 26.11 rates and are not separately charged. (Tr. 577)

F. Metering and Requirements to Interconnect

Tariff 26.16 states that Midland will meter the member-consumer to obtain the billing data necessary to fulfill the terms of the contract required by tariff 26.16. (Midland Tariff 26.16) The tariff further provides that: "The Cooperative shall install, own and maintain and the Member-Consumer shall reimburse the Cooperative for the metering equipment and pay all costs associated with the installation and maintenance of metering equipment necessary to measure all electrical flows between the Cooperative and Member-Consumer at the point of interconnection. Said metering shall include equipment capable of recording real and reactive power flow and demand and energy in thirty (30) minute intervals for the entire billing period format compatible with CIPCO's existing system interchange metering. Meters shall be read monthly by the Cooperative and any costs incurred for meter reading, data

retrieval and translation shall be the Member-Consumers…. The Cooperative shall have the right to install such additional metering equipment as it deems necessary for the collection of data for research purposes, which metering will be furnished and paid for by the Cooperative." (Tariff 26.16)

The tariff provides that Midland will purchase energy generated by the member pursuant to the rate set by CIPCO. (Tariff 26.16) The payment for energy is based on CIPCO's avoided costs. (Tariff 26.16) There will be no payment for capacity until CIPCO no longer has excess capacity. (Tariff 26.16) The member is required to pay all costs associated with interconnecting the QF's electrical system with Midland's, including automatic relaying and system protection. (Tariff 26.16) The member must have protection equipment that will prevent it from re-energizing a de-energized line. (Tariff 26.16) The member must furnish and install a UL listed manual disconnect switch between the QF and the cooperative's system. (Tariff 26.16) Quality of power generated by the member's QF must conform to the requirements in the tariff. (Tariff 26.16) Electric service delivered by Midland to the QF will be metered separately. (Tariff 26.16)

Tariffs 26.16 and 26.18 contain the same requirements for co-generators to interconnect with Midland's system. (Tr. 542-44; Tariffs 26.16 and 26.18)

Tariffs 26.16 and 26.18 do not contain a provision that says Midland will charge a 40 percent markup on all equipment for the interconnection. (Tr. 634-5) The markup is charged regardless of whether the item is carried in inventory.

(Tr. 634-5) When Midland provides equipment to its members under tariff 26.11, there is also a 40 percent markup if the member is charged separately for the piece of equipment. (Tr. 653, 713) Mr. Severson testified the 40 Percent markup is designed to recover costs for Midland beyond the mere purchase price of the items. (Tr. 712, 740) It includes freight and shipping, Midland's handling costs, the costs of carrying inventory, profit, and in some cases, costs of testing and programming meters. (Tr. 712-3, 740) Mr. Severson testified it was an error to bill Mr. Welch only an 11.1 percent markup. (Tr. 713)

Mr. Severson testified Exhibit 216 contains a list of the equipment and costs required to interconnect the Sweckers' wind generator with Midland's system. (Tr. 752) The cost of the meter includes a 40 percent markup. (Tr. 757-8) The $2,000 hookup fee is in addition to this equipment. (Tr. 752-3; Ex. 216) This list is for Midland's own use to figure the cost, and has nothing to do with what Midland will bill the Sweckers. (Tr. 754-5, 758) Some of these costs are included in the $86/month service fee. (Tr. 755) Midland will bill the Sweckers a total of $5,712.17 for the interconnection, which includes the $2,000 hookup fee. (Tr. 732-3, 758-9, 761-2)

Although the meter is marked up 40 percent and "sold" to the co-generator, Midland retains ownership of the meter and maintains it. (Tr. 765-6) If the meter is damaged or needs to be replaced, Midland will replace it at Midland's cost. (Tr. 765)

The charge for the meter is a one-time charge to the co-generator because it is a specially required meter. (Tr. 765)

Mr. Wieck and Mr. Severson testified the meter required by tariffs 26.16 and 26.18 will measure the flow of electricity from Midland to the co-generator, and also from the co-generator to Midland, when the co-generator is producing more electricity than it is using. (Tr. 518, 586, 740) It will also measure customer demand to determine the extent to which the customer is contributing to Midland's coincident peak, upon which a part of Midland's bill for power purchased from CIPCO or Corn Belt is based. (Tr. 518, 534, 586, 740) The meter will measure power quality (i.e. power factor), to make sure the power being supplied to the co-generator, and the power coming onto the Midland system from the co-generator, is adequate and will not cause problems either to Midland's system, to the equipment at the co-generator's location, or to equipment of other members being supplied by the same lines. (Tr. 518, 653, 665, 740-1) The meter required by tariff 26.18 is the same as the meter required by tariff 26.16. (Tr. 543-4) Mr. Wieck testified this specialized meter is necessary for a co-generator but not needed by normal three phase members. This is why the co-generator is charged for the meter when normal three-phase customers are not charged. (Tr. 518, 526) If a non-generating three-phase customer had special metering needs, that customer would also pay additional costs associated with the metering. (Tr. 526)

Mr. Welch's meter records the motel's demand on 30-minute intervals. (Tr. 200, 679) Midland reads this meter monthly, and then determines Mr. Welch's demand at the time of Midland's Corn Belt coincident peak. (Tr. 200) Midland then charges Mr. Welch for his actual contribution to Midland's Corn Belt peak. (Tr. 200-1) Since Midland does not know when Corn Belt will peak ahead of time, it must record Mr. Welch's usage patterns throughout the month to determine his demand at the time of Midland's Corn Belt coincident peak. (Tr. 201) Mr. Wind was not sure whether the meter measures power quality problems such as harmonics or flicker. (Tr. 200)

Mr. Swecker does not think he should have to pay for a meter when customers without generation do not have to pay for one. (Tr. 74-75, 523, 526-7) He believes the special meter required by Midland is unnecessary and a regular simple meter could register electricity both going from his wind generator to Midland's system and vice versa. (Tr. 43, 45-46, 74, 94, 97) He believes the cost of the meter should be included in the monthly service charge. (Tr. 75) Mr. Severson disputed Mr. Swecker's assertion that a special meter was not required. (Tr. 699-704)

Mr. Wieck and Mr. Severson testified tariff 26.16 contains a requirement for a disconnect switch so Midland can be sure there is no power flowing onto Midland's lines when Midland's crews might be working on the system. (Tr. 518, 528, 767-8) Mr. Wieck testified tariff 26.16 requires co-generators to carry liability insurance because of the possibility their generation of electricity onto Midland's lines might

cause damage, and bring Midland into a lawsuit. (Tr. 519, 527) The $1 million figure for the amount of liability insurance is required of Midland by Corn Belt's PURPA Implementation Plan, as is the requirement to annually provide proof of insurance. (Tr. 571-2; Ex. 221) Liability insurance such as that required by Midland is commercially available. (Tr. 736; Ex. 233) The cost is specific to the customer, but if the co-generator is already carrying a farm liability policy with $1 million limits, the cost of the insurance required by Midland would be about an additional $27-$50 per year. (Tr. 736-7) Mr. Wieck testified these requirements are not required of regular three-phase customers because they do not apply to their operations. (Tr. 519) Midland does have some members using temporary, portable generators in the event of an outage, and a disconnect switch is required of them as well. (Tr. 519, 528)

Mr. Swecker objected to the requirement he carry liability insurance. (Tr. 527-8) Mr. Swecker testified he does not object to the requirement for a disconnect switch, and will provide it. (Tr. 46, 582)

Mr. Swecker objected to the requirement to sign a contract. (Tr. 529) Mr. Wieck testified tariff 26.16 requires co-generators to sign a contract contained in the tariff because CIPCO is the entity buying back any surplus power from the co-generator. (Tr. 519) He also testified all members who go from single phase to three-phase service are required to enter into a contract in which they agree to pay a minimum service fee for at least 48 months. (Tr. 519, 704)

Mr. Wieck testified that Midland requires all members who request three-phase service to pay the respective fees for that service up front. (Tr. 529) He testified Mr. Swecker was willing to pay only the amount associated with providing regular three-phase service. (Tr. 529) Therefore, Midland would not provide him with the service. (Tr. 529)

G. The Sweckers' Position

The Sweckers do not accept the terms of Midland's co-generation agreement, because they say it makes it virtually impossible to receive any economic benefit from their generator, and violates state and federal law. (Tr. 41) Mr. Swecker believes tariff 26.16 was designed to discourage the use of QF facilities by making it unprofitable to own a wind turbine by charging higher tariff rates and service fees. (Tr. 42) He testified that the cost to provide three-phase service to a customer with generation is the same as the cost to provide three-phase service to a customer without generation, but the generating customer must pay a monthly service fee of $86 rather than $36. (Tr. 40-41)

Mr. Swecker testified a co-generator is like a regular three-phase customer who only uses his three-phase service once a year for drying grain at harvest. (Tr. 43) He testified that Midland does not collect the $86 fee from this customer to recover its cost. (Tr. 44) He also objects to the demand charge under tariff 26.16. (Tr. 44)

Mr. Swecker does not believe he should have to carry liability insurance to cover his wind generator unless Midland requires the same insurance for all backup power generators on Midland's lines. (Tr. 46, 65, 69-72, 104) He objects to the requirement that he sign a 48-month contract. (Tr. 46) Mr. Swecker does not object to the requirement that he provide a disconnect switch, and will do so at the time of installation. (Tr. 46)

The Sweckers' position is that they should be treated no differently than customers without generation, and it is discriminatory to treat them differently. (Tr. 79-80, 88, 91-92, 106)

Mr. Swecker prepared a table in which he compared the charges between regular three-phase customers under tariff 26.11 and generating customers with similar energy usages under tariffs 26.16 and 26.18. (Tr. 34, 62, 90; Ex. 207) His estimates show that the cost of 500 kWh for a 26.16 customer would be 81 percent higher than for a customer under 26.11, for 1,000 kWh would be 66 percent higher, and for 4,000 kWh would be 36 percent higher. (Tr. 34)

It must be noted that Mr. Swecker used a monthly coincident demand figure of 25 kW in making his calculations. (Tr. 62, 97, 109) Mr. Swecker believes his monthly coincident demand could be 25 kW. (Tr. 108-111) This figure is an estimate. (Tr. 110) In arriving at this figure, Mr. Swecker assumed that his non-coincident demand was 25 kW, and he then assumed that this would also be his coincident demand, because he would never know when Midland's CIPCO

coincident demand period would occur. (Tr. 110) This would be an unusually high coincident demand figure for a customer like Mr. Swecker. (Tr. 540, 597-8; Exs. 3, 6, 103, 201, 203)

At the hearing, Midland testified the average monthly demand figure used for regular three-phase customers without generation in Midland's cost-of-service study was 7.31 kW. (Tr. 533) After the hearing, Mr. Greneman clarified that the figure was actually 6.01 kW. (Exs. 201, 203, 235; Greneman testimony filed 12/13/99) The 7.31 kW figure was estimated using the Rural Electric Administration (REA) AB methodology. (12/13/99 Greneman testimony) It was used by Midland as both an average coincident demand figure and an average non-coincident demand figure. (Greneman testimony 12/13/99) The 6.01 figure was an adjusted coincident demand figure. (Greneman testimony 12/13/99) Whether coincident or non-coincident demand, both figures show that Mr. Swecker's estimate is far above the average.

Mr. Wind estimated the Sweckers' coincident demand would range from 3.7 kW to 8 kW. (Ex. 6) After he installed his wind generator, Mr. Welch's monthly coincident demand figures ranged from zero to 36.11 kW, with most months being below 15 kW. (Exs. 3, 103) In many months, his coincident demand is very small, below five kW. (Tr. 151; Exs. 3, 103) Also, Mr. Wind estimated that Mr. Welch consumes more than twice as much electricity as the Sweckers. (Tr. 151; Ex. 6) Therefore, the 25 kW figure estimated by Mr. Swecker does not represent a likely demand level for comparing the difference in charges which would be experienced

by a typical customer with wind generation, and does not reflect the likely difference in charges that the Sweckers would experience. (Tr. 34, 62; Exs. 3, 103, 201, 203)

Mr. Swecker testified that there is nothing in Midland's cost-of-service study that shows Midland could not recoup its costs if customers with generation were included in tariff 26.11. (Tr. 104) He testified since Midland has no data for generating customers, their rates must be based on providing service to regular three-phase customers to avoid discrimination. (Tr. 44) His position is that Midland must use the same cost methodology it uses for regular rates, and it is not the same cost methodology to charge generators for demand and lower the energy charge, when that is not the rate structure it developed for regular three-phase customers. (Tr.44)

Mr. Swecker testified that in the cost-of-service study, Midland used the average of all three-phase customers in determining what the rate should be to recover costs for that class of customers. (Tr. 45) This rate structure included customers who used large amounts of energy and those who used small amounts. (Tr. 45, 85, 107) The question of whether Midland can recover its cost of serving Mr. Swecker is the same as whether it can recover the cost of serving any other individual customer, and Mr. Swecker believes he should not be treated differently just because he has a wind generator. (Tr. 91) He testified that before adding his wind generator, he never guaranteed Midland a certain income. (Tr. 80) Midland's cost-of-service study just gives an average cost to provide service to all customers in

tariff 26.11, and the Sweckers did not increase Midland's cost to provide service by adding the wind generator. (Tr. 80)

Mr. Swecker's position is that it is a violation of Iowa law and PURPA for Midland to establish a separate rate for co-generators without separate data regarding co-generating customers. (Tr. 45)

Mr. Thomas Wind, Wind Utility Consulting, testified on behalf of the Sweckers. (Tr. 136) Mr. Wind testified Mr. Greneman had data from the cost-of-service study for the typical three-phase customer, and then made some general assumptions that if a customer puts up a wind turbine, energy purchases should decrease. (Tr. 197) Mr. Wind agrees this is generally correct, but also testified that Mr. Greneman did not give appropriate credit for peak-load reduction. (Tr. 197)

Mr. Wind does not agree with Mr. Greneman's calculations in Exhibit 205. (Tr. 143) He disagrees with column B, which is the amount of wind generation estimated to be used on the Sweckers' farm, because no one knows what this will be, and he thinks Mr. Greneman did not have complete information when making his estimates. (Tr. 146, 154-5) He also testified that when the wind turbine is generating power, it will reduce Midland's CIPCO coincident peak, and Mr. Greneman did not take the resulting savings to Midland into account. (Tr. 147-9, 159-60)

Mr. Wind estimated what those peak-demand reductions might be and the value of the reductions to both Midland and CIPCO. (Tr. 147-57; Ex. 6) Mr. Wind based his estimate on billing data from Welch Motel. (Tr. 148) Mr. Wind estimated

that the Sweckers currently use about 41,000 kWh per year, and Mr. Welch uses about 107,000 kWh per year. (Tr. 151; Ex. 6) He estimated that after the Sweckers' wind generator becomes operational, they will purchase about 16,000 kWh from Midland, a yearly reduction in purchases from Midland of about 25,000 kWh per year. (Tr. 151-2; Ex. 6) However, Mr. Wind calculated that Midland would over-recover its costs under tariff 26.11 by about $601 per year due to the reductions in both kWh sales and kW demand. (Tr. 153-4; Ex. 6) These amounts will vary depending on the wind and the Sweckers' load. (Tr. 152)

Mr. Wind believes there is a correlation between when the wind blows and when Midland has its peak. (Tr. 151) He testified there is a good probability the wind turbine will be generating power during many of the periods when Midland's peak is measured, and therefore Midland's peak will be reduced. (Tr. 152) Mr. Wind estimated that annually there will be about 145 kW of cumulative peak-load demand reductions to CIPCO, and about 61.7 kW of cumulative peak load reductions to Midland caused by the Sweckers' wind turbine. (Tr. 153; Ex. 6) Since Midland's testimony showed Midland's external demand cost is $16.59/kW/month, Mr. Wind calculated that Midland's annual savings in external demand costs due to the wind generator will be $1,024.16. (Tr. 156; Ex. 6) Therefore, he calculated that under tariff 26.11, even with the Sweckers' reduced purchase of kWh from Midland, Midland will still have a net savings of $601.18 due to the wind turbine. (Ex. 6) He therefore testified that Midland will not under-recover its cost under tariff 26.11, but

will more likely over-recover its cost by $601.18 because of savings it receives in peak-load reductions. (Tr. 153-4; Ex. 6)

This amount does not include savings to CIPCO due to CIPCO's peak load reductions. (Ex. 6) Mr. Wind believes Midland should work with its power supplier to assure that co-generation facilities receive an appropriate credit for times when they deliver capacity to the utility's system during peak load periods. (Tr. 166-7, 189) He disagrees with Midland's assertion that since wind power does not provide firm power, Midland and its power suppliers cannot pay for capacity delivered during Midland's peak. (Tr. 167) He testified that the Mid-Continent Area Power Pool (MAPP) has a formula for determining an appropriate capacity value for wind generators, so generators should receive appropriate credit for the capacity benefits they provide. (Tr. 167) He testified that even if Midland has an exclusive contract with its power suppliers, as we move to deregulation, many contracts will be re-examined, and the issue should be reconsidered. (Tr. 189-90) Mr. Wind is not saying that Midland is discriminating against the Sweckers and Mr. Welch by not changing its contract with its power suppliers. (Tr. 190) He is saying that Mr. Welch and the Sweckers are not getting appropriate credit for the benefits they bring to the combined Midland, Corn Belt, and CIPCO system. (Tr. 190)

Mr. Wind agreed that he used a lot of estimates to come to his conclusions. (Tr. 171-83) He also based his estimates on calculations from Welch Motel data, as did Mr. Greneman in Exhibit 205. (Tr. 177, 179-8) Mr. Wind testified that neither he

nor Midland have accurate data on a multitude of factors that go into determining what the Sweckers' load profile will be once the generator is running. (Tr. 181-2) He testified the cost-of-service study has fairly good numbers on the amount of energy customers use over a period of time, since it is metered. (Tr. 182) With test metering, he testified, the peak demand of customers is known to some extent, although that data is not always complete and it is not hour-by-hour data. (Tr. 182) He testified that a rate analyst has to make a lot of assumptions to allocate costs in a cost-of-service study, and those were the same types of assumptions he made. (Tr. 183)

Mr. Wind testified there are misunderstandings about Mr. Welch's facility, its load profile, and its load factor in testimony and exhibits in this case. (Tr. 163) It is difficult to understand how the co-generation facility is metered and how billing is determined, and Mr. Welch did not completely understand it himself. (Tr. 163)

Mr. Wind has not seen another rate structure like tariff 26.16 and has not seen a recording meter such as the one required by Midland used for billing purposes for a wind turbine. (Tr. 157) Mr. Wind has not seen any data or evidence in the record that justifies the different rate in 26.16. (Tr. 158-9, 186) Although he does not have all of Midland's cost of service data and wasn't there when Midland developed tariff 26.16, Mr. Wind does not know how it developed the rate when it didn't know the characteristics of co-generation facilities. (Tr. 196) He testified Midland was

guessing or assuming what the characteristics might be when it developed 26.16. (Tr. 196, 205)

Mr. Wind testified that tariffs 26.16 and 26.18 can be discriminatory toward co-generation facilities. (Tr. 162) He testified that tariff 26.16 will produce revenue comparable to tariff 26.11, but only at a specific demand and energy level. (Tr. 167) Midland selected these average demand and energy levels based on the average estimated coincident peak demand and energy usage for its three-phase customers. (Tr. 167-8) If the load factor of the customer is different than the average, then the revenue under the two tariffs will be different. (Tr. 168) This is where Mr. Wind testified the possibility of discrimination to the co-generator exists. (Tr. 168)

Mr. Wind testified Midland was trying to make the rate as cost-based as possible. (Tr. 168) He testified PURPA and Iowa law require that the tariffs essentially be the same, which is not the case for Mr. Welch or the Sweckers. (Tr. 168, 188) However, he also testified that simply because the two tariffs are different does not make them discriminatory. (Tr. 191) He does not see how Midland made its underlying assumptions for 26.16, and has some question about how the $0.03/kWh charge was calculated. (Tr. 196, 214-5) It appeared to him from Mr. Greneman's testimony that there was an adder to the energy charge to cover some of the demand charges Midland assumed it would not be recovering from co-generators because they were not sure they would have any demand. (Tr. 215) Mr. Wind testified that in creating the adder, Midland was assuming co-generators

would have no demand, and the billing data from Mr. Welch shows there is demand. (Tr. 216) Therefore, Mr. Wind thinks there is some over-recovery. (Tr. 216)

Mr. Wind testified tariff 26.16 is also discriminatory by requiring a very expensive meter. (Tr. 168) He believes that if one purpose of the meter is to measure power quality problems, such as harmonics or flicker, the cost of this extra provision should be borne by Midland, not the customer. (Tr. 168) He speculated that some of Midland's other large customers cause more power quality problems that the wind turbine will, but doubts Midland requires these customers to pay for continuous power quality monitoring. (Tr. 168) Midland should treat all customers the same concerning this issue. (Tr. 168) Mr. Wind testified rate-regulated utilities have not mandated the use of a meter with the capabilities required by Midland. (Tr. 194) He agrees that co-generators who want to interconnect with any utility's system must comply with the safety and power quality requirements in Board rule 199 IAC 15.10. (Tr. 193-4)

Mr. Wind testified there are individual customers presently in three-phase rates 26.11 and 26.12 that have load profiles different than the class average. (Tr. 194-5) This does not necessarily mean Midland should create a separate rate class for those customers. (Tr. 195) It takes some judgement to determine how to group customers together and is an averaging process so there are customers in the group with very small to very high load factor usage. (Tr. 195)

Mr. Wind testified the appropriate way to address co-generators, and the way he has seen investor-owned utilities do this, is to keep the same tariff, but put a rider on the tariff that addresses the unique characteristics of the customer due to the generation. (Tr. 198) The demand charges and energy charges are the same for the co-generator as for regular customers. (Tr. 203) The rider would address issues regarding any excess power delivered to the utility, how the generator is paid, whether there would be a capacity credit, what kind of meter is required, whether both demand and energy are measured, safety issues, disconnection, interconnection facilities, and insurance requirements. (Tr. 198-9) Any special equipment required for the generator not paid for in the basic tariff would be paid for by the generator. (Tr. 199)

H. The OCA's Position

Ms. Christine Collister, Utility Administrator, testified on behalf of the OCA. (Tr. 217) She testified the process of designing rates from allocated costs is more an art than a science. (Tr. 229) While allocated costs are an extremely important starting point in rate design, a number of other factors are also important. (Tr. 229) Customers ought to be responsible for the costs they impose on the utility, and utilities should have a reasonable opportunity to recover those costs. (Tr. 229) Although it may be ideal to have a different rate for every customer reflecting that customer's particular set of costs, this is not practical. (Tr. 229) Therefore, customers are grouped into classes with generally similar loads and other cost-

causing characteristics. (Tr. 229) Class rates are designed as average rates intended to recover average costs from a customer with average cost-causing characteristics. (Tr. 229) Since every customer has a unique set of cost-causing characteristics, there will be customers who pay more or less than their actual share of the costs imposed on the system. (Tr. 229-30) Therefore, it is important that cost-causing characteristics of all customers within a customer class be similar. (Tr. 230) Design of a rate to recover the costs imposed by co-generators is particularly difficult in this case because Midland buys power from both CIPCO and Corn Belt on two different wholesale rate schedules with different measures of demand. (Tr. 230)

The OCA's position is that the costing methodology Midland used to allocate costs to the three-phase customer group as a whole is the same costing methodology that has been used to allocate costs to other customer class groups in Midland's cost-of-service study. (Tr. 231) The OCA believes the differences between the 26.11 rate and the 26.16 rate are a function of rate design rather than cost allocation. (Tr. 231)

Ms. Collister testified it appears the numbers used in the cost-of-service study tie to the accounting workpapers used to derive the annual revenue requirement desired by Midland. (Tr. 231) It further appears to her that the three-phase customer class costs as classified and allocated in the cost-of-service study tie to the allocated costs that serve as a starting point for tariffs 26.11 and 26.16. (Tr. 231)

Tariffs 26.11 and 26.16 are both based on the same costs. (Tr. 231) The same costs allocated to the three-phase customer class in the cost-of-service study were used in the design of both tariffs 26.11 and 26.16. (Tr. 232) The difference in the two rates lies not in the underlying costs, but rather on the manner in which those costs are recovered by Midland. (Tr. 232)

The OCA does not believe it was unreasonable for Midland to use the cost data it had for its non-generating three-phase customers as a starting point to develop tariff 26.16, since it had no data regarding co-generators. (Tr. 232) Ms. Collister testified that utilities often use similar information as a starting point to price new services, and can adjust rates later if necessary to more accurately reflect the cost-causing characteristics of customers under the new service as additional data becomes available. (Tr. 232) However, she testified if a utility makes assumptions for rate design purposes, it is important that support for these assumptions be established before rate design changes are made. (Tr. 294)

Ms. Collister also testified that while it was not unreasonable to use cost data from the three-phase customer class as a starting point, if Midland believes costs imposed by co-generators are different enough to warrant a different rate design, co-generators should also be a separate category in the cost allocation process. (Tr. 243) Since Midland had no co-generating customers at the time rate 26.16 was created, it could have turned to the Iowa Association of Electric Cooperatives, sister cooperatives around the state, investor-owned utilities, industry organizations, and

government agencies to gather data regarding usage patterns of customers with wind generation and how installation of these turbines affects a utility's operations. (Tr. 261-2, 269) Rather than simply assuming certain characteristics, Midland should have consulted the appropriate resources to find out what those characteristics and load profiles would be. (Tr. 262) Ms. Collister testified there is no evidence that Midland looked at the actual operation of co-generators when it designed tariff 26.16. (Tr. 234) She also testified that major rate design changes should not be based on the usage patterns of one customer. (Tr. 241)

Ms. Collister testified that if a utility establishes a rate based on what it believes are appropriate cost-causing characteristics, it must eventually verify that estimates it initially relied on reflect actual experience. (Tr. 239, 269) Although she testified she would not assume the usage patterns of other co-generators are the same as Mr. Welch's, she stated the only information in the record regarding a co-generator's usage is the data for Mr. Welch. (Tr. 235) Since Mr. Welch installed his wind generator, there have not been any months in which he did not purchase energy from Midland. (Tr. 235; Exs. 103) Therefore, the only data available in this case does not support the idea that co-generators will require no energy from Midland. (Tr. 235) Ms. Collister testified it does not appear that installation of the wind generator has significantly changed Mr. Welch's energy needs from Midland. (Tr. 235-6) Midland's concern that co-generators would rarely use energy from Midland, and thus Midland would be unable to recover its costs through energy

sales, is not supported by the evidence. (Tr. 236) She also testified the evidence regarding Mr. Welch's non-coincident demand seems to confirm that no change in non-coincident demand was experienced by Midland due to the installation of Mr. Welch's wind generator. (Tr. 238-9; Ex. 104)

Ms. Collister testified that load factor is another important cost causation characteristic. (Tr. 239) Load factor measures the relationship between the amount of energy consumed over a particular time period given the peak demand during the same period. (Tr. 236) It can be calculated over a variety of time periods, or for an individual customer, for a customer class, or for the utility as a whole. (Tr. 236) The monthly load factor for a customer is calculated by dividing the customer's kWh usage during the month by the number of kWhs that could have been used during the month if peak demand had been constant for all hours in the month. (Tr. 236-7) A load factor of 100 percent indicates that a customer's load was constant for all hours of the month and that the facilities put in place by the utility to serve peak load were fully utilized by the customer in all hours of the month. (Tr. 237) A low load factor customer has low energy usage relative to peak period demand. (Tr. 238)

Ms. Collister testified from the utility's perspective, a customer with 100 percent load factor is the ideal customer, because the facilities put in place to serve the customer's peak load are fully used by the customer in every hour of the month. (Tr. 237) This results in lower per unit costs for the utility. (Tr. 237) A low load factor customer is more costly to serve on a per unit basis because the

investment in equipment that must be made to meet peak demand is not as fully used and sits idle for many hours during the month. (Tr. 238)

She testified that a rate design like that in tariff 26.16 would be preferred by customers with higher load factors because once the fixed costs are paid, the added cost to consume an additional kWh is only $0.03 per kWh. (Tr. 237) The customer pays a lower per kWh price. (Tr. 237) For a lower load factor customer, the opposite is true. (Tr. 237) The low load factor customer has fewer kWhs to spread the fixed cost over, which usually results in a higher per kWh price. (Tr. 237)

Ms. Collister testified the rate design in tariff 26.11 would typically be preferred by customers with lower load factors. (Tr. 237) The recovery of most of the demand or fixed costs is through the declining block energy charges. (Tr. 237-8) Energy charges are higher because they include many of the demand-related costs that are recovered separately in tariff 26.16. (Tr. 238) Because the low load factor customer's energy usage is low compared to the customer's peak period demand, the tariff 26.11 rate would typically result in a lower per unit cost of electricity for the customer than the 26.16 rate. (Tariff 238)

Midland has no demand information for its regular three-phase customers on tariff 26.11 because their demand is not metered. (Tr. 239) The only information Midland has about these customers is from its cost-of-service study. (Tr. 239) The cost-of-service study indicates that on average, three-phase customers as a class have a peak demand of 7.31 kW per month. (Tr. 239; Ex. 201) This is an estimated

average figure, and there are customers both above and below that average figure within the class. (Tr. 239) Mr. Welch's non-coincident demand in every month from 1994 through 1998 is two to six times higher than the average customer in the three-phase class. (Tr. 239; Ex. 103) Mr. Welch's energy figures are also higher than the average three-phase customer. (Tr. 239)

Using the estimated monthly average per customer peak demand of 7.31 kW, the OCA calculated the load factor of Midland's average three-phase customer to be 58.28 percent. (Tr. 240; Ex 104) Ms. Collister does not agree with Mr. Greneman's calculations of Mr. Welch's average monthly load factor. (Tr. 253; Ex. 204) She calculated Mr. Welch's average monthly load factor prior to installation of the wind generator to range from 23.32 percent to 46.30 percent, and from 23.02 percent to 36.73 percent after installation in 1996. (Tr. 254; Ex. 110)

Ms. Collister also calculated Mr. Welch's annual load factor to be between 16 and 22 percent during the time period 1994 through 1998. (Tr. 240; Ex. 104) Ms. Collister testified that as with energy and demand usage, the evidence suggests that installation of the wind generator has not significantly affected the annual load factor of the service Mr. Welch has required from Midland. (Tr. 240; Ex. 104) She testified data from Mr. Welch's most recent 12-month usage shows his peak demand, annual and average monthly energy use, and load factor continue to remain the same. (Tr. 240; Ex. 106)

Ms. Collister testified that Midland's Exhibit 204 looks at the energy, demand and load factor information for Welch Motels separately by month, while the OCA Exhibit 104 looks at the information on an annual basis. (Tr. 250) She testified that looking at the figures on an annual rather than a monthly basis makes it comparable to the information in Midland's cost study on which costs were allocated to the three-phase class and on which current rates are based. (Tr. 250, 253; Ex. 201) Midland has provided no monthly demand, energy or load factor information related to the three-phase customer class as a whole. (Tr. 253) Therefore, the comparison of annual load factors for Mr. Welch with the annual load factors provided for the three-phase class in the cost-of-service study results in a more appropriate comparison than does a comparison of the monthly load factors for Mr. Welch with annual load factors for the three-phase class as a whole. (Tr. 253)

When the average annual energy purchases of Mr. Welch for the two years prior to installation of his wind generator in 1996 are compared with the average annual energy purchases for the two years after installation, his energy purchases from Midland went from 8509 kWh/year to 7772 kWh/year. (Tr. 251) Ms. Collister calculated that if the 737 kWh/year difference were billed at the rate of $0.12/kWh for the first block of energy, the decrease in revenue to Midland would have been $88.44 per year. (Tr. 251) If the energy were billed at the rate of $0.056/kWh for the third block of energy, a more likely possibility, the decrease in revenue to Midland would have been $41.27 per year, or $3.44 per month. (Tr. 251) Although Midland

stated its concern over energy sales to co-generators was the reason for designing rate 26.16, installation of the wind generator has not made a significant change in Mr. Welch's need for energy from Midland over the year. (Tr. 251) Mr. Welch has required significant amounts of energy from Midland, and the average annual amount taken from Midland has not changed significantly since the wind generator was installed. (Tr. 251) Although Mr. Welch's usage varies from month to month, Ms. Collister suspects usage of most other three-phase customers on Midland's system also varies month to month. (Tr. 252)

Ms. Collister testified there is no evidence that installation of a co-generator will change a customer's use of Midland's system. (Tr. 243) She testified Mr. Welch has been a three-phase customer of Midland's for many years, and his usage characteristics have remained constant, even with installation of the wind generator. (Tr. 243) Ms. Collister testified his usage went into the calculation of the cost characteristics of the "average" three-phase customer on Midland's system. (Tr. 243) She testified Mr. Welch's usage was included in the raw data used to derive the 7.31 kW and 3,100 kWh three-phase customer class "averages" used to allocate costs. (Tr. 252) Her position is that if Mr. Welch's usage patterns have not changed, and the regular three-phase rate was a satisfactory mechanism for Midland to recover its costs of providing service to Mr. Welch before, it should be a satisfactory mechanism for cost recovery after installation of the wind generator. (Tr. 243)

It must be noted that prior to installation, Mr. Welch was on tariff 26.12 for large power customers, not 26.11. (Tr. 585) If he were not on tariff 26.18, he would be on tariff 26.12, not 26.11. (Tr. 680)

The OCA's position is that the assumptions made by Midland in developing tariff 26.16 had no empirical support, and there is no evidence in this case to support Midland's concern that installation of a wind generator would result in a significant change in customer usage of Midland's system. (Tr. 241) In addition, the OCA does not believe that Midland has done any additional investigation to evaluate differences in cost causing characteristics between co-generator and regular three-phase customers. (Tr. 241) Ms. Collister testified at some point Midland must re-evaluate the issue and determine if the assumptions it relied on in creating tariff 26.16 are appropriate. (Tr. 241) She testified the only data in the record is Mr. Welch's, which suggests that usage patterns and thus cost-causing characteristics with regard to service from Midland did not change with installation of his co-generator. (Tr. 241, 243; Exs. 3, 103, 104)

The OCA believes tariffs 26.11 and 26.16 are cost based in the sense that they are based on the allocation of costs within the cost-of-service study. (Tr. 242, 268) Both rates are based on the allocation of costs to the three-phase customer class. (Tr. 242) However, Ms. Collister testified they are not cost based in the sense that the different rate designs (or methods of recovering costs from customers) are based on actual differences in cost causation. (Tr. 242-3, 268) She

testified that Midland made assumptions about what the load characteristics and load profiles were going to be, and designed rate 26.16 based on those assumptions. (Tr. 268) Midland assumed that cost characteristics for co-generators as a group were different from regular three-phase customers, and therefore required a separate rate design to recover the same costs. (Tr. 293) She testified that Midland did not look at any empirical evidence to come up with those load profiles or characteristics, and they have not revisited this since tariff 26.16 was created. (Tr. 268-9)

Ms. Collister testified that the evidence does not support Midland's claim that it would not have a reasonable opportunity to recover its costs from co-generators under tariff 26.11. (Tr. 244) Even if a customer installs a wind generator and reduces his consumption of purchased energy, this does not say anything about the utility's inability to recover costs. (Tr. 272) It does not say there will be a shortfall, but only that cost recovery may be reduced. (Tr. 273)

She testified that Midland had not demonstrated the need for a different rate design in tariff 26.16 rate 4, including the separate demand charge and the additional cost of the specialized metering equipment needed to compute the demand portion of the customer's bill. (Tr. 244) Furthermore, she testified, Midland did not demonstrate the need to recover nearly all the customer and internal demand-related costs caused by the three-phase class in a fixed monthly service charge. (Tr. 244)

Ms. Collister noted that Midland's regular three-phase customer class includes a wide variety of end users served by rate 26.11, including grain drying (including aeration), welding equipment, various specialized equipment applications including fabricating and hydraulic, livestock confinement facilities, pumping stations and rural water association uses, seed processing and storage, transmitting towers, and dairy operations and equipment. (Tr. 246; Ex 109) Midland stated it has no information which would allow it to assign a percentage of total class use for each of the above uses. (Ex. 109) Midland also stated it does not have sufficient demographic and metering information to be able to assign the class usage into separate end-use components. (Ex. 109)

Ms. Collister testified there are some similarities in the usage patterns of grain dryers and co-generators, in that both loads may impose a peak for a short time with very little accompanying energy usage. (Tr. 247) However, since grain drying activities usually take place during the fall, an off-peak time for most Iowa utilities, Ms. Collister suspects that the grain drying load is making use of facilities already in place to serve other loads at other times of the year. (Tr. 247) She believes there are differences between grain dryers and co-generators. (Tr. 247)

However, she testified, there is no evidence that co-generators are not within the appropriate range of equipment operated under tariff 26.11. (Tr. 247) Rates for tariff 26.11 were designed for the "average" customer with "average" usage, and there is some range around this "average" that includes all the customers in the

class. (Tr. 252) She testified Midland has provided no evidence to demonstrate whether Mr. Welch's usage is actually outside the range or is within the range of other three-phase customers, including some with lower load factors and less predictable usage than "average." (Tr. 252)

The OCA does not believe the requirements to pre-pay utility extensions and sign a contract are unreasonable and discriminatory, since they apply to regular three-phase customers as well as generating customers. (Tr. 245) The OCA's position is also that safety items such as the disconnect switch and liability insurance are reasonable to protect the physical well-being and safety of utility employees, other customers, and utility and customer equipment, and are not discriminatory. (Tr. 245)

The OCA has two concerns with respect to the $2,763.98 price the Sweckers were quoted for equipment to interconnect their wind generator with Midland's system. (Tr. 245) First, the Sweckers would be charged for two meters. (Tr. 245) The $2,763.98 includes $1,820 for a "three-phase meter to read kW and kWh (4-channel bi-directional)." (Tr. 245; Ex. 107) In addition, the $86 per month service charge includes the cost of a three-phase meter, albeit not the same type meter required by the Sweckers' generator. (Tr. 245) The second concern is that the Sweckers would be charged a 40 percent markup for every item included in the $2,763.98 list. (Tr. 246) The OCA does not believe this to be a reasonable margin without further explanation. (Tr. 246) Additionally, the OCA points out that Mr.

Welch was charged an 11.1 percent markup, not the 40 percent quoted to the Sweckers. (Tr. 246; Ex. 108)

Ms. Collister does not agree with Mr. Greneman's assertion that if all customers in 26.11 installed wind turbines, Midland would experience a significant revenue shortfall and would either have to increase energy rates or restructure its rate design to remain whole in future years. (Tr. 252) She testified that if all customers in the three-phase class installed wind turbines, it would become a co-generator class rather than a three-phase class. (Tr. 252) A group of customers with similar cost-causing characteristics would be aggregated together, average cost-causing characteristics would be determined, costs would be allocated and rates would be designed to recover those costs. (Tr. 252-3) It does not mean in and of itself that rates to other customers would be increased. (Tr. 253) Ms. Collister testified the redesign of rates to more accurately reflect the cost-causing characteristics of the class is something that goes on all the time. (Tr. 253)

In Exhibit 205, Mr. Greneman estimated there would be a 40.93 percent decrease in kWh usage by the Sweckers. (Tr. 259) Ms. Collister does not believe that Mr. Greneman's calculations in Exhibit 205 present a complete picture. (Tr. 255) She points out that Mr. Greneman applied all of Mr. Welch's decreases in monthly consumption as though they would also occur for Mr. Swecker, but did not include any of Mr. Welch's increases in monthly consumption. (Tr. 256) She believes if Midland is trying to estimate decreases in the recovery of demand-related costs, it

should include both increases and decreases in consumption. (Tr. 256) This is because for those months where additional energy is purchased, Midland will recover more of the demand-related costs. (Tr. 256) Ms. Collister used the same figures Mr. Greneman used to create Exhibit 205, but also included the increases in consumption and corresponding increases in Midland's cost recovery to create Exhibit 111. (Tr. 257, 279; Ex. 111) Ms. Collister estimated in Exhibit 111 that there would be a 19.75 percent decrease in kWh usage by the Sweckers. (Tr. 259)

Ms. Collister does not agree with Mr. Greneman that Exhibit 205 shows Midland cannot recover its costs from the Sweckers if they were billed under tariff 26.11. (Tr. 257) Mr. Greneman made a number of assumptions in his exhibit which she said may not be accurate. (Tr. 257, 280) She points out there are a number of differences between the Sweckers and Mr. Welch which affect the accuracy of Exhibit 205. (Tr. 257, 280) The Sweckers have farm use, and Mr. Welch runs a motel. (Tr. 258) Ms. Collister doubts whether their load patterns and time of use are the same. (Tr. 258) She also noted we do not know whether the wind patterns will be the same at the Sweckers' site and at Mr. Welch's site. (Tr. 258) Mr. Greneman assumed the decreases in Mr. Welch's energy consumption were due to installation of the wind generator. (Tr. 280) Ms. Collister testified that even if the assumptions made by Mr. Greneman in creating Exhibit 205 are true, the calculations still do not show Midland could not recover its cost from the Sweckers. (Tr. 258) All they show is that there is a potential for reduced recovery, something that exists for every

customer on every one of Midland's rates. (Tr. 258) Given the unpredictability of the wind, it is equally likely that Midland will be able to fully recover its costs. (Tr. 258)

Furthermore, Ms. Collister testified the calculations say nothing about the current recovery of costs from the Sweckers. (Tr. 258) She testified it is not known whether Midland is currently over-recovering, under-recovering, or fully recovering its costs from the Sweckers. (Tr. 258) While cost recovery may be reduced after the Sweckers install their wind generator, that does not necessarily mean Midland's costs are under-recovered. (Tr. 259) Even if the Sweckers experience a 90 percent reduction in energy consumption, this would not justify rate 26.16. (Tr. 298) The fact that consumption is reduced does not directly translate into under-recovery of costs. (Tr. 298-9) It depends on what level the recovery of costs was prior to the reduction. (Tr. 298-9) Ms. Collister testified that in and of itself, decreased consumption does not directly translate into under-recovery of costs. (Tr. 299)

Ms. Collister listed the fluctuations in energy use by the customers in rate class 26.11 for the years 1996-1998 in Exhibit 112. (Tr. 259) She calculated that average class customer energy use fluctuates between 2,945 kWh and 3,659 kWh per month. (Tr. 260, 283; Ex. 112) This is a difference of 24.27 percent. (Tr. 260, Ex. 112) Accepting the assumptions made by Mr. Greneman in Exhibit 205, Ms. Collister concluded that the approximately 20 percent reduction in kWh usage she calculated for the Sweckers is in line with the annual fluctuations in

energy use exhibited by the customers in rate class 26.11. (Tr. 260, 283; Exs. 111, 112)

She also testified that Midland's Exhibit 205 is not the type of empirical evidence necessary to support a new rate design. (Tr. 261) Ms. Collister testified that Exhibit 205 is an after the fact analysis of one customer and is of very limited use. (Tr. 261) She further testified that energy use fluctuates from year to year for any customer and in any year there may be customers on the low end and customers on the high end. (Tr. 283) To the extent the recovery of costs and the rates are based on an average, there may be some customers who pay more than their share and some customers who pay less than their share. (Tr. 283) Ms. Collister testified that nothing has been presented which shows Mr. Welch is outside the range of loads, usage, demand, and load factor for customers on rate 26.11. (Tr. 284)

Ms. Collister testified that some customers who are contemplating installing a wind generator may be discouraged from doing so by an $86 per month service charge and a $15.90 coincident demand charge. (Tr. 275, 291, 330) Furthermore, the charges and rates in tariff 26.11 are not the same as the charges and rates in 26.16. (Tr. 289) Mr. Swecker will not necessarily be paying the same under rate 26.16 as he would under rate 26.11. (Tr. 289) There may be some customers who would pay the same under tariff 26.16 as under tariff 26.11, but for others, it will make a difference which rate they are under. (Tr. 290) Lower load factor customers

would quite likely see a higher per-unit cost under a rate design such as 26.16 with a high demand charge and a low energy charge. (Tr. 290) Tariff 26.16 might be beneficial, or it might be detrimental compared to tariff 26.11 for any particular customer. (Tr. 291)

Ms. Collister testified that different rates do not necessarily mean discriminatory rates. (Tr. 285) They are not discriminatory if there is some basis for having the different rate. (Tr. 285) The OCA's position is that if there is some empirical support for having rate 26.16 designed as it is, then the rate is not discriminatory. (Tr. 275, 285, 297) However, Ms. Collister testified there is nothing in the record which indicates Mr. Welch is outside the range of regular three-phase customers. (Tr. 276) The 7.31 kW and the 3,110 kWh would be the average demand and usage. (Tr. 276) There is a range around that. (Tr. 276) There are going to be customers above that, and customers below that. (Tr. 276) There are going to be high load factor customers and low load factor customers on rate 26.11, and nothing has been presented that indicates Mr. Welch is outside that range. (Tr. 276)

Ms. Collister does not believe the fact that Mr. Welch's cost per kWh has gone down under tariff 26.18 is the kind of empirical information Midland should use to evaluate its assumptions in designing tariff 26.18. (Tr. 296-7) Rather, she testified, Midland should look for information about the effect of the wind turbine on Midland's system and the incurrence of costs. (Tr. 297) Ms. Collister believes the fact that

Mr. Welch's cost per kWh has gone down has nothing to do with whether the rate is discriminatory or not. (Tr. 297)

I. Midland's Position

Mr. Robert Greneman, Rate Regulatory Consultant, testified on behalf of Midland. (Tr. 339) Mr. Roger Wieck, Director of Finance/Office Services for Midland, also testified for Midland. (Tr. 491, 504) Mr. Donald Severson, General Manager of Midland, also testified for Midland. (Tr. 695) Mr. Severson's prefiled testimony is out of order in the transcript. His testimony filed October 1, 1999 begins at page 715 of the transcript. His testimony filed November 1, 1999 begins at page 698 of the transcript.

Midland is a rural electric cooperative. (Tr. 96, 504-5) Mr. Wieck testified it is owned by its member-consumers, and if one member-consumer does not pay for the cost to provide service to that member-consumer, the other members of Midland pay the unpaid cost. (Tr. 505, 545)

Mr. Wieck testified that although Midland is exempt from rate regulation and is thus not required to file its tariffs and rates with the Board, it does so. (Tr. 508-9) Even though it files the tariffs, the Midland Board, not the Iowa Utilities Board, adopts Midland's tariffs and determines Midland's rates. (Tr 509, 642, 716)

Mr. Wieck testified Midland tries to set its rates to cover its costs of operation and a small operating margin. (Tr. 509, 592) It sets rates to recover its costs of operation from members in proportion to the costs they create. (Tr. 509) Mr. Wieck

testified Midland's goal is to spread the cost of operation on a fair and equitable basis. (Tr. 510) By classifying customers based on the type of service they need, Midland tries to treat members with similar needs in the same fashion and charge them the same amount. (Tr. 510)

Mr. Wieck testified "Midland felt that the member-consumers being served under tariff 26.11 had similar load and cost-related characteristics. Midland did not feel it would be fair to member-consumers under 26.11 or co-generators under Tariffs 26.16/26.18 to try to force such two groups to be covered by one rate structure. Midland felt that if it did not design a different rate for the co-generators, it would be deviating too much from basing its rates upon a recovery of its costs." (Tr. 553) Mr. Wieck further testified "It was felt much more appropriate to establish a separate classification and rate for the co-generators, because of their differing load characteristics and the unpredictable nature of their power requirements. To have left co-generators under the normal three-phase rate and Tariff 26.11 would have departed from a rate design based upon costs of service." (Tr. 554-5)

Mr. Wieck does not agree with Mr. Swecker's statements that tariff 26.16 makes it virtually impossible for him to receive economic benefit from his wind generator and that Midland's tariffs were designed to discourage co-generators. (Tr. 538) He also questions whether Mr. Swecker understands Midland's rates. (Tr. 538, 540; Ex. 207) Mr. Wieck prepared Exhibit 208 which is his comparison of tariff 26.11 and tariff 26.16 rate 4. (Tr. 538-9) According to Mr. Wieck's comparison,

if a co-generator had no coincident demand charge during a month, the co-generator would pay more under tariff 26.16 for the same amount of energy if purchasing less than 600 kWh during the month, and would pay less if purchasing more than 600 kWh during the month. (Tr. 539; Ex. 208) If a co-generator had 7.31 kW of coincident demand during the month, the co-generator would pay more under tariff 26.16 for the same amount of energy if purchasing less than 3,605 kWh during the month, and would pay less if purchasing more than 3,605 kWh during the month. (Ex. 208)

Mr. Wieck disagrees with Mr. Swecker's computations, and provided a comparison of Mr. Swecker's computations and his own computations in a table on page 540 of the transcript. (Tr. 539-40) Mr. Wieck testified Mr. Swecker overstated the co-generation cost considerably. (Tr. 540) Mr. Wieck calculated that the cost of 500 kWh would be $96 for a regular three-phase customer, $101.00 for a co-generator with no coincident demand, and $217.23 for a co-generator with 7.31 kW of demand. (Tr. 540) He calculated that the cost of 1,000 kWh would be $137.50 for a regular three-phase customer, $116.00 for a co-generator with no coincident demand, and $232.23 for a co-generator with 7.31 kW coincident demand. (Tr. 540) If a customer purchases 4,000 kWh during the month, the cost is $332.50 for a regular three-phase customer, $206.00 for a co-generator with no coincident demand, and $322.23 for a co-generator with 7.31 kW coincident demand. (Tr. 540)

Mr. Wieck testified Midland's rates under tariff 26.16 more directly recover the costs paid to suppliers for the actual demand a co-generator adds to Midland's system. (Tr. 534) That is because the meter needed to measure the surplus power received from the co-generator can also be used to measure that co-generator's actual demand. (Tr. 534) Under tariff 26.16, if the Sweckers were using energy from Midland at the time Midland's coincident peak is measured, they would pay for that part of the demand costs they have created for Midland. (Tr. 534) If the Sweckers do not have any demand at the time the coincident peak is measured, they would not pay any coincident peak charges. (Tr. 534)

If a co-generator can avoid the coincident peak billing period and does not use any energy during the month, the co-generator will be billed only the $86 service charge. (Tr. 534) If the co-generator requires energy from Midland during that same month, the member would also be billed for the energy delivered. (Tr. 534-5) If the co-generator does not contribute to Midland's coincident peak billing period for measuring demand, the co-generator pays no demand charges. (Tr. 535)

Mr. Wieck testified that the majority of Midland's three-phase customers do not use their service only for drying of grain at harvest. (Tr. 580) Midland does not have specific end use information on its regular three-phase customers. (Tr. 580) In reviewing energy consumption figures, Midland found that 98 percent of regular three-phase customers purchasing power from Midland during the year had usage during the months of December through August. (Tr. 580) (Midland considered

September through November to be harvest months. Tr. 580) Midland does not agree with Mr. Swecker that grain drying customers are similar to co-generators even if there were any who have three-phase service just for grain-drying during harvest. (Tr. 581) This is because they will be looking to Midland to provide all their energy needs, while co-generators are totally unpredictable as to energy and demand needs. (Tr. 581)

Mr. Wieck testified the next cost-of-service study Midland conducts will include available system historical co-generation data in the allocation process, which should allow Midland to more precisely assign costs and rates for revenue recovery. (Tr. 535) He testified Mr. Welch has an annual load factor of 18-20 percent, which is considerably lower than the annual load factor for the three-phase class of members used in setting the existing retail co-generation rates. (Tr. 536) He testified Midland understands there are considerable differences in the operating characteristics of a three-phase user and a three-phase user with generation. (Tr. 536) Mr. Wieck testified that is why the gathering of historical information from co-generation users within Midland will be valuable when it comes to developing the next cost-of-service study. (Tr. 536) Midland plans to conduct a cost-of-service study during 2000. (Tr. 561)

Mr. Greneman testified that rates that recover revenues that are in relative alignment with class revenue requirements, determined using a cost-of-service study, are the most widely recognized measure of rates that are equitable and non-

discriminatory. (Tr. 350) The rate design process may involve many considerations including unit costs, availability of demand metering, maintaining historical rate relationships, value of service and competitive factors, social considerations, and the ability of rates to recover allocated costs. (Tr. 351)

In the cost-of-service study, allocated costs for the three-phase class were $622,126, and proposed revenue was $669,019. (Tr. 355; Exs. 201, 203) Of the $669,019 to be recovered from the three-phase class, $221,732 is related to internal demand and customer costs and $447,287 is related to external demand and energy costs. (Tr. 359; Ex. 203)

Mr. Greneman testified that because of the different operating characteristics of sales customers and co-generation customers, it would be inappropriate to use rate 26.11 for co-generation customers. (Tr. 356) He has two main concerns. (Tr. 356) The first deals with Midland's internal capacity and customer costs, which are fixed in nature and do not vary with the amount of kWh consumed. (Tr. 356-7) Regardless of its level of sales, Midland must meet its financial ownership and operating costs. (Tr. 357)

Mr. Greneman testified that distribution facilities are designed to meet a peak demand level, and customer classes that contribute to that peak (usually non-coincident with the system peak) are allocated a proportionate share of all such costs. (Tr. 357) Customer costs are incurred by virtue of the fact that a customer is connected to the system. (Tr. 357) Thus, the trigger for incurring customer costs is

being a customer, and the trigger for incurring internal demand costs is contributing to the class peak. (Tr. 357) He testified that on a regular sales rate, these costs are typically recovered partly through a service charge and partly through an energy charge. (Tr. 357) Based on historical usage patterns of such classes, there is a more than reasonable expectation that all fixed annual costs will be recovered. (Tr. 358)

Mr. Greneman testified that for a co-generation customer, in which a reliable sales level or pattern is not known, to put fixed costs in the energy charge would put Midland at significant risk for under-recovery of its internal costs. (Tr. 358) To remedy this situation, rate 26.16 has an $86/month service charge, which recovers 96 percent of the $89.56 cost-of-service based customer costs. (Tr. 358; Ex. 203) Mr. Severson testified recouping all of the fixed costs up front for a co-generator makes sense because the goal of the co-generator is to purchase as little energy as possible from Midland. (Tr. 725) He testified Midland would not be fair to its other members if it did not attempt to collect a fair share of costs from the co-generator. (Tr. 725)

Mr. Greneman's second main concern also relates to the unknown sales level and load profile of a co-generator, but as it relates to Midland's external capacity costs. (Tr. 358) Tariff 26.11 does not have a demand charge, but recovers coincident peak-related power supply costs through its energy charges. (Tr. 358) Mr. Greneman testified if a co-generator required service during the coincident peak

period, it would cause Midland to incur demand costs from its suppliers, but the co-generator would likely not use sufficient energy through the balance of the month to allow recovery of the costs incurred. (Tr. 358) Therefore, in tariff 26.16, coincident peak-related power supply demand costs were removed from the energy charge and stated as a separate demand charge in order to explicitly recognize on-peak usage. (Tr. 358-9)

Mr. Wieck and Mr. Severson testified that under either tariff 26.11 or 26.16, Midland is merely attempting to recover its costs. (Tr. 530, 721) They testified Midland just collects monthly service costs in a different manner, given the different usage characteristics of a co-generator compared to a regular three-phase customer. (Tr. 530, 721) The monthly customer charge portion of tariff 26.16 was structured so Midland would recover from that member at least the monthly cost of making the service available to that member and a reasonable margin. (Tr. 530, 593) Mr. Wieck testified if the co-generator each and every day produces enough energy to meet its own needs, the co-generator would not require any energy from Midland. (Tr. 530) However, the co-generator still needs the availability of Midland's electric distribution system to provide the energy needed to energize the co-generation facility. (Tr. 531) Mr. Wieck testified it would not make sense to try to recover a portion of those basic costs from higher initial energy rate brackets as in tariff 26.11 because Midland might never recover its costs. (Tr. 531)

It must be noted that Mr. Greneman's concerns and the testimony of Mr. Wieck and Mr. Severson were not based on actual metered coincident demand and energy usage levels for either co-generating customers or for regular three-phase customers.

Mr. Severson testified that the components of tariff 26.16 are interdependent. (Tr. 709) He testified Midland could not offer a lower $0.03/kWh energy rate if it were at risk for a significant demand bill from its suppliers for a load caused by the customer who pays only $0.03/kWh. (Tr. 709-10) That is why a separate demand component is included. (Tr. 710)

Mr. Greneman prepared a schedule that he testified shows the equivalency of tariff 26.11 and tariff 26.16, rate 4. (Tr. 359; Ex. 203) Exhibit 203 sets out costs and cost of service-based rate structures for tariff 26.11 and tariff 26.16, rate 4. (Tr. 359) Mr. Greneman testified the exhibit starts with the cost of service and shows the equivalence of cost-based rate structures on a per-customer basis. (Tr. 359)

The calculation in Exhibit 203 is for one-month's usage. (Ex. 203) In his comparison, Mr. Greneman assumed the customer would have a monthly coincident demand of 7.31 kW and use 3,110 kWh. (Tr. 360, Ex. 203) According to his calculations, each customer would have a cost-based monthly bill of $261.75. (Tr. 360; Ex. 203) It should be noted that according to Mr. Wieck's Exhibit 208, customers under tariff 26.11 would pay $282.66 for 3,110 kWh, and customers under tariff 26.16 would pay $295.53 for 3,110 kWh, assuming they had 7.31 kW

coincident demand. (Ex. 208) The apparent reason for this difference is that Mr. Greneman's calculation is a cost-based analysis, whereas Mr. Wieck's is a billing revenue analysis.

Mr. Greneman explained details of Exhibit 203 beginning at page 359 of the transcript. (Tr. 359-361) According to Mr. Greneman's Exhibit 203 analysis of tariff 26.11, the cost-based customer charge of $89.56 was lowered to $36 and the cost-based demand charge of $16.59 was lowered to zero. (Tr. 360) The unrecovered portion of the service and demand charges were then added to the energy charge. (Tr. 360; Ex. 203)

Mr. Greneman testified that by virtue of the fact that Midland has customers connected to the system, there are ownership costs associated with owning and operating meters, services, meter reading and billing, and that customer cost is $27.11/month. (Tr. 402; Ex. 203) Midland must recover this amount from each customer each month. (Tr. 402) In addition, there is an internal capacity cost related to ownership of substations and lines of $62.45 associated with the three-phase customer. (Tr. 402; Ex. 203) Therefore, Midland's internal cost associated with a customer who imposes a non-coincident demand of 7.31 kW is $89.56/month. (Tr. 402; Ex. 203) In addition, there are two components to external costs. (Tr. 402) For purchased power, there is a capacity component and an energy component. (Tr. 402) The capacity component is $16.59/kW. (Tr. 402) The energy component is $0.019064/kWh. (Tr. 402-3)

For a customer under tariff 26.16, Mr. Greneman explained that the cost-based customer charge was lowered from $89.56 to $86 and the cost-based demand charge of $16.59/kW was lowered to $15.90. (Tr. 360) This resulted in an energy charge of $0.02184/kWh. (Tr. 360) For an average customer having an average three-phase load profile (i.e. 7.31 kW demand and 3,110 kWh use), this results in a monthly cost recovery of $261.75. (Tr. 360)

However, customers under tariff 26.16 pay an actual energy charge of $0.03/kWh, not the $0.02184/kWh used in the calculation. (Tr. 360) At the hearing, Mr. Greneman explained this difference resulted from the fact that Midland is billed for a $4/kW hourly non-coincident demand charge by its supplier CIPCO which is not reflected in the $0.02184 energy charge developed in Exhibit 203. (Tr. 360, 471-7) [Note that Mr. Wieck testified CIPCO does not actually bill Midland a $4/kW hourly non-coincident demand charge, but bills Midland for non-coincident demand based on a millage rate times the kWh for that month. (Tr. 672-7)] Corn Belt does not charge the $4/kW non-coincident demand charge. (Tr. 474, 677) Mr. Greneman first testified although this non-coincident demand cost is included in the $15.90/kW coincident demand charge, it is incurred when any demand is imposed by the co-generator, but cannot be collected under tariff 26.16 unless the co-generator imposes a coincidental demand. (Tr. 360-1) He later changed his testimony to say that the $4/kW is not included in the $15.90/kW charge, and his previous testimony was incorrect. (Tr. 473-6) He testified it is recovered from customers under tariff

26.16 in the difference between the $0.02184/kWh energy figure and the $0.03/kWh figure actually billed as the energy charge. (Tr. 475-7; Ex. 203) Mr. Greneman testified there is nothing else included in the difference other than the $4/kW non-coincident demand charge. (Tr. 475) In Exhibit 203, Mr. Greneman showed how the energy charge was recalculated to include this $4/kW cost, which resulted in the $0.03/kWh energy charge for customers under tariff 26.16. (Tr. 361, 471-7; Ex. 203) He agreed that the $4/kW charge was not included in the $261.75 figure in Exhibit 203 for the 26.16 rate and that it should have been. (Tr. 477)

It should be noted that if the customer's monthly bill under tariff 26.16 is recalculated as was done in Exhibit 203, but using an energy charge of $0.03/kWh, the bill would be $295.60 rather than $261.75. This discrepancy was somewhat resolved by Mr. Greneman in post-hearing testimony. After the hearing, Mr. Greneman again changed his testimony, this time explaining the difference between the $0.02184/kWh energy figure and the $0.03/kWh figure for tariff 26.16 in Exhibit 203 was not due to the $4/kW non-coincident demand cost. (Greneman 12/13/99 testimony pp. 3-6) He testified the $4/kW cost was already included as part of total external demand costs. (p. 7) Rather, the difference was because of an error in deriving average three-phase customer coincident demand, which was actually 6.01 kW rather than 7.31 kW. (pp. 3-6) Mr. Greneman made this correction in post-hearing Exhibit 235 (a revision of Exhibit 203), which increased the tariff 26.16 energy figure from $0.02184/kWh to $0.028488/kWh. (pp. 2, 6; Ex. 235) Mr.

Greneman testified that the $0.028488 figure was rounded up to $0.03 in designing the tariff 26.16 energy rate. (p. 6)

Mr. Greneman's testimony and exhibit 235 only show that rates under tariff 26.11 and 26.16/26.18 will recover approximately the same costs at the usage level and coincident demand level (3,110 kWh and 6.01 kW) used in the exhibit. They do not show the rates are approximately equivalent at any other usage or demand levels. In fact, the evidence showed the rates are not equivalent at other levels. (Tr. 34, 539-40; Ex. 208)

Mr. Greneman's opinion is that tariff 26.16 is cost-based. (Tr. 361; Greneman 12/13/99 testimony p. 8) He testified that tariff 26.16 is based on cost of service in terms of both rate level and rate structure and was developed using the same principles that were used in the development of tariff 26.11. (Tr. 361; Exs. 201, 203, 235) Rate 26.11 was developed by recovering costs allocated to the class using a combination of service and energy charges. (Tr. 361; Ex. 203, 235) He testified another combination of service, energy, and demand charges recovers the same class costs for co-generation rate 26.16. (Tr. 362; Ex. 203, 235)

Mr. Greneman testified customers that take service under tariffs 26.11 and 26.16 are not similarly situated customers. (Tr. 362) Rate 26.11 customers have a reasonably predictable historical load profile. (Tr. 362) Co-generation customers are expected to have an unknown or sporadic load profile which may change depending on which way the wind is blowing. (Tr. 362) He testified one widely recognized rate

design principle is that the utility must have a reasonable expectation of recovering costs from the customers that incur them. (Tr. 362) He testified this was a common principle used in designing both rates. (Tr. 362)

Mr. Greneman further testified that if rate 26.11 were applied to co-generation sales, Midland should expect a significant revenue shortfall. (Tr. 362) He testified in order to remain whole, Midland would have to raise its rates to other sales classes to subsidize co-generators, which would be discriminatory to the other customers. (Tr. 363)

Another common costing and rate design principle involves grouping classes together based on similar load characteristics and usage patterns. (Tr. 363) Under this consideration, Mr. Greneman testified customers under tariffs 26.16 and 26.11 clearly have different load profiles and should be treated separately. (Tr. 363)

Mr. Greneman testified that industry-wide, utilities have developed separate standby and co-generation sales rates in recognition of their need to recover costs when sporadic sales are anticipated. (Tr. 363) He testified these rates quite often include the recovery of internal fixed costs through a monthly service charge not tied to energy consumption. (Tr. 370) He also testified that he does not know whether it is common for utilities to charge a separate coincident demand charge for co-generators when such a separate charge is not explicitly charged to non-generating customers of the same class. (Tr. 381) It must be noted that Mr. Greneman did not provide percentages of such utilities doing so in the industry, and the only example

he provided was Woodbury County REC. (Tr. 382; Ex. 223, 229) He provided some generalized information regarding backup rates in the electric and gas industries, but nothing showing whether utilities have developed separate co-generation rates. (Ex. 229) Ms. Collister testified that research by OCA staff revealed that investor-owned utilities in Iowa do not have separate rate structures for co-generators such as tariff 26.16. (Tr. 265) Mr. Wind also testified he is not aware of any rates structured like 26.16 with a demand charge, and testified that investor-owned utilities in Iowa have not taken the same approach as Midland. (Tr. 157, 198-9, 203) A review of Iowa investor-owned utility tariffs by Board staff showed that Iowa investor-owned utilities all have standby or supplemental power rate schedules or riders for customers with self-generation. These rate schedules and riders generally apply to large power customers who are already billed for kW demand.

Mr. Greneman's conclusion is that the rates and service classifications established by Midland, including its tariff 26.16 co-generation rates, apply equitably to similarly situated customers and in a non-discriminatory manner. (Tr. 363) Mr. Greneman testified that co-generation customers should be responsible for the cost of metering needed to record sales to and from the co-generation facility, and that if Midland were to assume responsibility for this cost, it would subsidize co-generators at the expense of other sales customers. (Tr. 363)

Mr. Wieck and Mr. Severson also testified that tariffs 26.16 and 26.18 do not discriminate against wind generators or other members wishing to use renewable

energy sources. (Tr. 520, 544, 724-5) Mr. Wieck testified tariffs 26.16 and 26.18 were developed to set out reasonable requirements to address the unique demands co-generators place on Midland. (Tr. 520, 544) He testified they only attempt to require co-generators to pay their fair share of costs created by the service they are requesting. (Tr. 520, 544-5)

Mr. Greneman testified that in ratemaking, equal rates are not equitable rates because customers use system fixed costs differently. (Tr. 366) Once a customer's demand level is established, customers who use that demand for more hours per month will have a lower per kilowatt hour cost. (Tr. 366) The demand level may be visualized as a claim on the system distribution facilities for the month. (Tr. 367) Load factor measures the extent to which fixed facilities are utilized. (Tr. 367) Higher load factor customers have the ability to divide the same fixed charge over more kWh of use, which gives them a lower rate per kWh. (Tr. 367)

Mr. Greneman testified that customers that comprise rate 26.11, in the aggregate, have a 58.3 percent load factor. (Tr. 367) He testified that this load factor applies to the average consumer in the class, which inherently recognizes that all consumers are either above or below the aggregate class load factor. (Tr. 367-8)

He testified that tariff 26.16 was created to recover the cost of service of customers that may have a pattern of use different than the class as a whole, or which may be somewhat unpredictable. (Tr. 368) Rate 26.16 used the same costs as rate 26.11, but charges most of the system demand costs through fixed charges

rather than through an energy charge, because any expected change in load factor would not likely allow Midland to fully recover its fixed distribution system or external demand costs. (Tr. 368) In summary, Mr. Greneman testified that rate 26.16 effectively recovers costs from consumers that have different load profiles or unpredictable load factors. (Tr. 368)

Mr. Greneman does not agree with Ms. Collister's assertions that (1) there is no evidence Midland looked at the actual operation of co-generators when it designed rate 26.16, and (2) Midland must prove a neutral, cost-based justification for serving co-generators under a different rate design than regular three-phase customers. (Tr. 369) Mr. Greneman asserts that since development of tariffs 26.16 and 26.11 are consistent from a cost of service standpoint, rate 26.16 is itself cost-based, and is therefore equitable and non-discriminatory by industry measures. (Tr. 369-70) Mr. Greneman testified rate 26.11 would not be equitable if it did not produce a cost-based revenue requirement. (Tr. 370)

Mr. Greneman testified tariff 26.16 was based on accurate data from the cost-of-service study. (Tr. 433) He believes no empirical data other than the tariff 26.11 data was needed in order to develop tariff 26.16. (Tr. 483) This is because the customer component of cost can be common to both co-generators and regular three-phase customers. (Tr. 483) He also does not see why the internal capacity costs would be different for a co-generation customer than for a regular three-phase customer. (Tr. 484) External demand and energy costs are as they are incurred.

(Tr. 484) Therefore, he testified, using tariff 26.11 as a foundation for tariff 26.16 was defensible. (Tr. 484)

Mr. Greneman further testified it was not necessary for Midland to look at the actual operation of co-generators in conjunction with establishment of rate 26.16. (Tr. 370) This is because it would be difficult to imagine a finding that load profile does not materially change. (Tr. 370) He believes that data for any number of co-generators will show a meaningful change in load profile. (Tr. 374) Mr. Greneman testified he does not believe empirical data is at all necessary to develop a cost-based rate applicable to a co-generator. (Tr. 395-6) He testified if he used data from any one customer, it would be wrong for another customer, and if he took a sample of 500 customers, it would only be right for the average. (Tr. 396)

He testified that residential, farm, commercial and industrial classes have characteristic load patterns that are different from one another and reasonably predicable. (Tr. 370) However, he testified, the operation of a wind turbine co-generation facility is quite unpredictable. (Tr. 370)

He further testified that one or two co-generation consumers may be able to "hide" in the class. (Tr. 370) However, he testified, if every consumer in a class had a co-generation facility, the utility would not be able to predict revenues and would either have to increase energy rates significantly or apply a co-generation rate to the entire class in order to recover its cost. (Tr. 370-1, 373)

Mr. Greneman testified Midland proved a neutral, cost-based justification for serving co-generators under a different rate design than regular three-phase customers. (Tr. 371; Ex. 203)) The rationale is that when a co-generation facility is not operating, it must rely on the utility for back-up power and the utility must provide facilities standing ready to meet these demands whenever they occur. (Tr. 371) However, because of its generation capabilities, the co-generator may not make sufficient energy purchases throughout the month to enable the utility to fully recover its costs. (Tr. 371) He testified this is the main reason that utilities develop co-generation back-up rates in which most internal demand costs are recovered up front. (Tr. 371)

Mr. Greneman testified that the data from Mr. Welch showing his energy consumption has not changed significantly requires further investigation. (Tr. 372) There are many factors that may not be apparent, such as the rated capacity of the turbine in relation to the backup requirements of the load, whether or not the wind turbine was operating in parallel with the motel load, whether the turbine was down for maintenance, whether the wind was of sufficient speed to generate power, whether any additional electrical load was added after installation, and whether the occupancy rate of the motel changed after installation. (Tr. 372)

Mr. Greneman believes the load profile of a wind turbine superimposed on the load profile of a commercial load will tend to preserve the non-coincident peak demand and lower the monthly energy requirements, resulting in a degradation in

load factor. (Tr. 372, 464-7) Under these conditions, he does not agree that Midland will have an opportunity to fully recover its costs. (Tr. 372)

Mr. Greneman testified there has been a degradation of Mr. Welch's load factor since installation. (Tr. 373) He prepared an exhibit, page 1 of which is a table that shows a comparison of the average of the monthly load factors for Welch Motel before and after installation of the wind generator. (Tr. 373; Ex. 204) Page 2 of the exhibit is a graph that shows as a result of installation of the wind turbine, the load factor associated with purchases from Midland has declined in eight out of ten months. (Tr. 373; Ex. 204) He testified that in July and August, the load factors after installation are approximately equal to, or slightly greater than, load factors before installation. (Tr. 373; Ex. 204) He testified this convergence in load factors is apparently due to the fact that the average wind speed is less in summer months than in the other months of the year. (Tr. 373) Mr. Greneman testified that the point of the chart was to show there has been a material change in consumption levels and a general decline in load factor after installation of the wind turbine. (Tr. 373; Ex. 204) Mr. Greneman used non-coincident demand figures in Exhibit 204 because he was calculating Mr. Welch's load factor, and Midland does not look at coincident demand to determine load factor. (Tr. 564) However, Midland’s demand rates in tariffs 26.16 and 26.18 are based on coincident demand rather than non-coincident demand. (Tr. 564) Exhibit 204 shows Mr. Welch's average (for years 1994-96) monthly load factor (based on non-coincident demand) before installation ranged

from 32.5 percent to 46.6 percent, and after installation (years Oct 1996-98) ranged from 19.39 percent to 43.41 percent. (Ex. 204)

Mr. Greneman testified that Mr. Swecker is installing a wind turbine with a power rating of approximately 65 kW, which is approximately ten times the average peak demand of an average residential consumer. (Tr. 374) It represents generation that can easily reduce his requirements from Midland greatly whenever the wind speed is sufficient. (Tr. 374) He testified this would clearly result in a different load profile than a typical residential consumer. (Tr. 374)

Mr. Greneman prepared a table which develops what he characterized as a conservative estimate of the decrease in monthly sales to the Sweckers from Midland after the installation of their wind turbine. (Tr. 374) Mr. Greneman considered the Sweckers' average monthly historical energy use for the period August 1996 through July 1999. (Tr. 374; Ex. 205) Mr. Greneman then estimated the energy the Sweckers would obtain each month from the generator. (Tr. 375) Since the Sweckers are installing the same model of wind turbine as Mr. Welch, Mr. Greneman assumed that the energy generated by Mr. Welch's turbine also would have been generated by the Sweckers' turbine if it had been installed at the time. (Tr. 375; Ex. 205) The amount of generation during the months July, August, and September are shown as zeros, because Mr. Welch's consumption from Midland during those months, on average, increased, and his non-coincident demand also increased. (Tr. 375; Ex. 209) Mr. Greneman estimated there would be a decrease of

about 41 percent in the Sweckers' annual energy sales. (Tr. 375; Ex. 205) Mr. Greneman estimated Midland would under-recover approximately $945 in costs per year from the Sweckers as a result of installation of the wind turbine if tariff 26.11 were applied. (Tr. 376; Ex. 205)

Mr. Greneman testified that Mr. Welch's non-coincident demand tends to be the same or increase after installation, and any decrease in sales levels will result in a decrease in load factor. (Tr. 376; Ex. 204) Therefore, Mr. Greneman concluded that for both Mr. Welch and the Sweckers, energy use will decrease and the monthly non-coincident demand will remain approximately constant, thus resulting in a deterioration in load factor. (Tr. 376) Therefore, it is his opinion that sales to co-generators under tariff 26.11 would not allow Midland to recover its costs associated with serving these customers. (Tr. 377, 384-5) He testified rate 26.16 is much more likely to allow Midland to recover its costs of serving three-phase co-generation customers than rate 26.11. (Tr. 377, 384-5) It is also his opinion that tariff 26.16 was designed as a cost-based rate and is non-discriminatory. (Tr. 377)

Mr. Wieck testified that "Midland would not be saying that the rates under Tariff 26.11 could NOT recover the costs of serving member-consumers that have generation. Midland is saying that the rates under Tariff 26.11 may not recover the costs of serving member-consumers that have generation. Midland is saying that because of their ability to produce their own energy, co-generators would be less likely to fully pay their full costs of service under Tariff 26.11 than under 26.16 or

26.18. Where Midland has the right to establish appropriate classification of members, and design its own rates, why should Midland have to risk whether or not a co-generator is able to generate enough of its own power during a particular month to prevent Midland from recouping its appropriate costs?" (Tr. 556) Mr. Wieck further testified that "Co-generators are investing a significant amount of money in equipment to produce as much of their own energy as possible, and prevent buying any more power from an outside source than absolutely necessary. Isn't this in and of itself supporting data?" (Tr. 557)

Mr. Wieck and Mr. Severson testified that Mr. Swecker's statements about how much energy he expected his wind generator to produce and marketing brochures from wind generator companies provided further support for Midland's conclusion that rates under tariff 26.11 may not allow Midland to recover the $86/month for internal and customer costs. (Tr. 558, 708) Mr. Severson offered these marketing materials as evidence in support of Midland's co-generator rate design. (Tr. 709)

Mr. Wieck testified that since Mr. Swecker had represented his demand to be 25 kW, tariff 26.11 would not allow Midland to recover the demand charges assessed by CIPCO for 25 kW of demand. (Tr. 558) Mr. Wieck agreed that he does not know whether tariff 26.11 would recover Midland's costs from a co-generator. (Tr. 608)

Mr. Greneman testified he is extremely confident that 26.11 would not recover costs, but there are exceptions. (Tr. 397) In reaching these conclusions, Mr. Greneman assumed a co-generator would require a much reduced, unknown amount of power, although he testified this assumption did not drive his analysis because rate 26.16 provides for recovery under any different type of consumption level. (Tr. 385-6) Mr. Greneman testified that if the co-generator operates the way it was designed to operate and generates power as anticipated, the customer would have reduced requirements from Midland. (Tr. 387) He testified no one really knows how it will operate, but he is very confident the power requirements will be reduced. (Tr. 387)

Mr. Greneman agreed that a co-generator can at times reduce coincident peak demand, which would decrease Midland's billing and cost of service. (Tr. 388-90) He agreed that to the extent the wind turbine was running at the time of Midland's coincident peak, at that point for that hour, it would reduce the coincident demand to its supplier. (Tr. 412, 436) He testified whether or not the co-generating facility would reduce Midland's coincident peak demand is dependent upon whether the wind is blowing and the co-generator is operating, and during what time it is operating. (Tr. 434) He also testified there is no metered measure of the amount of any such reduction. (Tr. 436)

Mr. Greneman testified that if Mr. Welch's data showed a zero coincident demand, this is not necessarily attributable to the wind turbine, but could be because his operation was not drawing any power at the time. (Tr. 388-9, 391)

Mr. Greneman's testimony applies equally to tariff 26.18 and tariff 26.16. (Tr. 377-9)

Mr. Greneman agreed that Midland does not always recover all of its internal costs from every customer either in tariff 26.11 or 26.12. (Tr. 399-400) He agreed that Midland recovers more than average costs from some customers, and less than average from others. (Tr. 400)

With regard to Ms. Collister's analysis in Exhibit 112, intended to demonstrate fluctuations in energy usage among rate 26.11 three-phase customers, Mr. Greneman believes it is not relevant because a co-generator is another generating facility and not a regular customer. (Tr. 431-2)

Mr. Greneman testified that since residential and commercial customers have load profiles that tend to be the same year after year, although they vary by month, the utility has a reasonable expectation that by the end of the year, it will recover its costs through an energy charge. (Tr. 404) He testified that once a utility puts its fixed costs on an energy basis, the higher users tend to subsidize the lower users. (Tr. 405) So once the utility puts the rate on an energy basis, it is introducing cross-subsidies within the class. (Tr. 405) He testified that one typical customer that might be expected to receive such a cross-subsidy is a grain dryer. (Tr. 405) Grain dryers

have a fall peak demand, and although they use energy throughout the year, they have a relatively low load factor. (Tr. 405) He testified those customers could very likely be receiving a subsidy within a class, and a lot of utilities have put grain dryers into a separate customer class. (Tr. 405) He further testified utilities have discretion as to whether and how to separate customers into classes. (Tr. 405)

Mr. Greneman testified the co-generation rate was developed because the utility is not dealing with a residential, commercial, or industrial class, but rather with another power producer. (Tr. 406) He testified these power producers anticipate their wind turbine is going to serve them first, and when it doesn't spin, they will need backup power from Midland. (Tr. 406) So in essence, Mr. Greneman testified, Midland is not selling to a customer, but to a generating facility that might be down and with loads that are unexpected, which is unlike a grain-drying facility. (Tr. 406) Therefore, rate 26.16 decouples external costs and bills them as incurred. (Tr. 407) The $15.90/kW coincident demand charge is only charged if the customer has coincident demand that month. (Tr. 407) Similarly, the customer will be billed the $0.03/kWh energy charge only if the customer uses energy from Midland. (Tr. 407)

Mr. Greneman testified that tariff 26.11 seeks to recover costs only on an aggregate class basis. (Tr. 409) He testified the big difference is that tariff 26.11 seeks to recover costs on average, whereas 26.16 is customer-specific. (Tr. 409) He believes that if co-generators were left in tariff 26.11, Midland would be discriminating against the other customers in the class because Midland would not

be charging the co-generators a fair rate. (Tr. 411) Mr. Greneman agreed there are cross-subsidies in tariff 26.11 between large users and small users. (Tr. 411) He agreed that if a customer under tariff 26.11 made energy efficiency improvements to cut usage, this would also reduce Midland's ability to recover costs from that customer. (Tr. 429) He testified if co-generators were left in tariff 26.11, they would in all likelihood fall into the category of customers who were being cross-subsidized. (Tr. 434) However, when asked whether it was appropriate to put a particular customer group into a separate class if you can identify that it is causing cross-subsidization, Mr. Greneman answered it is occasionally appropriate, because there will always be cross-subsidies. (Tr. 434) He testified it was appropriate to separate out the co-generators in this case. (Tr. 434)

Mr. Greneman testified both tariffs 26.11 and 26.16 recover Midland's costs. (Tr. 454) They recover the same costs. (Tr. 454) In tariff 26.11, Midland recovers costs from customers in the aggregate. (Tr. 454) In tariff 26.16, recovery of costs tends to be more customer specific. (Tr. 454)

Mr. Greneman testified he believes OCA Exhibit 111 has no meaning because it takes negative numbers and attributes meaning to them. (Tr. 430, 438) OCA Exhibit 111 is based on Mr. Greneman’s Exhibit 205, which is intended to estimate the Sweckers’ future reductions in Midland sales based on reductions in Mr. Welch’s Midland sales after installing his wind generator. (Tr. 257) Exhibit 205 subtracted Mr. Welch’s average monthly usage after wind generation from his average monthly

usage before wind generation (using data from Mr. Greneman's Exhibit 204) and applied the differences to the Sweckers' usage to estimate their reduced Midland sales. (Ex. 205) However, Mr. Welch's average monthly differences are negative for July, August, and September (reflecting increased Midland sales after Mr. Welch installed his wind generator). (Tr. 375; Ex. 205) For these months, Mr. Greneman's Exhibit 205 adjusted the negative differences to zero for the Sweckers, whereas OCA Exhibit 111 used the unadjusted negative differences. (Tr. 257, 375) Mr. Greneman testified the OCA numbers were inconsistent, he had no idea what they meant or what the rationale was, and thus the use of the negative differences had no meaning to him other than being an arithmetical exercise. (Tr. 438) Mr. Greneman testified Exhibit 205 shows Midland would under-recover its costs by approximately $945. (Tr. 376) Mr. Greneman testified OCA Exhibit 111 shows Midland would under-recover its costs by $455.95. (Tr. 437)

Mr. Greneman testified there is a fatal flaw in the reasoning process behind both Exhibits 111 and 205 that compare Mr. Welch's consumption before and after installation of the wind generator and attempt to draw conclusions about how installation of the wind generator will affect the Sweckers' load. (Tr. 439-41; Ex. 234) He testified since Mr. Welch's total energy consumption increased after installation, the contribution of the wind generator was greater than previously thought, and the estimates of the ability of the generator to reduce the Sweckers' need for energy from Midland were significantly understated. (Tr. 441-4; Ex. 234) Mr. Greneman

testified this means there would be an even greater under-recovery of costs from the Sweckers if they were allowed to stay on rate 26.11. (Tr. 446)

Mr. Greneman expressed concern that Mr. Wind's Exhibit 6 was difficult to follow. (Tr. 447) He testified Mr. Wind did not include the revenue loss to Midland in a situation where the wind turbine is not running during the peak hour and runs normally during the other hours, yet not enough to recover the $15.90/kW coincident peak demand cost. (Tr. 447-8) Mr. Greneman believes that Mr. Wind's estimate of the wind generator's reduction of the Sweckers' coincident peak demand on the Midland system is too high. (Tr. 449) He believes the assumptions intrinsic in Mr. Wind's calculations are more tenuous than other assumptions in this case. (Tr. 450) With the existing metering configuration at Welch Motels, Mr. Greneman testified it is his understanding there is no ability to measure how much Mr. Welch's wind generator reduces his Midland coincident peak demand. (Tr. 450-1)

In Exhibit 205, Mr. Greneman did not estimate how wind generation would impact the Sweckers' monthly coincident demand. (Tr. 462-3) He testified in some months it would lower coincident demand requirements and in other months it would not. (Tr. 463) He does not know what the effect of a wind generator on coincident peak would be. (Tr. 468)

Mr. Severson testified Midland cannot recoup any money it would pay for the capacity of a co-generator because it is not firm power. (Tr. 701) He testified no one can depend on power being supplied by a wind generator because no one knows

when the wind will blow. (Tr. 701) Therefore, there is no market for the capacity of a wind generator. (Tr. 701) He also disagrees with Mr. Swecker's testimony that a QF facility is beneficial to Midland because it is putting capacity credit back on the line which lowers the demand charge to Midland. (Tr. 702-3)

In responding to Ms. Collister's testimony that the Sweckers were being asked to pay for two meters, Mr. Severson testified this is true. (Tr. 710-11) He testified the cost of the regular three-phase meter is $120, and in addition to paying for the specialized meter up front, the Sweckers would be charged an extra $0.54 per month in the $86/month service charge for the regular meter. (Tr. 711-12)

J. Midland's Post-Hearing Testimony

After the hearing, Mr. Greneman prepared a revision to Exhibit 203. (Greneman testimony filed 12/13/99 p. 2; Ex. 235) Exhibit 235 contains Mr. Greneman's calculations regarding the equivalency of rate structures 26.11 and 26.16/26.18. (p. 2; Ex. 235) Mr. Greneman testified Exhibit 235 differs from Exhibit 203 only in the respect that the average coincident demand for each three-phase customer was changed from 7.31 kW to 6.01 kW. (p. 2)

Mr. Greneman testified the reason for making this change was because at the time he was asked to analyze rate 26.16, he did not have all the original workpapers for the rate. (p. 3) He stated he needed to rely on the cost-of-service study and the workpapers used to develop rate 26.11, which only referred to the 7.31 kW figure. (p. 3) He testified as a result, it initially appeared to him that the $4/kW hourly

demand charge from CIPCO had been excluded from the $15.90/kW coincident demand charge in 26.16 and therefore needed to be added separately. (p. 3)

After the hearing, Mr. Greneman conferred with Mr. Brian Kading, Executive Vice President of the Iowa Association of Electric Cooperatives (IAEC). (p. 3) Mr. Kading had been the person who performed the cost-of-service study for Midland in 1995. (p. 3) Mr. Kading told Mr. Greneman that a coincident demand figure of 6.01 kW, not 7.31 kW, per customer had been used to allocate external capacity costs in the cost-of-service study. (p. 3)

Mr. Greneman testified both of these average customer demands are referenced in the electronic version of Midland's cost-of-service study. (p. 3; Ex. 201) Mr. Greneman testified the 7.31 kW figure was developed directly as a result of using the REA AB Methodology as described in REA Bulletin No. 45-2. (p. 3) He also testified the result of multiplying 7.307 kW per customer times 213.22 customers, times 12 months, yields a class demand of 18,696 kW. (p. 4)

At the hearing, Mr. Greneman was not sure whether the 7.31 figure was a coincident or non-coincident figure. (Tr. 462-3, 480-2) After calling someone at the IAEC office, Mr. Greneman testified he was told it represents the class diversified maximum demand; that it is not the coincident demand of the class and is not the arithmetic sum of each customer's maximum metered demand, but rather, the average maximum monthly demand of rate 26.11 customers as a whole. (Tr. 486-8) He testified that class diversified maximum demand is the average class peak for the

month divided by the number of customers in that class, which was 7.31 kW. (Tr. 487-8) Mr. Greneman also testified this class diversified maximum demand is always equal to or greater than the class coincident demand. (Tr. 488) Put another way, he testified that the average coincident demand for a three-phase customer is going to be equal to or less than the 7.31 kW figure. (Tr. 489) Mr. Greneman testified that since the 7.31 kW figure was all they had, the IAEC used it as both non-coincident and coincident demand in the cost-of-service study, which he also did in Exhibit 203. (Tr. 489-90) Mr. Greneman was somewhat unclear on this point and he agreed to provide additional testimony after the hearing. (Tr. 489-91)

In his post-hearing testimony, Mr. Greneman testified in the Midland system, the single- and three-phase classes, which drive the cooperative's system peak, are thought to have coincident and non-coincident class peaks at approximately the same time. (p. 4) Therefore, he testified, the 7.31 kW figure could be used as either coincident or non-coincident demand. (p. 4)

Mr. Greneman testified the cost-of-service study electronic template shows the actual allocation of external demand costs. (p. 4) However, the external demand costs allocated to the three-phase class in this version were based on a class coincident annual demand of 15,374 kW, not 18,696. (p. 4) He testified this figure, when divided by 213 customers and 12 months, equals 6.01 kW per customer per month. (p. 4)

Mr. Greneman testified the difference between the 7.31 kW and the 6.01 kW per customer represents a reconciliation from the theoretical result of the REA AB methodology to Midland's actual system coincident peaks during the test year. (p. 4) To do this reconciliation, he testified the cost-of-service study first subtracted the actual metered demands at the time of the coincident peak for those classes that were demand metered from Midland's actual metered system coincident peak during the test year. (p. 4-5) The amount left over was then prorated over the remaining (i.e. non-metered) classes in proportion to their demands estimated through the REA AB methodology. (p. 5) This gave a class coincident annual demand of 15,374 kW. (p. 4)

Mr. Greneman testified this reconciliation had no effect on how rate 26.11 was developed, because it has no demand charges. (p. 5) However, he testified, rate 26.16 has a coincident demand charge for the recovery of external demand costs. (p. 5) Therefore, he used the 6.01 kW per customer demand in Exhibit 235 (a revision of Exhibit 203) to reflect the way external demand costs were actually allocated in the cost-of-service study. (p. 5) He testified the 6.01 kW figure represents a reconciliation to Midland's actual system coincident peaks, while the 7.31 kW figure does not. (p. 5)

Mr. Greneman testified when the total external demand costs for the three-phase class are divided by the 15,374 kW figure related to 6.01 kW (as opposed to the 18,696 kW figure based on 7.31 kW that was used in Exhibit 203), the result is

unrecovered demand costs of $4.28/kW that must be transferred to the energy component. (p. 6) The result is an energy component of $0.028488/kWh, which was rounded up to $0.03/kWh when rate 26.16 was developed. (p. 6)

Therefore, Mr. Greneman testified, there is no additional cost added to rate 26.16 in Exhibit 235 as was done in Exhibit 203. (p. 6) He testified the $4/kW hourly demand charge for CIPCO is already included in the total external demand costs. (p. 7) When asked why the $4 charge is included in rate 26.16 applicable to all co-generation customers even though Corn Belt's rates do not include the $4 charge, Mr. Greneman testified that all coincident demand and energy charges from both suppliers are combined and charged to all customers. (p. 7)

Mr. Greneman testified Exhibit 235 should replace Exhibit 203 as more accurately reflecting the co-generation rate analysis. (p. 8) He also testified his August 30, 1999 testimony at pages 360-1 should be revised. (p. 8) It should be noted that Exhibit 235, just as Exhibit 203, shows rate equivalency only at the coincident demand and energy usage levels (6.01 kW and 3110 kWh) used in the exhibit.

In post-hearing testimony filed December 13, 1999, Mr. Wieck provided additional testimony explaining how the 7.31 kW demand was derived in Midland's cost-of-service study. (Wieck testimony filed 12/13/99 p. 2)

At the hearing, Mr. Wieck testified he was not aware of any changes or updates to REA Bulletin 45-2. (Tr. 615) Ms. Easler stated when staff of the OCA

contacted RUS (the current name of the REA), they were informed bulletin 45-2 had been rescinded as of December 20, 1991, and that one must look at 7 CFR Part 1710, subpart E. (Tr. 615) Mr. Wieck agreed that load data would have changed since 1954-5. (Tr. 615) REA bulletin 45-2 says the tables in the bulletin are based on load data for 1954-5. (Tr. 615; Ex. 222)

In his post-hearing testimony, Mr. Wieck testified he spoke with Mr. George Shultz, Chief of the Energy Forecasting Branch of the Electric Staff Division for Rural Utilities Services (RUS) (formerly the Rural Electrification Administration, or "REA"). (p. 2) Mr. Shultz told Mr. Wieck the AB Methodology and formulas continue to be applicable and useful in a cost-of-service study where a utility has unmetered customer demand. (p. 2)

Mr. Wieck testified the first step in the methodology is to arrive at the average number of customers to use for the class. (p. 2) This is necessary because there is variance in the number of customers taking service during the test year, and the number of customers is not necessarily constant. (p. 2)

Mr. Wieck testified he and Mr. Greneman worked with Mr. Brian Kading of the IAEC to further study and analyze the cost-of-service study electronic template used in 1995. (p. 3) After talking with Mr. Kading, Mr. Wieck testified they then understood that Mr. Kading had applied a weighting factor from the residential class to calculate the number of customers for the three-phase class. (p. 4; Ex. 237) This was done to obtain a more accurate average number of three-phase customers, which was

determined to be 213.22. (p. 4-5; Ex. 237) The effect of the weighting factor was to reduce the costs for the three-phase class, and ultimately the costs to be recovered from the three-phase co-generation customers. (p. 5)

Mr. Wieck testified the next step in calculating demand applies a "Factor B" formula to the test year data. (p. 5; Ex. 239) The result of this calculation yields a monthly demand figure of 7.31 kW per customer. (p. 6; Ex. 238) In the cost-of-service study, the 7.31 kW/customer monthly demand figure was multiplied by the calculated number of customers (213.22), and then by twelve months, to yield a calculated annual demand for three-phase customers of 18,696 kW. (p. 6)

Mr. Wieck testified he agreed with how Mr. Greneman derived the 6.01 kW per customer demand figure, and that the resulting adjustment in three-phase demand from 18,696 kW to 15,374 kW increased the accuracy of the demand data upon which costs were allocated to the three-phase class. (p. 6-7) Mr. Wieck testified the reason it took so long to arrive at this explanation was because they had never seen the electronic template, and were not aware of some of the adjustments being accomplished in the template. (p. 7)

Mr. Wieck also submitted testimony regarding how CIPCO bills Midland for non-coincident demand. (p. 7) CIPCO recovers a portion of its demand costs by assessing Midland 7.5 mils for each kilowatt hour purchased. (p. 8) In the cost-of-service study, Midland included this expense in its total external demand costs. (p. 8) In establishing its rates, Midland recovers a portion of such external demand costs

through the demand portion of its rates, with the remaining balance through energy charges. (p. 8)

K. The Sweckers' Post-Hearing Testimony

After the hearing, Mr. Wind submitted additional testimony, in which he discussed the new 6.01 kW demand figure. (12/21/99 Wieck testimony) Mr. Wind testified the 17.8 percent downward adjustment from 7.31 kW to 6.01 kW suggests that either the REA AB methodology is not accurate or appropriate, or that the assumptions used in the reconciliation are not appropriate. (p. 2)

Mr. Wind also questioned the changes in co-generation demand costs, which he testified were $14.95/kW-month in Mr. Greneman's August 30, 1999 testimony, $16.59 in Exhibit 203, and $20.18 in Exhibit 235. (p. 2-3; Tr. 355) Mr. Wind testified it appeared that rather than starting from a factual analysis of its cost for serving a co-generator, Midland was working backwards to justify the demand and energy charges it previously had set. (p. 3) Mr. Wind questioned Mr. Greneman's assertion there was an underrecovery of demand costs that had to be added to the energy charge. (p. 3) Mr. Wind doubted the underrecovery argument because it depends on the assumptions used for the average demand for three-phase customers that are not based on actual metering data for the average three-phase customer or co-generation customer but, rather, on an REA methodology and reconciliation based on that methodology. (p. 3) Mr. Wind testified Midland provided no explanation for the cost shifting, and it appeared to him that Midland was searching for an

explanation of why it charges $0.03/kWh in the co-generation tariff, which is 58 percent more than the actual external energy cost of $0.019/kWh. (p. 3; Ex. 235) Mr. Wind testified Mr. Greneman originally used a supposed $4/kW demand charge as justification, and that since that is already included in the demand charge, it appears Midland is searching for another method to justify the 58 percent markup in the energy charge. (p. 4) He testified there appears to be no factual or accurate data regarding co-generators that was used to justify the 58 percent markup. (p. 4) Mr. Wind testified the explanations given suggest to him that Midland is simply trying to justify the rate, not explain how it was designed based on factual and accurate data from co-generators. (p. 4)

Mr. Wind's testimony that the changing demand figures suggest that Midland was searching for a method to justify the 58 percent markup in the energy charge is not persuasive. The preponderance of the evidence supports the position that Mr. Greneman made a mistake in his original analysis because he did not understand what had been done in the cost-of-service study, not that demand numbers had been changed to support a particular outcome. The cost-of-service study includes the 15,374 kW figure which was the basis for the 6.01 kW demand figure. (Exhibit 201) In addition, at the hearing, Mr. Greneman appeared to be genuinely confused regarding the meaning of the 7.31 kW demand figure. (Tr. 490-1)

Mr. Swecker also submitted post-hearing testimony. (12/21/99 Swecker testimony) He questioned the accuracy of the Midland data, since the figures were

changed after the hearing, and since Mr. Kading did not testify or submit any information under oath. (p. 2) Mr. Swecker claimed the true cost of energy from Midland in 1994 was $0.053616/kWh according to their cost-of-service study, which is the true avoided cost he should be paid. (p. 3) Mr. Swecker testified to a number of concerns he had regarding Midland's evidence. (pp. 2-5) He testified Midland's tariff is discriminatory by subjecting co-generators to demand charges, placing them at an unfavorable disadvantage. (p. 5)

L. The OCA's Post-Hearing Testimony

In testimony submitted after the hearing, Ms. Collister testified that the Corn Belt PURPA Implementation Plan, Woodbury County REC tariff, and projected and expected load characteristics of a co-generator, which Midland stated it relied on to develop its co-generation rates, are not the type of empirical evidence necessary to support the differences in rates and rate designs applicable to three-phase customers under tariffs 26.16/26.18 versus those applicable to customers under tariff 26.11. (OCA Testimony filed 12/10/99, p. 2) She testified Midland looked only to the language used in the Corn Belt Plan and Woodbury tariff, and did not look at actual usage and load characteristics of co-generators. (p. 2) She further testified that the projected and expected load characteristics of a co-generator "appear to be nothing more than unsubstantiated subjective expectations of a co-generator load characteristics." (p. 2) Ms. Collister testified she surveyed co-generation tariff provisions used by a number of rural electric cooperatives in Iowa and was unable to

find any other cooperative that uses a separate rate structure for co-generators similar to Midland's. (p. 3) She testified the tariff of Iowa Lakes REC places co-generators on regular sales rates for the first six months of operation, and then determines whether to establish a qualifying facility backup rate based upon metered data in a cost-of-service study. (p. 4) Ms. Collister testified that although six months may not be long enough to get a complete picture of year-round costs to serve a co-generator, it provides for an empirical analysis of actual data to support any difference in rate design. (p. 4)

ANALYSIS

Midland is an electric cooperative, and therefore is not subject to the rate regulation authority of the Board. Iowa Code § 476.1A (1999). However, it is subject to other regulation and enforcement activities of the Board, including the requirements in Iowa Code § 476.21. Iowa Code §§ 476.1A, 476.21 (1999). Therefore, the proper focus of this decision is not to set rates for Midland, but to determine whether Midland's tariffs discriminate against co-generators in violation of Iowa Code § 476.21.

Iowa Code § 476.21(1999) provides that:

> A municipality, corporation or co-operative association providing electrical or gas service shall not consider the use of renewable energy sources by a customer as a basis for establishing discriminatory rates or charges for any service or commodity sold to the customer or discontinue services or subject the customer to any other prejudice or disadvantage

> based on the customer's use or intended use of renewable energy sources. As used in this section, "*renewable energy sources*" includes but is not limited to, solar heating, wind power and the conversion of urban and agricultural organic wastes into methane gas and liquid fuels.

The section does not define the meaning of "discrimination", and neither does Iowa Code Chapter 476. Iowa Code § 476.1A states that "Electric cooperative corporations and associations and electric public utilities exempt from rate regulation under this section shall not make or grant any unreasonable preferences or advantages as to rates or services to any person or subject any person to any unreasonable prejudice or disadvantage."

Although § 476.1A specifically contains the adjective "unreasonable", and § 476.21 does not, it is logical to interpret § 476.21 as containing a prohibition against unreasonable discrimination. Just because a utility treats co-generators differently from regular three-phase customers does not necessarily mean there has been a violation of the statute. *See* Cities of Newark et.al. v. F.E.R.C., 763 F.2d 533, 546 (3rd Cir. 1985); Cities of Bethany et.al. v. F.E.R.C., 727 F.2d 1131, 1139 (D.C. Cir. 1984). Differences in rates are justified when they are based on factual differences between customers. Cities of Newark , *supra.* If the difference in treatment is reasonable, it does not violate § 476.21. Board Order Granting Request for Formal Complaint Proceedings and Assigning to Presiding Officer; issued June 23, 1999.

In order to determine whether different treatment is reasonable or discriminatory, it is helpful to look to federal statutes and regulations dealing with the same subject as guidance in interpreting Iowa Code § 476.21. The Iowa statute is consistent with the federal. Section 210 of the Public Utility Regulatory Policies Act, 16 U.S.C. § 824a-3(a), requires the Federal Energy Regulatory Commission (FERC) to promulgate rules which require utilities to sell energy to, and purchase energy from, qualifying small power production facilities (QFs). Section 824a-3(c) states that the rules must ensure that rates for sales of energy to QFs "(1) shall be just and reasonable and in the public interest, and (2) shall not discriminate against the qualifying cogenerators or qualifying small power producers."

FERC promulgated rules regarding sales of energy to QFs at 18 C.F.R. § 292.305. Section 292.305(a)(1) provides that rates for sales "shall be just and reasonable and in the public interest", and "shall not discriminate against any qualifying facility in comparison to rates for sales to other customers served by the electric utility." Section 292.305(a)(2) provides that "Rates for sales which are based on accurate data and consistent systemwide costing principles shall not be considered to discriminate against any qualifying facility to the extent that such rates apply to the utility's other customers with similar load or other cost-related characteristics."

This regulation is stated in the negative, and to some degree, Midland is correct when it stated the section provides a "safe harbor." If a utility can show its

rates meet the qualifications in the regulation, then the rates will not be considered discriminatory. The regulation does not require a utility to prove its rates meet the qualifications in the regulation in order to show the rates are not discriminatory.

However, the utility must show its rates and charges are not unreasonably discriminatory once a co-generator has shown that it is subject to different treatment based on its use or intended use of renewable energy sources, and that treatment either has been or would be unreasonably prejudicial or a disadvantage under certain circumstances. Iowa Code § 476.21 (1999) In order to show its rates and charges are not unreasonably discriminatory, since it has established a separate tariff for co-generators, Midland must show that the differences in tariffs 26.11 and 26.16/26.18 are cost-based, that 26.16/26.18 are based on the same cost-of-service methodology as Midland's other tariffs, and that Midland's tariffs are applied in a nondiscriminatory manner to similarly-situated customers. Board Order Granting Request for Formal Complaint Proceedings and Assigning to Presiding Officer, issued June 23, 1999; 18 CFR 292.305(a)(2). "If the electric utility is able to prove cost-based justification for serving any particular class of customers pursuant to different terms and conditions, then the utility is treating differently-situated customers in a different manner, an appropriate situation. It is only when the utility is not able to establish a neutral, cost-based rationale for its differing treatment that it may be said to discriminate among customers in an unlawful manner." *Id.*

A. Is there a prejudice or disadvantage?

The first step is to determine whether co-generators are subject to some prejudice or disadvantage because of their use or intended use of renewable energy sources in tariffs 26.16 and 26.18.

Midland's calculations show that members purchasing lower amounts of energy during a month will pay more for the same kWh under tariffs 26.16 and 26.18 than they will under tariff 26.11. (Tr. 539-40; Ex. 208) Members purchasing higher amounts of energy during the month will pay less for the same kWh under tariffs 26.16 and 26.18 than under 26.11. (Tr. 540; Ex. 208) The break even point depends on the co-generator's coincident demand figure for the month; but even with zero coincident demand, the co-generator will pay more per kWh under tariffs 26.16 and 26.18 if purchasing less than 600 kWh during the month. (Tr. 539; Ex. 208) If the co-generator's coincident demand is 7.31 kW during the month, the co-generator will pay more per kWh under tariffs 26.16/26.18 if purchasing less than 3,605 kWh during the month. (Ex. 208) Mr. Swecker's figures show that co-generators with 25 kW coincident demand during the month will pay considerably more per kWh under tariff 26.16 than they would under tariff 26.11, although the preponderance of the evidence shows it is unlikely a co-generator would have a coincident demand as high as 25 kW. (Tr. 34, 540; Exs. 3, 6, 103, 201) The attached analysis by Board staff shows that if a co-generator's coincident demand is 6.01 kW during the month, the co-generator will pay more per kWh if purchasing less than 2,810 kWh during the month. (See Attachment A) Mr. Greneman's calculations attempting to show rate

equivalence show there is approximate equivalence only if coincident demand is 6.01 kW and energy use is 3,110 kWh during the month. (Ex. 235) The difference in price paid per kWh is a disadvantage to co-generators purchasing lesser amounts of energy during a month under tariffs 26.16 and 26.18.

The preponderance of the evidence shows that Mr. Welch has experienced a reduction in his per kWh rate as a result of being on tariff 26.18, as compared to what he would have paid under tariff 26.12. (Tr. 241, 263-4, 296, 325; Exs. 103, 209) A comparison calculation of Mr. Welch's bills under tariffs 26.18 and 26.12 by Board staff (using Mr. Wind's figures from Exhibit 3) shows that overall, Mr. Welch has paid less under tariff 26.18 than he would have paid had he remained on tariff 26.12. (See Attachment B) Therefore, it cannot be said that Mr. Welch has shown that he has been discriminated against or subjected to any prejudice or disadvantage by the rates or rate structure under tariff 26.18. However, Mr. Welch is a large power user, and tariff 26.12 is a demand and energy tariff. Mr. Welch's experience does not establish what would happen to a user who went from the energy-only rate in tariff 26.11 to the demand and energy rate in tariff 26.18.

Tariff 26.18 provides for a considerably larger up front payment to interconnect than does tariff 26.12, and contains more onerous interconnection requirements than for non-generators. These interconnection requirements are a disadvantage to a co-generator, including Mr. Welch, although he did not have to pay for the special meter. (The tariff has been changed since Mr. Welch installed his

meter, and it is now clear that co-generators must pay for the meter under tariff 26.18.)

No one knows whether the Sweckers will pay more or less per kWh under tariff 26.16 than under 26.11, because no one knows what their kWh usage will be, or what their coincident demand will be. The testimony and exhibits of Mr. Swecker, Mr. Wind, Ms. Collister, and Mr. Greneman that attempt to estimate the Sweckers' demand and energy usage levels after installation of their wind generator are based on so many unknowns and assumptions that they are unpersuasive. (Tr. 34, 62, 108-111, 145-56, 171-83, 255-64, 273-4, 277-83, 374-6, 430-1, 437-52, 458-9; Exs. 6, 111, 205) All we know is that if the Sweckers purchase sufficiently lesser amounts of energy during a month relative to their coincident demand level, they will pay more per kWh under tariff 26.16 than under 26.11. If they purchase sufficiently higher amounts of energy during a month relative to their coincident demand level, they will pay less per kWh under tariff 26.16 than under 26.11. The attached analysis by Board staff shows that if the rate structures of tariffs 26.11 and 26.16 are applied to Mr. Wind's estimates of the Sweckers' coincident demand and kWh consumption levels in Exhibit 6, the Sweckers would pay less under tariff 26.16 than they would under tariff 26.11. (See Attachment C) However, this is not conclusive proof of what will happen to the Sweckers, because Mr. Wind's estimates are also based on multiple unknowns and assumptions and are therefore unpersuasive. (Tr. 148-56, 171-83; Ex. 6)

It is also known that the Sweckers must pay more to interconnect than a regular three-phase member, and are subject to additional requirements to interconnect. The preponderance of the evidence shows the Sweckers will be subject to a disadvantage by the rates and rate structure of tariff 26.16 at certain coincident demand and energy usage levels, and will be subject to a disadvantage by the tariff 26.16 interconnection requirements, as compared to those in tariff 26.11. In order to determine whether the prejudice or disadvantage is unreasonable and discriminatory, we must examine whether the differences between tariffs 26.11 and 26.16/26.18 are cost-based, whether 26.16 and 26.18 are based on the same cost-of-service methodology as Midland's other tariffs, and whether Midland's tariffs are applied in a nondiscriminatory manner to similarly-situated members.

B. Are the differences cost-based?

Tariff 26.11 and current tariffs 26.16/26.18 are cost-based in the sense that they are based on Midland's allocated costs to serve the three-phase customer class, as determined in the cost-of-service study. However, the cost-of-service study contained no information regarding co-generators, because Midland had none at the time. Therefore, Midland used the costs for serving regular three-phase customers as the basis for establishing tariffs 26.16 and 26.18. Midland used no other cost data to develop current tariffs 26.16 and 26.18. Midland did not have any cost data specific to co-generating customers when it developed current tariffs 26.16 and 26.18.

Midland based the different rate structure of 26.16/26.18 on its assumption that a co-generator's demand and energy usage levels would be so different than that of regular three-phase customers that Midland would not be able to recover its costs to serve that particular customer under standard tariff rates. However, it had no data to show what demand and energy usage levels were for co-generators. Even if it had, there was no three-phase class data showing the actual range of demand and energy of individuals in the class available for comparison, since Midland does not demand meter the three-phase class. Therefore, Midland had no data showing co-generators were significantly different than regular three-phase customers upon which to base its different rate structure.

Therefore, the differences between the rate structure of tariff 26.11 and the rate structures of tariffs 26.16 and 26.18 are not cost-based.

Midland's reliance on In re Iowa Power & Light Co., 95 PUR 4th 363 (IUB 1988), for the proposition that cost support data for tariffs 26.16 and 26.18 is not required, since they were established for a new service, is misplaced. The Iowa Power case involved a negotiated rate between the utility and Iowa Methodist Medical Center (IMMC). (RPU-88-5 File). There was no imposition of the backup rate on IMMC by the utility, and the rate was more advantageous to IMMC than the rate previously in place. In addition, the Board told Iowa Power to collect pertinent data so the rate for standby service could be based on actual data in a subsequent rate case. The case is not comparable to this one. (RPU-88-5 File).

C. Are tariffs 26.16 and 26.18 based on the same cost-of-service methodology as Midland's other tariffs?

Both Mr. Greneman and Ms. Collister testified the costing methodology Midland used to allocate costs to the three-phase customer class was the same costing methodology used to allocate costs to other customer classes in the cost-of-service study. (Tr. 230-1, 362) They did not testify that tariffs 26.16/26.18 were based on the same cost-of-service methodology as tariff 26.11. (Tr. 230-1, 362) Midland had no co-generation customers at the time of the cost-of-service study, so it could not allocate costs to a co-generation customer class. Midland used the costs allocated to the three-phase class as the basis for tariffs 26.16/26.18.

It is not accurate to say tariffs 26.11 and 26.16/26.18 are the same because they are merely trying to recover the same allocated costs in different ways. Tariff 26.11 was designed to recover allocated costs as a class. It was not designed to recover each individual customer's individually attributable costs. It was designed to recover the allocated costs of the entire class by recovering average costs over the class as a whole. In the tariff 26.11 class, there are a variety of usage levels by customers, and Midland is not concerned with whether it recovers the average cost to serve from each individual customer. That is why there is no requirement for a demand meter for these customers. Midland does not separately meter demand for regular three-phase customers, so Mr. Wieck testified Midland does not know

whether it is able to recover its costs as to any particular customer receiving regular three-phase service. (Tr. 580-1)

The structure of tariff 26.16/26.18 on the other hand, attempts to recover individually attributable external demand and energy costs, and average three-phase customer and internal demand costs, on an individual by individual customer basis. (Tr. 530-5) Midland is very concerned with whether it can recover a particular co-generating customer's costs from that particular customer. There is no recognition as there is in tariff 26.11 that Midland will under-recover from some customers in the class, and will over-recover from other customers.

Therefore, tariffs 26.16 and 26.18 are not based on the same cost-of-service methodology as tariff 26.11.

This different treatment of customers between those under tariff 26.11 and those under tariffs 26.16/26.18 is unreasonable and discriminatory. Iowa Code § 476.21 (1999).

D. Are Midland's tariffs applied in a non-discriminatory manner to similarly situated members?

There was a great deal of evidence presented regarding whether co-generators are similarly situated with regard to regular three-phase customers or not. This evidence compared known and estimated load characteristics of the regular three-phase class with those of the Sweckers and Mr. Welch, and attempted to show whether or not Midland could recover its costs from the Sweckers if they were left under tariff 26.11. Because of the differences in the ways the load characteristics were determined, the numbers are not comparable.

Load characteristics of the three-phase class were determined in the following ways. Workpaper No. 2 in Midland's cost-of-service study shows that Midland had 213 three-phase customers at the time of the study. (Ex. 201) The number of kWhs sold to the class as a whole during the test year was 7,948,247. (Ex. 201) Midland then calculated that the average kWh sold per month to each customer in the class was 3,110 kWh. (Ex. 201) There is nothing in the record that shows the range of actual monthly kWh sales to individual three-phase customers.

Exhibit 105 contains the energy consumption figures by month for the years 1996, 1997, and 1998 for all customers under tariff 26.11. Mr. Wieck indicated Midland has data to compare kilowatt-hour usage of individual three-phase members under 26.11 with the kilowatt-hour usage of Mr. Welch, although this was not

presented as evidence in this case. (Tr. 559) There is also no evidence in the record as to kWh usage of individual customers under tariff 26.12.

The cost-of-service study, Workpaper No. 2, and Mr. Greneman's testimony at page 355 show a three-phase class external demand of 18,696 kW per year. (Tr. 355, 460-1; Ex. 201) This figure is not a measured figure, but was arrived at by multiplying 7.31 kW/customer times the number of customers in the class (213) times twelve months. (Tr. 461) The 7.31 kW figure is an estimated average monthly per customer demand figure for the three-phase class. (Tr. 462-3) It is also not a metered number, but was calculated using the REA AB methodology as described in bulletin number 45-2. (Tr. 354, 567, 614-5, 679; Ex. 222) The method uses the number of customers within a class and kWh usage of the customers within that same class to estimate a class demand. (Tr. 567; Wieck 12/13/99 testimony)

In post-hearing testimony, Midland revealed that the cost-of-service study had used 6.01 kW as the average customer demand, not 7.31 kW. The 6.01 kW figure was also not a metered number, but was derived from an adjustment designed to reconcile the coincident demands of individual classes to Midland’s overall coincident peak demand. (12/13/99 Greneman testimony)

Midland does not separately meter demand of normal three-phase customers under 26.11, and therefore does not have any individual comparisons of kW demand between members under 26.11 and co-generator members under tariffs 26.16 and 26.18. (Tr. 559, 612; Ex. 105)

Mr. Wieck agreed that it is possible Midland could demand meter every three-phase customer, and acknowledged that Midland requires co-generators to have a demand and energy meter that it does not require of regular three-phase customers. (Tr. 612-3) Midland does not demand meter regular three-phase customers because of the cost of the meter.

Load characteristics of Mr. Welch were determined by metered numbers. (Tr. 163-4; Exs. 3, 106, 209) Mr. Welch's non-coincident demand both prior to and after installation was metered. Mr. Welch's coincident demand was metered after, but not prior to, installation. Mr. Welch's energy purchases from Midland both prior to and after installation were metered.

Load characteristics of the Sweckers were determined in the following ways. The only metered amounts available for the Sweckers are their current and past energy use. The parties attempted to estimate what the Sweckers' demand and energy usage levels would be after installing wind generation by imposing usage and demand figures from Mr. Welch onto the Sweckers. (Exs. 6, 111, 205)

Midland used a comparison of Mr. Welch's load factor with that of three-phase customers as part of its justification for a separate tariff for co-generators. (Tr. 367-8, 535-6; Ex. 106) The comparison is not valid for a number of reasons.

First, the OCA and Midland agree that usage patterns of other customers with generation should not be assumed to be similar to Mr. Welch's facility. (Tr. 241, 560-1, 707-8) However, it must be remembered that there is no data in the record

showing the range of individual demand and energy usage levels within the three-phase class, so there is no way to determine whether or not Mr. Welch's levels are different from, or within the range of values for regular three-phase customers.

Second, Mr. Welch is a large power user, and if he were not on tariff 26.18, he would be on tariff 26.12 for large power commercial customers, not tariff 26.11. (Tr. 680)

Third, the ways in which the load factor figures for Mr. Welch and for the three-phase class were calculated differed in several important respects. (Tr. 683; Ex. 106) Mr. Wieck calculated Mr. Welch's load factor based on his actual metered demand, and based it on the highest recorded month's non-coincident demand during the twelve month period July 1998 through June 1999. (Ex. 106) He also based it on actual metered usage by Mr. Welch during the period. (Ex. 106) Mr. Wieck calculated the load factor for the three-phase class using an average monthly kWh consumption figure for the class for the year ending September 1994. (Ex. 106) We do not know the range of actual monthly kWh consumption of members within the class. To calculate the load factor, he also used the 7.31 kW average estimated demand figure, which is not a metered figure. (Ex. 106) Therefore, the demand figures used to calculate load factor are not comparable numbers. We do not know the range of demand of members within the class, and we do not know an actual metered demand for the class as a whole. This makes the calculation of load factor for the class a very nebulous number.

Finally, the actual load factor of individual customers within the three-phase class will vary, with some being above the average and some being below. However, since there is no metered demand of the 26.11 class, there is no way to determine the range. (Tr. 559) Therefore, the evidence attempting to show a significant difference between Mr. Welch's load factor and that of the three-phase class under 26.11 is not persuasive.

As discussed above, the evidence which attempts to estimate the Sweckers' demand and energy usage levels after installation of their wind generator, and the resulting estimates of whether Midland could recover its costs from the Sweckers if they were left on tariff 26.11 are unpersuasive. (Tr. 34, 62, 108-11, 145-56, 171-83, 255-64, 273-4, 277-83, 374-6, 430-1, 437-52, 458-9; Exs. 6, 111, 205) Even if we had metered coincident demand numbers for regular three-phase customers to compare, it is unknown whether the Sweckers will fall within the range of demand levels in the three-phase class.

The evidence in the record does not show that co-generating customers' coincident demand levels and energy consumption are significantly different from the range of demand levels and energy consumption of regular three-phase customers. Since the only actual data regarding co-generators' energy and coincident demand levels in the record is Mr. Welch's, the evidence also does not show that Midland could not recover its costs from co-generating customers if they were left under tariff 26.11, or tariff 26.12 if appropriate. (Tr. 258-9, 370, 397, 556; Exs. 6, 111, 205) As

discussed above, the evidence that Midland could not recover its costs from the Sweckers under tariff 26.11 is based on multiple assumptions and is unpersuasive. As Mr. Wieck testified, Midland was not saying it could not recover its costs if co-generating customers were left on tariff 26.11, only that it may not. (Tr. 556) Mr. Greneman's testimony that he was confident Midland would not recover its costs was not based on actual data from co-generating customers in the record. The only co-generator currently on Midland's system has had many months with zero or very low coincident demand during the same months he purchased significant amounts of energy from Midland. This undermines Midland's concern that it might not recover its costs through energy charges. At times, a wind generator could reduce Midland's peak demand and thus its billing from Corn Belt or CIPCO, which would assist Midland in recovering its cost of serving co-generating customers, although there is no evidence in the record that persuasively indicates the amount of such reductions. (Tr. 147-9, 389) Mr. Wind's Exhibit 6 is based on multiple assumptions and is therefore not persuasive.

There is no evidence in the record that shows the costs to serve a co-generating customer are different from those to serve a regular customer.

Midland argued that since co-generators require power on a sporadic basis as opposed to the more consistent requirements of regular customers, this justifies a separate rate. However, there is no evidence in the record to support this conclusion. There is no data in the record that shows co-generators require power

on a sporadic basis. There is no evidence other than Mr. Welch's, and his data shows that he required energy regularly from Midland both before and after installation of his wind generator. There is also no evidence in the record regarding energy use by individual regular customers which could be compared to that of co-generators.

Therefore, it was unreasonable and discriminatory for Midland to remove co-generators from the rate structure of tariff 26.11 without data that: (1) was specific to co-generators showing their usage patterns were not within the range of customers under tariff 26.11; (2) showed the range of values for regular three-phase customers so valid comparisons could be made; and (3) established Midland could not recover its costs to serve co-generators under tariff 26.11.

Furthermore, there was no reason to treat co-generating customers differently in the sense that costs must be recovered from them individually, rather than recognizing, as in tariff 26.11, that there will be some under-recovery and some over-recovery within the three-phase class because all customers are either above or below the average. This different treatment was also unreasonable and discriminatory in violation of Iowa Code § 476.21 (1999).

However, the evidence shows that there are some characteristics of co-generators which are different from regular three-phase customers, and which justify differing treatment. Co-generators including the Sweckers will likely produce excess energy which they will put onto Midland's lines. It is therefore neither unreasonable

nor discriminatory for Midland to require co-generators to carry a $1 million liability insurance policy, particularly when the cost is minimal. (Tr. 69-73, 245, 736-7) It is neither unreasonable nor discriminatory for Midland to require a disconnect switch. (Tr. 245, 519, 528) Midland requires all customers with backup generators to have a disconnect switch. Since Midland requires regular three-phase customers who convert from single-phase service to pay a 40 percent markup on any specialized equipment and sign a contract, it is not discriminatory to require the same of co-generators. (Tr. 519, 713) Since co-generators wish to sell their excess energy, it is neither unreasonable nor discriminatory for Midland to require them to sign a contract specific to co-generators.

The preponderance of the evidence shows that the regular meter for three-phase customers with generation will not be adequate to measure both power flowing from Midland to the co-generator and from the co-generator to Midland. This is because the Board has no authority to order Midland to use AEP net billing, and the amounts must be measured separately. If a regular three-phase customer requires specialized metering equipment, Midland charges the customer for the equipment. Therefore, it is neither unreasonable nor discriminatory for Midland to charge the Sweckers for a meter which measures both power flowing from Midland's lines to the Sweckers, and from the Sweckers' wind generator to Midland's lines. Additionally, if Midland needs to measure power quality of the power flowing from the

Sweckers' wind generator, it is neither unreasonable nor discriminatory for Midland to charge the Sweckers for a meter capable of measuring power quality.

However, the reason Midland needs a meter capable of measuring the Sweckers' and Mr. Welch's coincident demand is because it structured tariffs 26.16 and 26.18 to require it. Therefore, it is unreasonable and discriminatory for Midland to charge the Sweckers for the portion of the meter capable of measuring coincident demand when it does not charge regular three-phase customers for such a meter. If Midland wishes to measure demand levels of co-generating customers to gather information for future studies and possible future tariffs, this is a research expense and must be born by the cooperative as a whole. In order to establish a basis for treating co-generators in a different fashion, Midland must also demand meter a representative sample of regular three-phase customers, to be able to make a valid comparison of demand levels.

It is neither unreasonable nor discriminatory for Midland to require the Sweckers to pay for the other equipment needed to interconnect their wind generator listed in the $5,712.17 quote. It is neither unreasonable nor discriminatory to require the Sweckers to pay interconnection costs up front, since Midland requires such up front payment from all customers who switch from single-phase to three-phase power. (Tr. 524) However, since the monthly service charge includes a charge for a regular meter, the Sweckers may only be charged the difference between the cost of

the regular meter and the cost of their meter (excluding the portion attributable to measuring demand) in the up front fee.

FINDINGS OF FACT

1. The Sweckers are member-consumers of Midland Power Cooperative, a rural electric cooperative in Iowa. (Tr. 29, 504-6)

2. The Sweckers installed a 65 kW wind generator at their farm near Dana, Iowa, and wish to interconnect it with Midland's system pursuant to Midland tariff 26.11 for regular three-phase customers, instead of Midland tariff 26.16 for co-generating customers. (Tr. 27, 29, 40, 41, 76, 116, 220; Inf. Comp. File; Tariffs 26.11 and 26.16) The Sweckers allege that tariff 26.16 is discriminatory to them because of their intended use of the wind generator. (Tr. 29 – 36)

3. Midland offered to provide service to the Sweckers under tariff 26.16, which the Sweckers refused. (Tr. 523; Inf. Comp. File)

4. The Sweckers currently have single-phase service at their farm, and did not pay Midland for this service in the spring of 1999. (Tr. 68; Inf. Comp. File) As a result, Midland disconnected the Sweckers' service after giving the Sweckers three days' notice in which to pay the past due bill. (Inf. Comp. File)

5. Midland's tariff provides that Midland will give customers at least twelve days' written notice before disconnecting service for nonpayment. (Midland Tariff Section 6)

6. After working with Customer Service staff of the Board, the Sweckers paid their past due bill and single-phase service was restored. (Inf. Comp. File) The Sweckers reserved their right to assert they should not have to pay the trip charge and the reconnection fee. (Inf. Comp. File)

7. Mr. Welch owns the same type of wind generator as the Sweckers, and his wind generator has been connected to Midland's system since October 1996. (Tr. 116, 304) The wind generator supplies electricity to Mr. Welch's 30-unit motel. (Tr. 163, 304) He previously received service under Midland tariff 26.12 for large power customers, and since October 1996, has received service under Midland tariff 26.18. (Tr. 559, 569-70, 573, 585; Ex. 103; Tariff 26.12) Tariff 26.18 is essentially the same as tariff 26.16. (Tr. 542, 545; Tariffs 26.16, 26.18) Mr. Welch alleges that tariff 26.18 is discriminatory. (Tr. 305)

8. Member-consumers purchasing lower amounts of energy during a month will pay more for the same kWh under tariffs 26.16 and 26.18 than they will under tariff 26.11. (Tr. 34, 539-40; Ex. 208) Members purchasing higher amounts of energy during the month will pay less for the same kWh under tariffs 26.16 and 26.18 than under tariff 26.11. (Tr. 540; Ex. 208) The break-even point depends on the co-generator's coincident demand level for the month. (Tr. 34, 539-40; Ex. 208)

9. Mr. Welch has experienced a reduction in his per kWh rate as a result of being on tariff 26.18, as opposed to tariff 26.12. (Tr. 241-2, 263-4, 296-7, 325;

Exs. 103, 209) Mr. Welch is a large power user. (Tariff 26.12) Tariff 26.12 is not comparable to tariff 26.11. (Tr. 242, 264, 573; Tariffs 26.11, 26.12)

10. The evidence is not conclusive regarding whether the Sweckers will pay more or less per kWh under tariff 26.16 than under tariff 26.11, because no one knows what their kWh usage and coincident demand levels will be. Testimony and exhibits which attempt to estimate their demand and energy levels after installation are based on so many unknowns and assumptions they are unpersuasive. (Tr. 34, 62, 108-11, 145-56, 171-83, 255-64, 273-4, 277-84, 374-6, 430-1, 437-52, 458-9; Exs. 6, 111, 205) Whether the Sweckers will pay more or less per kWh depends on the factors discussed in finding of fact eight above.

11. The Sweckers would have to pay $5,712.17 to interconnect their wind generator with Midland's system under tariff 26.16, and they would have to pay $2,500 to interconnect under tariff 26.11. (Tr. 524-6, 730-3; Inf. Comp. File; Ex. 101) The charge under tariff 26.16 includes the cost of a meter to measure coincident demand. (Tr. 526; Inf. Comp. File) Tariff 26.11 does not require customers to pay for a meter to measure demand. (Tr. 533-4; Tariff 26.11)

12. Midland based tariffs 26.11 and 26.16/26.18 on an allocation of costs to the three-phase customer class in a cost-of-service study completed in 1995. (Tr. 232-3, 510, 535, 543, 594; Ex. 201) The cost-of-service study contained no information regarding co-generators because Midland had none at the time. (Tr. 205, 515-6, 595-6; Ex. 201) Therefore, Midland used the allocated costs for serving

regular three-phase customers as the basis for establishing tariffs 26.16 and 26.18. (Tr. 205, 232, 535, 543, 548-9) Midland used no other cost data to develop tariffs 26.16/26.18, and had no cost data specific to co-generators when it developed the tariffs. (Tr. 45, 86, 205, 232, 483, 516, 535, 543, 548-61)

13. Midland based the rate structure of tariffs 26.16/26.18 on its assumptions that a co-generator's demand and energy usage levels would be so different than that of regular three-phase customers that Midland would not be able to recover its costs to serve the co-generator from that particular co-generator. (Tr. 268-9, 293, 358-9, 361-3, 368-72, 464-7, 516, 530-1, 534, 536, 548-58, 725)

14. Midland had no co-generator data to support its assumptions at the time it developed tariffs 26.16/26.18, and it presented no data regarding co-generators other than that of Mr. Welch to attempt to support the assumptions at the hearing. (Tr. 252, 268-9, 516-7, 548-555, 587-91, 600, 602-6, 651, 668-72; OCA Post-Hearing Testimony; Exs. 221, 223) The only data regarding co-generators in the record is that of Mr. Welch, and his data does not support Midland's assumptions. (Tr. 234-6, 238-41, 243, 252, 276, 284, 376, 442-4, 458; Exs. 3, 103, 104, 106, 110, 204, 209, 214, 226, 227, 234)

15. Tariffs 26.11 and 26.16/26.18 are cost-based in the sense they are based on the same allocated costs for the three-phase class in the cost-of-service study. (Tr. 205, 242, 535, 543, 548-9) However, the differences between the rate

structure of 26.11 and that of 26.16/26.18 are not cost-based. (Tr. 45, 205, 242-3, 268, 516, 535, 543, 595-6)

16. Tariff 26.11 was designed to recover the allocated costs for the three-phase class by recovering average costs from the class as a whole. (Tr. 232-4, 252, 283, 354-62, 406-7, 409, 454, 533-4, 552, 593; Exs. 201, 202, 235) In its tariff 26.11 rate design, Midland recognizes that it over-recovers costs from some customers within the class, and under-recovers costs from some customers in the class. (Tr. 367-8, 399-400, 405, 411, 433-4) Midland does not meter demand for the 26.11 customers. (Tr. 533-4, 559; Ex. 105; Tariff 26.11)

17. Testimony of Mr. Wieck, Mr. Severson, and Mr. Greneman showed Midland is very concerned with whether it can recover a particular co-generating customer's costs from that particular customer. (Tr. 356-63, 376-7, 384-5, 435, 530-1, 556-8, 708-10) The structure of tariffs 26.16/26.18 is designed to recover individually attributable external demand and energy costs, and average three-phase customer costs and internal demand costs, on an individual by individual customer basis. (Tr. 233-4, 356-62, 369, 406-7, 409, 454, 530-2, 534-5, 552-3, 566, 722; Ex. 235)

18. Tariffs 26.16/26.18 are, therefore, not based on the same cost-of-service methodology as tariff 26.11.

19. The evidence in the record does not show that co-generating customers' demand levels and energy consumption levels are significantly different

from the range of demand levels and energy consumption levels of regular three-phase customers, because the only co-generator's levels in evidence are Mr. Welch's, and there is no evidence in the record regarding the range of demand and energy levels of regular three-phase customers. The evidence in the record does not show that load factors of co-generating customers are significantly different than those of regular three-phase customers, because the only calculation of a co-generator's load factor is that of Mr. Welch, and the ways in which load factor figures for Mr. Welch and for the three-phase class were calculated differed in several important respects such that the numbers are not comparable. (Tr. 240-1, 253-4, 284, 367-8, 372-3, 536, 559-61, 684, 723-4; Exs. 3, 104, 106, 110, 204, 235; 12/13/99 Greneman testimony)

20. The evidence in the record does not show Midland could not recover its costs from co-generating customers if they were left under tariff 26.11, or tariff 26.12 when appropriate. (Tr. 34, 62, 108-11, 145-56, 171-83, 244, 252-3, 255-64, 272-4, 277-83, 298-9, 370, 374-7, 384-5, 396-7, 430-1, 437-52, 458-9, 556-8, 608-9; Exs. 6, 111, 205) Evidence attempting to show whether Midland will be able to recover its costs from the Sweckers after installation of their wind generator is based on a number of unknowns and is unpersuasive. (Tr. 34, 62, 108-11, 145-56, 171-83, 255-64, 273-4, 277-83, 299, 374-6, 384-5, 430-1, 437-52, 458-9, 557-8; Exs. 6, 111, 205)

21. There is no evidence in the record that shows the costs to serve a co-generating customer are different than the costs to serve a regular three-phase customer. (Tr. 484, 594)

22. There is no data in the record to support Midland's assumption that co-generators require power on a more sporadic basis than regular three-phase customers.

23. It was unreasonable and discriminatory for Midland to remove co-generating customers from the rate structure of tariff 26.11 without data that: (1) was specific to co-generators showing their usage patterns were not within the range of customers under tariff 26.11; (2) showed the range of values for regular three-phase customers so valid comparisons could be made; and (3) established Midland could not recover its costs to serve co-generators under tariff 26.11.

24. It was unreasonable and discriminatory for Midland to treat co-generating customers under tariffs 26.16/26.18 differently from customers under tariff 26.11, in the sense that the 26.16/26.18 rate structure is designed to recover an individual customer's costs from that customer. Under tariff 26.11, Midland recognized there would be some under-recovery and some over-recovery from individual customers because no customer is exactly average, yet deemed it sufficient to recover average costs from customers as a whole so long as the recovery was based on allocated costs for the class as a whole.

25. It was neither unreasonable nor discriminatory to require the Sweckers to pay for a meter that separately measures energy flow from Midland to the Sweckers, and from the Sweckers to Midland, since the Sweckers want to sell excess energy to CIPCO. Although Mr. Welch did not pay for his meter, it was neither unreasonable nor discriminatory for Midland to require Mr. Welch to have such a meter.

26. It was neither unreasonable nor discriminatory for Midland to charge the Sweckers for a meter to measure power quality. Although Mr. Welch did not pay for his meter, it was neither unreasonable nor discriminatory for Midland to require Mr. Welch to have such a meter.

27. It was unreasonable and discriminatory for Midland to charge the Sweckers for a meter capable of measuring coincident demand when it did not require the same type of meter for non-generating customers. Although Mr. Welch did not pay for such a meter, it was unreasonable and discriminatory to require Mr. Welch to have such a meter when regular customers were not required to have one.

28. It was neither unreasonable nor discriminatory for Midland to require a disconnect switch, a $1 million liability insurance policy, a contract specific to co-generators, and payment of interconnection costs up front. However, since the monthly service charge includes a charge for a regular meter, the Sweckers may only be charged the difference between the cost of the regular meter and the cost of

the specialized meter (excluding the portion attributable to measuring demand) in the up front fee. It was neither unreasonable nor discriminatory to require the same things from Mr. Welch.

29. Since Midland charges regular customers a 40 percent markup for specialized equipment, it was not discriminatory to charge the Sweckers the same markup. It was neither unreasonable nor discriminatory to charge Mr. Welch an 11.1 percent markup.

30. If Midland wishes to install and pay for a meter capable of measuring the demand of co-generators, it would be neither unreasonable nor discriminatory to require co-generators to allow this, so long as Midland also installs similar demand meters on a representative sample of its regular three-phase customers.

CONCLUSIONS OF LAW

1. The Sweckers and Mr. Welch argue that they should be paid for capacity when they sell energy to Corn Belt or CIPCO, and that the $0.02/kWh rate is not the correct amount to be paid. These issues are strictly a matter of federal law, and the Iowa Utilities Board does not have jurisdiction to decide them. 16 U.S.C. § 824a-3(b); 18 C.F.R. § 292.304.

2. It is the policy of the state and federal government to encourage alternate energy production (called small power production in the federal statutes).

Iowa Code § 476.41 (1999); 16 U.S.C. § 824a-3; F.E.R.C. v. Mississippi, 456 U.S. 742, 750 (1982); In re Iowa Power & Light Co., 95 PUR4th 363 (IUB 1988).

3. Midland is an electric cooperative, and therefore is not subject to the rate regulation authority of the Board. Iowa Code § 476.1A (1999). However, it is subject to other regulation and enforcement activities of the Board, including the requirements in Iowa Code § 476.21. Iowa Code §§ 476.1A, 476.21 (1999).

4. Therefore, the proper focus of this decision is not to set rates for Midland, but to determine whether Midland's tariffs discriminate against co-generators in violation of Iowa Code § 476.21.

5. Iowa Code § 476.21(1999) provides that:

> A municipality, corporation or co-operative association providing electrical or gas service shall not consider the use of renewable energy sources by a customer as a basis for establishing discriminatory rates or charges for any service or commodity sold to the customer or discontinue services or subject the customer to any other prejudice or disadvantage based on the customer's use or intended use of renewable energy sources. As used in this section, "*renewable energy sources*" includes but is not limited to, solar heating, wind power and the conversion of urban and agricultural organic wastes into methane gas and liquid fuels.

6. The term "discriminatory" is not defined in Iowa Code Chapter 476.

7. Iowa Code § 476.1A states that "Electric cooperative corporations and associations and electric public utilities exempt from rate regulation under this section shall not make or grant any unreasonable preferences or

advantages as to rates or services to any person or subject any person to any unreasonable prejudice or disadvantage."

8. Although § 476.1A specifically contains the adjective "unreasonable", and § 476.21 does not, it is logical to interpret § 476.21 as containing a prohibition against unreasonable discrimination. Just because a utility treats co-generators differently from regular three-phase customers does not necessarily mean there has been a violation of the statute. *See* Cities of Newark et.al. v. F.E.R.C., 763 F.2d 533, 546 (3rd Cir. 1985); Cities of Bethany et.al. v. F.E.R.C., 727 F.2d 1131, 1139 (D.C. Cir. 1984). Differences in rates are justified when they are based on factual differences between customers. Cities of Newark , *supra.* If the difference in treatment is reasonable, it does not violate § 476.21. Board Order Granting Request for Formal Complaint Proceedings and Assigning to Presiding Officer; issued June 23, 1999.

9. In order to determine whether different treatment is reasonable or discriminatory, it is helpful to look to federal statutes and regulations dealing with the same subject as guidance in interpreting Iowa Code § 476.21, since the Iowa statute is consistent with the federal. Iowa Code § 476.21 (1999); 16 U.S.C. § 824a-3(a) and (c); 18 CFR § 292.305(a)(1) and (2).

10. Section 210 of the Public Utility Regulatory Policies Act, 16 U.S.C. § 824a-3(a), requires the Federal Energy Regulatory Commission (FERC) to promulgate rules which require utilities to sell energy to, and purchase energy

from, qualifying small power production facilities (QFs). Section 824a-3(c) states that the rules must ensure that rates for sales of energy to QFs "(1) shall be just and reasonable and in the public interest, and (2) shall not discriminate against the qualifying cogenerators or qualifying small power producers."

11. FERC promulgated rules regarding sales of energy to QFs at 18 C.F.R. § 292.305. Section 292.305"a"(1) provides that rates for sales "shall be just and reasonable and in the public interest", and "shall not discriminate against any qualifying facility in comparison to rates for sales to other customers served by the electric utility." Section 292.305"a"(2) provides that "Rates for sales which are based on accurate data and consistent systemwide costing principles shall not be considered to discriminate against any qualifying facility to the extent that such rates apply to the utility's other customers with similar load or other cost-related characteristics."

12. If a utility can show its rates meet the qualifications in the regulation, then the rates will not be considered discriminatory. Section 292.305"a"(2). The regulation does not require a utility to prove its rates meet the qualifications in the regulation in order to show the rates are not discriminatory.

13. However, the utility must show its rates and charges are not unreasonably discriminatory once a co-generator has shown that it is subject to different treatment based on its use or intended use of renewable energy sources,

and that treatment either has been or would be unreasonably prejudicial or a disadvantage under certain circumstances. Iowa Code § 476.21 (1999)

14. In order to show its rates and charges are not unreasonably discriminatory, since it has established a separate tariff for co-generators, Midland must show that the differences in tariffs 26.11 and 26.16/26.18 are cost-based, that tariffs 26.16/26.18 are based on the same cost-of-service methodology as Midland's other tariffs, and that Midland's tariffs are applied in a nondiscriminatory manner to similarly-situated customers. Board Order Granting Request for Formal Complaint Proceedings and Assigning to Presiding Officer, issued June 23, 1999; 18 C.F.R. § 292.305(a)(2).

15. "If the electric utility is able to prove cost-based justification for serving any particular class of customers pursuant to different terms and conditions, then the utility is treating differently-situated customers in a different manner, an appropriate situation. It is only when the utility is not able to establish a neutral, cost-based rationale for its differing treatment that it may be said to discriminate among customers in an unlawful manner." Board Order Granting Request for Formal Complaint Proceedings and Assigning to Presiding Officer, issued June 23, 1999.

16. The differences in the rates and rate structures between tariffs 26.11 and 26.16 are discriminatory in violation of Iowa Code § 476.21 (1999). The requirement to pay for a meter capable of measuring coincident demand is also discriminatory in violation of Iowa Code § 476.21 (1999). The remaining

interconnection requirements in tariffs 26.16 and 26.18 are not discriminatory and do not violate Iowa Code § 476.21 (1999).

17. The Sweckers must comply with the Board's rules on interconnections, safety and reliability at 199 IAC 15.10.

18. The Utilities Board has no authority to order Midland to use AEP net billing with the Sweckers or Mr. Welch. 199 IAC 15.2(1), 15.11(5).

19. Midland was required under its own tariff and 199 IAC 20.4(15) to provide the Sweckers with 12 days' notice prior to disconnecting their electric service for nonpayment of their bill. Since it provided only three days' notice, the disconnection was unlawful and Midland may not charge the Sweckers for the disconnection and reconnection.

20. The Utilities Board has jurisdiction over the complaint filed in this case to determine whether tariffs 26.16 and 26.18 are discriminatory in violation of the statute, and over the parties to this case. Iowa Code §§ 476.1A, 476.3, and 476.21 (1999).

IT IS THEREFORE ORDERED:

1. Midland may not use the rates and rate structure in tariff 26.16 to bill the Sweckers, and must bill them according to the rate structure in tariff 26.11.

2. Midland may not charge the Sweckers for the portion of the specialized meter used to measure coincident demand.

3. Midland may charge the Sweckers for the portion of the specialized meter used to measure energy flow both from the Sweckers to Midland and from Midland to the Sweckers, and the portion of the specialized meter used to measure power quality.

4. Midland may require the Sweckers to pay the interconnection costs up front, except that it may only include the difference between the cost of a regular three-phase meter and the Sweckers' specialized meter (excluding the portion attributable to demand measurement) in the up-front charge.

5. Midland may require the Sweckers to provide a disconnect switch or charge them for one if the Sweckers do not provide one acceptable to Midland.

6. Midland may require the Sweckers to obtain and carry a $1 million liability insurance policy, pay a 40 percent markup on specialized equipment, and sign the contract specific to co-generators.

7. Other than the cost of a regular three-phase meter, and the portion of the cost of the meter used to measure demand, Midland may require the Sweckers to pay for the equipment needed to interconnect with their wind generator included in the $5,712.17 fee.

8. Midland may not charge the Sweckers the $52.50 trip charge for the disconnection, and may not charge the Sweckers the reconnection fee.

9. If Midland and Mr. Welch agree, Midland may continue to charge Mr. Welch pursuant to the rate structure in tariff 26.18. However, since tariff 26.18 is

discriminatory in the same way 26.16 is, if Midland and Mr. Welch cannot agree, Midland may not charge Mr. Welch pursuant to tariff 26.18. Midland may continue to require Mr. Welch to have a disconnect switch, carry a $1 million liability insurance policy, and continue the contract specific to co-generators.

10. This proposed decision will become the final decision of the Utilities Board unless appealed to the Board within 15 days of its issuance. Iowa Code § 17A.15(3) (1999); 1999 IAC § 7.8(2).

UTILITIES BOARD

/s/ Amy L. Christensen
Amy L. Christensen
Administrative Law Judge

ATTEST:

/s/ Raymond K. Vawter, Jr.
Executive Secretary

Dated at Des Moines, Iowa this 28th day of March, 2000.