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July 12, 2010

U. S. Department of Energy
Office of the General Counsel
1000 Independence Ave, SW, Room 6A245
Washington, DC 20585

Subject: NBP RFI: Communications Requirements

Introduction

Cleco Corporation greatly appreciates the opportunity to provide information to the Department of Energy (DOE) on the communications needs of utilities. Cleco is an energy services company based in central Louisiana, serving approximately 276,000 residential, commercial and industrial customers since 1934. Cleco manages over 3,000 megawatts of electric capacity through its regulated Cleco Power LLC and unregulated Cleco Midstream Resources LLC businesses, utilizing a diverse fuel mix of lignite, coal, petcoke and natural gas. With 1,300 employees, Cleco manages and operates 70 transmission substations connected via 1,300 miles of transmission lines, together feeding over 350 distribution substations, dispersed over approximately 7,000 square miles.

Due to the relatively rural nature of its service territory, Cleco is very interested in the recent National Broadband Plan and its potential impact on the communications networks Cleco operates today, as well as those planned for future utility applications. Throughout its 75 year history Cleco has demonstrated an unwavering commitment to its customers, and communications networks have served as the backbone for that support. Cleco therefore gladly joins other utilities in providing this information, and also fully supports and endorses comments filed by both the Utilities Telecom Council and the Edison Electric Institute in responding to this request for information.

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Existing Systems

Cleco currently manages its electric business through multiple communications networks, each designed for a specific purpose. These networks include wired and wireless, public and private, mobile and fixed, and all with varying levels of security and risks associated. Supporting these networks are backup power in the form of DC battery banks and generators using various fuel sources.

Cleco's communications backbone consists of a 20 site licensed point-to-point microwave network, which carries all voice, two-way radio, SCADA, mobile field service, and office communications. This system was originally established to provide reliable SCADA communications for substations, and over time as technology improved other applications were added. Because of the recent increase in data needs, this system is nearing capacity (155Mbps), and an expansion is scheduled for 2011 to increase capacity. Optical fiber is also used in certain parts of the backbone network, but due to the proximity to the Gulf of Mexico and the frequency of hurricanes in Cleco's territory, microwave technology has proven more reliable than wired networks.

To support the voice and mobile data needs of field personnel, Cleco owns and operates a licensed trunked 900MHz two-way radio system consisting of a master site and 32 remote tower sites. This system provides adequate voice capacity, and data needs are met for today's requirements. Service personnel are able to receive and update customer orders, and they're also able to update maps following storms. Cleco is currently in the design phase of a system-wide automated metering infrastructure (AMI) project, and the existing mobile data system has been considered as an option for communicating with customer meters. However, the current available bandwidth (9600bps) is insufficient to support such an application.

Prior to implementing the current radio system, Cleco considered commercial carriers to supply mobile voice and data service to its field crews. While upfront costs for a commercial network would have been considerably less than building out a private

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system, ongoing operating expenses were much greater. However, the primary reason for establishing a private system was reliability.

Cleco activated its current system in May 2005. Hurricanes Katrina and Rita hit Cleco's service territory in September and October 2005, causing damage to virtually every part of Cleco's electric system. Within 24 hours of Katrina's passing, Cleco's radio system was operational, serving as the only communication method in the St. Tammany Parish area, north of Lake Pontchartrain. Satellite phones were only marginally effective, and both cellular service and land lines were unavailable. Cellular service was not established for several days, and once operational, service was extremely limited due to congestion for more than a week. While commercial carriers have in some cases increased reliability of their tower sites by adding generators and privatizing their backhaul links, they've done little to address the congestion issue since their business model is based on increasing the quantity and density of users. This is counter to the needs of utilities. Furthermore, the fact that many commercial wireless carriers implemented private backhaul is an acknowledgement that they themselves cannot rely on outside providers. And finally, it should be noted that local sites are only part of the reliability picture. Carriers use central switching stations through which all traffic must pass. Recent major outages at AT&T and RIM demonstrate the weakness of this architecture. Commercial providers could increase the capacity of their systems, but their current business model does not support such an investment. Furthermore, it's unlikely that carriers would guarantee service availability to current utility standards, at least not without a substantial increase in rates.

For less critical applications, Cleco does utilize commercial carriers, as well as unlicensed wireless systems, in areas such as wireless computer networking and remote access to isolated sites and offices. These technologies have proven reliable and cost effective for their intended purpose. However, an increase in interference in unlicensed systems has been observed over time and the available bandwidth has

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decreased to allow for more users in the given spectrum. For reliability and security reasons, these systems are only marginally used.

All wireless systems utilized by Cleco are designed for the Louisiana climate, which includes high temperatures, high humidity, frequent rain, occasional storms and lightning, and dense pine trees. The terrain is relatively flat, which simplifies the design somewhat, but the numerous trees contribute considerably to signal loss, especially at the higher frequencies. Commercial carriers face similar challenges, and their consumer, cost-focused, competitive business model dictates that their coverage follow more densely populated areas. Because of the obligation to serve that guides utilities, all areas must be covered regardless of density, and this coverage must be available regardless of loading or weather.

Cleco's Long-Term Vision

As previously mentioned Cleco is in the initial stages of an AMI deployment. This project will replace all existing electronic and electro-mechanical meters with electronic smart meters capable of two-way communications to both transmit usage data and respond to utility pricing signals. The system will support time-of-use (TOU) rates and pricing signals, remote connect/disconnect capability, theft detection, and outage notification. Enabling this capability is an underlying communications network that will link Cleco to its customers, and it's this network that is expected to be the foundation for future smart grid applications.

Cleco's customer service systems include a customer information system (CIS), an order taking/tracking/dispatch system, work management system (WMS), and an outage management system (OMS) interconnected to a geographic information system (GIS). Highly refined processes are currently in place to facilitate the timely provisioning of service to customers, but many of these processes are still manual, due to the limited information currently available from the field. The AMI communications network is expected to automate many of these processes.

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Cleco's vision and plan is to fully integrate operational systems with intelligent grid devices to form a reliable, self-healing network. Smart meters and switches will communicate outage information back to the OMS, and coupled with signals from smart fault indicators, communicate with the GIS to determine the probable cause and location of the outage. OMS will then signal the order system to dispatch service personnel to the affected area. As service is restored and smart meters begin to indicate their energized status, the OMS is able to identify unenergized devices, indicating nested outages, which signal further investigation. Once service is fully restored, outage reports will be automatically generated to management for quality review and to the appropriate regulatory agencies for statistical reporting. This system will improve operational efficiency for Cleco, resulting in lower prices and improved service for its customers.

From a usage and energy management perspective, the AMI network will provide consumers with the information they need to make wise energy usage decisions. To do so, 15 minute interval data will be collected and combined with system operational data collected from substation and line devices. It is assumed that at some point time-of-use (TOU) rates will be implemented, allowing customers to adjust their higher usage to off-peak times. Once Home Area Networks (HAN) are in place customers can then program devices in their homes and businesses to respond appropriately to these pricing signals.

Taking into consideration the AMI usage data, meter control and indication data, SCADA, voice traffic, and mobile data needs, Cleco anticipates needing approximately 500kHz of bandwidth for its current and immediately scheduled needs. Factoring in future utility needs, application and data growth, this number will grow to approximately 1MHz (based on an approximate doubling of data needs, based on general historical data). Video monitoring of substations and other critical facilities will likely push this number to 10MHz, assuming Cleco's existing service territory and operating strategy. Current and future needs are detailed as follows:

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Application	Current Bandwidth Needs	Future Bandwidth Needs
Voice	50kHz	100kHz (using VoIP)
Mobile Data	100kHz	250kHz
AMI	50kHz	50kHz
Distribution SCADA	100kHz	200kHz
Transmission SCADA	50kHz	100kHz
Remote Disconnect	25kHz	25kHz
Outage Notification	25kHz	25kHz
Pricing Signals	25kHz	25kHz
Load Management	25kHz	50kHz
Misc. Wireless Control	50kHz	100kHz
TOTAL*	500kHz	925kHz

* Factors in an assumed aggregation reduction and a security overhead increase, which roughly cancel out.

Based on Cleco's experience of utilizing many different types of communications systems, wireless technology is without question the most reliable and economical. Furthermore as reliability and security requirements continue to expand, coupled with increased customer demand for more information and better electric service, utilities must incorporate the most reliable and cost effective technology possible. Since wireless technology meets those needs, and based on the fact that many of the requirements listed are government driven, Cleco believes that the FCC, supported by the DOE, should allocate dedicated wireless spectrum for Critical Infrastructure companies. Dedicated spectrum assures access to the wireless technologies needed by utilities to deliver on the company's requirement to serve, and to meet the many increasing demands listed herein.

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Cleco currently operates in many spectral bands, including 450MHz, 900MHz, 2.4GHz and 6GHz. Prior to the 900MHz trunking system upgrade, Cleco operated a 48MHz mobile radio system for four decades. Having real operational experience in so many disparate bands gives Cleco an ideal perspective on what bands are most applicable for specific applications. Most of the applications used or planned by Cleco are fixed in nature. Coupled with Cleco's relatively flat and rural service territory, many frequency bands would meet Cleco's needs, but the ideal range is between 400MHz and 2GHz. Given the recent 1.8GHz allocation by the Canadian government for utilities in that country, having a similar allocation in the U.S. would most certainly provide an expedited and cost effective market for fixed utility applications.

Cyber security is obviously a main concern for every utility facing not only increased demands, but also an increasing number of threats from around the world. Countering cyber security threats requires effort at every level of the organization, from the highest level policy to the lowest level component embedded in an end device. A significant and foundational piece of this security puzzle is the communications infrastructure which connects a utility to its customers. Meters and electric system devices either currently have, or will have, wireless interfaces though which the utility communicates. Current unlicensed spectrum offers adequate bandwidth to meet utility needs, but unlicensed technologies by their nature operate in a manner generally open to anyone. Device manufacturers counter this by incorporating proprietary algorithms to help ensure security, but this doesn't address the issue of congestion.

Unlicensed spectrum, as a whole, tends to be rather wide, and the technologies employed have been efficient at using this bandwidth wisely. However, as the number of devices has increased, the contention for this space has increased, resulting in lower real throughput. Furthermore, because of the fact that users in this spectrum don't license, or register, their space, it's not only difficult to locate an interfering source, it's impossible to eliminate it. This poses the risk of not only a significant operational impact, but also one of a rather large stranded investment.

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Dedicated spectrum, especially when allocated in an appropriate amount as discussed previously, provides utilities with a known operational quantity – a tangible boundary in which to design its operations and associated systems. Such an allocation allows utilities to meet their service requirements in a secure and reliable manner, and allows them to plan their systems for a given time period. This is critical for any business when faced with making large investments in technology. Utilities must be assured that the systems they deploy can be paid for and will meet their needs, and requirements, in an appropriate time period.

Wireless technology is the best option for utilities to deploy their operation networks, and one wireless option is to utilize commercial wireless services. Options include large commercial carriers, such as AT&T and Verizon, and smaller wireless service providers which typically offer mobile voice, data and broadband service in a smaller geographic area. There are several utility applications that may be appropriate for such service, but reliability and availability requirements for more critical systems tend to preclude the use of such commercial services. Most carriers will not guarantee needed service levels, especially following major storm events (which are a major cause of outages). Furthermore such service levels tend to only offer financial service credits after the incident, which provide no real operational value to the utility and its customers.

Every business has its challenges, and utilities are certainly no exception. A major challenge for a utility is meeting the needs and demands of its customers, while operating in a rapidly changing and sometimes unpredictable regulatory environment, which crosses state and numerous federal jurisdictions. Not having adequate visibility into regulatory requirements will cause utilities to make unwise investments that strand customers with costs for decades. Any amount of stability in the operating environment makes planning easier and more cost effective, and as utilities plan out and begin the implementation of their Smart Grid systems, this stability is both welcome and vital.

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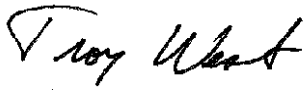
Once again, Cleco greatly appreciates the opportunity to participate in this request for information process, and it is our sincere hope that those empowered with making regulatory decisions recognize the operational value communications systems bring to the business of delivering energy to consumers. Utilities strive to serve their customers in the most reliable and cost effective means possible, and having the appropriate regulatory tools available makes that goal possible.

Yours truly,



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