We Energies Comments re VoIP NOPR (FCC Docket # 04-28)

Wisconsin Electric Power Company and Wisconsin Gas Company do business under the name of "We Energies". We Energies wishes to make use of VoIP technology to provide internal customers with a seamless extension of the existing owned infrastructure to and from the infrastructure we may lease from carriers.

When using leased facilities from competitive carriers, or others, we believe that the use of such arrangements is a natural extension of our own network, and which are not subject to regulations at the present time.

There is no distinction between data and voice on such a "private" network during transmission between facilities, and until customers interface with end devices the signals or "data packets" are intermixed by design. The design model of the Internet is that the network is non-intelligent, serving merely as a "pipeline" for interconnecting highly intelligent devices. The only intelligence in the Internet is what is needed to identify endpoints prescribed by the users and to route data packets between those endpoints. All other intelligence resides in the endpoint device (computer, etc.). This includes control, content generation and control, and user interface. Intelligent devices connect to the Internet via dial-up telephone lines, circuits leased from common carriers/LECs, cable provider connections, or satellite links. These connections are already regulated, and fees are paid to the various supplying entities for use of the facilities (bandwidth).

However, there are some functions on an IP network that must be performed by a telephone company ("Telco"), such as 911 routing. Telcos should be compensated for their costs to perform these functions. Likewise, any time that a VoIP service connects to and sends calls or other information to or over the Public Switched Telephone Network ("PSTN"), the Telcos should be rightfully compensated.

This reasoning is much like the issue of toll bypass that arose in the late 1980's and early 1990's. Private entities could lease a circuit from their place of business to a toll carrier, using a Telco-provided circuit. The Telco was rightfully compensated for the cost of the calls, but were rightfully not able to charge per-call fees on traffic carried over those facilities. In a similar manner, corporations who could carry traffic over private microwave systems between locations were not obligated to pay Telcos or carriers for the cost of the toll calls, and rightfully so. VoIP can be viewed as a high-tech form of bypass.

IP based services offer a plethora of new applications and uses that cannot be accomplished by existing technologies. Applying traditional regulation will introduce artificial constraints on the technology, stifling innovation and limiting the possibilities of what can be done. These regulations, though necessary in the PSTN environment, are irrelevant (for technical reasons), irrational, and with exceptions unneeded. Applying them will force IP-based services into the status quo, benefiting the Telcos at the expense of the public interest. The marketplace will play the role previously played by regulation. There should be no distinction between types of services carried by IP. Except as is necessary in the public interest, they should all be non-regulated.

Means should also be mandated to allow law enforcement agencies to monitor ("wiretap") conversations as is now done. However, the technology makes this more difficult to do, from both logistical and technological standpoints. In the PSTN, it is a simple matter to find the physical connection for a particular telephone, tap the line, and listen in. But with voice over IP, several difficulties are introduced. It may be more difficult to find the physical connection carrying the conversation. Once it is found, then it would be necessary to examine all data coming from the end-user device, which could be anything from mostly voice packets to virtually no voice packets (proportionally). Once the packets are found, they must then be translated from data packets into an audio stream. Not only this, but the end-user device can readily encrypt the voice packets, making it very difficult if not impossible to decode the data in a timely manner and with commonly available equipment. In short, voice over IP will make it difficult if not impossible to monitor

voice traffic. If law enforcement agencies must perform monitoring, laws should be enacted to prohibit encryption of voice packets (though this might be difficult to enforce).

Another possibility that will become an issue with voice over IP is "voice spam." As we are all too well aware, the Internet is clogged with unwanted e-mail messages, called "spam", which cause difficulties and increase the cost of doing business to users. Some even argue it threatens the usefulness of e-mail. Part of the reason spam works is because it is easy to hide the true identity of the sender and instead send a false identity. This makes it difficult to stop the flow of spam and difficult to prosecute the sender. With voice over IP, it becomes possible to send "voice spam" to users, sending unwanted telephone calls to the user, forcing the user to answer the calls or handle an excess of unwanted voice mail messages. The FTC "Do Not Call" list for stopping telemarketer calls has been a wonderful benefit for millions of Americans. One reason this works, is that the telemarketer can be identified from caller ID or physical location, and therefore can be required to stop. But with voice over IP, the sender's identity can be falsified, making it impossible to stop the calls or know who to contact to apply legal pressures to stop calling. "Voice spam" could threaten the usefulness of the technology. Passing legislation may not help this problem, and there may not be technological means to stop voice spam. Legislation should nonetheless be passed, but it must have more "teeth" in it than the present anti-spam legislation, which has done little if anything to stop the flow of spam.

Since these services are embedded, we believe that the carriers only be concerned with the actual traffic that is purposely intended for their delivery. The extension to mobile services is in our view the same as for terrestrial services. Our ability to lease the intended seamless facilities or to use providers for delivery to an end-user outside our private network, is the distinction we propose to be used for the purpose of the Rulemaking. To this end we propose that the interconnection to regulated common carriers for the purpose of delivery of our data and voice traffic to the public is no different than the existing connection of our Private Branch Exchange ("PBX") traffic to our local carrier. The carrier is due revenue on a per

call, or other basis, no matter if the call is originated from VoIP or similar technology. The use of dedicated DS1, Ethernet, or other connection, is only a matter of convenience for the parties. We believe this position conforms to the Telecommunications Act of 1996.

Paragraphs 26 and 43. By the definitions of the 1996 Telecommunications Act, VoIP is not "telecommunications." The form of the communications is changed, and changed by the end-user.

The carriers must continue to provide service for the public necessity, and also have engaged in providing private network services to entities like ourselves. In so doing, we have continued to negotiate with them to provide these services on a competitive basis, thus lowering costs and providing a competitive industry environment. Other entities have emerged to compete with the carriers, and even provide services to the carriers. These entities have been the vehicle for us to extend our private networks. We feel that there is no need to introduce regulations beyond those in existence today, to modify our relationship with them.

Given the above, we see that our proposed use of VoIP over our "private" network is a computer to computer philosophy, much like that considered in the 1998 "Stevens Report". It is obvious that soft phones will exist on these computers within the "private" network, but unless one of them needs to call a customer that is only accessible from the public network, there is no need for Regulation of that activity.

Paragraphs 29 and 43. By the four criteria of the Stevens Report, VoIP does not meet the 2nd and 4th criteria. The information is changed in form and possibly/likely in content, and the end-user device is something other than a telephone. Therefore, VoIP is not a "telecommunications service." The only telecommunications service in a VoIP call is in the method of transport from the user to the ISP, typically a leased telephone line, DSL line, cable connection, etc.

Paragraph 37

a. Functional equivalence to traditional telephony is not a way to distinguish between types of IP-based services. A call can be altered from simple person-to-person conversation to complex, multi-media collaboration in the middle of the call. In other words, a give call can be classified under several categories. This makes it difficult to apply regulation based on types and very difficult to bill for only the types that have tariffs applied.

b. VoIP services that interact with and interface to the PSTN should be subject to the regulations applied to the PSTN, but only insofar as they use the PSTN. A voice call between two computers that does not use the PSTN should not have PSTN regulations allied to it. However, if the call goes between a computer and a PSTN telephone, the portion of the call intersecting the PSTN should be regulated. For example, if a call was made from California to New York, and the New York ISP had local lines in the local serving area in which the call was terminated, the costs applied should be for a local call, and not for a toll call. The New York ISP should have to pay the local lines lease charges and access fees. But the costs of the lines in New York would not have to be borne by the caller in California, who does not use the PSTN to make the call.

c. The "layered" model provides an excellent way to view VoIP and thereby an excellent means to help determine regulatory structure. The Open Systems Interconnection ("OSI") model on which the Internet is based has 7 layers. Layer 1, Physical, is the communications facility (connection to service provider). Fees are rightfully paid to the service provider for use of these facilities. Layers 2 through 7 include control, switching, routing, communication protocols, and end-user interfaces. In the PSTN, the functions in these layers are provided by central office equipment, and fees are paid to Telcos for these functions. In the Internet, these functions are performed by equipment owned by the ISP and the end-user devices. Therefore, there should be no obligation to the user to pay access fees, universal service fees, and other regulation-based fees (provided the service does not interface to the PSTN). Neither should there by any additional charges levied by the

Telcos based on the type of traffic across the user's access connection (phone line, leased circuit, etc). The fees charged by the ISPs cover their costs for their services (primarily routing and interconnections between themselves and other ISPs).

In the above scenario, layer 1 (physical) should be regulated as it is today. Layers 2 through 7 should not be regulated, except as necessary to provide for the public good, notably for 911 and Communications Assistance for Law Enforcement Act ("CALEA"). This should be true regardless if a company provides service at several layers.

d. IP services should not be regulated differently depending on the transmission platform/means. The existing regulations on transmission can still apply, but there should be no additional regulations applied based on what is carried over those lines (traditional telephony, IP-based services, etc).

In our view, we see that "gateways" from private to public networks are a reasonable place to distinguish delineation in the traffic for purposes of Rulemaking.

The North American Numbering plan would continue to support the public as it does today. As suggested in FCC 04-28, we need to have a different numbering plan to support the intended private to private communications. Today we use a non-DID numbering system between our private PBX network. An extension of this idea to support IP phone systems is sought.

In summation of the above, we see that IP-enabled services are of the following categories:

1. **Private to private phone or data**
2. **Private to public phone or data**
3. **Private wireless to private phone or data**
4. **Private wireless to public phone or data**

We agree that all entities should contribute to the PSTN when used in similar ways. The place to monitor and insure revenues are properly allocated, is at the gateways to public networks in the categories above. When wireless is used, the gateway is maintained by the wireless carrier. When the Internet is used the ISP could control the gateway. The private network would connect to carriers by choice. Carriers would provide gateways to wherever the private network should require, at a competitive price. When a private to private network connection is made, no gateway is required in this proposal.

Paragraphs 38-41. IP-based services should be federally regulated, and federal regulation should be exclusive. This is because of the nature of the Internet. One of the salient features of the Internet is that it is designed for survivability. As such, data packets sent between two endpoints could take several different physical paths between endpoints. For example, if a user wanted to send a large data files between different parts of the same city, the packets could go directly across town, from the town to another in a different LATA and back to the same town, or even back and forth across state lines. It would all depend on interconnection loading, network topology, and network outages. Therefore, it is impossible to predict with certainty where any given packets will physically go. Therefore, IP communications can by its very nature be considered to be interstate and suitable for exclusive regulation by the FCC, at the exclusion of state regulation. This is analogous to RF communications, which can be local, interstate, or international, and as such are exclusively regulated by the FCC. However, where IP communications interfaces the PSTN, it should be subject to regulations placed on the PSTN at the physical location of the interface, whether the regulation is state or federal. Such regulation should be limited to the physical aspects of the connection (circuit lease charges, access fees, etc) and not applicable to the content.

Paragraph 45. IP-based services do render traditional regulation and their rationale irrelevant and inapplicable. This is inherent in the technology. The only places regulation should be applied is when the IP services interface to the PSTN (see earlier comments).

Voice traffic intended for the public network should conform to established quality and functional standards to enable the delivery to the public, including the timeliness of delivery. If the traffic is all private, no requirements or distinctions are required.

Since the Internet is to be used for both voice and data, we propose that the distinctions above be used to delineate the uses of the technology. In the case of private interconnections (using VPN, etc) for private to private communications, there is no need to provide regulations. The industry will provide for standards and mechanisms for insuring those engaged in the practice will be served. When traffic is meant for the general public, technical considerations and the recovery of costs for the use of these networks needs to be under Rulemaking. The private entities, like ourselves, would lease facilities in support of our private network, but would require gateways from the carriers, or cable operators, to assist our private network for the purpose of commerce.

Paragraphs 51-57. Voice over IP has 911 issues that must be addressed. All voice over IP services must enable the user to reach 911. However, there are problems with this for technological reasons. In the PSTN, the user interface (telephone) is connected via copper facilities to the Telco central office. The physical location of that wire is known, so discerning the caller's location from the telephone number is usually a simple matter. However, IP telephony by its nature does not have a strict correlation between the user interface and the user's geographical location. A user could connect to the Internet at any physical location, and location information sent to the Public Safety Answering Point ("PSAP") may not be correct at all. A method or means needs to be established to provide accurate location information. One possible solution is to require end-user equipment to be equipped with a GPS receiver. If a user dials 911, the exact geographical information could then be sent to the PSAP. However, this raises issues with the PSAP. A database system would have to be established which would then provide a correlation between latitude/longitude and the serving PSAP. Another alternative would be to use cellular telephone technology for location

determination (triangulation, etc). It should be noted that individuals may raise objections to either method due to privacy issues. However, if privacy is a concern, the individual does not have to use this service.

The encouragement of a seamless and reliable infrastructure in support of 911 service is compatible with our proposal. Since gateways would be required of those who place calls to the public from their private networks, conformance to 911 regulations is in our interest. Whether wireless or not, we anticipate that our VoIP wireless phones would need to be 911 friendly, just as our internal phone systems would be. Whenever a private network is to use gateways to the public network, conformance to the 911 proposed rules should be assumed. This assumes that whether wireless or terrestrial technology is provided within the private network, the rules would apply when a gateway is assigned to those particular devices.

Paragraph 59. IP-based services offer the possibility of improving the ability of disabled individuals to communicate. For example, a deaf user could initiate a conversation with a hearing user. The deaf user's computer could transform the typed text into voice. The voice signal could then be sent to the hearing user, who would receive audio instead of typed text. The hearing person's speech could be sent to the deaf user, whose computer would then transform that audio signal into text to be displayed on the computer.

Paragraph 61. VoIP services that interact with and interface to the PSTN should be subject to the regulations applied to the PSTN, but only insofar as they use the PSTN. A voice call between two computers that does not use the PSTN should not have PSTN regulations allied to it. However, if the call goes between a computer and a PSTN telephone, the portion of the call intersecting the PSTN should be regulated. For example, if a call was made from California to New York, and the New York ISP had local lines in the local serving area in which the call was terminated, the costs applied should be for a local call, and not for a toll call. The New York ISP should have to pay the local lines lease charges and access fees. But the costs of the

lines in New York would not have to be borne by the caller in California, who does not use the PSTN to make the call.

There should be no difference in the regulations, tariffs, or fees based on the content of the transmitted data.

Paragraph 72. Prohibitions against "slamming" do not apply to IP-based services. The other rules mentioned in the last sentence of this paragraph should still apply (reaching preferred long distance operators from pay phones, etc.).

The encouragement of a seamless and reliable infrastructure in support of 911 service is compatible with our proposal. Since gateways would be required of those who place calls to the public from their private networks, conformance to 911 regulations is in our interest. Whether wireless or not, we expect that our VoIP wireless phones would need to be 911 friendly, just as our internal phone systems would be. Whenever private network is to use gateways to the public network, conformance to the 911 proposed rules should be assumed. This assumes that whether wireless or terrestrial technology is provided within the private network, the rules would apply when a gateway is assigned to those particular devices.