



Edison Electric  
INSTITUTE

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September 16, 2022

*Via Electronic Filing*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
45 L Street, NE  
Washington, DC 20554

Re: Notice of Ex Parte, ET Docket No. 18-295; GN Docket No. 17-183, ET Docket No. 21-352

Dear Ms. Dortch:

The Edison Electric Institute (“EEI”), the American Public Power Association (“APPA”), the National Rural Electric Cooperative Association (“NRECA”) and the Utilities Technology Council (“UTC”) (collectively “Utility Trade Associations”) respectfully submit this letter to emphasize further the importance of real-world testing of unlicensed operations in the 6 GHz band to ensure that the operations of licensed incumbents are adequately protected from harmful interference from unlicensed devices. Protecting existing 6 GHz networks remains a vital issue for our utility members because they must have reliable microwave communications to ensure the safe, reliable, secure, and resilient operation of their energy and water transmission and distribution infrastructure. These 6 GHz networks are particularly necessary for the safety of utility personnel and to maintain the backbone of utilities’ operations during emergencies and disasters such as hurricanes, tornadoes, and wildfires.

Some stakeholders continue to assert that there is a minimal risk of harmful interference to Fixed Service (“FS”) microwave operations from Low Power Indoor Devices (“LPIs”), but real-world testing has repeatedly found that 6 GHz unlicensed devices operating in accordance with the Commission’s new rules can cause significant interference to FS microwave links.<sup>1</sup> Monte Carlo simulations can be useful in evaluating

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<sup>1</sup> See Letter from Larry F. Butts, Manager, Telecom Engineering, Southern Company Services, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 23, 2021) (“Southern Company Test Report”) (showing significant harmful interference from unlicensed LPI devices to a utility microwave link between Fortson and Columbus, Georgia). *See also* Michael P. Goggin, General Attorney, AT&T to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295 (filed Sept. 9, 2022) refuting a recent CableLabs

interference risks associated with potential operations, but the simulations by CableLabs only make conclusory findings and do not provide the underlying data and algorithms used. This has led to disagreements over the validity of the assumptions and methodologies used in the CableLabs simulations. At the same time, proponents for unlicensed operations in the 6 GHz band continue to assert that the real-world testing on the record used worst-case parameters for unlicensed devices; but these critiques of real-world testing have been methodically rebutted.<sup>2</sup> Furthermore, initial results of real-world testing by other electric companies confirms the Southern Company Test Report findings regarding a single LPI operating in the path and also indicates that the additional interference caused by operating more than one unlicensed device in the path of an existing 6 GHz FS microwave link presents a significant risk of communications failure.

Given the ongoing competing technical analysis,<sup>3</sup> the Commission should conduct further testing to ensure that all affected stakeholders, particularly critical electric and public safety communications networks, are adequately protected from harmful interference while allowing for use of the 6 GHz band for unlicensed devices. At present, the results of Monte Carlo simulations and real-world testing on the record are inconsistent with each other. To close gaps between these technical analyses, it is critical for analysis of the full CableLabs' simulation, including real-world measurements of actual LPIs, and testing of the impact of real LPIs on actual FS microwave links. As part of this effort, critical infrastructure, and public safety stakeholders should have full access to CableLabs' Monte Carlo simulation methodology, including algorithms, data and codes underpinning the methodology.<sup>4</sup> This would enable replication of the simulations, to test inputs and outputs, and to fully analyze interference scenarios to understand the risk to incumbent FS microwave links, which would also assist incumbents in developing interference mitigation strategies.

Through further real-world studies, all stakeholders can gain confidence in how factors such as the number of LPI access points in the main beam, LPI locations within

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simulation and discussing AT&T field test results showing how unlicensed LPI devices interact with co-channel licensed FS microwave systems in the 6 GHz band.)

<sup>2</sup> See Letter from Larry F. Butts, Manager, Telecom Engineering, Southern Company Services, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295, GN Docket No. 18-295 (filed Aug. 16, 2022). *But see* Letter from Neal M. Goldberg, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295, GN Docket No. 18-295 (filed Feb. 23, 2022).

<sup>3</sup> See e.g., Letter from Michael P. Goggin, AT&T, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295, GN Docket No. 18-295 (filed Sept. 9, 2022) (highlighting flaws in recent NCTA/CableLabs' analysis and discussing AT&T's field test results showing how unlicensed LPIs present serious risks to FS systems).

<sup>4</sup> See Letter from Craig A. Gilley, Venable LLP, Attorney to the Edison Electric Institute, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 18-295, GN Docket No. 18-295 (filed March 11, 2022).

buildings, and use of additional LPI units impact FS microwave links. Such tests could explore ways to limit 6 GHz unlicensed operations to prevent consumer devices from causing interference. At the very least, these tests could help develop a baseline by which the interference from 6 GHz unlicensed devices could be measured and monitored over time. It is essential that these tests be conducted or at least observed/overseen/reviewed by an objective third party, like the Commission, to address any concerns about transparency.

In addition to the interference threat from 6 GHz LPI devices, there also is the potential for interference from unlicensed standard power operations that have been authorized under the Commission's current rules. This interference will begin to manifest once the Commission approves automatic frequency coordination ("AFC") systems operators to control these standard power access operations. There is also the potential for interference from a variety of other unlicensed operations that the Commission is considering as part of its FNPRM.<sup>5</sup> Given the real-world testing that has been conducted to date, expanding unlicensed use of the 6 GHz band is likely to increase the potential for interference to FS microwave operations that support mission critical communications for personnel and for smart grid as well as other applications essential to the safe and reliable operation of the electric grid and greater energy efficiency. Accordingly, it is vital that the Commission has the benefit of further testing before the FCC adopts any changes to its rules as proposed in the FNPRM for unlicensed operations in the 6 GHz band.

To be clear, the Utility Trade Associations' opposition is not a general objection to any unlicensed use of the 6 GHz band. The Utility Trade Associations are opposed to such operations when there are inadequate protections put in place for incumbents, who rely on the band for mission-critical communications, to ensure that their operations are not adversely impacted. Real-world testing is an important component of determining how unlicensed operations can provide the necessary and proper protections.

If there are any questions regarding the foregoing, please contact the undersigned.

Respectfully submitted,  
*/s/ Aryeh B. Fishman*

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Aryeh B. Fishman  
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Edison Electric Institute

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<sup>5</sup> Unlicensed Use of the 6 GHz Band, Report and Order and Further Notice of Proposed Rulemaking, ET Docket No. 18-295 (rel. Apr. 24, 2020) ("FNPRM") (proposing to: (1) permit higher power limits for 6 GHz LPI devices and standard power access devices when standard power access operations are configured for point-to-point and point-to-multipoint operations; (2) allow mobile operation of standard power access devices and so-called Very Low Power operations; and (3) allow client-to-client communications by 6 GHz LPI and standard power access operations).

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