

**Federal Energy Regulatory Commission  
Docket No. AD19-13-000  
2019 Reliability Technical Conference  
Statement of Mike Brozek, Anterix**

Commissioners, thank you for the opportunity to join this panel today to address the critical need for robust, reliable, resilient, secure wireless data communications networks to ensure the continuing reliability of our nation's rapidly changing power grid.

After 30 years in the electric utility business, I appreciate the importance of this subject. I know, as do many of you, that utility operations require a locked-down, utility-grade communication network; without that network, sensors and smart devices will not provide situational awareness, the ability to act on data in real-time, or otherwise help reliability and resilience.

I am now with Anterix, formerly pdvWireless, which holds the majority of licenses for 900 MHz-band spectrum all over the country and wants to use that spectrum to solve the problem we are here to discuss today: helping utilities maintain reliability even as the grid undergoes enormous change and faces risks, including the potential for a widespread disruption from cyber-attacks by sophisticated nation-state actors.

The industry is changing, the micro and macro forces are changing, all creating an increasing need for private broadband communications. With the inexorable drive to decrease carbonization and increase distributed generation, the grid is becoming more complex and harder to manage; to operate it reliably, safely, and efficiently, utilities need greater visibility and control.

As in other industries, information technology can meet that need: sensors create data about grid conditions and control systems analyze and act on that data; control systems issue commands, and smart devices on the grid receive those commands and take physical action. Utility adoption of these solutions is happening today and will increase substantially: Navigant Research foresees an 8-fold increase in the number of connected devices over the next decade.<sup>1</sup>

This is where the communications network is critical: fast, reliable data communications are valuable and essential. But, as Southern California Edison stated in a recent filing at the FCC,

The telecommunications methods, equipment, and networks of the 20th century are no longer up to the task of meeting 21st century climate conditions and security threats, not to mention the increasing complexity of administering the interconnected grids that make up the nation's electrical infrastructure.<sup>2</sup>

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<sup>1</sup> Richelle Elberg, Navigant Research, "The Urgent Need for a Licensed Broadband Spectrum Allocation for Critical Infrastructure," (2018) at 5.

<sup>2</sup> Comments of Southern California Edison, In the Matter of Review of the Commission's Rules Governing the 896-901/935-940 MHz Band, WT Docket No. 17-200 (June 3, 2019) at 3.



To put this subject into real-world context, here are a couple of examples of how electric utilities depend on data—and data communications—to ensure reliability:

- **Fault location, isolation, and service restoration (FLISR)** technologies, which isolate and rectify trouble areas to reduce the number, scale, and duration of electric outages. Especially when there is a power outage in the service territory, fast, secure and reliable data communications are important for FLISR to deliver its substantial benefits.
- **Advanced Distribution Management Systems (ADMS)** automate real-time adjustment to changing loads, distributed generation, and failure conditions within the distribution grid. At its ADMS test facility, the Department of Energy's National Renewable Energy Laboratory (NREL) is working with Anterix to integrate a private LTE wireless communications system on Anterix's 900 MHz spectrum into NREL's testbed to analyze performance in a variety of network congestion scenarios that accurately represent real-life challenges faced by utility systems. Guiding these efforts is an Industry Advisory Board that includes six leading utilities: Consumers Energy, Duke Energy, Eversource Energy, Holy Cross Energy and Xcel Energy.

Today, utilities depend upon a mix of communication networks. They vary from single-application private wireless narrowband networks to wifi over unlicensed spectrum, and some utilities also use public commercial wireless broadband networks; all of these fall short in comparison to the robust, utility-grade, efficient coverage that a private wireless broadband network can offer.

To be utility-grade, a wireless communications network must be controlled and managed by the utility; separated from the public Internet; capable of very low latency; hardened to utility (not commercial) standards against cyber and physical attack and natural disaster, including back-up power to support grid recovery even in blackout conditions; and updated on the utility's—not a commercial carrier's—schedule.

As a result, if the utility communications network is wireless, the spectrum must be licensed, legally protected from interference, and free from contention from other users. The spectrum must be dedicated to the use of the utility and under the utility's control to meet the utility's build out, coverage and performance requirements. It is also helpful if this licensed spectrum is both low-band—so that its favorable propagation characteristics enable greater coverage with fewer cell sites and thus lower cost of ownership—and built into a global standard like LTE with an existing ecosystem of devices and an evolutionary path to 5G.

For an electric utility, a robust communications platform supporting grid operations and recovery is no longer a nice-to-have; it's a must-have. And the need for solutions is growing more urgent every day. The wireless solution for a secure, reliable, resilient, and efficient network is private broadband over licensed spectrum. With FERC's leadership, the industry should press the Federal Communications Commission to move urgently to make licensed spectrum—including 900 MHz broadband spectrum—available to meet the utility industry's critical data communications needs.

