

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Unlicensed Use of the 6 GHz Band)	ET Docket No. 18-295
)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz)	GN Docket No. 17-183
)	

ORDER DENYING PETITIONS FOR STAY

Adopted: August 13, 2020

Released: August 13, 2020

By the Acting Chief, Office of Engineering and Technology:

I. INTRODUCTION

1. On April 24, 2020, the Commission released a Report and Order and Further Notice of Proposed Rulemaking (*Order*), which adopted rules opening up the 6 GHz band for unlicensed use while protecting incumbent users from harmful interference.¹ The *Order* carefully considered a record assembled over a two-and-a-half-year period, starting with the Commission's August 2017 *Notice of Inquiry*,² and that included input from broadcasters, wireless Internet service providers, cable operators, content distributors, public safety entities, utilities, and other stakeholders. Relying on arguments that the Commission fully considered and ruled upon in the *Order*, both the Edison Electric Institute (EEI)³ and the Association of Public-Safety Communications Officials-International, Inc. (APCO)⁴ now petition the Commission to stay the application of the rules adopted in the *Order*. We deny both petitions.

II. BACKGROUND

2. While the *Order* lays out the full background of this proceeding, a short history is helpful: As the Commission has repeatedly recognized, demand for wireless broadband, including for unlicensed operations, has exploded in recent years, and is projected to continue growing.⁵ That is why, in the 2017 *Mid-Band NOI*, the Commission began an evaluation of whether spectrum between 3.7 and 24 GHz could be made available for wireless broadband services, including unlicensed use in the 6 GHz band (5.925-7.125 GHz).⁶ The 6 GHz band is particularly attractive for unlicensed operations, the Commission noted, because it is near spectrum designated for U-NII use and could, among other things,

¹ *Unlicensed Use of the 6 GHz Band*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 3852 (2020) (*Order*).

² *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, 32 FCC Rcd 6373 (2017).

³ Petition for Stay Pending Judicial Review, Edison Electric Institute, ET Docket No. 18-295, at 1 (filed June 19, 2020) (*EEI Petition*).

⁴ Petition for Stay of APCO International, ET Docket No. 18-295 (filed May 28, 2020) (*APCO Petition*).

⁵ Cisco Systems, Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017-2022 at 17, 31 (Feb. 2019) <https://s3.amazonaws.com/media.mediapost.com/uploads/CiscoForecast.pdf>; Ericsson, Ericsson Mobility Report at 17 (June 2019) <https://www.ericsson.com/en/mobility-report/reports/june2019>.

⁶ *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, 32 FCC Rcd 6373 (2017) (*Mid-Band NOI*).

allow those devices to operate with wider channel bandwidths and higher data rates with increased flexibility.⁷ But, as the Commission recognized, any unlicensed use in the band would need to protect the wide range of incumbent users operating in various subsets of the band—including fixed service, fixed satellite service (FSS), and fixed and mobile broadcast auxiliary services.⁸

3. For the next two-and-a-half years, the Commission explored ways to accommodate shared use in the 6 GHz band. This task was made even more urgent in 2018, when Congress mandated, in the RAY BAUM'S Act, that the Commission make more spectrum available for unlicensed use.⁹ In response to the *Mid-Band NOI*, parties filed numerous *ex parte* presentations—many with detailed technical evaluations—evidencing a good-faith effort to work toward finding areas of potential agreement on accommodating shared use.¹⁰ In its October 2018 *Notice of Proposed Rulemaking (Notice)*, the Commission again sought comment on how best to provide new opportunities for unlicensed use in the 6 GHz band while ensuring the incumbent licensed operations were protected.¹¹ To best accommodate the variety of incumbent licensed services occupying the 6 GHz band, the Commission proposed to permit two different types of unlicensed devices—“standard-power” access points and “low-power” access points—to operate in four different sub-bands.¹² The Commission received comments from over 150 parties in response to this proposal, including from proponents of unlicensed use and incumbents raising concerns about interference—such as EEI and APCO.¹³

4. In a lengthy order grappling with the arguments, proposals, and technical studies in the record, the Commission adopted rules to authorize two types of unlicensed operations in the 6 GHz band: standard-power operations and low-power indoor operations.¹⁴ For *standard-power operations*, the Commission provided that, in two portions of the 6 GHz band, standard-power access points will operate under the control of an automated frequency coordination (AFC) system.¹⁵ Prior to transmitting, a standard-power access point will send its location to the AFC system, which in turn will limit the standard-power access point to the frequencies available and maximum power permitted at that time and location.¹⁶ The Commission concluded that use of this AFC system will prevent standard-power access points from operating where they could cause harmful interference to licensed point-to-point microwave links that operate in these two portions of the 6 GHz band.¹⁷ But for *low-power indoor operations*, the Commission found the use of an AFC unnecessary. The *Order* adopted rules limiting low-power indoor access points to operate only at indoor locations across the entire 6 GHz band.¹⁸ The Commission concluded, based on its evaluation of studies and other evidence in the record, that the lower operating power required of these devices along with the attenuation provided by building structures will prevent harmful interference from occurring to incumbent licensees even without being under the control of an

⁷ *Mid-Band NOI*, 32 FCC Rcd at 6382, para. 26.

⁸ *Id.* at 6384-85, paras. 32-36.

⁹ RAY BAUM'S Act of 2018, Pub. L. 115-141, § 614, 132 Stat. 1080, 1109 (2018).

¹⁰ *Unlicensed Use of the 6 GHz Band*, Notice of Proposed Rulemaking, 33 FCC Rcd 10496, 10499-501, paras. 16-17 (2018) (*Notice*).

¹¹ *Notice*, 33 FCC Rcd 10496.

¹² *Notice*, 33 FCC Rcd at 10504-05, para. 20-21.

¹³ *Order*, 35 FCC Rcd at 3860, para. 16.

¹⁴ *Order*, 35 FCC Rcd at 3860, paras. 17-18.

¹⁵ *Order*, 35 FCC Rcd at 3862, 3953-56, para. 22, Appx. A § 15.407(k). Standard power access points will be permitted in the 5.925-6.425 GHz and 6.525-7.125 GHz portions of the 6 GHz band. *See id.* at 3862, para. 22.

¹⁶ *Order*, 35 FCC Rcd at 3862, 3953, 3954, para. 22, Appx. A § 15.407(k)(1), (7).

¹⁷ *Order*, 35 FCC Rcd at 3858, para. 12.

¹⁸ *Order*, 35 FCC Rcd at 3860, 3888-90, paras. 18, 98-103, Appx. A § 15.407(d)(3).

AFC system.¹⁹ It also required low power indoor access points to incorporate a contention-based protocol which will also help them avoid transmitting on frequencies when other signals are present.²⁰ In addition, the Commission permitted unlicensed client devices to operate either under the control of a standard-power or low-power indoor access point.²¹

5. The Commission released the *Order* on April 24, 2020. The Federal Register published a summary of the *Order* on May 26, 2020, and the *Order* became effective on July 27, 2020.²² Eight parties filed for judicial review of the *Order* in the United States Court of Appeals for the D.C. Circuit.²³ Five parties filed petitions for reconsideration of the *Order*.²⁴

6. Finally, two parties—EEI and APCO—petitioned to stay the *Order*. EEI, a trade association representing investor-owned electric utilities, seeks only to stay the effectiveness of the rules that apply to low-power indoor devices.²⁵ According to EEI, utilities use 6 GHz point-to-point microwave links for teleprotection, a relay system integrated into the power transmission and distribution grids.²⁶ EEI claims that, with respect to low power indoor operations, the *Order*: (1) conflicts with the Communications Act and the Commission’s established rules by not requiring use of an AFC system given that EEI believes that the record shows harmful interference will occur; (2) impermissibly modified its members’ licenses under Section 316 of the Communications Act; and (3) was arbitrary and capricious

¹⁹ *Order*, 35 FCC Rcd at 3889, 3889-90, paras. 100, 103.

²⁰ *Order*, 35 FCC Rcd at 3889, paras. 101-02. Although contention-based protocols have typically been used to avoid interference between similar devices operating in proximity, the sensing mechanism they incorporate will sense any signal (i.e., energy detect) and avoid frequencies with signals above a prescribed level regardless of the type of system. *Order*, 35 FCC Rcd 3889, paras. 101-02.

²¹ *Order*, 35 FCC Rcd at 3860, 3926, paras. 18, 199, Appx. A § 15.407(d)(5).

²² Federal Communications Commission, Unlicensed Use of the 6 GHz Band, Final Rule, 85 Fed. Reg. 31390, 31390 (May 26, 2020).

²³ The parties filed six petitions for review. Petition for Review, *CenturyLink, Inc. v. FCC*, No. 20-1284 (D.C. Cir. July 27, 2020); Petition for Review, *Utilities Technology Council v. FCC*, No. 20-1281 (D.C. Cir. July 27, 2020); Petition for Review, *National Association of Broadcasters v. FCC*, No. 20-1274 (D.C. Cir. July 24, 2020); Petition for Review, *Association of Public-Safety Communications Officials International, Inc. v. FCC*, No. 20-1272 (D.C. Cir. July 24, 2020); Petition for Review, *Edison Electric Institute v. FCC*, No. 20-1216 (D.C. Cir. June 17, 2020); Petition for Review, *AT&T Services, Inc. v. FCC*, No. 20-1190 (D.C. Cir. June 5, 2020).

²⁴ Petition for Reconsideration, The Association of Public-Safety Communications-International, ET Docket 18-295 (filed May 28, 2020); Fixed Wireless Communications Coalition Petition for Reconsideration, ET Docket 18-295 (filed June 25, 2020); Verizon Petition for Reconsideration, ET Docket 18-295 (filed June 25, 2020); Petition for Partial Reconsideration, CTIA, ET Docket 18-295 (filed June 25, 2020); Petition for Reconsideration, Encina Communications Corp., ET Docket 18-295 (filed June 29, 2020). The Encina reconsideration petition was dismissed as being untimely filed. *Unlicensed Use of the 6 GHz Band*, Memorandum Opinion and Order, ET Docket No. 18-295, DA 20-730, at 1, para. 2 (OET July 13, 2020). As noted above, APCO subsequently withdrew its Petition for Reconsideration.

²⁵ *EEI Petition* at 1-2 & n.4.

²⁶ *EEI Petition* at 3.

by permitting low-power indoor devices that will interfere with incumbents' licensed uses.²⁷ We received three oppositions to EEI's stay petition,²⁸ one letter supporting the petition,²⁹ and two replies.³⁰

7. APCO, a non-profit association of persons who manage and operate public-safety communications systems, seeks to stay the rules for both standard-power and low-power indoor operations.³¹ Public safety agencies use 6 GHz band point-to-point microwave links for links to/from 911 centers and connections between public safety radio base stations and control facilities.³² APCO argues that the *Order*: (1) failed to adequately address public safety's concerns that the rules will not prevent harmful interference; (2) neglected to establish location-accuracy requirements for standard-power access points that would enable AFC systems to define exclusion zones; (3) should have extended the AFC requirement to low-power indoor devices because the *Order* did not include sufficient measures to keep the devices indoors; and (4) failed to address how sources of interference will be identified and eliminated.³³ We received four oppositions to APCO's petition,³⁴ three filings supporting the stay

²⁷ *EEI Petition* at 7-16.

²⁸ Opposition of Apple Inc. et al. to the Petition for Stay Pending Judicial Review of Edison Electric Institute, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 26, 2020); Opposition of NCTA—The Internet & Television Association to Petition for Stay Pending Judicial Review of Edison Electric Institute, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 26, 2020); Wi-Fi Alliance Opposition to Petition for Stay, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 26, 2020).

²⁹ Letter from Brett Kilbourne, Vice President Policy and General Counsel, Utilities Technology Council, Brian O'Hara, Senior Director Regulatory Issues—Telecom & Broadband, National Rural Electric Cooperative Association, and Corry Marshall, Senior Government Relations Director, American Public Power Association, to Marlene H. Dortch, Secretary, FCC (June 26, 2020) (on file in ET Docket No. 18-295 and GN Docket No. 17-183).

We note that section 1.45(d) of the Commission's rules authorizes only oppositions to be filed in response to stay petitions and that the filing by these parties of a letter in support of EEI's stay petition conflicts with the plain language and purpose of this section. See 47 CFR § 1.45(d); *Participation by Comsat Corporation in a New Inmarsat Satellite System Designed to Provide Service to Handheld Communications Devices*, Order, 10 FCC Rcd 894, 894, paras. 4-7 (IB 1994); see also *Amendment of Parts 0 and 1, Rules and Regulations*, Order, 12 F.C.C.2d 859, 859, para. 3 (1968). These parties, however, neither filed a request for waiver of section 1.45(d), nor provided any reasons to justify their filing of this letter. Accordingly, we dismiss this filing. Even if we were to consider the letter on the merits, however, we find that it does not contain any arguments that would justify a stay.

³⁰ Reply Comments of Encina Communications Corporation Re Public Knowledge, et al. Support for Opposition to Edison Electric Institute's Petition for Stay, ET Docket No. 18-295, GN Docket No. 17-183 (filed July 9, 2020); Support for Opposition to EEI's Petition for Stay of Public Knowledge et al., ET Docket No. 18-295, GN Docket No. 17-183 (filed July 2, 2020).

Section 1.45(d) of the Commission's rules provides that "[r]epplies to oppositions should not be filed and will not be considered." 47 CFR § 1.45(d). Neither Encina nor Public Knowledge et al. showed why the Commission should waive this rule to allow the filing of their replies. Thus, we dismiss the replies and, pursuant to section 1.45(d), will not consider the facts or arguments raised therein. See, e.g., *WTVG, Inc. and WUPW Broadcasting, LLC*, Order, 25 FCC Rcd 12263, 12263, para. 1 n.5 (MB 2010). Even if we were to consider Encina's reply on the merits, however, we find that it does not contain any arguments that would justify a stay.

³¹ *APCO Petition* at 1.

³² *Order*, 35 FCC Rcd at 3893, para. 115 (citing National Public Safety Telecommunications Council Comments at 5).

³³ *APCO Petition* at 2-6.

³⁴ Opposition of TechFreedom to Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 17, 2020); Opposition of Apple Inc. et al. to the Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 4, 2020); Opposition of NCTA—The Internet & Television Association to Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed June

(continued....)

petition,³⁵ and one reply.³⁶ We note that APCO's petition to stay asks the Commission to stay the effectiveness of the rules pending the Commission's consideration of its Petition for Reconsideration.³⁷ While APCO arguably mooted its petition for stay by withdrawing its Petition for Reconsideration,³⁸ we nevertheless consider APCO's arguments here, given that APCO has not withdrawn its stay petition and is among the parties seeking judicial review of the *Order* in the D.C. Circuit.

III. DISCUSSION

8. When evaluating a stay request, the Commission considers: (1) whether the requesting party has made a strong showing that it is likely to succeed on the merits; (2) whether the requesting party will be irreparably injured without a stay; (3) whether a stay will substantially injure other interested parties; and (4) whether the public interest supports a stay.³⁹ "A stay is an 'intrusion into the ordinary processes of administration and judicial review.'"⁴⁰ "The party requesting a stay bears the burden of showing that the circumstances justify an exercise of that discretion."⁴¹ We find that both APCO and EEI have failed to demonstrate that the extraordinary equitable relief of a stay is warranted.

A. Petitioners Have Failed to Show a Likelihood of Success on the Merits

9. EEI and APCO fail to demonstrate that they are likely to succeed on the merits. The Commission addressed and discussed in detail several of the petitioners' concerns in the *Order*. We also

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4, 2020); Wi-Fi Alliance Opposition to Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 4, 2020).

Section 1.45(d) provides that "[o]ppositions to a request for stay of any order . . . shall be filed within 7 days after the request is filed." 47 CFR § 1.45(d). APCO filed its stay petition on May 28, 2020, which means that oppositions were due on June 4, 2020. TechFreedom filed its Opposition almost two weeks later and failed to show why the Commission should waive its filing deadline. Thus, we dismiss TechFreedom's late-filed Opposition. See *Price Cap Regulation of Local Exchange Carriers Rate-of-Return Sharing and Lower Formula Adjustment*, Order, 10 FCC Rcd 11979, 11981, para. 4 (1995).

³⁵ Comments of Motorola Solutions, Inc. in Support of Petition for Stay, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 23, 2020); Letter from Ralph A. Haller, Chairman, National Public Safety Telecommunications Council, to Marlene H. Dortch, Secretary, FCC (June 12, 2020) (on file in ET Docket No. 18-295 and GN Docket No. 17-183); FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed June 4, 2020). We note that these parties also lacked the authority to file pleadings in support of APCO's stay petition. see 47 CFR § 1.45(d); *Comsat Order*, 10 FCC Rcd at 894, paras. 4-7, failed to request a waiver of section 1.45(d) to file these comments, and failed to provide any reasons to justify the filing. Accordingly, we dismiss these unauthorized filings. Even if we were to consider them, we also find that they do not contain any arguments that would support a stay.

³⁶ Reply Comments of Encina Communications Corporation Re Apple Inc. et al. ("RLAN Group") Opposition to the Petition for Stay by APCO International, ET Docket No. 18-295, GN Docket No. 17-183 (filed July 9, 2020). For the reasons stated above, we dismiss this reply and, pursuant to section 1.45(d), will not consider the facts or arguments raised therein. Even if we were to consider this reply on the merits, we find that it does not contain any arguments that would justify a stay.

³⁷ *APCO Petition* at 1 (citing APCO International Petition for Reconsideration, ET Docket No. 18-295 (filed May 28, 2020)).

³⁸ APCO International Withdrawal, ET Docket No. 18-295, at 1 (filed July 24, 2020).

³⁹ *Washington Metro. Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841, 843 (D.C. Cir. 1977); *Va. Petroleum Jobbers Ass'n v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958) (per curiam).

⁴⁰ *Nken v. Holder*, 556 U.S. 418, 427 (2009) (citation omitted).

⁴¹ *Id.* at 433-34.

note that courts accord the Commission's technical judgments great deference.⁴² Taken together, we find that neither petitioner has met its burden of demonstrating that it is likely to succeed on the merits.

10. *Potential for harmful interference from low-power indoor unlicensed devices.* Both EEI and APCO raise the prospect of harmful interference, largely ignoring the *Order's* discussion of this point and instead making arguments based on technical studies in the record that the Commission has already considered and rejected. Given that the Commission reached its conclusion regarding the potential for harmful interference occurring based on a reasoned examination of a detailed record, including its assessment of the studies on which both EEI and APCO rely in their petitions for stay, we conclude neither petitioner establishes a likelihood of success on revisiting the Commission's analysis.⁴³

11. EEI's arguments rely on its premise that the record demonstrates that some locations will receive harmful interference from low-power indoor devices that will impair licensed uses.⁴⁴ According to EEI, the Commission rejected extensive real-world simulation evidence that showed a high probability of harm and instead relied on a single probability assessment submitted by proponents of unlicensed indoor devices.⁴⁵ But again, in the *Order*, the Commission considered an extensive record containing numerous technical studies submitted over almost three years to conclude that low-power indoor unlicensed device operations will not have a significant potential for causing harmful interference to users authorized to operate in the band.⁴⁶ In reaching this conclusion, the Commission explained in detail the reasons why it found certain technical studies more persuasive than others.⁴⁷ The Commission did not, as EEI claims, ignore technical studies by utilities and others asserting that low-power indoor operations would cause harmful interference.⁴⁸ To the contrary, the Commission accepted some of the information in those studies and incorporated it into the new 6 GHz rules.⁴⁹ The Commission also analyzed studies submitted by Southern Company, Exelon Corporation, and Critical Infrastructure Industry users (including EEI) and provided detailed reasons for rejecting their conclusions.⁵⁰ EEI provides no actual or additional justification as to why it questions the Commission's decision on this issue other than pointing out that a study upon which the Commission relied was submitted by proponents of low-power unlicensed

⁴² *NTCH, Inc. v. FCC*, 950 F.3d 871, 879-80 (D.C. Cir. 2020) ("We will accept the Commission's technical judgments when supported with even a modicum of reasoned analysis." (internal quotation marks omitted)); *see also id.* (stating that the Commission receives "the greatest deference" when it "acts to foster innovative methods of exploiting the spectrum").

⁴³ Thus, because the Commission determined that the limitations in its rules ensured against any significant risk of harmful interference to incumbent users, and continued to make unlicensed users subject to Part 15 requirements enforcing harmful interference protections against such users, EEI is unlikely to succeed on its claim that the *Order* worked a fundamental change to incumbents' licenses in violation of section 316 of the Communications Act. *See EEI Petition* at 13.

⁴⁴ *EEI Petition* at 9.

⁴⁵ *EEI Petition* at 9-10, 15.

⁴⁶ *Order*, 35 FCC Rcd at 3905, 3907, paras. 141, 145. The Commission also adopted technical and operational rules, such as the prohibition on outdoor operations, to further protect fixed microwave incumbents from any potential harmful interference. *See, e.g., Order*, 35 FCC Rcd at 3888-90, paras. 99-103.

⁴⁷ *Order*, 35 FCC Rcd at 3893-915, paras. 116-68.

⁴⁸ *See EEI Petition* at 15-16.

⁴⁹ *Order*, 35 FCC Rcd at 3892, para. 110. For example, based on its review of all the technical studies, the Commission adopted a power limit for indoor low-power operations that was much lower than the proposed rule and lower than the amount requested by unlicensed proponents. *Id.* (adopting a 5 dBm/MHz power spectral density limit instead of the 17 dBm/MHz limit proposed in the NPRM and the 8 dBm/MHz limit requested by unlicensed proponents).

⁵⁰ *Order*, 35 FCC Rcd at 3902-04, paras. 134-38 & n.343.

use of the band and objecting to the Commission's finding that the other studies that EEI favors were not as persuasive.⁵¹

12. APCO also raises as a potential issue the likelihood of harmful interference but provides no support for its claim that "interference is a statistical certainty given the sheer number of unlicensed devices."⁵² APCO does not even address whether this alleged interference will rise to the level of actually causing harm. APCO contends that expanding unlicensed use of the 6 GHz band will result in interference to incumbent users is "a fact recognized by the Commission."⁵³ This contention is without basis. In support, APCO points to language encouraging a multi-stakeholder group "to address any issues it deems appropriate regarding interference detection and mitigation in the event that an incumbent licensee believes it may be experiencing harmful interference."⁵⁴ The Commission's suggestion that the multi-stakeholder group could address a process for addressing harmful interference issues was included as an additional precautionary measure. Contrary to APCO's contention, nothing in that suggestion to the parties is inconsistent with the Commission's predictive judgment regarding the likelihood of harmful interference.

13. *Necessity of an AFC for low-power indoor devices under the Communications Act and the Commission's rules.* EEI argues that because the adopted rules permit low-power indoor unlicensed devices to operate without being under the control of an AFC, there is no practical remedy when the devices cause harmful interference.⁵⁵ According to EEI, this flouts the Commission's obligation under Section 301 of the Communications Act to prevent harmful interference to licensed operations, as well as the requirement in the Commission's Part 15 rules that unlicensed devices cease operation if they cause harmful interference.⁵⁶ Neither the Communications Act nor the Part 15 rules require the Commission to mandate the use of an AFC for low-power indoor operations in the 6 GHz band. The Commission has long interpreted Section 301 to permit unlicensed operations as long as the devices do not transmit enough energy to have a "significant potential of causing harmful interference."⁵⁷ As the *Order* points out, after a thorough analysis of an extensive record containing numerous technical studies, the Commission concluded that the requirements established in the rules eliminate any significant risk of harmful interference caused by low-power indoor access points, without the need for an AFC.⁵⁸ Consequently, the rules are fully consistent with the requirements of Section 301.⁵⁹ Furthermore, the

⁵¹ *EEI Petition* at 9-10.

⁵² APCO Petition at 3-4; *see EEI Petition* at 4. The Commission addressed this argument in the *Order*, finding that "under realistic deployment scenarios (which of course will not occur immediately but over the course of several years), large numbers of 6 GHz-capable devices do not alter our conclusions regarding the risk of interference to 6 GHz links." *Order*, 35 FCC Rcd at 3905, para. 141 n.373.

⁵³ *APCO Petition* at 6.

⁵⁴ *APCO Petition* at 6 n.19. Because it points to language in which the Commission is discussing the harmful interference standard, we interpret APCO's use of the term "interference" to mean "harmful interference" in this instance. *See Am. Radio Relay League v. FCC*, 524 F.3d 227, 235 (D.C. Cir. 2008) ("Commission precedent does not require the elimination of all interference at all times[.]").

⁵⁵ *EEI Petition* at 7-11.

⁵⁶ *Id.* at 11. EEI also suggests that the Commission violated section 302 of the Communications Act, which provides that the Commission may adopt regulations "governing the interference potential of devices which in their operation are capable of . . . caus[ing] harmful interference to radio communications." *Id.* at 8. However, we need not address this issue because EEI fails to make any specific argument regarding this purported violation of section 302.

⁵⁷ *Am. Radio Relay League v. FCC*, 524 F.3d 227, 234 (D.C. Cir. 2008) (citing *Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*, Second Report and Order and Second Memorandum and Order, 19 FCC Rcd 24558, 24589, paras. 68-69 & n.179 (2004)).

⁵⁸ *Order*, 35 FCC Rcd at 3905, 3907, paras. 141, 146.

Commission is not departing from its established Part 15 precedent: The requirements that unlicensed devices not cause harmful interference and cease operation upon notification from a Commission representative that harmful interference is occurring will apply to unlicensed devices in the 6 GHz band.⁶⁰ Both AT&T and CTIA made arguments on the record similar to EEI on this issue,⁶¹ which the Commission rejected.⁶² In fact, neither EEI, AT&T, nor CTIA have pointed to precedent where the Commission or the courts have found that an AFC system or similar mechanism is required by the Communications Act or the Commission's rules when unlicensed devices share a band with licensed operations.

14. *Identification and elimination of interference.* APCO also complains that the *Order* failed to address how sources of interference will be identified and eliminated.⁶³ According to APCO, the Commission committed a clear error by not adopting a mechanism—similar to the spectrum access system for the Citizens Broadband Radio Service—that has the ability to quickly respond to interference complaints.⁶⁴ EEI argues that permitting indoor unlicensed devices without any device identification or interference-mitigation mechanisms makes utilities' wireless systems unreliable.⁶⁵

15. The *Order* addressed similar concerns that were expressed by AT&T and CTIA regarding interference identification and mitigation for low-power indoor operations.⁶⁶ As an initial matter, the Commission concluded that low-power indoor access points will not present a significant risk of causing harmful interference, which obviates the need for an automated system to identify and eliminate interference.⁶⁷ As the *Order* explained, there is no spectrum management system in other bands used by unlicensed devices where Wi-Fi devices have been deployed in abundance for over 20 years,⁶⁸ i.e., the 2.4 GHz and 5 GHz bands, and the Commission has been able to effectively identify and eliminate harmful interference in those rare instances when it has occurred.⁶⁹ Furthermore, as the *Order* notes, in the unlikely event harmful interference were to occur, the Commission already established a regulatory

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⁵⁹ *Id.* at 3907, para. 146.

⁶⁰ 47 CFR § 15.5(b), (c).

⁶¹ Letter from Michael P. Goggin, AT&T Services, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-295, at 2-6 (filed March 26, 2020); Letter from Scott K. Bergmann, Senior Vice President, CTIA, to Marlene H. Dortch, Secretary, FCC, ET. Docket No. 18-295, at 3-7 (filed Apr. 14, 2020).

⁶² *Order*, 35 FCC Rcd at 3907-08, paras. 146-47.

⁶³ *APCO Petition* at 5-6.

⁶⁴ *See id.*

⁶⁵ *EEI Petition* at 10-11, 15-16.

⁶⁶ *Order*, 35 FCC Rcd at 3908, 3909, paras. 147, 149; (citing Letter from Michael P. Goggin, AT&T Services, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-295, at 4-6 (filed March 26, 2020) (citing 47 CFR§ 15.5(b)-(c)); Letter from Scott K. Bergmann, Senior Vice President, CTIA, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-295, at 3-7 (filed Apr. 14, 2020) (a low probability of harmful interference without an effective mechanism to promptly track and root out such interference is not acceptable)).

⁶⁷ *Order*, 35 FCC Rcd at 3892, 3905-06, paras. 112, 141-43.

⁶⁸ We note that the instances where the Commission did implement spectrum management systems presented unique circumstances that could not otherwise be addressed. In the white spaces case where devices rely on a database similar to the 6 GHz AFC, the database is used to protect television receivers that could be located indoors. Hence building attenuation and spatial separation between the transmitters and receivers could not be relied upon to prevent harmful interference. In CBRS, the SAS protects spectrum users that are otherwise unknown to the Commission (such as U.S. Navy vessels) from outdoor transmitters that operate at much higher power than the 6 GHz low-power indoor device.

⁶⁹ *Order*, 35 FCC Rcd at 3908, para. 147. We also note that in these other bands, specific devices are not limited to indoor-only operation.

framework in the Part 15 rules to remedy harmful interference and empowered the Enforcement Bureau to investigate complaints and take appropriate enforcement actions.⁷⁰

16. As for APCO's concern that there is no explicit requirement for the AFC systems to demonstrate the ability to respond to interference complaints, the Commission concluded that the rules adopted will protect microwave receivers from the potential of harmful interference from unlicensed standard-power operations.⁷¹ Indeed, the express purpose of the AFC system is to act as a gatekeeper to ensure that standard-power access points do not operate in locations and at power levels where they would have a potential for causing harmful interference.⁷² Consequently, the Commission did not adopt an explicit requirement for AFC systems to respond to interference complaints.⁷³ Furthermore, the *Order* requires that AFC systems establish protocols to comply with Commission enforcement requests, including the ability to discontinue access point operations in designated geographic areas, if necessary.⁷⁴ Thus, as provided in the *Order*, in the unlikely event that harmful interference were to occur from standard-power operations, the AFC systems will be able to quickly address it. Considering that the *Order* already addressed the concerns raised by petitioners, including mechanisms to protect against harmful interference, we conclude that the petitioners have not met their burden of establishing a likelihood of success on this issue.

17. *Keeping low-power indoor devices indoors.* APCO points out that the adopted rules permit low-power indoor access points to operate without coordination by an AFC system based on the assumption they will remain indoors but claims that there are insufficient measures to restrict the devices to indoor operations.⁷⁵ The *Order* adopted several requirements to help ensure that the low-power indoor access points remain indoors, such as prohibiting them from being weather resistant, requiring integrated antennas, prohibiting operation on battery power, and imposing marketing and labeling requirements.⁷⁶ The Commission found that these requirements make outdoor operations impractical and unsuitable and disagreed with commenters who claimed that any requirements would be ineffective.⁷⁷ We also note that the Commission has previously restricted certain unlicensed devices to indoor operation without this resulting in reports of harmful interference.⁷⁸ APCO offers no new arguments in its stay petition

⁷⁰ *Order*, 35 FCC Rcd at 3909, para. 149; *see, e.g.*, 47 CFR §§ 15.5(b) (stating that “[o]peration of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused”), 15.5(c) (stating that “[t]he operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference” and that “[o]peration shall not resume until the condition causing the harmful interference has been corrected”). NPSTC claims that a review of enforcement cases in the 5 GHz band shows that interference from unlicensed devices occurs and can take months to resolve. Letter from Ralph A. Haller, NPSTC, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-95, at 3 (filed June 12, 2020). As noted above, we need not consider NPSTC's argument because it lacked the authority to file this letter in support of EEI's stay petition. Even if we were to consider this argument, we find it unpersuasive because NPSTC provides no citation to these cases or details of the particular occurrences, which prevents us from considering their relevance to APCO's stay petition.

⁷¹ *Order*, 35 FCC Rcd at 3862, para. 23.

⁷² *Order*, 35 FCC Rcd at 3862, 3953, 3954, para. 22, Appx. A § 15.407(k)(1), (7).

⁷³ *See Order*, 35 FCC Rcd at 3883-84, paras. 83-84 (not providing an explicit requirement that AFC systems respond to interference complaints and encouraging formation of a multi-stakeholder group to develop procedures to resolve interference complaints).

⁷⁴ *Order*, 35 FCC Rcd at 3883, para. 83.

⁷⁵ *APCO Petition* at 5.

⁷⁶ *Order*, 35 FCC Rcd at 3891, para. 107.

⁷⁷ *Id.* at 3891, para. 108.

⁷⁸ *Amendment of the Commission's Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Frequency Range*, Report and Order, 12 FCC Rcd 1576, 1615, para. 95 (1997) (limiting U-NII devices in 5.15-5.25

regarding the purported ineffectiveness of these measures, and consequently, has not demonstrated that it is likely to succeed on the merits on appeal.⁷⁹

18. *Location requirement for AFC systems.* APCO points out that the *Order* does not establish a location accuracy requirement for the standard-power access points and instead requires their coordinates be reported to the AFC system with a 95% confidence level.⁸⁰ APCO argues that this will make the AFC-calculated exclusion zones ineffective, asserting that 5% of the devices could be installed in the “worst possible location.”⁸¹ APCO’s argument shows a misunderstanding of the purpose of this rule and how it is designed to protect incumbent users. This rule enables the AFC system to use this uncertainty information in determining the minimum required separation distance to protect fixed microwave receivers; i.e., the AFC will calculate a larger separation distance to protect fixed service operations commensurate with distance accuracy corresponding to the 95% confidence level.⁸² The Commission adopted this rule based on this rationale and on its experience with the white-space rules, which have similar geo-location requirements and have reliably protected against harmful interference.⁸³ APCO has not demonstrated that it is likely to succeed on the merits of this argument on appeal.

19. *Field testing.* EEI contends that the Commission “arbitrarily failed to conduct even a single field test” to evaluate the impact of unlicensed low-power indoor devices on incumbent operations.⁸⁴ While the Commission has occasionally conducted field measurements prior to adopting new rules,⁸⁵ as a matter of course it almost never conducts such field tests.⁸⁶ As in other such proceedings, the purpose of issuing a notice of proposed rulemaking in this docket was to seek comment from interested parties on the question at issue here. Interested parties were free to submit analyses to the record, including field tests if such stakeholders conducted such tests and deemed them appropriate for the record. Moreover, many spectrum-related rulemaking proceedings involve opportunities for future spectrum use and do not prejudice the actual users and equipment that will operate in the band. Field tests in these cases are therefore better left to industry stakeholders that can tailor testing towards their intended business plans and produce related results rather than the Commission presuming specific types or modes of operation. The Commission routinely evaluates such tests, analysis, and simulation results in the course of its rulemaking proceedings and, as stated, has done just that with the extensive technical record submitted during this proceeding.

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GHz to indoor use); *Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems*, First Report and Order, 47 FCC Rcd 7453, 7479, paras. 65-66 (2002) (establishing a category of ultra-wideband unlicensed devices that will fail to operate if they are removed from the indoor environment).

⁷⁹ See, e.g., *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Order Denying Stay Petition, 35 FCC Rcd 5807, 5814, para. 16 (WTB 2020) (declining to address at length arguments already considered and rejected in the underlying order and concluding that those arguments do not show a likelihood of success on the merits).

⁸⁰ *APCO Petition* at 4.

⁸¹ *Id.*

⁸² *Order*, 35 FCC Rcd at 3868, para. 41.

⁸³ *Id.*

⁸⁴ *EEI Petition* at 15.

⁸⁵ See, e.g., *Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband over Power Line Systems*, Memorandum Opinion and Order, 21 FCC Rcd 9308, 9324-25, para. 47 (2006) (Commission relied on its own internally conducted studies).

⁸⁶ For example, the Commission adopted rules for the Upper Microwave Flexible Use Services without conducting any field test. *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014 (2016).

20. *Consideration of public safety.* APCO argues that the *Order* failed to consider how the rules will impact public safety and did not adequately address public safety's concerns that the rules will not prevent harmful interference.⁸⁷ In particular, APCO faults the *Order* for not reflecting appropriate consideration of public safety's reliance on its microwave links in the 6 GHz band for mission critical communications, not addressing the concerns APCO raised in its comments, not acknowledging an APCO *ex parte* filing, ignoring public safety issues, and not addressing the impact on public safety in the cost/benefit analysis.⁸⁸

21. The Commission adequately considered and addressed public safety concerns in adopting the *Order*. The lengthy discussion in the *Order* that addressed protection of microwave links applied in full measure to public safety systems and accorded all fixed microwave licensees the higher level of protection applicable to safety services.⁸⁹ Public safety agencies are only one set of incumbents among several different entities that use the 6 GHz band for point-to-point microwave links. The microwave links used by public safety agencies must follow the same technical rules as those implemented by any other 6 GHz fixed service licensee and their links have the same technical characteristics as those used for other purposes, such as backhaul for commercial wireless providers, coordination of railroad train movements, control of natural gas pipelines, management of electric grids, and long-distance telephone service. Furthermore, public safety agencies and other incumbent industries have the same reliability requirements for their point-to-point microwave links. Users of these various applications all requested similar reliability requirements on the record; FWCC claimed that fixed microwave links are typically designed to achieve 99.999% or 99.9999% reliability.⁹⁰ APCO stated that public safety microwave links are designed to have downtime of no more than 30 seconds a year,⁹¹ which is equivalent to the 99.9999% reliability that FWCC stated is necessary for many users of general fixed microwave links. A significant portion of the *Order* discusses how these point-to-point microwave links will be protected from harmful interference, both from standard-power access points under the control of an AFC system and low-power indoor access points.⁹² The Commission's conclusions that the AFC mechanism will protect microwave operations from the potential for harmful interference from standard-power access points and that low-power indoor access points will not have a significant risk of causing harmful interference to microwave links apply with equal force to public safety operations in the 6 GHz band.⁹³ As for the cost-benefit analysis, the Commission determined that "the technical and operational rules are designed to minimize the potential for interference to incumbent licensed services."⁹⁴ Given the lack of expected harmful interference, there was no reason to include a cost estimate for public safety agencies in this discussion. Accordingly, the *Order* did not include any cost estimates regarding harmful interference to microwave links.

⁸⁷ *APCO Petition* at 3. APCO claims that "[t]he Order does not reflect appropriate consideration for public safety's reliance on the 6 GHz band for mission critical communications and the potential for interference to result in irreparable harm to the public's and first responders' safety." *Id.* We interpret APCO's use of the term "interference" to mean "harmful interference" because that is the protection that unlicensed devices must provide to licensed operations. See 47 CFR § 15.5(c).

⁸⁸ *APCO Petition* at 3-4; see also FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 3-4 (filed June 4, 2020). As noted above, FWCC lacked the authority to file a pleading in support of APCO's stay petition. See 47 CFR § 1.45(d); *Comsat Order*, 10 FCC Rcd at 894, paras. 4-7.

⁸⁹ See 47 CFR § 15.3(m).

⁹⁰ *Order*, 35 FCC Rcd at 3893, para. 114.

⁹¹ *Order*, 35 FCC Rcd at 3893, para. 115.

⁹² *Order*, 35 FCC Rcd at 3862-84, 3892-909, paras. 23-86, 112-50.

⁹³ *Order*, 35 FCC Rcd at 3862, 3907, paras. 23, 146.

⁹⁴ *Order*, 35 FCC Rcd at 3938, para. 230.

22. The *Order* also makes clear that the Commission specifically took into consideration public safety's use of the 6 GHz band. Far from failing to acknowledge or address public safety concerns, as APCO alleges,⁹⁵ the Commission adopted several of APCO's recommended protections against harmful interference.⁹⁶ APCO's comments are cited 20 times in the *Order* regarding different issues raised in the discussion. While APCO's late *ex parte* filing was not mentioned in the *Order*, the issues discussed in the *ex parte* were addressed in the *Order* because they had been raised in either APCO's comments or by other commenters.⁹⁷ Given the recognition and thorough discussion of APCO's comments and the issues raised by APCO and commenters raising identical or similar concerns, APCO has not demonstrated a likelihood of success on its claim that the Commission did not consider the concerns of public safety in the *Order*.

23. *Application of 42 U.S.C. § 5195c(c)(1)*. EEI argues that the *Order* arbitrarily contradicts the policy stated in 42 U.S.C. § 5195c(c)(1) that "any physical or virtual disruption of the operation of the critical infrastructures of the United States be rare, brief, geographically limited in effect, manageable, and minimally detrimental to the economy, human and government services, and national security."⁹⁸ Neither EEI nor any other party raised the applicability of Section 5195c(c)(1) to the Commission's 6 GHz unlicensed rules in the record of this proceeding, either prior to the Commission's issuance of the *Order* or in a petition for reconsideration.⁹⁹ As a result, a reviewing court is unlikely to consider this argument.¹⁰⁰ Moreover, EEI cites no authority that indicates that this policy statement, enacted as the Critical Infrastructures Protection Act of 2001 and codified in a subchapter of Title 42 administered by FEMA,¹⁰¹ was intended other than as specified by its terms—to support (1) modeling, simulation and analysis of critical infrastructure; (2) acquisition of data; (3) education and training for policymakers, and (4) recommendations to policymakers and federal agencies "upon request."¹⁰² We do not read the text, context, or purpose of this policy statement as reflecting any intent to modify the Commission's long-standing and exclusive spectrum management responsibilities under Title III of the Communications Act. In any event, the Commission complied with this general statement of policy by concluding, after reviewing an extensive record containing numerous technical studies, that 6 GHz band low-power indoor

⁹⁵ *APCO Petition* at 3.

⁹⁶ These protections include (1) the requirement that standard-power access points register with the AFC, *Order*, 35 FCC Rcd at 3882, para. 81 (citing APCO Comments at 6; NPSTC Comments at 11); (2) the requirement that AFCs have the ability to deny spectrum access to a particular registered standard-power access point, *id.* at 3883, para. 83 (citing APCO Comments at 10); (3) the requirement that a device's geo-location capability determine its location uncertainty and report it to the AFC system, *id.* at 3868, para. 41 (citing APCO Comments at 14); (4) the requirement that standard-power access points contact an AFC system at least once per day to obtain the latest list of available frequencies at its location, *id.* at 3870, para. 46 (citing APCO Comments at 7); and (5) the decision not to permit higher-power operations in rural areas, *id.* at 3922, para. 188 (citing APCO International Comments at 17-18).

⁹⁷ See *Order*, 35 FCC Rcd 3883-84, 3890-91, 3906-09, 3918-19, paras. 83-84, 106-108, 144, 146-149, 176-178.

⁹⁸ *EEI Petition* at 14-15 (quoting 42 U.S.C. § 5195c(c)(1)).

⁹⁹ Given our disposition, we need not decide here whether EEI was procedurally barred from raising that argument in a petition for reconsideration. See 47 CFR § 1.429(b).

¹⁰⁰ *GLH Commc'ns, Inc. v. FCC*, 930 F.3d 449, 455 (D.C. Cir. 2019) (court would not address merits of argument that petitioner had not raised before the Commission); see 47 U.S.C. § 405(a).

¹⁰¹ 42 U.S.C. § 5195b.

¹⁰² 42 U.S.C. § 5195c(c)(1).

unlicensed devices will not have a significant potential for causing harmful interference to any fixed microwave incumbents, including critical infrastructure incumbents.¹⁰³

24. *Additional technical studies.* FWCC submitted a filing in support of APCO's stay petition that includes initial test results that FWCC claims demonstrate that even low levels of interference will affect point-to-point microwave links.¹⁰⁴ We need not consider FWCC's new evidence because FWCC lacked the authority to file this pleading in support of APCO's stay petition.¹⁰⁵ Even if we were to consider this pleading, we find FWCC's procedural argument for submitting the new evidence, which relies on an analogy to the rule governing petitions for reconsideration, to be unpersuasive. Recognizing that the Commission does not typically consider evidence not previously presented on the record, FWCC notes that the Commission should consider the new test results for two reasons: (1) FWCC could not have previously tested 6 GHz low-power indoor devices because those devices have not been made available by manufacturers; and (2) the consideration of the new evidence is required in the public interest.¹⁰⁶ We are not persuaded by these arguments. FWCC's new tests were in fact conducted using unlicensed devices operating in the nearby 5 GHz band,¹⁰⁷ which have been available for years. Thus, such tests could have been readily conducted and submitted to the record prior to the Commission making its decision.¹⁰⁸ Furthermore, the new evidence is not "required in the public interest" because FWCC had every opportunity to conduct these tests earlier.¹⁰⁹

25. Even if we were to consider FWCC's tests on the merits, they would not warrant consideration because they contain a number of significant flaws. The tests effectively assumes all antennas are isotropic (i.e. radiating energy equally in all directions), ignoring the fact that point-to-point microwave links use highly directional antennas, commonly with gains in excess of 40 dB.¹¹⁰ In addition, the signal levels assumed in the test are not realistic. For example, the 33 dB attenuation level where errors are first detected corresponds to an unlicensed transmitter located approximately 7 inches from the microwave receiver;¹¹¹ a situation that would not occur in a real-world deployment.¹¹² Given these

¹⁰³ See, e.g., *Order*, 35 FCC Rcd at 3892, 3905, 3907, paras. 112, 141, 145; see also *id.* at 3888-90, paras. 99-103 (adopting three restrictions—limiting operations to indoor use, mandating the use of a contention-based protocol, and requiring the use of low power—to prevent interference to incumbents).

¹⁰⁴ FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 9 (filed June 4, 2020).

¹⁰⁵ 47 CFR § 1.45(d).

¹⁰⁶ FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 9 n.20 (filed June 4, 2020) (citing 47 CFR § 1.429(b)(2)-(3)).

¹⁰⁷ See *id.* at 9, Attach. A at 2 (stating that the bench testing used devices manufactured for use in the 5.8 GHz band).

¹⁰⁸ See 47 CFR § 1.429(b)(2); see also, e.g., *Schoenbohm v. FCC*, 204 F.3d 243, 250 (D.C. Cir. 2000) (agency's denial of petition for reconsideration was unreviewable because petitioner "could have, and under FCC rules should have, submitted this evidence prior to that decision," which had been "previously available"); *Improving Public Safety Communications in the 800 MHz Band et al.*, Order, 21 FCC Rcd 678, 683-84, para. 15 (WTB 2006) ("It is well established that a party may not sit back in a proceeding and then proffer new evidence only after an adverse ruling is rendered."); *Improving Public Safety Communications in the 800 MHz Band et al.*, Order, 20 FCC Rcd 1560, 1562, para. 5 & n.21 (WTB 2005).

¹⁰⁹ See 47 CFR § 1.429(b).

¹¹⁰ FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 13 (filed June 4, 2020).

¹¹¹ FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 19 (filed June 4, 2020).

¹¹² Similarly, Encina Communications (Encina) submitted two replies—one in support of EEI's stay petition and another in support of APCO's stay petition—that contain technical exhibits purporting to show real-world situations

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significant flaws in the apparent design of the testing, we do not find it reliable evidence that would show a likelihood of prevailing on the merits given the extensive discussion on potential interference in the 6 GHz Order.

B. Petitioners Have Not Shown That Their Members Will Suffer Irreparable Harm

26. Even if the petitioners could demonstrate a likelihood of success on the merits, they would not be entitled to a stay as they fail to establish that their members will suffer irreparable harm. To establish irreparable harm, the claimed injury must be: (1) “actual and not theoretical”; (2) more than mere “economic loss”; and (3) “imminent” and “likely” to occur.¹¹³ Neither petitioner has met this showing.

27. *The alleged harms are speculative.* Both petitioners anchor their claim of irreparable harm in the contention that harmful interference will occur to microwave links.¹¹⁴ EEI bases this claim on certain studies submitted on the record,¹¹⁵ while APCO claims this fact has been recognized by the Commission and is a statistical certainty given the sheer number of expected unlicensed devices.¹¹⁶ For AFC-controlled standard-power access points, the Commission concluded that the adopted rules will protect microwave receivers from the potential of harmful interference.¹¹⁷ For low-power indoor access points, the Commission concluded these devices will not have a significant potential for causing harmful interference to the users authorized to operate in the band.¹¹⁸ These conclusions are based on a thorough examination of the entire record. While there were studies included in the record that purport to show that harmful interference will occur, the Commission concluded that these studies have shortcomings or are flawed and unreliable so as not to be persuasive.¹¹⁹

28. In describing the potential harm, APCO points to the effort public safety agencies will need to expend to attempt to identify the source of interference.¹²⁰ Similarly, EEI opines that utilities

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where interference is likely to occur from unlicensed indoor low-power devices. Reply Comments of Encina Communications Corporation Re Public Knowledge, et al. Support for Opposition to Edison Electric Institute’s Petition for Stay, ET Docket No. 18-295, at 2, Exs. 1-3 (filed July 9, 2020); Reply Comments of Encina Communications Corporation Re Apple Inc. et al. (“RLAN Group”) Opposition to the Petition for Stay by APCO International, ET Docket No. 18-295, at 2-3, Exs. 1-3 (filed July 9, 2020). As noted above, we dismiss the replies and, pursuant to section 1.45(d), will not consider the facts or arguments raised therein. *See, e.g., WTVG, Inc. and WUPW Broadcasting, LLC*, Order, 25 FCC Rcd 12263, 12263, para. 1 n.5 (MB 2010). Even if we were to consider Encina’s replies on the merits, nothing in the technical exhibits would justify a stay. In particular, we note that Encina’s technical exhibits present examples from three cities where it claims that unlicensed devices in real-world locations would have clear line-of-sight to microwave receivers which would result in harmful interference, which are similar to the examples that AT&T and CTIA presented of actual microwave links that they claimed would receive harmful interference from unlicensed access points located in nearby buildings. *See* Letter from Michael P. Goggin, AT&T Services, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-295, Ex. A at 12-29 (filed Nov. 12, 2019); Presentation: 6 GHz Interference Analysis, CTIA, at 7-16 (filed Jan 24, 2020). The Order presented a detailed discussion of why the Commission was not convinced by the AT&T/CTIA examples that harmful interference will occur. Order, 35 FCC Rcd at 3897-901, paras. 123-31.

¹¹³ *Wisc. Gas v. FERC*, 758 F.2d 669, 674 (D.C. Cir. 1985); *see also Nken v. Holder*, 556 U.S. 418, 434-35 (2009) (“[S]imply showing some ‘possibility of irreparable injury’ fails to satisfy the second factor” of the test for granting a stay) (emphasis added).

¹¹⁴ *EEI Petition* at 17; *APCO Petition* at 6-7.

¹¹⁵ *EEI Petition* at 17.

¹¹⁶ *APCO Petition* at 6-7.

¹¹⁷ Order, 35 FCC Rcd at 3862, para. 23.

¹¹⁸ Order, 35 FCC Rcd at 3907, para. 145.

¹¹⁹ Order, 35 FCC Rcd at 3897-905, paras. 123-40.

have no means to reach out to a single user.¹²¹ Assuming *arguendo* that harmful interference were to occur, tracking down the source of the interference would be the responsibility of the Commission's Enforcement Bureau which, as the *Order* noted, has the ability to investigate reports of such interference and take appropriate enforcement action as necessary.¹²² Therefore the claimed drain on resources is in fact also a speculative harm.

29. In finding that the claims of harm are speculative, we are not implying that the uses for which EEI and APCO's members employ their point-to-point microwave links are insignificant. To the contrary, we take seriously the importance of public safety communications and the need to safeguard the functioning of the electric grid. However, in light of the Commission's extensive analyses and its conclusion that there is a lack of significant potential for harmful interference, we find that the petitioners' claims that harmful interference "could" or "might" occur to fixed microwave links are speculative and do not rise to the "actual and not theoretical" level required to show irreparable harm.¹²³

30. *The alleged harms are not imminent.* In describing the irreparable harm that APCO claims will occur, it states that the sheer number of unlicensed devices makes interference a statistical certainty.¹²⁴ According to APCO, an influx of unlicensed devices will be introduced into the band.¹²⁵ EEI points to estimates of hundreds of millions, if not billions, of unlicensed low-power devices.¹²⁶ According to EEI, millions of devices deploying in unpredictable places will risk overwhelming its members' networks.¹²⁷

31. We note that the Commission's contrary conclusion relied in part on a CableLabs Monte Carlo simulation reflecting a speculative density of 1,000 Wi-Fi access locations per square mile (to represent a worst-case situation), using data taken from 500,000 such access points.¹²⁸ In other words, given the land mass of the United States, that study already took into account the potential for billions of devices to be deployed in the 6 GHz band. Moreover, while unlicensed devices may in fact eventually populate the band in large numbers, it is unrealistic to expect that they will reach anywhere close to these numbers during the short-term pendency of the petitions for review, which is the relevant question for purposes of evaluating the stay requests filed by EEI and APCO. Before low-power indoor devices can reach the public, they will first have to be certified to comply with the Commission's rules,¹²⁹ a process that could not have begun until after the rules became effective on July 27, 2020. In this context, not only do manufacturers need to design new equipment or modify existing equipment, such equipment must also be tested pursuant to Commission measurement procedure guidance; guidance that is still in the process of being developed.¹³⁰ It is reasonable to expect that low-power indoor devices will be available to the

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¹²⁰ *APCO Petition* at 7.

¹²¹ *EEI Petition* at 18.

¹²² *Order*, 35 FCC Rcd at 3909, para. 149.

¹²³ See *APCO Petition* at 6 (noting that "[d]isruption to these systems could have dire consequences," that "[a]ssistance to the public could be delayed," and that first responders "might lack the ability to transmit emergency calls for assistance and other information essential for protecting life and property").

¹²⁴ *APCO Petition* at 6-7.

¹²⁵ *APCO Petition* at 2.

¹²⁶ *EEI Petition* at 17-18.

¹²⁷ *EEI Petition* at 18.

¹²⁸ *Order*, 35 FCC Rcd at 3894, para. 117.

¹²⁹ See 47 CFR § 2.803.

public before the 2020 holiday season,¹³¹ but, as Apple, Broadcom et al. point out, “there is simply no historical precedent for the immediate sale of millions of devices to consumers in a few months immediately following the effectiveness of the Commission’s rules.”¹³² The rate at which 6 GHz unlicensed devices are adopted by the public is also important. Even if the petitioners’ claim that interference will occur had some basis, it would likely be very rare in the near term—if it occurred at all—because, under petitioners’ own assumptions, the only way that any harmful interference could be expected to occur would be if there were many millions or billions of the unlicensed devices in operation. As this cannot be expected to be the case in the near term, if ever, this potential harm cannot be said to be imminent.

32. For AFC-controlled standard-power devices, the potential harm is even further remote. As an initial matter, standard-power devices will have to complete the same certification process as low-power indoor devices. However, before standard-power access points can be deployed, the Commission’s Office of Engineering and Technology also will have to designate one or more AFC system operators using a multi-stage review process.¹³³ This process includes issuing a public notice inviting proposals from prospective operators, time for system development, a public comment period, and testing by the public.¹³⁴ Given the complexity of this process, and based on the Commission’s prior experience with similar systems,¹³⁵ there is not likely to be a functioning AFC system during the pendency of judicial review.

C. A Stay Would Harm Other Parties

33. Both petitioners have failed to show that other parties will not be harmed if the Commission grants their stay petition.

34. Both EEI and APCO assert that granting the stay would maintain the status quo and APCO adds that the *Order* was not intended to end an existing harm.¹³⁶ EEI claims that granting a stay would not cause harm because even if the *Order*’s legality is upheld, certain business plans may be delayed but none will be destroyed.¹³⁷ APCO states that it is not aware of any reports that parties are

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¹³⁰ The Commission provides measurement guidance for various devices through its knowledge database (KDB) system (<https://apps.fcc.gov/oetcf/kdb/index.cfm>). When developing guidance for new devices, such as the 6 GHz band, the Commission typically develops draft guidance and then seeks public comment on that guidance.

¹³¹ EEI Petition at 16; FWCC Filing in Support of Petition for Stay of APCO International, ET Docket No. 18-295, at 8 (filed June 4, 2020); Opposition to Petition for Stay, Wi-Fi Alliance, ET Docket No. 18-295, at 15 (filed June 26, 2020).

¹³² Opposition of Apple, Broadcom et al. to the Petition for Stay Pending Judicial Review of Edison Electric Institute, ET Docket No. 18-295, at 17 (filed June 26, 2020).

¹³³ *Order*, 35 FCC Rcd at 3870-71, para. 49.

¹³⁴ *Id.*

¹³⁵ For example, the system access administrator (SAS) model being deployed in the 3.5 GHz band took approximately four years to implement. *Compare Wireless Telecommunications Bureau and Office of Engineering and Technology Approve Five Access System Administrators to Begin Initial Commercial Deployments in the 3.5 GHz Band*, GN Docket No. 15-319, Public Notice, 34 FCC Rcd 8106 (2019), with *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 (2015). The television white spaces database required approximately three years to implement. *Compare Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008), with *Office of Engineering and Technology Announces the Approval of Spectrum Bridge, Inc.’s TV Bands Database System for Operation*, ET Docket No. 04-186, Public Notice, 26 FCC Rcd 16924 (2011).

¹³⁶ *APCO Petition* at 8; *EEI Petition* at 19.

¹³⁷ *EEI Petition* at 19.

suffering harm because of unlicensed devices lacking bandwidth despite the current nationwide emergency causing a shift in Wi-Fi usage patterns.¹³⁸ According to APCO, no party challenged the identical concerns that APCO raised prior to adoption of the *Order*, and no party indicated that it would face harm if the Commission had delayed the *Order* to address APCO's concerns.¹³⁹

35. Other parties disagree. Stakeholders such as Apple and Broadcom contend that before these devices can be brought to market, manufacturers must obtain rule interpretations and the Commission's Office of Engineering and Technology must develop test procedures.¹⁴⁰ This process will be disrupted if a stay is granted and companies will be discouraged from making investments in developing 6 GHz products. Consequently, a stay will delay companies from receiving the benefit of the investment they have made in developing 6 GHz products and delay the development of additional 6 GHz unlicensed products.

36. Furthermore, a stay would harm consumers. As the Commission stated, by making the 6 GHz band available for unlicensed use it was "satisfying the American public's need for additional network capacity."¹⁴¹ Delaying the availability of the 6 GHz band is not harmless to either potential manufacturers of 6 GHz equipment or consumers. We cannot conclude that merely maintaining the status quo prevents these harms from occurring.

37. The ongoing COVID-19 pandemic further illustrates the increased demand for spectrum suitable for unlicensed use. With millions of Americans at home for the foreseeable future, the high bandwidth connections made possible by the *Order* are essential for remote work, distance learning, and telehealth, and help people remain connected and productive. In response to the unprecedented demand for broadband at this time, the Commission has made spectrum adjacent to the U-NII-3 band available to wireless Internet service providers.¹⁴² As this band is located close to the lower end of the 6 GHz band and wireless Internet service providers often make use of spectrum to provide broadband connectivity to their customers on an unlicensed basis, it illustrates that there is demand for additional spectrum for unlicensed use in this frequency range.

38. We do not find convincing APCO's contention that no party indicated it would face harm if the Commission delayed enactment of the 6 GHz unlicensed rules to address the concerns APCO expressed prior to adoption of the *Order*. APCO expressed these concerns in an *ex parte* filing made on April 10, 2020,¹⁴³ which was 7 days before the start of the Sunshine period for the *Order*, during which the *ex parte* rules prohibit most presentations.¹⁴⁴ Given that this *ex parte* filing was made so close to the start of the Sunshine period and so long after the comment and reply comment filing deadlines, we draw

¹³⁸ *APCO Petition* at 8.

¹³⁹ *Id.*

¹⁴⁰ Opposition of Apple, Broadcom et al. to the Petition for Stay Pending Judicial Review of Edison Electric Institute, ET Docket No. 18-295, at 18 (filed June 26, 2020).

¹⁴¹ *Order*, 35 FCC Rcd at 3854, para. 4.

¹⁴² News Release, *FCC Grants Wireless ISPs Temporary Access to Spectrum in the 5.9 GHz Band to Meet Increase in Rural Broadband Demand During Pandemic*, FCC (Mar. 27, 2020), <https://docs.fcc.gov/public/attachments/DOC-364138A1.pdf>.

¹⁴³ Letter of Jeffrey S. Cohen and Mark S. Reddish, APCO International, to Marlene Dortch, Secretary, FCC, ET Docket 18-295 (filed Apr. 10, 2020).

¹⁴⁴ See 47 CFR § 1.1203(b).

no significant meaning from the lack of response before parties made this precise point in their oppositions to these recent stay requests.¹⁴⁵

D. Granting a Stay Would Not Be in the Public Interest

39. Finally, neither petitioner has met its burden of showing that the public interest warrants a stay. APCO argues that given the Commission's statutory mandate to promote public safety, protecting public safety communications is in the public interest.¹⁴⁶ According to APCO, protecting public safety communications is not possible unless the rules are suspended so that they can be revised to prevent and mitigate interference.¹⁴⁷ EEI claims that there is a real possibility all microwave links nationwide will be immediately compromised once unlicensed 6 GHz devices are deployed.¹⁴⁸ EEI states that if utilities cannot rely on their communications infrastructure, lives and property will be at risk and taking this risk pending judicial review is not in the public interest.¹⁴⁹

40. A stay of the *Order* is not necessary to protect the fixed microwave operations of public safety agencies and utilities. In making spectrum available for unlicensed operations in the 6 GHz band, the Commission made clear that its rules for 6 GHz unlicensed operations have been designed to ensure that licensed incumbent operations are protected from harmful interference to deliver high value, mission-critical services—including public safety and utilities—on which Americans rely.¹⁵⁰ The Commission made its determinations based on consideration of an extensive record that supported its conclusion that 6 GHz unlicensed devices, under the technical and operational parameters adopted, would serve the public interest by enabling innovative and valuable new uses while not presenting a significant potential for causing harmful interference to licensed public safety and utility users (and other fixed microwave licensees) that operate in the band. As such, we conclude that petitioners have not met their burden of showing that public safety communications will not be protected or that lives and property will be put at risk if the new 6 GHz band unlicensed rules are not stayed.

41. Furthermore, the public interest would be best served by denying the stay petitions and allowing the implementation of the *Order*. In the *Order*, the Commission determined that the new 6 GHz rules would advance its statutory directive to “encourage the larger and more effective use of radio in the public interest.”¹⁵¹ The new 6 GHz rules also are consistent with the recently announced congressional goal of “promot[ing] spectrum policy that makes available on an unlicensed basis radio frequency bands to address consumer demand for unlicensed wireless broadband operations.”¹⁵²

¹⁴⁵ Opposition of Apple Inc. et al. to the Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183, at 7-9 (filed June 4, 2020); Wi-Fi Alliance Opposition to Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183, at 11-13 (filed June 4, 2020); Opposition of NCTA—The Internet & Television Association to Petition for Stay of APCO International, ET Docket No. 18-295, GN Docket No. 17-183, 11-13 (filed June 4, 2020).

¹⁴⁶ *APCO Petition* at 8.

¹⁴⁷ *Id.*

¹⁴⁸ *EEI Petition* at 19.

¹⁴⁹ *EEI Petition* at 19-20.

¹⁵⁰ *See, e.g., Order*, 35 FCC Rcd at 3853, para. 1, 3855, para. 7, 3856, para. 11, 3860, para. 19, 3862, para. 23, 3888, para. 98.

¹⁵¹ *See Order*, 35 FCC Rcd at 3947, para. 264 (citing 47 U.S.C. § 303(g)). Section 1507 also provides that the Commission “ensure that [its] efforts . . . related to spectrum allocation and assignment made available on an unlicensed basis radio frequency bands to address demand for unlicensed wireless broadband operations if doing so is, after taking into account the future needs of homeland security, national security, and other spectrum users—(1) reasonable; and (2) in the public interest.” *Id.* § 1507(a)(3).

¹⁵² *Id.* § 1507(a)(3).

42. A stay would postpone the stated benefits of the new 6 GHz rules. In particular, as discussed in the *Order*, the new 6 GHz rules will help meet the growing consumer demand for wireless broadband and yield important economic benefits.¹⁵³ By making an additional 1,200 megahertz of spectrum available for unlicensed use, the Commission stated that the new rules will “ease any existing and anticipated congestion,” allow “businesses and consumers [to] take advantage of new data-intensive applications,” and “advance the . . . goal of making broadband connectivity available to all Americans, especially those in rural and underserved areas.”¹⁵⁴ Furthermore, 6 GHz unlicensed devices will make an immediate impact during the COVID-19 pandemic which has seen rising demand for consumer connectivity for work, school, and entertainment applications. The Commission noted that it expects that 6 GHz unlicensed devices will become a part of most peoples’ everyday lives and will play a role in providing broadband access to multitudes of consumers and in the growth of the Internet of Things; connecting appliances, machines, meters, wearables, and other consumer electronics as well as industrial sensors for manufacturing.¹⁵⁵ The Commission also stated that the new 6 GHz rules “will have a significant economic benefit”—one estimate asserting that they “will produce over \$150 billion in economic value”—“by relieving potential congestion, allowing more users to access these new bands, and potentially making new use cases possible.”¹⁵⁶

43. Thus, given the expected benefits that will result from deployment by both consumers and businesses of 6 GHz unlicensed devices, and the unlikely, speculative nature of the petitioners’ claims about the alleged dangers, we conclude that petitioners have not established that it would be in the public interest to delay deployment of new unlicensed operations.

IV. ORDERING CLAUSES

44. Accordingly, **IT IS ORDERED THAT**, pursuant to the authority contained in sections 4(i), 4(j), 5, 201, 302, and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i)-(j), 155, 201, 302a, and 303 and the authority delegated in sections 0.31 and 0.241 of the Commission’s rules, 47 CFR §§ 0.31 and 0.241, this Order Denying Petitions for Stay in ET Docket No. 18-295 and GN Docket No. 17-183 **IS ADOPTED**.

45. It is **FURTHER ORDERED** that the Petition for Stay Pending Judicial Review filed by the Edison Electric Institute, **IS DENIED**.

46. It is **FURTHER ORDERED** that the Petition for Stay filed by the Association of Public-Safety Communications Officials-International, Inc., **IS DENIED**.

47. It is **FURTHER ORDERED** that the pleadings filed by Encina Communications Corporation; FWCC; Brett Kilbourne, Vice President Policy and General Counsel, Utilities Technology Council, Brian O’Hara, Senior Director Regulatory Issues—Telecom & Broadband, National Rural Electric Cooperative Association, and Corry Marshall, Senior Government Relations Director, American Public Power Association; Ralph A. Haller, Chairman, National Public Safety Telecommunications Council; Motorola Solutions Inc.; TechFreedom; and Public Knowledge et al., **ARE DISMISSED** as not in compliance with section 1.45(d) of the Commission’s rules, 47 CFR § 1.45(d).

48. It is **FURTHER ORDERED** that, pursuant to section 1.102(b)(1) of the Commission’s rules, 47 CFR § 1.102(b)(1), this Order Denying Petitions for Stay **SHALL BE EFFECTIVE** upon its release.

FEDERAL COMMUNICATIONS COMMISSION

¹⁵³ See, e.g., *Order*, 35 FCC Rcd at 3853-54, 3937-38, paras. 1-4, 229.

¹⁵⁴ *Order*, 35 FCC Rcd at 3853-54, paras. 1-2; see also *id.* at 3854, 3937, paras. 4, 229.

¹⁵⁵ *Order*, 35 FCC Rcd at 3854, para. 3.

¹⁵⁶ *Order*, 35 FCC Rcd at 3937, para. 229.

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