Putting the Cart Before the Horse – The FCC's "5G First, Safety Second" Policy

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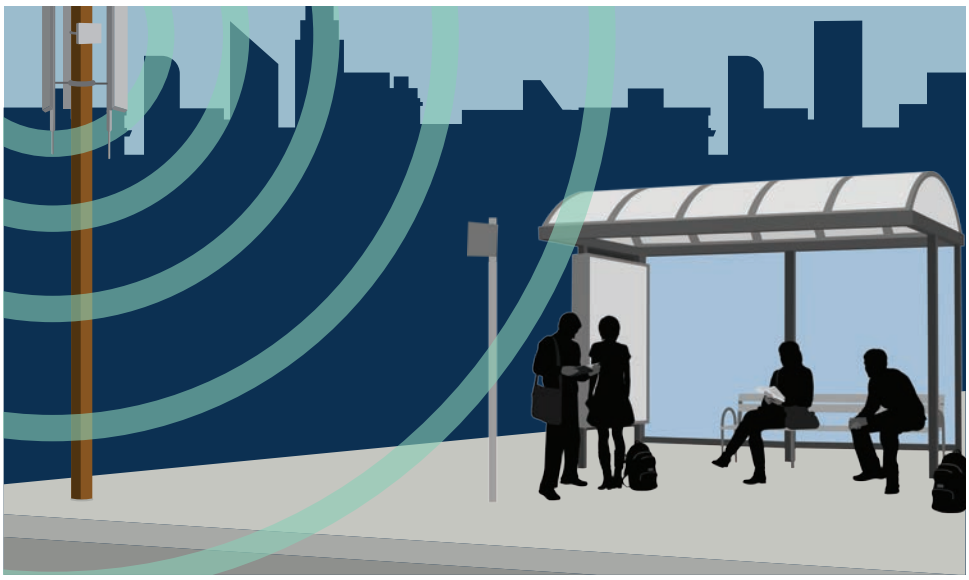

In September 2018, the Federal Communications Commission ("FCC" or "Commission") released a Declaratory Ruling with the goal of accelerating the deployment of 5G wireless broadband services across the country ("Small Cell Order" or "Order").[1] The Commission sees its action as needed so that the U.S. "wins the global race to 5G."[2] The wireless industry promises that with fifth generation wireless network technology - or 5G as it is more commonly known - greater wireless speeds and lower latency will lead to innovation and uses such as augmented and virtual reality, the Internet of Things, smart homes, smart cities and autonomous cars. However, in order to win "the 5G race," hundreds of thousands of small cell transmitters must be deployed on a national scale and in densely populated areas.

The FCC's carrier-centric Order has had several controversial effects on local jurisdictions: (i) limiting state and local regulatory authority over wireless infrastructure deployment; (ii) mandating that fees for carrier use of public rights-of-way ("ROW") and facilities within the ROW be limited to costs; and (iii) rushing the deployment of hundreds of thousands of 5G transmitters into residential areas and other public spaces without ever considering if the Commission's decades-old Radiofrequency ("RF") safety standards remain sufficient to protect public health and safety.

Montgomery County, Maryland appealed the Small Cell Order based on the RF issue and its case has been consolidated in the United States Court of Appeals for the Ninth Circuit with numerous appeals challenging other parts of the same order. Specifically, Montgomery County is asking the Ninth Circuit to determine whether the FCC violated the National Environmental Policy Act and the Administrative Procedure Act by failing to conduct an environmental analysis of the RF standards and potential 5G health risks, or explain why it did not consider whether its own existing RF standards will be protective of human health in a new 5G world.

The FCC's RF Exposure Rules

The FCC has an obligation to evaluate the risks of human exposure to RF energy under various statutory and regulatory provisions, including the National Environmental Policy Act of 1969 ("NEPA"), which requires Federal agencies to assess the effects of their actions on the quality of the human environment.[3] The Commission has long recognized its responsibility to evaluate whether FCC-regulated RF transmitters and facilities could harm the public health.[4]

In 1985, the Commission adopted a 1982 American National Standards Institute ("ANSI") standard for RF radiation on the environment.[5] The ANSI standard was fairly basic and only contained one set of exposure limits. In 1992, ANSI replaced its 1982 standard and set out exposure criteria for "controlled environments" (like industrial locations only accessible to employees and contractors) and "uncontrolled environments" (typically accessible by the general public).[6] A year later, in 1993, the FCC initiated a rulemaking proceeding to update its RF exposure standards based on the 1992 ANSI standard.[7]

In enacting the Telecommunications Act of 1996 ("Act"), Congress required the FCC to complete its on-going RF proceeding and adopt new rules.[150] The Act also preempted State and local governments from regulating "personal wireless service" facilities based on the effects of RF emissions if those facilities comply with the Commission's RF regulations.[9]

Based on scientific knowledge at the time, the rules adopted by the Commission in 1996 were designed to protect only against the thermal effects of RF exposure – that is, the excessive heating of biological tissue as a result of exposure to RF energy. The rules did not establish exposure limits

based on potential non-thermal effects, such as cancer, neurological impacts, and immune system deficiencies.[10]

Also, when these rules were adopted nearly 23 years ago, the typical height for free standing wireless base station towers was between 50 and 200 feet above ground.[11] Often these towers were in locations along highways and far from residential or commercial areas. In contrast to the longer wavelengths of earlier technologies which allowed cell towers to be spaced miles apart, the 5G wireless transmitters covered by the FCC's Order will rely on higher frequency millimeter wavelengths that carry massive amounts of information only short distances.

As a result, small cell poles (such as streetlights and lamp posts) will have 5G transmitters that are less than 50 ft. off the ground and will be located only a few hundred feet or less apart in rights-of-way like sidewalks and alleyways, only yards from homes and businesses. Yet, despite this vastly different environment for 5G, in its Order the FCC summarily dismissed the requests of Montgomery County and others to reevaluate the Commission's RF rules, instead leaving standards of over 20 years in place without any environmental evaluation.

The Montgomery County, Maryland Appeal

As noted, under the Act, state and local governments have no authority to regulate potential health impacts of RF emissions from wireless transmitters provided that those installations comply with federal safety standards. Instead, the responsibility to protect the public from dangerous RF levels lies with the FCC.[12]

Given that the FCC has not updated its RF exposure standards since 1996, and that an accelerated 5G deployment on a national scale will involve hundreds of thousands of small cell transmitters in densely populated areas, Montgomery County appealed the Small Cell Order and argues that the FCC had a legal duty under NEPA and the APA to reevaluate its RF standards before taking further action on the nationwide implementation of small cells. Montgomery County notes that this duty is particularly relevant in light of recent research on the health risks that potentially could be associated with 5G deployment.[13]

RF Exposure Research

Much research has occurred since the FCC adopted its existing RF rules back in 1996. Since that time there have been many studies of various non-thermal impacts of RF radiation. These studies have examined a number of RF-related risks, such as carcinogenicity, DNA damage and genotoxicity, reproductive impacts (e.g., low sperm counts), and neurologic effects (e.g., behavioral issues in children).[14]

This research and the associated concerns with non-thermal impacts is world-wide. In 2015, over 200 scientists from 42 countries, including the United States, sent a letter to the United Nations and World Health Organization stating that "[b]ased upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices," including cell towers. Listed RF effects include "cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, [and] neurological disorders."[15]

In 2017, several hundred experts from the United States and around the world sent a letter to the European Union requesting a moratorium on 5G technology until the "potential hazards for human health and the environment have been fully investigated by scientists independent from industry." They note that 5G will contribute to cumulative RF exposures – i.e., an "increase[d] exposure to radiofrequency electromagnetic fields (RF-EMF) on top of the 2G, 3G, 4G, Wi-Fi, etc. for telecommunications already in place."[16]

In light of this research, some scientists and academics warn that the FCC's current RF standards, which are limited to addressing thermal effects, may not be protective of human health. By way of example, the BioInitiative 2012 report (including updates through 2017) reviews over 1,800 studies showing various adverse health impacts from RF and, based on that research, maintains that the current FCC standards do not adequately protect the public health.[17] As a result, they recommend further research be conducted on non-thermal effects before 5G is widely available.

FCC Review of RF Standards

Though the Commission has not updated its RF exposure standards since 1996, it did initiate a review of those standards in 2013, seeking comments to determine whether its RF exposure limits and policies needed to be reassessed.[18] The FCC cited to both its NEPA obligations and other statutory provisions as justifying the review.[19]

The Commission subsequently received over 900 submissions in its 2013 docket, many of them focusing on non-thermal risks posed by RF radiation.[20] However, its review of the RF standards stalled and to date the Commission has not made any determinations in this proceeding (or any other proceeding) on whether the current RF standards remain protective of human health or whether the installation and operation of 5G small cells will pose health risks.[21]

The FCC's Small Cell Order

Prior to the release of the FCC's Small Cell Order, a number of local jurisdictions raised concerns about the current RF standards and their ability to protect local citizens in a 5G environment. Montgomery County repeatedly urged the FCC to reevaluate the standards and determine if they remain protective of human health. Representatives of the County met with Commission leadership and filed comments requesting that the FCC delay rulemakings aimed at speeding small cell rollouts until the 2013 RF proceedings were completed.

Several other local governments and associations, scientists, and individual citizens also requested that the FCC complete the 2013 proceedings before expediting the rollout of 5G technology and otherwise expressed concerns about the substantially out-of-date RF standards.[22]

In its Order, the Commission responded to these serious and legitimate concerns about public health with a single terse footnote, stating "[w]e disagree" with concerns raised about RF emissions from 5G small cell facilities. The FCC emphasized "nothing in this Declaratory Ruling changes the applicability of the Commission's existing RF emissions exposure

Continued on page 16

5G First, Safety Second cont'd from page 15

rules."[23] There was no discussion by the FCC of potential non-thermal RF effects or any indication when it would complete the 2013 RF proceeding.

Questions to be Addressed by the Ninth Circuit

The Ninth Circuit will now decide whether by refusing to substantively address RF/public health issues in the Small Cell Order, the FCC violated NEPA and/or the APA. Specifically, the issues before the Court are:

> Did the FCC violate NEPA when it failed to either: (i) explain why that statute does not apply to the Order; or (ii) conduct an environmental analysis of the RF standards and potential 5G health risks?
>
> and
>
> Did the FCC violate the APA when it failed to either: (i) explain why it did not consider whether the 1996 RF standards protect against potential 5G health risks; or (ii) address relevant public health and safety issues when adopting the Order?[24]

The FCC's NEPA Violation

Under NEPA, it is the "policy of the federal government" to "assure for all Americans [a] safe [and] healthful" environment.[25] In particular, for "major Federal actions significantly affecting the quality of the human environment," the agency must prepare a "detailed statement" on the "environmental impact of the proposed action" (called an Environmental Impact Statement or "EIS").[26] At a minimum, the agency must prepare a preliminary Environmental Assessment to determine whether the potential for such an impact exists and an EIS is therefore required.[27] While NEPA does not impose any substantive environmental mandates, it does require that agencies follow certain procedures for assessing environmental impacts of their decisions.[28]

Unfortunately, the FCC proceeded to implement its Small Cell Order without any environmental analysis and otherwise failed to explain how the Order is somehow exempt from this requirement. Instead, the FCC responded to comments urging it to complete its 2013 review of the RF standards before finalizing the Order by simply stating that it "disagreed" with commenters who opposed the ruling on the basis of concerns regarding RF emissions. There was *zero* analysis by the Commission as to whether the current RF standards – enacted nearly 23 years ago – will be protective of human health in a new 5G environment.

The FCC's decision to move forward with 5G infrastructure without considering the health effects of RF violates NEPA. The Order *itself* is a "major federal action," within the scope of NEPA, because it involves "[a]doption of official policy, such as rules, regulations and interpretations" pursuant to the APA.[29] In the FCC's own words, the Order was an exercise of Commission authority to "issue interpretations of the statutory language and to adopt implementing regulations that clarify and specify the scope and effect of the Act."[30]

Moreover, the Order is a "major federal action" because it is an activity that is "potentially subject to federal control and responsibility" or is "regulated" by a Federal agency.[31] There is no question that the Small Cell Order regulates activities that are subject to Federal control and responsibility - it specifically establishes rules that municipalities must follow when reviewing carrier applications for the installation of small cells and the provision of 5G services in public rights-of-way.[32]

In addition, the Small Cell Order "may significantly affect the quality of the human environment."[33] 5G deployments and operations will see the densification of transmitters in neighborhoods and public spaces in close proximity to households and businesses. Commenters noted that recent studies, conducted after the 1996 RF standards were adopted, have raised concerns about public health and safety, including potential RF-related risks associated with the anticipated use of 5G millimeter waves.

No scientific certainty or consensus, however, is required to constitute a significant effect.[34] The point of NEPA is not for agencies to make the determination that significant effects on the human environment *will* occur, but rather to "insur[e] that available data is gathered and analyzed prior to the implementation of the proposed action."[35] Therefore, even if studies have not conclusively shown that RF emissions pose a substantial risk of non-thermal effects, the FCC cannot ignore its NEPA obligations to review and analyze this critical issue. NEPA is designed to force agencies, like the FCC to confront head-on, rather than ignore, these uncertainties.[36]

What is particularly troubling with the FCC's refusal to review its RF standards is that State and local governments are completely dependent on the FCC for the protection of their citizens from the dangers of RF emissions. In the 1996 Act, Congress directed the FCC to promulgate RF standards that are protective of human health, while preempting state and local governments from regulation in this area.[37] In fact, the FCC has stated repeatedly that only it has the authority under NEPA and other statutory provisions to set and maintain safe RF exposure levels.[38] Yet despite this mandated obligation to protect the public health, the FCC ignored its NEPA obligations in the rush for nationwide migration to 5G.

The FCC's APA Violation

Similar to the FCC's shortcomings under NEPA, the FCC also violated the APA because it failed to consider whether the current RF standards will fully protect the health and safety of citizens living and working directly adjacent to 5G small cells and did not explain why it ignored this relevant factor. Under the APA, courts will strike down agency action as arbitrary and capricious if the agency has, among other things, "entirely failed to consider an important aspect of the problem."[39]

The FCC itself has recognized that it has a continuing obligation to revise the RF standards as research on potential RF health impacts and wireless technology evolves.[40] In the last 23 years, significant research has been conducted and scientists and academics have warned that the FCC's current RF standards may not be protective of human health. It goes without saying, moreover, that wireless technology has evolved. When the FCC's current RF standards were adopted in 1996 the first ever flip phone had only been on the market a few months, which boasted cutting-edge features like the ability to receive SMS text messages and a vibrate function in place of a ring tone. 5G technology will look completely different.

Whether the 1996 RF standards remain protective of human health, including any

potential non-thermal risks, is a relevant factor that the FCC should have considered when promulgating the Order. By the Commission's own admission, the Order will hasten the deployment of 5G facilities and the provision of services.[41] This means more small cells, in more locations, and sooner than later. Because RF safety issues were implicated by the Small Cell Order it was incumbent on the FCC to determine whether the Order would increase harmful RF exposures in residential and public areas, particularly in light of the fact that countless 5G antennas spaced only about hundred feet apart will be placed in close proximity to homes and businesses.[42]

The Rest of the Story – The FCC Finally Takes Action

Just as this article was going to publication - and with the Montgomery County lawsuit still pending - the FCC announced that FCC Chairman Ajit Pai was circulating a proposal to fellow Commissioners that would maintain the Commission's RF exposure limits. According to the press release, the item would resolve the 2013 Notice of Inquiry that sought public input on whether to strengthen or relax existing RF exposure limits. In addition, the item would establish a uniform set of compliance guidelines – regardless of the type of service or technology involved - for determining how entities will assess their compliance with the RF standards. Finally, the item would seek comment on establishing a rule for determining compliance with the RF exposure standard for devices operating at higher frequencies.

Conclusion

Regardless of any potential benefits that deployment of 5G infrastructure will bring to improve broadband availability across the country, the FCC - the sole authority for health and safety concerns related to RF – should have completed the review of its RF standards before opening the floodgates for the deployment of hundreds of thousands of small cell transmitters. At a bare minimum, the Commission should have explained its decision to summarily reject the comments submitted by Montgomery County, other local governments and associations, scientists, and individual citizens raising RF concerns.



Albert Catalano, Counsel at Keller and Heckman LLP, has 30 years of experience in telecommunications regulatory, legislative, litigation and transactional matters. His practice focuses on broadband and wireless communications, and on 5G/small cells and the use of municipal infrastructure. Prior to entering private practice, Mr. Catalano served as legal counsel with the Federal Communications Commission on wireless communications, information transfer, technology developments, licensing issues and international satellite matters.



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Notes

1. *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Declaratory Ruling and Third Report and Order, FCC 18-133, WT Docket No. 17-79, WC Docket No. 17-84 (Sept. 27, 2018).
2. *Id*. at par 1.
3. National Environmental Policy Act of 1969, 42 U.S.C. § 4321, et seq.; Small Cell Order at n.72.
4. *See, e.g.*, FCC, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, Report and Order, 1996 FCC LEXIS 4081, at *4 (Aug. 1, 1996).
5. *See* Report and Order, GEN Docket No. 79-144, 100 FCC 2d 543 (1985): Memorandum Opinion and Order, 58 RR 2d 1128 (1985); *see also* ANSI C95.1-1982, *American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz*, ANSI, New York, NY.
6. *See* FCC, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, Report and Order, 1996 FCC LEXIS 4081, at *7 (Aug. 1, 1996).
7. *Id*. at *8.
8. Pub. L. No. 104-104, 110 Stat. 56 (1996).
9. 47 U.S.C. § 332(c)(7)(B)(iv).
10. FCC, OET Bulletin 56, at 8 (August 1999).
11. *Id*. at 20.
12. Montgomery County, Maryland's Opening Brief, at 1 (19-70147) (9th Cir.) ("Brief"), https://www.beyondtelecomlawblog.com/5g-small-cells-and-rf-health-concerns/.
13. *Id*. at 2.
14. *Id*. at 12-15.
15. *Id*. at 15.
16. *Id*. at 15-16.
17. *BioInitiative 2012 – A Rationale for Biologically-based Exposure Standards for Low-Intensity Electromagnetic Radiation* (2017), https://bioinitiative.org/.
18. FCC, *In the Matter of Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies,* First Report and Order; Notice of Proposed Rulemaking and Notice of Inquiry, 2013 FCC LEXIS 1257 (Mar. 27, 2013).
18 Brief at 19-20.
19. *Id*. at 22.
20. *Id*.
21. *Id*. at 24-26.
23. Small Cell Order at n.72.
24. Brief at 4-5.
25. 42 U.S.C. §§ 4321, 4331.
26. 42 U.S.C. § 4332.
27. 40 C.F.R. § 1508.9.
28. Am. Bird Conservancy, Inc. v. FCC, 516 F.3d 1027, 1032 (D.C. Cir. 2008).
29. 40 C.F.R. § 1508.18(b)(1).
30. Small Cell Order at ¶ 21.
33. 40 C.F.R. § 1508.18.
32. Brief at 40.
33. 42 U.S.C. § 4332.
34. *Am. Bird Conservancy, Inc.*, 516 F.3d at 1033.
35. Found. for North Am. Wild Sheep v. United States Dept. of Agric., 681 F.2d 1172, 1179 (9th Cir. 1982).
36. Brief at 46.
37. *See* 47 U.S.C. § 332(c)(7)(B)(iv).
38. Brief at 37-38.
39. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).
40. Brief at 11-12, 19, 52.
41. *Id*. at 53.
42. *Id*. at 54.

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