



May 15, 2019

The Honorable Ajit Pai  
Chairman  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

**Re: Criticality of the 6 GHz Spectrum Band**

Dear Chairman Pai:

We thank you for seeking comments on the Federal Communications Commission's (FCC, the Commission) proposal to open the critical 6 GHz spectrum band to unlicensed use in ET Docket No. 18-295. We write to urge you and your colleagues to protect the licensed, mission-critical communications systems in the 6 GHz band that are used to monitor and support the reliable delivery of electricity and other critical utility services. Unfortunately, the mitigation measures proposed are not enough to protect these highly critical systems, and therefore, we have deep concerns with this proceeding.

The signatories to this letter represent nearly all of the electric utilities in the U.S., along with thousands of water and wastewater utilities. Our collective membership of critical-infrastructure industries (CII) delivers the most critical commodities necessary for sustaining life and public health—water, electricity, and natural gas. Each CII entity represented by our organizations is diverse in size, scope, and ownership structure, but each is committed to safely, securely, and efficiently providing these essential energy and water services.

The critical industries we represent own and operate massive infrastructure to deliver life-sustaining services for all aspects of the economy, including technology and telecommunications. This infrastructure consists of power plants, interstate and intrastate electricity lines, interstate and intrastate water and gas pipelines, control centers, and substations, among others. Because electricity travels at the speed of light, balancing the supply and demand of electricity requires intense planning, careful coordination, and robust and redundant infrastructure. Additionally, gas and water pipelines must be continuously monitored for safety and reliability.

To support the reliable delivery of these services on a real-time basis, our collective membership deploys a sophisticated array of private telecommunications networks throughout their service territories. CII communications networks consist of wireline and wireless technologies; while wireline services can provide faster and more reliable communications, wireline can be cost prohibitive in remote locations.

Therefore, our collective members must rely on wireless networks for numerous mission-critical communications needs.

Often invisible or overlooked, these communications networks provide critical situational awareness, underpin safety functions, and enable crews to safely repair and restore services after storms. Additionally, for electric utilities, these networks are essential for our members to meet and exceed the stringent electric reliability requirements enforced by the federal government. These networks also support the greater deployment of distributed energy resources such as solar or battery storage, smart meters, and other technologies to enable grid modernization.

Hundreds of CII entities have licenses in the 6 GHz band for their microwave communications. Licensed spectrum offers our members the reliability and protection from interference that these networks require. Due to the criticality of these networks, electric utilities cannot tolerate even the slightest risk that these communications systems could be degraded, as diminished situational awareness can result in degraded reliability.

With the FCC considering expanding access to the 6 GHz band for unlicensed use, we have significant concerns that this proposal will threaten the integrity of our mission-critical communications networks. While our collective members fully understand and appreciate the need to make more efficient use of spectrum, we strongly encourage the Commission to weigh the advantages of expanding access to the 6 GHz band with the potential negative impact this could have on critical infrastructure networks.

For example, electric utilities use the 6 GHz band for teleprotection, a system of devices that relay information and monitor the health and status of power lines. If a line is experiencing a problem or fault, teleprotection systems automatically take actions to prevent the problem from escalating and possibly damaging other elements on the system or causing power outages. If these critical communications are degraded due to interference, utilities may be unable to take preventative action which could then lead to a system failure.

The Automated Frequency Coordination (AFC) system being proposed by the FCC to mitigate interference in the 6 GHz band remains untested and unproven. For reference, the National Telecommunications and Information Administration has raised concerns about a similar technology called Dynamic Frequency Selection (DFS) used to prevent interference to Terminal Doppler Weather Radar (TDWR) in the 5.8 GHz band. While the interference in that band was partly caused by illegal alteration of the equipment used for unlicensed operations, NTIA also found that interference was caused by the inability of the DFS systems to detect the TDWR signals and restrict unlicensed operations.

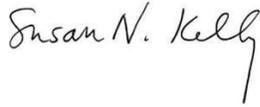
Should the FCC proceed with this concept, at the very least the Commission must make sure the interference-mitigation measures have been tried, tested, and proven to work. The need to make more efficient use of our nation's spectrum resources is critical but cannot be rushed at the expense of vital energy and water services that are essential to our economy and public health. It is imperative that the FCC ensure the mitigation measures are tested and proven before moving ahead.

As the agency proceeds, we urge you to take steps in this proceeding to adequately protect critical-infrastructure systems prior to expanding access to the 6 GHz band. These steps include:

- Requiring AFC for both indoor and outdoor unlicensed operations.
- Securing the AFC system, particularly considering the potential threat of cyberattacks to mission-critical communications by CII.
- Testing the AFC system so it is proven to protect against interference to microwave systems, prior to allowing any unlicensed operations in the 6 GHz band.

The CII represented here stand ready to work with the FCC to ensure our nation's spectrum needs can be met efficiently and effectively. Balancing the interests of all segments of the U.S. economy in this proceeding is essential to doing so.

Sincerely,



Sue Kelly  
American Public Power Association



G. Tracy Mehan, III  
American Water Works Association



Tom Kuhn  
Edison Electric Institute



Jim Matheson  
National Rural Electric Cooperative Association



Joy Ditto  
Utilities Technology Council

**Cc:**

The Honorable Brendan Carr  
The Honorable Michael O'Rielly  
The Honorable Jessica Rosenworcel  
The Honorable Geoffrey Starks

*The American Public Power Association (APPA) is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. It represents public power before the federal government to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ.*

*The American Water Works Association (AWWA) is an international, nonprofit, scientific and educational society dedicated to providing total water solutions assuring the effective management of water. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our membership includes more than 4,000 utilities that supply roughly 80 percent of the nation's drinking water and treat almost half of the nation's wastewater. Our 50,000-plus total membership represents the full spectrum of the water community: public water and wastewater systems, environmental advocates, scientists, academicians, and others who hold a genuine interest in water, our most important resource. AWWA unites the diverse water community to advance public health, safety, the economy, and the environment.*

*The Edison Electric Institute (EEI) is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for more than 220 million Americans, and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than 7 million jobs in communities across the United States. In addition to our U.S. members, EEI has more than 65 international electric companies, with operations in more than 90 countries, as International Members, and hundreds of industry suppliers and related organizations as Associate Members.*

*The National Rural Electric Cooperative Association (NRECA) is the national service organization for America's Electric Cooperatives. The nation's member-owned, not-for-profit electric cooperatives constitute a unique sector of the electric utility industry – and face a unique set of challenges. NRECA represents the interests of the nation's more than 900 rural electric utilities responsible for keeping the lights on for more than 42 million people across 47 states. From booming suburbs to remote rural communities, America's electric cooperatives are energy providers and engines of economic development. Electric cooperatives play a vital role in transforming communities.*

*Founded in 1948, the Utilities Technology Council (UTC) is the international trade association for the telecommunications and information technology interests of electric, gas, and water utilities. UTC's membership includes approximately 300 utilities across the U.S. and Canada, including large, for-profit, investor-owned electric and gas companies that serve millions of customers across multi-state service territories, as well as smaller, not-for-profit, rural electric cooperative and public power utilities, which may serve only a few thousand customers in isolated communities or remote areas. UTC's core utility members own, manage, and control extensive communications infrastructure to support the safe, reliable, and secure delivery of essential energy and water services to the public.*