ORAL ARGUMENT NOT YET SCHEDULED

BRIEF FOR RESPONDENTS

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

NOS. 20-1025 AND 20-1138

ENVIRONMENTAL HEALTH TRUST, CONSUMERS FOR SAFE CELL PHONES, ELIZABETH BARRIS, AND THEODORA SCARATO,

PETITIONERS,

V.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED STATES OF AMERICA,

RESPONDENTS.

CHILDREN'S HEALTH DEFENSE, MICHELE HERTZ, PETRA BROKKEN, DR. DAVID O. CARPENTER, DR. TORIL H. JELTER, DR. ANN LEE, VIRGINIA FARVER, JENNIFER BARAN, AND PAUL STANLEY, M.ED.,

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V.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED STATES OF AMERICA,

RESPONDENTS.

ON PETITIONS FOR REVIEW OF AN ORDER OF THE FEDERAL COMMUNICATIONS COMMISSION

JONATHAN D. BRIGHTBILL
PRINCIPAL DEPUTY ASSISTANT ATTORNEY GENERAL

ERIC GRANT
DEPUTY ASSISTANT ATTORNEY GENERAL

JEFFREY BEELAERT
JUSTIN HEMINGER
ATTORNEYS

THOMAS M. JOHNSON, JR.
GENERAL COUNSEL

ASHLEY S. BOIZELLE
DEPUTY GENERAL COUNSEL

JACOB M. LEWIS
ASSOCIATE GENERAL COUNSEL

WILLIAM J. SCHER

UNITED STATES
DEPARTMENT OF JUSTICE

RACHEL PROCTOR MAY
COUNSEL

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

1. Parties.

Petitioners in Case No. 20-1025 are Environmental Health Trust, Consumers for Safe Cell Phones, Elizabeth Barris, and Theodora Scarato. Petitioners in Case No. 20-1138 are Children's Health Defense, Michele Hertz, Petra Brokken, Dr. David O. Carpenter, Dr. Toril H. Jelter, Dr. Ann Lee, Virginia Farver, Jennifer Baran, and Paul Stanley, M.Ed. Respondents are the Federal Communications Commission and the United States of America.

2. Rulings under review.

The ruling under review is *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, Resolution of Notice of Inquiry, 34 FCC Rcd 11687 (2019).

3. Related cases.

Respondents are not aware of any related cases in this Court.

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* *Cases and other authorities principally relied upon are marked with asterisks.*

GLOSSARY

ADA	Americans with Disabilities Act
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FHA	Fair Housing Act
NEPA	National Environmental Policy Act
OSHA	Occupational Safety and Health Administration
WHO	World Health Organization
5G	Next (Fifth) Generation of Wireless Communications Services

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ON PETITIONS FOR REVIEW OF AN ORDER OF THE FEDERAL COMMUNICATIONS COMMISSION

INTRODUCTION

A variety of products and facilities subject to Federal Communications Commission regulation, including cell phones and towers, transmit radio signals and attendant radiofrequency radiation. In 1996, the Federal Communications

Commission (FCC or Commission) adopted rules addressing when regulated entities must undertake environmental analysis in accordance with the National Environmental Policy Act (NEPA). Those rules specified limits for human exposure to radiofrequency radiation caused by FCC-authorized equipment above which an environmental analysis is required. In adopting these rules, the FCC gave particular deference to the views of federal health and safety agencies, as well as those of recognized standard-setting agencies. Both this Court and the Second Circuit upheld the FCC's radiofrequency exposure limits against claims that they failed to reasonably protect public health. *See EMR Network v. FCC*, 391 F.3d 269, 273 (D.C. Cir. 2004), *cert. denied*, 545 U.S. 1116 (2005); *Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 90 (2d Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001).

In 2013, the Commission voluntarily initiated an inquiry into whether its radiofrequency limits continue to provide adequate protection to public health. Based on the record assembled in response to that inquiry, the FCC determined that the radiofrequency exposure limits are safe and set at the appropriate levels. As the agency explained, the Food and Drug Administration (FDA), which has specific expertise in evaluating the biological effects of radiofrequency exposure, recommended no changes to the limits, and no other agency advocated tightening the limits. Moreover, no commenter proposed any changes to existing protections

that were supported or justified by scientifically rigorous data or analysis. The FCC therefore concluded the inquiry with an order issued last year declining to initiate a rulemaking to consider revising the existing radiofrequency limits (the Order).

Petitioners challenge the Order based on their belief that exposure to radiofrequency radiation has harmful, "non-thermal" effects at levels far below the limits adopted by the Commission. But the agency reasonably relied on the expert advice of other federal agencies and standard-setting bodies and the record as a whole to conclude that no evidence of such effects exists and that no changes in the limits were warranted. That conclusion was neither arbitrary nor capricious, nor does it constitute the "rarest and most compelling of circumstances" in which this Court would disturb an agency's decision not to initiate a rulemaking. *EMR Network v. FCC*, 391 F.3d at 273 (internal quotations and citations omitted).

Petitioners also criticize the agency for not expressly responding to specific studies, petitions, and comments in the record. But after examining those materials, the agency reasonably concluded that the weight of the scientific and health evidence, and particularly the judgment of federal agencies expert in health matters, demonstrated that no changes were warranted. Having squarely addressed the significant issues in its decision-making process, the FCC complied with the Administrative Procedure Act. No statute, regulation, or legal precedent required

the agency to summarize and distinguish each submission in the record. This Court should deny the petitions for review.

JURISDICTION

The FCC released the Order on December 4, 2019. On January 31, 2020, Environmental Health Trust, Consumers for Safe Cell Phones, Elizabeth Barris, and Theodora Scarato timely filed a petition for review in this Court. On February 3, 2020, Children's Health Defense, Michele Hertz, Petra Brokken, Dr. David O. Carpenter, Dr. Toril H. Jelter, Dr. Ann Lee, Virginia Farver, Jennifer Baran, and Paul Stanley, M.Ed timely filed a petition for review in the United States Court of Appeals for the Ninth Circuit, which transferred the petition to this Court pursuant to the provisions of 28 U.S.C. § 2112. The Court has jurisdiction under 47 U.S.C. § 402(a) and 28 U.S.C. § 2342(1).

STATEMENT OF THE ISSUES

1. Did the Commission reasonably decline to propose new rules to protect against unproven radiofrequency exposure risks based on the record in response to its notice of inquiry and guided by expert agencies and standard-setting bodies?

2. Did the Commission reasonably decline to propose new requirements for measuring radiofrequency emissions from cell phones?

3. Did the Commission properly decline to prepare a supplemental environmental impact statement regarding the radiofrequency exposure limits in

the absence of ongoing federal action or a significant change in the scientific understanding of radiofrequency exposure risks?

4. Did the Commission reasonably decline to address arguments that no commenter raised during the proceeding and that are, at best, tangential to the question whether to propose new radiofrequency exposure limits?

STATUTES AND REGULATIONS

Pertinent statutes and regulations are set forth in an addendum to this brief.

COUNTERSTATEMENT

A. Statutory and Regulatory Background

The Communications Act of 1934, as amended (Act), grants the Commission broad authority to regulate the use of radio communications and the operation of equipment capable of producing electromagnetic energy. 47 U.S.C. §§ 301, 302a, 303(a)–(f). The FCC exercises this authority by, among other things, licensing the use of electromagnetic spectrum and establishing procedures for the approval of equipment capable of emitting electromagnetic energy. *See*, *e.g.*, 47 U.S.C. § 308; 47 C.F.R. § 2.901 *et seq.* (equipment authorization procedures).

The energy generated by radio communications equipment is known as radiofrequency radiation. At high levels, radiofrequency radiation can heat body tissue, producing "thermal" effects. FCC, RF Safety FAQs, https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-

division/radio-frequency-safety/faq/rf-safety#Q5 (last visited Sept. 18, 2020) (RF Safety FAQs).[1] Thermal effects can be harmful if the body cannot cope with or dissipate the excessive heat. *Id*. At low levels of exposure – *i.e.*, levels generally encountered by the public – any heating caused by radiofrequency radiation is easily absorbed by the body. *Id.*

NEPA is a procedural statute that requires agencies to consider the environmental impact of proposed federal actions. *DOT v. Pub. Citizen*, 541 U.S. 752, 756–57 (2004). The statute contains no substantive environmental standards and mandates no particular results. *Mayo v. Reynolds*, 875 F.3d 11, 16 (D.C. Cir. 2017). An agency considers the environmental impact of a proposed action and then informs "the public that it has indeed considered environmental concerns in its decisionmaking process." *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). Because NEPA provides no private right of action, parties challenge agency actions relating to NEPA obligations under the APA. *See Lujan v. Nat'l Wildlife Fed'n*, 497 U.S. 871, 882 (1990).

In 1996, the Commission adopted regulations under NEPA to consider the thermal effects of radiofrequency exposure in agency decisionmaking. *Guidelines*

[1] Radiofrequency radiation is "non-ionizing" – it lacks sufficient energy to cause ionization (the process of stripping electrons from atoms), which can lead to harmful biological injury. *See* RF Safety FAQs.

for Evaluating the Environmental Effects of Radiofrequency Radiation, Report and Order, 11 FCC Rcd 15123 (1996) (*1996 Order*). The regulations, which continue in effect today, specify exposure limits well below the levels that laboratory studies have shown can produce potentially harmful thermal effects. *See* 47 C.F.R. §§ 1.1310, 2.1091, 2.1093; *see also* RF Safety FAQs. Parties seeking FCC authorization for proposed activities that may exceed those exposure levels must prepare an environmental assessment for FCC review under NEPA. 47 C.F.R. §§ 1.1306, 1.1307. The Commission's NEPA regulations also specify that facilities and equipment that comply with its established limits are categorically excluded from further environmental analysis. *Id.* "Application of a categorical exclusion is not an exemption from NEPA; rather, it is a form of NEPA compliance, albeit one that requires less than where an environmental impact statement or an environmental assessment is necessary." *Ctr. for Biological Diversity v. Salazar*, 706 F.3d 1085, 1096 (9th Cir. 2013).

In adopting its radiofrequency exposure limits, the Commission gave significant weight to the recommendations of federal agencies and private standard-setting bodies with specialized expertise in health and safety issues. *1996 Order*, 11 FCC Rcd 15135 ¶ 28 (placing "special emphasis on the recommendations and comments of Federal health and safety agencies"). The FCC's exposure limits are based on guidelines developed by the National Council

on Radiation Protection and Measurements, a congressionally chartered organization, as well as guidelines promulgated by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, Inc., private standard-setting bodies. *Id.* at 15135-52 ¶¶ 28-74.

The Commission's radiofrequency exposure limits within the frequency range of 100 kilohertz to 6 gigahertz are quantified in terms of specific absorption rate, a measure of the rate at which the body absorbs radiofrequency energy that is expressed in units known as watts per kilogram. *See* RF Safety FAQs. Radiofrequency energy can begin to cause thermal effects at a specific absorption rate of about four watts per kilogram averaged over the whole body. *Id.* The limits incorporate safety margins for "occupational" exposure (no more than one tenth of the four watts per kilogram threshold, or 0.4 watts per kilogram) and "general population" exposure (no more than 1/50 of the four watts per kilogram threshold, or 0.08 watts per kilogram), as well as for localized exposure, for example when a person uses a cell telephone. *Id.*; *see* 47 C.F.R. §§ 1.1310(b), (c), 2.1093(d).[2]

[2] Radiofrequency exposure at the occupational limit of 0.4 watts per kilogram "is practically indistinguishable from the impact of normal ambient temperature variation, exposure to the sun, exercise, etc." *IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz*, ANSI/IEEE C95.1-1991 at 19 (Nov. 18, 1992), https://ieeexplore.ieee.org/document/159488 (last visited Sept. 18, 2020).

B. Judicial Decisions Rejecting Challenges to the Commission's Rules

1. The Second Circuit's Decision in *Cellular Phone Taskforce*

In 1997, the Commission denied petitions seeking reconsideration of its radiofrequency exposure limits on the ground that they were inadequate to protect against "non-thermal" biological effects (*i.e.*, effects not associated with the heating of body tissue) and to protect individuals who were "hypersensitive" to radiofrequency exposure. *Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, Second Memorandum Opinion and Order, 12 FCC Rcd 13494, 13503–05 ¶¶ 25–31 (1997) (*1997 Order*). Although the petitioners submitted studies purporting to demonstrate that exposure to radiofrequency radiation at levels below the FCC's limits could have biological effects, the Environmental Protection Agency (EPA) had advised the FCC that the majority of studies showed that "no significant health effects are associated with chronic, low-level exposure to [radiofrequency] radiation." EPA Comments, ET Docket 93–62 at 4–5 (Nov. 16, 1993). The EPA further concluded that the Commission's exposure limits provided "adequate protection of public health." Letter from Carol M. Browner, EPA, to Reed E. Hundt, Chairman, FCC, ET Docket No. 93–62 (July 25, 1996); Letter from Mary D. Nichols, Asst. Administrator for Air and Radiation, EPA, to Reed E. Hundt, Chairman, FCC, ET Docket No. 93–62 (Mar. 5, 1997).

The FCC relied on the EPA's advice, concluding that it would be "impracticable" to "independently evaluate the significance of studies purporting to show biological effects, determine if such effects constitute a safety hazard, and then adopt stricter standards [than] those advocated by federal health and safety agencies." 12 FCC Rcd at 13505 ¶ 31. The FCC recognized that "ongoing research" in the field could lead the expert agencies and private standard-setting bodies to revisit their recommendations. *Id.* at 13506 ¶ 32. If that occurred, the FCC stated, it would consider whether to amend its rules to conform to the new recommendations. *Id.*

The Second Circuit upheld the Commission's assessment of non-thermal effects in *Cellular Phone Taskforce*, 205 F.3d at 82. The court explained that the American National Standards Institute, the Institute of Electrical and Electronics Engineers, and the National Council on Radiation Protection and Measurements had each "considered … non-thermal effects" and concluded that "no reliable scientific data" showed these effects to be "meaningfully related to human health." *Id.* at 90 (internal quotations omitted). The court also concluded that "[a]ll of the expert agencies consulted were aware" of the FCC's reliance on the standard-setting bodies' guidelines and that they "had been advised of such evidence of non-thermal health effects as may have existed," and yet they "found the FCC's approach to be satisfactory." *Id.* The court therefore held that, under the

circumstances, "it was reasonable for the FCC to continue to rely on the" guidelines from the standard-setting bodies "absent new evidence indicating that the fundamental scientific understanding underlying" the standards "was no longer valid." *Id.*

The Second Circuit also rejected arguments that the FCC arbitrarily failed to consider new evidence suggesting that exposure to non-thermal effects could produce adverse health effects. *Id.* "At most," the court reasoned, this evidence "established that the existence of non-thermal effects is 'controversial' and that room for disagreement exists among experts in the field." *Id.* Observing that, in "the face of conflicting evidence at the frontiers of science, courts' deference to expert determinations should be at its greatest," the court held that the FCC "was justified in continuing to rely on the" standard-setting bodies' guidelines, rather than attempt to develop separate regulations for non-thermal effects. *Id.* The court also upheld the FCC's conclusion that "requiring exposure to be kept as low as reasonably achievable in the face of scientific uncertainty would be inconsistent with its mandate" to balance potential health effects against ensuring availability of telecommunications services "in the most efficient and practical manner possible." *Id.* at 92.

2. This Court's Decision in *EMR Network*

In 2003, the Commission dismissed a petition requesting that it initiate an inquiry into whether to revise the radiofrequency exposure limits to address non-thermal effects. *EMR Network Petition for Inquiry to Consider Amendment of Parts 1 and 2 Regarding Environmental Effects of Radiofrequency Radiation*, Order, 18 FCC Rcd 16822 (2003). This Court affirmed the FCC's dismissal in *EMR Network*, 391 F.3d at 269. The petitioner had argued that the FCC abdicated its responsibilities by relying on outside experts in its analysis. But this Court rejected that argument, reasoning that "the FCC's decision not to leap in, at a time when the EPA (and other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by [the] courts." *Id.* at 273 (citing *Am. Horse Prot. Ass'n, Inc. v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987)). The Court also rejected the petitioner's suggestion that the studies it submitted "show that exposure to [radiofrequency] radiation is unsafe at levels too low to cause thermal effects," finding "nothing in [these] studies so strongly evidencing risk as to call into question the Commission's decision to maintain a stance of what appears to be watchful waiting." *Id.* at 274.

C. The Proceedings Below

1. The Notice of Inquiry

In 2013, the Commission issued a notice of inquiry "to provide a forum for a full and transparent … to determine whether any action may be appropriate" to revise its radiofrequency exposure limits. *Reassessment of Radiofrequency Exposure Limits & Policies*, Notice of Inquiry, 28 FCC Rcd 3498, 3575 ¶ 219 (2013). The FCC expressed confidence in the existing limits, noting that the National Council on Radiation Protection and Measurements continued to support them and that more recent international standards for exposure were "fundamentally similar." *Id.* at 3574 ¶ 216; *see id.* at 3572-74 ¶¶ 213-15. But given the passage of time since it adopted the existing limits, ongoing scientific research, and other developments, the FCC determined that an inquiry was warranted. *Id.* at 3570 ¶ 205; *see id.* at 3570 ¶ 206. The FCC stated that it would "defer to other organizations and agencies with respect to interpreting the biological research necessary to determine what levels are safe." *Id.* at 3501 ¶ 6; *id.* at 3571 ¶ 210.

2. The Challenged Order

In the Order, the Commission resolved the notice of inquiry by declining to initiate a rulemaking to propose new or modified radiofrequency exposure limits. *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, Resolution of Notice of Inquiry, 34 FCC Rcd 11687 (2019) (JA___). The FCC concluded that the record did "not

demonstrate that the science underpinning the current [radiofrequency] exposure limits is outdated or insufficient to protect human safety," and did not "include actionable alternatives or modifications to the current [radiofrequency] limits supported by scientifically rigorous data or analysis." *Id.* ¶ 10 (JA__). The FDA supported that conclusion, advising the FCC that "no changes to the current standards are warranted at this time." *Id.* Moreover, as the Commission explained, "no expert health agency expressed concern about the Commission's [radiofrequency] exposure limits." *Id.*

Although some commenters advocated new limits "that are millions to billions times more restrictive than FCC limits," the Commission found no evidence "that such restrictive limits would produce any tangible benefit to human health, or provide any improvement over current protections against established risks," nor did they "provide sufficient scientific evidence or explanation justifying why the proposed reductions are the appropriate value(s)." *Id.* ¶ 12 (JA___).

The Commission declined to propose new requirements for evaluating whether cell phones comply with the radiofrequency exposure limits. *Id.* ¶ 14 (JA___). The FCC's evaluation procedures call for testing of cell phones "against the head … to represent normal use conditions during a phone call," and at a "distance of up to 2.5 centimeters (about one inch) from the body" to represent other uses. *Id.* The FCC disagreed with parties who argued that mobile devices

should be tested without any separation from the body as well as the head, explaining that such a change was "unnecessary" given, among other things, that phones are tested at maximum power (even though they are not consistently used at that power level) and the exposure limits are already set with "a large safety margin." *Id.*; *see* pg. 8 *supra*.[3] Based on all the scientific evidence, public input, and the advice of expert agencies and standards-setting bodies, the Commission concluded that the current exposure limits remained valid and therefore no further proceedings were necessary.

SUMMARY OF ARGUMENT

I. The Commission reasonably decided not to propose new rules based on unproven radiofrequency exposure risks. The purpose of the Commission's notice of inquiry was to determine whether the exposure limits remain safe and reflect prevailing scientific consensus regarding the health effects of radiofrequency

[3] The FCC's limit for localized radiofrequency exposure from mobile devices like cell phones is 1.6 watts per kilogram, 47 C.F.R. § 1.1310(c), and was derived from the whole body exposure limit of 0.08 watts per kilogram, which incorporates a fifty-fold safety margin. *See* pg. 8 *supra*; *see also* IEEE Std C95.1-2005 at 86 (the 20:1 ratio between the localized and whole body radiofrequency exposure limits was based on "experimental data available in the late 1970's…. Recent advances in numerical calculations have shown that the ratio … can be much higher, with reported values of more than 100:1."), https://ieeexplore.ieee.org/document/1626482 (last visited Sept. 21, 2020); *infra* n.15.

exposure. The FDA, which has specific expertise in evaluating such effects, recommended no changes to the limits. The FDA's advice accords with the views of other agencies and expert bodies. Moreover, no commenter suggested changes to the current limits that would improve protection against substantiated risks. Just as it did in *EMR Network*, therefore, this Court should affirm the Commission's decision not to initiate a rulemaking to consider new radiofrequency exposure limits.

Petitioners' arguments to the contrary are unavailing. The FCC complied with the APA when it explained the basis for its conclusion that the weight of the scientific evidence continues to support the current exposure limits. No statute or regulation required the agency to address every single individual objection or to independently evaluate every conflicting study and opinion.

Petitioners' arguments that the exposure limits do not protect children or potentially vulnerable adults, and do not account for risks associated with particular types of exposure, are not new. These matters were considered in the development of the current limits, which incorporate substantial safety margins to ensure protection from the known effects of radiofrequency exposure for people of different physical types, regardless of the mechanism. No new information in the record called into question the scientific consensus backing the Commission's exposure limits.

Petitioners also are mistaken that the FCC ignored new technological developments. The existing radiofrequency exposure limits specifically address simultaneous exposure from multiple sources. Thus, the limits already address concerns that the deployment of next-generation wireless networks will expose the public to more radiofrequency radiation. Petitioners do not challenge a separate portion of the Order in which the Commission explained how it continues to ensure that the public is adequately protected as new technologies are deployed.

II. The Commission also reasonably declined to propose new procedures for evaluating whether cell phones comply with the radiofrequency exposure limits. Petitioners contend that the procedures should be revised to test for non-thermal effects, but the weight of the scientific and health evidence does not support the existence of such effects. The Commission also reasonably declined to propose new requirements for testing without separation from the body. A number of factors, the FCC explained, mitigate any risk of underestimating exposure, including that phones are tested at maximum power (even though they are not consistently used at that power level), phones are tested at zero spacing from a user's head, and the limits are already set with a large safety margin. In light of these factors, the FCC reasonably declined to propose a new testing requirement.

III. Petitioners argue that the FCC had to prepare an environmental impact statement or an environmental assessment when it decided not to propose new

radiofrequency exposure limits. But petitioners misconstrue NEPA and misrepresent the record. As in *EMR Network*, the decision not to propose new limits involved no ongoing federal action and, therefore, created no requirement to supplement the existing environmental analysis under NEPA. In any event, the FCC had no duty to supplement because new information regarding exposure risks did not present a seriously different picture of the environmental landscape than the Commission had confronted in the past. On the contrary, the information developed since the adoption of the exposure limits has not changed the scientific consensus that they remain safe and adequate to protect the public health.

IV. Petitioners raise additional arguments for the first time in this Court. But the Court need not consider those arguments, because Petitioners failed to preserve them. No commenter asked the FCC to address the circumstances under which its radiofrequency exposure limits foreclose claims for accommodation under the Americans with Disabilities Act or Fair Housing Act. This argument is barred. Even if properly before this Court, the Commission was not required to address this argument, which is tangential to the question whether to revise the Commission's radiofrequency exposure limits. Petitioners' tort and constitutional arguments were also not preserved, and in all events lack merit.

STANDARD OF REVIEW

Under the APA, reviewing courts may overturn an agency decision only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). This standard is "[h]ighly deferential" because courts "presume[] the validity of agency action." *AT&T Corp. v. FCC*, 349 F.3d 692, 698 (D.C. Cir. 2003) (internal citations omitted). The Court "will accept the Commission's 'technical judgment[s]' when supported 'with even a modicum of reasoned analysis, absent highly persuasive evidence to the contrary.'" *NTCH, Inc. v. FCC*, 950 F.3d 871, 880 (D.C. Cir. 2020) (quoting *Mobile Relay Assocs. v. FCC*, 457 F.3d 1, 8 (D.C. Cir. 2006)).

"As applied to refusals to initiate rulemakings, this standard is 'at the high end of the range' of deference, and an agency refusal is overturned only in the 'rarest and most compelling of circumstances.'" *EMR Network*, 391 F.3d at 273 (quoting *WWHT, Inc. v. FCC*, 656 F.2d 807, 818 (D.C. Cir. 1981); *Multicultural Media, Telecom and Internet Council v. FCC*, 873 F.3d 932, 937 (D.C. Cir. 2017) (review of an agency's decision not to promulgate a new rule is "'extremely limited and highly deferential'") (quoting *Massachusetts v. EPA*, 549 U.S. 497, 527-28 (2007)); *see CellNet Commc'ns, Inc. v. FCC*, 965 F.2d 1106, 1111 (D.C. Cir. 1992) (an agency's decision not to initiate a new proceeding is "evaluated with a deference so broad as to make the process akin to nonreviewability.").

The agency's decision here not to conduct a rulemaking is subject to the same standard of review that the court applied to the denial of a rulemaking petition in *EMR Network*, 391 F.3d at 273. Both represent a "refusal to institute rulemaking proceedings." *Defenders of Wildlife v. Gutierrez*, 532 F.3d 913, 919 (D.C. Cir. 2008) (quoting *Am. Horse Prot. Ass'n, Inc. v. Lyng*, 812 F.2d 1, 4-5 (D.C. Cir. 1987)); *see also Nat'l Min. Ass'n v. Mine Safety & Health Admin.*, 599 F.3d 662, 667-68 (D.C. Cir. 2010) (applying the same standard to notice of an agency decision not to propose to modify a rule, contrary to the agency's prior expressed intention to do so).

Likewise, this Court reviews an agency's compliance with NEPA under the APA's "'deferential standard of review.'" *Mayo*, 875 F.3d at 19 (quoting *Sierra Club v. FERC*, 867 F.3d 1357, 1367 (D.C. Cir. 2017)). "A court's role in reviewing an agency's decision not to prepare an [environmental impact statement] is a limited one, designed primarily to ensure that no arguably significant consequences have been ignored." *Id.* at 20 (internal quotations and citations omitted).

ARGUMENT

I. THE FCC REASONABLY DECLINED TO PROPOSE NEW RADIOFREQUENCY EXPOSURE LIMITS.

The Commission "take[s] [its] duty to protect the public from any potential harm due to [radiofrequency] exposure seriously." Order ¶ 11 (JA __). In keeping with this obligation, the FCC issued its notice of inquiry to determine whether its

radiofrequency exposure limits remain adequate in light of ongoing research into the effects of exposure. *See* 28 FCC Rcd at 3570 ¶¶ 205-06. Guided by other agencies and expert bodies, the FCC determined that the scientific consensus backing the current limits has not changed since the time of their adoption. Order ¶¶ 10-12 (JA__-__). Accordingly, the agency reasonably concluded that there was no basis to consider revising the existing limits.

Petitioners' challenge echoes the same sorts of concerns about the effects of low-level radiofrequency exposure that have been raised since before the FCC adopted the limits in 1996. Over the years, the FCC has considered similar arguments and reasonably rejected them. Here, the FCC examined the evidence submitted in response to the notice of inquiry and concluded, taking into account the FDA's views and the views from other expert agencies and standard-setting organizations, that "there is no scientific evidence in the record" that more restrictive exposure limits "would produce any tangible benefit to human health." Order ¶ 12 (JA ___). The FCC therefore "decline[d] to initiate a rulemaking to reevaluate the existing [radiofrequency] exposure limits." *Id*. ¶ 10 (JA __). That decision, which "represent[s] the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts," *EMR Network*, 391 F.3d at 273, and is subject to reversal only under the "rarest and most compelling of circumstances," *WWHT*, 656 F.2d at 818 was reasonable.

A. The FCC Properly Credited Outside Experts in Declining to Propose New Limits.

The Commission's rules are designed to consider the known effects of exposure to radiofrequency radiation from FCC-authorized equipment, while balancing the agency's statutory obligation to ensure the "efficient and intensive use of the electromagnetic spectrum." 47 U.S.C. § 309(j)(3)(D); *see id.* §§ 151, 157(a); *Cellular Phone Taskforce*, 205 F.3d at 92. Because the Commission lacks primary jurisdiction over public health, *see* 28 FCC Rcd at 3504 ¶ 12; RF Safety FAQs, this Court and others have rightly recognized that the FCC reasonably may rely on other agencies' expertise to support its conclusions regarding the human health effects of low-level radiofrequency exposure. *See EMR Network*, 391 F.3d at 273; *Cellular Phone Taskforce*, 205 F.3d at 90. Indeed, other federal agencies have primacy in regulating public health, as well as "specific expertise on the health effects of [radiofrequency] radiation," *EMR Network*, 391 F.3d at 273, and may be expected "to keep abreast of scientific developments in carrying out their missions." *Cellular Phone Taskforce*, 205 F.3d at 91.

For these reasons, the FCC reasonably looks to the views of such agencies "for such controversial issues as non-thermal effects and whether certain individuals might be 'hypersensitive' or 'electrosensitive.'" *Id.* (quoting *1997 Order*, 12 FCC Rcd at 13494 ¶ 31). And "[i]n the face of conflicting evidence at the frontiers of science," *id.* at 90, FCC reliance on other agencies' expert views

"represent[s] the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts." *EMR Network*, 391 F.3d at 273; *see also City of Boston Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (agencies can be expected to "respect [the] views of such other agencies as to those problems" for which those "other agencies are more directly responsible and more competent.") (quoting *City of Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 754 (D.C. Cir. 1956)).

1. The FCC Reasonably Relied on the FDA's Recommendation.

a. The Commission properly credited the FDA's recommendation in declining to propose new exposure limits. Order ¶¶ 10-12, 15 (JA___). The FDA has statutory responsibility to regulate the human health effects of exposure to radiofrequency energy. Congress directed the FDA to establish an "electronic product radiation control program designed to protect the public health and safety from electronic product radiation." 21 U.S.C. § 360ii(a). In carrying out that responsibility, the FDA collects and makes available the results of research and studies regarding electronic product radiation, and the agency provides recommendations relating to its "hazards and control." 21 U.S.C. § 360ii(b)(1). The FDA also conducts ongoing evaluation of "'scientific and medical evidence related to the possibility of adverse health effects from radiofrequency energy exposure in both humans and animals.'" Order ¶ 12 n.42 (JA___) (quoting

Statement from Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health on the recent National Toxicology Program draft report on radiofrequency energy exposure (Feb. 2, 2018) (JA___)). The FDA participated actively in the FCC's inquiry, and then released its own review of scientific literature, which confirmed the FCC's conclusions, shortly after the *Order* was adopted.[4]

In its comments before the FCC, the FDA advised that "'no changes'" to the current radiofrequency exposure limits "'are warranted at this time.'" Order ¶ 10 (JA___) (quoting Letter from Jeffrey Shuren, M.D., J.D., Director, Center for Devices and Radiological Health, FDA, to Julius Knapp, Chief, OET, FCC, ET Docket No. 13-84 at 2 (Apr. 24, 2019) (JA___)). The "'totality of the available scientific evidence,'" the agency observed, "'continues to not support adverse health effects in humans caused by exposures at or under the current

[4] In February 2020, the FDA released a Review of Published Literature between 2008 and 2018 of Relevance to Radiofrequency Radiation and Cancer, https://www.fda.gov/radiation-emitting-products/cell-phones/scientific-evidence-cell-phone-safety (last visited Sept. 18, 2020). The review summarizes the agency's evaluation of approximately 125 peer-reviewed animal studies and 70 peer-reviewed epidemiological studies of possible links between radiofrequency exposure and cancer. *Id.* at 4-5. It affirms that, "[b]ased on the FDA's ongoing evaluation, the available epidemiological and cancer incidence data continues to support the Agency's determination that there are no quantifiable adverse health effects in humans caused by exposures at or under the current [radiofrequency] exposure limits." *Id.* at 5.

radiofrequency energy exposure limits.'" *Id.* ¶ 12 n.42 (JA___) (quoting Feb. 2, 2018 *Statement from Jeffrey Shuren*). As the FDA "is the agency with primacy" in evaluating the human health effects of exposure to radiofrequency radiation, "the FCC's decision not to leap in, at a time when" the FDA "saw no compelling case for action," was manifestly reasonable. *EMR Network*, 391 F.3d at 273. Neither this Court nor Petitioners may substitute their judgment for that of the agency. *U.S. Postal Serv. v. Gregory*, 534 U.S. 1, 7 (2001).

b. Petitioners provide no support for their claim (Br. 68-69)[5] that Dr. Shuren, the Director of the FDA's Center for Devices and Radiological Health, lacked authority to speak for the agency. The Center carries out the "mission of the FDA's radiological health program" under the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 360hh-360ss, "to protect the public from hazardous or unnecessary radiation exposure from radiation-emitting electronic products." FDA Radiological Health Program, https://www.fda.gov/radiation-emitting-products/fda-radiological-health-program (last visited Sept. 18, 2020).

Petitioners also assert (Br. 69) that the FDA's April 24, 2019 letter did not "cite *any* scientific evidence or health data to support rejection of the [National

[5] Brief citations refer to Petitioners' amended joint opening brief, filed on August 14, 2020.

Toxicology Program Study] and other findings." But the agency released two public statements before the letter explaining its conclusions regarding that study. *Statement from Jeffrey Shuren, M.D., J.D., Director of the FDA's Center for Devices and Radiological Health on the National Toxicology Program's report on radiofrequency energy exposure* (Nov. 1, 2018) (explaining, *inter alia*, that the study "was not designed to test the safety of cell phone use in humans," tested rats at levels considerably higher than the current limits for whole body exposure, and "there were unusual findings in the study," such as "the rats exposed to whole body radiofrequency energy lived longer than rats that were not exposed to any radiation (control group)," https://www.fda.gov/news-events/press-announcements/statement-jeffrey-shuren-md-jd-director-fdas-center-devices-and-radiological-health-national (last visited Sept. 18, 2020); Feb. 2, 2018 *Statement from Jeffrey Shuren* (JA___).[6] This Court should uphold the FCC's "fully informed and well-considered decision." *Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 558 (1978).

[6] Petitioners further complain of "non-public, off-the-record discussions between FCC and FDA staff." Br. 68 n.210 & accompanying text. But the FCC's decision not to initiate a rulemaking was based on the record before it, which included the FDA's publicly available comments. *See* Order ¶¶ 10-12 (JA___).

2. The FDA's Advice Is Consistent with the Views of Other Agencies and Recognized Standard-Setting Bodies.

a. The record in response to the notice of inquiry supported the FDA's recommendation. As the Commission observed, "[n]o expert health agency expressed concern about the" radiofrequency exposure limits. Order ¶ 10 (JA___). The World Health Organization, for example, continues to conclude "'that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields.'"[7] Likewise, according to the National Cancer Institute, "'[t]he only consistently recognized biological effect of radiofrequency radiation in humans is heating.'"[8] And "'[i]t is the opinion of" the International Commission on Non-Ionizing Radiation Protection "that the scientific literature published since the 1998 guidelines has provided no evidence of any adverse

[7] Comments of CTIA - The Wireless Association, ET Docket No. 13-84 at 20-21 n.97 (Sept. 3, 2013) (CTIA Comments) (JA___) (quoting World Health Org., What are electromagnetic fields?).

[8] Reply Comments of CTIA, ET Docket No. 13-84 at 7 n.21 (Nov. 18, 2013) (CTIA Reply) (JA___) (quoting Nat'l Cancer Inst., Fact Sheet, *Cell Phones & Cancer Risk*, https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet (last visited Sept. 18, 2020)).

effects below the basic restrictions.'"[9] The Institution of Engineering and Technology, "Europe's largest body of engineering and technology professionals," stated in 2012 that "'experimental studies have failed to demonstrate consistent effects and no mechanism has been established whereby low-level exposure to [radiofrequency energy] fields can cause biological effects.'"[10] Other expert bodies from Sweden, the Netherlands, the European Union, the United Kingdom, Norway, Germany, Spain, and South Africa have concluded that radiofrequency exposure from cell phone use is not causally linked to adverse health effects.[11] In light of this uncertainty, the FCC reasonably declined to propose revising the existing radiofrequency exposure limits. *Motor Vehicle Mfrs. Ass'n, Inc. v. State Farm*, 463 U.S. 29, 51 (1983); *Cellular Phone Taskforce*, 205 F.3d at 91-92.

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[9] Mobile Manufacturers Forum Comments, ET Docket No. 13-84 at 94 (Sept. 3, 2013) (MMF Comments) (JA___) (quoting ICNIRP 2009 statement, *Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)*, https://www.icnirp.org/en/publications/index.html (last visited Sept. 18, 2020)).

[10] MMF Comments at 97 (quoting Institution of Engineering and Technology statement, *The possible harmful biological effects of low-level electromagnetic fields of frequencies up to 300 GHz* (May 8, 2012)).

[11] MMF Comments at 75-80 (compiling conclusions).

b. Petitioners nevertheless insist (Br. 51) that the record demonstrated "a consensus of the scientific community" that radiofrequency exposure has "harmful and sometimes lethal" non-thermal effects. But they mischaracterize the record. Although some studies suggest an association between low-level radiofrequency exposure and adverse health effects, the Commission reasonably concluded that such data is inconsistent and inconclusive. *See* Order ¶ 12 (JA___). In this "controversial" area, *Cellular Phone Taskforce*, 205 F.3d at 90, this Court should defer to the FCC's judgment that the available evidence is too uncertain because the agency reasonably explained its decision, *see State Farm*, 463 U.S. at 51–53; *Cellular Phone Taskforce*, 205 F.3d at 91-92, and its conclusion is consistent with that of other federal agencies with expertise and primary jurisdiction in matters of health and safety.

c. Petitioners claim (Br. 64) that the Commission "rejected the science because the scientific/medical experts did not also solve the engineering problem of being able to provide 'viable' service within safe limits." Not so. The evidence simply did not show that the restrictive limits advocated by some commenters – "limits that are millions to billions times more restrictive than FCC limits" – "would produce any tangible benefit to human health." Order ¶ 12 (JA___). Petitioners also suggest (Br. 83-88) that the FCC improperly placed the burden of proof on those advocating for more restrictive limits, but the agency did no such

thing. The FCC was not "required to apply the principle against uncertainties … to limit radiation to levels as low as is reasonably achievable." *Cellular Phone Taskforce*, 205 F.3d at 91 (internal quotation marks omitted). "The argument that the FCC should create greater safety margins in its guidelines to account for uncertain data is a policy question, not a legal one." *Id.*

d. Petitioners contend (Br. 67-68) that agencies other than the FDA disagree that the radiofrequency exposure limits are safe. But the only agency they identify that responded to the FCC's notice of inquiry is the Occupational Safety and Health Administration (OSHA), which *supported* the FCC's limits. Letter from William Perry, CIH, Director, Standards and Guidance, OSHA, to Julius K. Knapp, Chief, OET, ET Docket No. 13-84 (July 1, 2015) (JA___). OSHA's letter stated that the FCC limits for occupational exposure "are fairly consistent with the current recommendations of" recognized standard-setting bodies. *Id.* at 1.

Petitioners' claims regarding other agencies do not bear scrutiny. The EPA did not state that the radiofrequency exposure limits' "premises are 'not justified.'" Br. 68 (quoting Letter from Norbert Hankin, Center for Science and Risk Assessment, Radiation Protection Div., EPA to Ms. Janet Newton, President, The EMR Network at 1-2 (July 6, 2002) (JA___)). When read in its proper context, the quoted letter merely states that the limits protect against thermal effects and not "any or all" possible harms. Petitioners look to a study (Br. 67–68) cited by the

National Toxicology Program, but that study provides no support. As an initial matter, the Program is an interagency program that has no regulatory authority related to radiofrequency exposure.[12] Even so, the cited study does not address the effects of radiofrequency exposure on humans. *See* Order ¶ 11 n.33.

Only two chicken embryo studies arguably support an offhand statement, in a 2014 letter from the Interior Department to another agency, that the FCC's radiofrequency exposure limits "are 'out of date and inapplicable today.'" Br. 68 (quoting Letter from Willie R. Taylor, Director, Office of Environmental Policy and Compliance, Dept. of the Interior to Mr. Eli Veenendaal, Nat'l Telecomm. and Inform. Admin., Dept. of Commerce (Feb. 7, 2014) (JA___)). Petitioners mischaracterize the significance of this letter, as it concerns the potential impact on migratory birds from First Responder Network Authority communications towers. The statement in the letter that the FCC's limits are outdated because they "continue to be based on thermal heating" is belied by the views of the FDA and other agencies and standard-setting bodies with specific expertise in evaluating the biological effects of radiofrequency exposure.

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[12] *See* https://ntp.niehs.nih.gov/whoweare/organization/index.html?utm_source=direct&utm_medium= prod&utm_campaign= ntpgolinks&utm_ term=org (last visited Sept. 18, 2020)

The Architectural and Transportation Barriers Compliance Board's recognition of radiation sickness as a potential disability under the Americans With Disabilities Act (ADA) was based on individual comments, not science. *See* ADA Accessibility Guidelines for Buildings and Facilities; Recreation Facilities, 67 Fed. Reg. 56352, 56353 (Sept. 3, 2002)); *accord* Order ¶ 16 n.57, citing https://www.who.int/peh-emf/publications/facts/fs304/en/ (last visited Sept. 18, 2020) ("Some individuals have reported that they experience non-specific symptoms upon exposure to [radiofrequency] fields emitted from base stations and other [radiofrequency] devices… [Radiofrequency radiation] has not been shown to cause such symptoms. Nonetheless, it is important to recognize the plight of people suffering from these symptoms.").

Finally, Petitioners provide no support for their contention that the Centers for Disease Control and Prevention "recognize[] that non-ionizing radiation can cause injury." Br. 68; *id.* 81. There is indeed nothing to cite. That agency's website states that "[a]t this time we do not have the science to link health problems to cell phone use." Frequently Asked Questions About Cell Phones and Your Health, https://www.cdc.gov/nceh/radiation/cell_phones._faq.html (last visited Sept. 18, 2020).

3. The FCC Addressed the Major Studies in the Record.

a. Petitioners complain that the FCC failed to address studies, appeals and recommendations from "[h]undreds of expert scientists, doctors, and public health experts," as well as "over 250 individual reports of sickness from FCC-authorized [radiofrequency exposure] levels." Br. 10-11; *id.* 14-16, 66; *see also* Amicus Brief of NRDC, *et al.* 26. This complaint lacks merit. The Commission responded to these submissions by explaining "what major issues of policy were ventilated ... and why the agency reacted to them as it did." *Carlson v. Postal Regulatory Comm'n*, 938 F.3d 337, 344 (D.C. Cir. 2019).

The FCC rationally explained that the *scientific* understanding of the health effects of radiofrequency exposure has not changed significantly over the years and thus the current exposure limits remain safe and appropriate. "The vast majority of filings" in response to the inquiry, the Commission explained, "were unscientific." Order ¶ 12 (JA___). Commenters also presented scientific research, but the FCC reasonably declined to independently "evaluate the quality and significance of that research" in light of the judgment of expert health agencies and other record evidence supporting the FCC's decision. *Id.* Nor was the agency required to do so. "An agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise." *MCI WorldCom, Inc. v. FCC*, 209

F.3d 760, 765 (D.C. Cir. 2000). Faced with "conflicting evidence at the frontiers of science," *Cellular Phone Taskforce*, 205 F.3d at 90, the FCC rationally chose to be guided by the considered views of the FDA and other expert bodies. The FDA's approach, moreover, is to consider "'the totality of the data'" "'rather than drawing conclusions from the results of a single study.'" Order ¶ 12 n.42 (JA___) (quoting Feb. 2, 2018 *Statement from Jeffrey Shuren* (JA___)).[13] The FCC used the same approach and its decision did not violate the APA.

b. Petitioners highlight the Commission's alleged failure to address four particular studies: (1) the National Toxicology Program study; (2) the Ramazzini Institute study; (3) a monograph by the International Agency for Research on Cancer; and (4) the BioInitiative report. Br. 11-14, 66-67; *see* Amicus Brief of NRDC, *et al.* 26 (highlighting failure to address BioInitiative report). But as the FCC explained, the National Toxicology Program and Ramazzini Institute studies, which involved the effects of radiofrequency exposure on rodents, did not address

[13] *Accord* MMF Comments at 97-98 (JA___) ("Weight of evidence is NOT counting the number of positive and negative studies and then concluding there are more positive study results than negative, or vice versa ….A true weight of evidence approach requires that each study, both positive and negative, be evaluated for quality …. WHO has used this approach for over 50 years and it is a very well accepted, tried and true method for assessing health risks from any biological, chemical or physical agent.") (internal quotations and citations omitted).

the applicability of their findings to human beings. Order ¶ 11 n.33 (JA __). Indeed, a senior National Toxicology Program scientist stated that "the exposures used in the studies cannot be compared directly to the exposure that humans experience when using a cell phone." *Id*. And, as the FCC noted, both the FDA and the International Commission on Non-Ionizing Radiation Protection concluded that those studies did not provide a reliable basis for revising exposure guidelines. Order ¶ 11 nn.33-34 (JA___).

As for the International Agency for Research on Cancer monograph, it "confirms rather than changes the state of the science." CTIA Comments at 23-26 (JA___-___); MMF Comments at 98-100 (JA___). In particular, the International Agency's classification of radiofrequency radiation as "possibly carcinogenic to humans" (which the FCC recognized in the notice of inquiry, although the monograph was not yet available, 28 FCC Rcd at 3504 ¶ 13 n.26 and accompanying text, 3575 ¶ 219) means only that "no one yet knows if the agent ([radiofrequency] radiation) is actually harmful (or not)." *CTIA-The Wireless Ass'n v. City & Cnty. of San Francisco*, 827 F. Supp. 2d 1054, 1060 (N.D. Cal. 2011) ("the 'possible' group is a weaker group than the 'probably carcinogenic' group and weaker still than the 'carcinogenic' group; it does not take much to list something as 'possible.'"), *aff'd*, 494 F. App'x 752 (9th Cir. 2012).

Nor did the Commission ignore the BioInitiative report. *See* Order ¶ 12 n.39 and accompanying text (JA___). As a general matter, commenters observed that the report "has been heavily criticized as being selective, not presenting a balanced analysis and for making claims which lacked a scientific basis." Mobile Manufacturers Forum Reply Comments, ET Docket No. 13-84 at 6 (Nov. 18, 2013) (MMF Reply) (JA___) (citing Committee on Man and Radiation, *Expert Reviews on Potential Effects of Radiofrequency Electromagnetic Fields and Comments on the BioInitiative Report*, 97 Health Physics 348-356 (Oct. 2009), and Health Council of the Netherlands, *Influence of radiofrequency telecommunication signals on children's brains*, The Hague: Health Council of the Netherlands, 2011; publication no. 2011/20E, ISBN 978-90-5549-859-8); CTIA Reply at 19 n.79 (JA___) ("'The BioInitiative Report has been firmly discredited by the scientific community as 'an egregiously slanted review.'") (quoting Kenneth R. Foster & Lorne Trottier, *Picking Cherries in Science: The BioInitiative Report* (Feb. 15, 2013)). In all events, the BioInitiative report specified "limits that are millions to billions times more restrictive than FCC limits." Order ¶ 12 (JA__). "No device," the Commission emphasized, "could reliably transmit any usable level of energy

by today's technological standards while meeting those limits," *id.*, and in any event, the need for those limits was unsubstantiated.

4. The FCC Stands Ready to Consider Changing the Exposure Limits in the Appropriate Circumstances.

The FCC continues to maintain the attitude of "watchful waiting" that animated the notice of inquiry and that this Court approved in *EMR Network*, 391 F.3d at 274; *see* 28 FCC Rcd at 3570 ¶¶ 205-06. Through the Radiofrequency Interagency Work Group, FCC and FDA staff maintain a "continuing dialogue … regarding the ongoing research into the possible health effects of [radiofrequency] emissions." Letter from Julius P. Knapp, Chief, OET, FCC, to Dr. Jeff Shuren, M.D., J.D., Director, Center for Devices and Radiological Health, FDA, ET Docket No. 13-84 at 1 (Mar. 22, 2019) (JA__). In the Order, the FCC reaffirmed its commitment to "continue to study and review publicly available science and collaborate with other federal agencies and the international community to ensure our limits continue to reflect the latest science." Order ¶ 10 (JA __). "If an appropriate basis for launching a new Commission proceeding arises," the FCC stated, the agency stands ready to "undertake further evaluation" of its exposure limits. *Id.*

B. The Limits Adequately Protect Children and Potentially Vulnerable Adults from the Effects of Exposure.

Petitioners argue that the FCC ignored evidence that the radiofrequency exposure limits do not adequately protect children or persons with "electrosensitivity" or radiation sickness. Br. 27-32, 64, 69-72. This argument likewise lacks merit.

1. The FCC previously considered and rejected claims that its exposure limits do not adequately protect children or persons with sensitivity or vulnerability to radiofrequency exposure. *1997 Order*, 12 FCC Rcd at 13504 ¶ 26 (noting that petitioner sought revision of the limits "to allow for different rates of absorption among members of the public," including children). In doing so, the FCC determined that its limits "represent[ed] the best scientific thought" on the restrictions necessary to protect all members of the public, including children. *1996 Order*, 11 FCC Rcd at 15184 ¶ 168; *see id.* at 15146-47 ¶ 62; CTIA Reply at 17 (JA___) (guidelines on which exposure limits are based "are 'intended to apply to all people,' including children and sensitive members of the public.") (citing IEEE 2005 Standard at 20). Petitioners raised similar arguments in the Second Circuit, suggesting that the agency failed to "consider individual vulnerabilities among members of the public." *Cellular Phone Taskforce*, 205 F.3d at 93. The court rejected that argument, and this Court should too.

In the Order, the FCC acknowledged the possibility of age-related differences in children's exposure to radiofrequency radiation, but explained that such differences were accounted for in the exposure limits, and that the FDA had concluded that "[t]he scientific evidence does not show a danger to any users of cell phones from [radiofrequency] exposure, including children and teenagers." Order ¶ 15 (internal quotation marks and citation omitted) (JA___). Nor is there anything in the record "so strongly evidencing risk as to call into question the Commission's decision" not to propose new limits for purportedly hypersensitive individuals. *EMR Network*, 391 F.3d at 274; *see* CTIA Comments at 47 n.220 (JA___) ("'There is little scientific evidence to support the idea of electromagnetic hypersensitivity.'") (quoting WHO, What are electromagnetic fields?, https://www.who.int/peh-emf/about/WhatisEMF/en/index1.html (last visited Sept. 18, 2020).[14]

[14] According to the International Commission on Non-Ionizing Radiation Protection, a "non-profit-making body of independent scientific experts," 28 FCC Rcd at 3572 ¶ 213 n.375, although some people experience adverse effects that they believe are caused by low-level radiofrequency exposure, "[d]ouble-blind experimental studies have consistently failed to" substantiate any effects of such exposure. 2020 Guidelines for Limiting Exposure to Electromagnetic Fields (available at www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf). That assessment is based on the WHO's "in-depth review of the literature on radiofrequency" exposure "and health, which was released as a Public Consultation

2. The fact that the Commission's exposure limits are based on a highly conservative evaluation of the scientific and medical evidence also helps to ensure adequate protection from the known effects of radiofrequency exposure for people of different physical characteristics. Order ¶ 14 (JA__); *see 1997 Order*, 12 FCC Rcd at 13538 ¶ 111 ("Our guidelines adopt the most conservative aspects of the" standard-setting organizations' "recommended exposure criteria").[15] They incorporate a *fifty-fold* safety margin for the general public. 28 FCC Rcd at 3582 ¶ 236; *see* pg. 8 *supra*. That safety margin "accommodate[s] ... variables such as different physical characteristics," 28 FCC Rcd at 3582 ¶ 236, accounting for children and adults of different physical types alike. *See Cellular Phone Taskforce*, 205 F.3d at 93 (in establishing the safety margin incorporated into the FCC's exposure limits, the National Council on Radiation Protection and Measurements

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Environmental Health Criteria Document in 2014," and comprises "the most comprehensive and thorough appraisal of the adverse effects of radiofrequency [exposure] on health," as well as literature reviews produced by other international organizations between 2015 and 2018 and consideration of more recent research up to September 2019. *Id.* at 36, App. B.

[15] Indeed, the Commission's limits "are more restrictive than other more recently published international limits." Order ¶ 11 (JA__). Those limits for mobile devices are two watts per kilogram averaged over 10 grams of tissue, compared to the FCC's more restrictive standard of 1.6 watts per kilogram averaged over one gram of tissue. *See id.* ¶ 11 n.35 (JA___). Some commenters argued that the FCC should propose to adopt the more recent limits. *See, e.g.*, CTIA Reply at 10-13 (JA___). But considering "the opinions provided by our expert sister agencies," the FCC declined. Order ¶ 13 (JA___).

"pointed to the presence among the public of debilitated or otherwise potentially vulnerable individuals for whom there is presently inadequate knowledge to set firm standards") (internal quotation marks omitted).[16]

C. The Limits Account for Risks Associated With Particular Types of Exposure.

1. Petitioners argue that the Commission's radiofrequency exposure limits fail to account for modulation and pulsation of radiofrequency energy and the risks of long-term and "peak" exposure to radiofrequency energy. Br. 4-5, 9, 19-20, 43, 63-64, 65.[17] That contention is incorrect. The Commission established the exposure limits to protect against all potential adverse health effects from radiofrequency exposure, regardless of the mechanism. The lowest levels of exposure that may cause known effects are due to thermal mechanisms, so the agency reasonably set

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[16] The International Commission on Non-Ionizing Radiation Protection's comprehensive overview of the literature, *see* n.14 *supra*, concludes that no adverse effects relevant to human health have been substantiated to particular body systems, biological processes, and diseases that Petitioners reference (Br. 17-18, 20-27). *See* 2020 ICNIRP Guidelines at 37-38 (brain physiology and related functions like oxidative stress-related processes), 40-41 (fertility, reproduction, and child development), 41-42 (cancer).

[17] Petitioners also suggest (Br. 19) that the exposure limits fail to account for the frequency on which radiofrequency energy is transmitted. They acknowledge, however, that the maximum permitted exposure under the limits is frequency dependent. Br. 6 (citing 47 C.F.R. § 1.1310(b)); *see* FCC, OET, *Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields*, OET Bulletin No. 56 at 13 (4th ed. Aug. 1999), https://www.fcc.gov/general/oet-bulletins-line#56, (last visited Sept. 18, 2020).

the limits based on thermal effects. These limits protect against any other effects that might occur at higher exposure levels.

The standard-setting bodies whose guidelines are incorporated into the radiofrequency exposure limits considered modulation and pulsation, as well as long-term and peak exposure, in promulgating their guidelines. *See* 28 FCC Rcd at 3577-78 ¶ 224 (summarizing treatment of "peak pulsed [radiofrequency] fields" by standard-setting bodies); *Cellular Phone Taskforce*, 205 F.3d at 90 (standard-setting bodies concluded that the existence of modulation effects was not substantiated); *1996 Order*, 11 FCC Rcd at 15130 ¶ 16, 15134-35 ¶ 28 (adopting limits based on National Council on Radiation Protection and Measurements guidelines for frequencies based on EPA argument that those guidelines "would better protect the public from potential long term effects of [radiofrequency] exposure at higher microwave frequencies"); ANSI/IEEE C95.1-1991 at 6, 8-9, 17, 23-24; *see also* OET Bulletin No. 56 at 8 ("there has been no determination that [non-thermal] effects might indicate a human health hazard, particularly with regard to long-term exposure."). The scientific consensus regarding these matters has not changed.[18]

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[18] The International Commission on Non-Ionizing Radiation Protection's comprehensive overview of the literature, *see* n.14 *supra*, "considers the potential for different types" of non-thermal radiofrequency exposure to adversely affect

2. Contrary to Petitioners' suggestion (Br. 19-20, 64, 65), the radiofrequency exposure limits expressly address the risk of simultaneous exposure from multiple radiofrequency radiation sources. The combined radiofrequency energy from all fixed transmitters at any location must be aggregated to evaluate compliance with the limits. 47 C.F.R. § 1.1307(b)(3). If the limits are exceeded "due to the emissions from multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce" radiofrequency radiation "that exceed[s] 5% of the ... exposure limit," including transmitters that are otherwise exempt from routine evaluation. *Id.*; *see Cellular Phone Taskforce*, 205 F.3d at 94.

D. The FCC Reasonably Addressed Developments in Wireless Technology.

Petitioners mistakenly contend that the FCC ignored the next generation of wireless communications services (known as "5G") and other technological developments in radiofrequency energy emitting devices. *See* Br. 32-42, 65; Amicus Brief of NRDC, *et al.* 15. The FCC recognized that next generation wireless networks involve deployment of transmission facilities that are smaller in size but greater in number than existing facilities, and that may be located near

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health, including continuous and pulsed radiofrequency energy "and both acute and chronic exposures." 2020 ICNIRP Guidelines at 37.

publicly accessible areas. *See, e.g.*, Order ¶ 26 (JA___). Contrary to Petitioners' argument (Br. 35), however, there was no need to address network "densification" in connection with the FCC's inquiry regarding the radiofrequency exposure limits. The limits directly address concerns that the public will be exposed to more radiofrequency energy as a result of next generation wireless network deployment by limiting simultaneous exposure from multiple radiofrequency sources, as discussed in the preceding section. In other words, Petitioners misconstrue the existing exposure limits.

In all events, the Commission did not ignore the impending deployment of next generation wireless networks. In a separate portion of the decision that Petitioners do not challenge, the FCC updated procedures for evaluation of whether FCC-authorized facilities and equipment complies with the exposure limits "to ensure that the public is adequately protected as new technologies, like 5G, flourish and more transmitters are deployed." Order ¶ 26 (JA___); *see id.* ¶ 21 (JA___). For example, the FCC replaced service-based exemptions from routine evaluation requirements for facilities that clearly comply with the limits with criteria that apply to all communications services uniformly, concluding that doing so would promote more "*consistently reliable* compliance with the existing exposure limits." *Id.* ¶¶ 26 (JA___) (emphasis in original); *see id.*¶¶ 34, 53 (JA___,

___).[19] In another unchallenged portion of the decision, the FCC proposed rule changes to further address wireless technological developments, again without proposing to change the exposure limits. *Id.* ¶¶ 119-47 (JA___-___).

Petitioners further suggest that the Commission ignored evidence of adverse health effects from existing wireless communications towers, cell phones, Wi-Fi technology, and "smart meters." Br. 32-42. But the level of radiofrequency exposure associated with any given service or equipment "is a function of the power and frequency of the [radiofrequency] transmission, a person's distance from the source, and the duration of the exposure." Order ¶ 18 (JA___). As set forth above, the FCC rationally concluded that the weight of scientific evidence does not support the existence of adverse health effects from radiofrequency

[19] The FCC's approach stands in contrast to the one the Court criticized in *United Keetoowah Band of Cherokee Indians in Oklahoma v. FCC*, 933 F.3d 728, 744 (D.C. Cir. 2019) (FCC "mischaracterize[ed]" 5G transmitters' "footprint" and "did not adequately address … the possible benefits of retaining review" of 5G deployments). In particular, the FCC in the Order rejected a broad exemption from its routine evaluation procedures for next generation or "small cell" transmitters. Order ¶ 53 (JA__). "The fact that small cell ... transmitters are 'building mounted' today does not preclude persons from having access to the front of antennas that could previously be presumed to always be distant from people, ... and the actual distance from potential human presence should be taken into consideration." *Id.*; *see id.* ¶ 54 (JA__) (rejecting relaxed routine evaluation procedures for "'transmitters located on structures where access can more readily be controlled'" because "adjacent spaces, like sidewalks, yards, or rights-of-way, may be accessible").

exposure below the FCC's limits, regardless of the service or equipment at issue. *See also* CTIA Reply at 19 n.78 (JA___) ("separate smart meter exposure restrictions are not supported by the scientific consensus and are unnecessary.") (citing Joint Testimony of William H. Bailey, Ph.D. & Yakov Shkolnikov, Ph.D., Docket No. 2011-00262 at 51 (Maine Pub. Utils. Comm'n Sept. 19, 2012) (reviewing the scientific literature regarding smart meters)).[20]

II. THE FCC REASONABLY DECLINED TO PROPOSE NEW PROCEDURES FOR MEASURING RADIOFREQUENCY EXPOSURE FROM CELL PHONES.

Petitioners also challenge the Commission's decision not to propose new rules for evaluating whether cell phones comply with the exposure limits. Br. 42-47, 72-75; *see* Order ¶ 14 (JA___). That decision is subject to the same "'extremely limited and highly deferential'" standard of review as the decision not to propose new exposure limits. *Multicultural Media, Telecom and Internet*

[20] Petitioners also argue that exposure to non-thermal levels of radiofrequency energy leads to environmental harm in the form of damage to animals and ecosystems. Br. 47-49, 65; Amicus Brief of NRDC, *et al.* at 27-28. But commenters cited the views of expert bodies that the International Commission on Non-Ionizing Radiation Protection guidelines for the protection of human health, which are "fundamentally similar" to the FCC's exposure limits, 28 FCC Rcd at 3504 -05 ¶ 13, "'are also protective of the environment.'" MMF Comments 100-01 (JA___) (quoting Foster KR, Osepchuk JM, and Repacholi MH, 2002, *Environmental impacts of electromagnetic fields from major electrical technologies*, and Environmental Health Perspectives and International EMF Project, Information Sheet, February 2005 Effects of EMF on the Environment).

Council, 873 F.3d at 937 (quoting *Massachusetts v. EPA*, 549 U.S. at 527-28). The FCC's decision easily satisfies that standard, as the Commission "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Baltimore Gas & Elec. Co.*, 462 U.S. at 105.

a. Before any entity can sell radiofrequency energy emitting devices in the United States, it must apply to the FCC for authorization to do so. 47 C.F.R. § 2.803. Applicants must demonstrate that their phones comply with the FCC's exposure limits by submitting test results performed by accredited testing laboratories whose work is reviewed by FCC-designated certification bodies. *See* 47 C.F.R. § 2.960. The Commission has adopted detailed procedures to evaluate compliance with its exposure limits by testing or computer modeling of the radiofrequency radiation emitted by FCC-authorized equipment. *See* 47 C.F.R. § 2.1093. The evaluation process relies in large part on standards promulgated by recognized standard-setting bodies, which are set forth in technical bulletins and the FCC's Laboratory Knowledge Database, and updated "as information and analysis becomes more readily available." 28 FCC Rcd at 3585 ¶ 244; *see id.* at 3585-87 ¶¶ 244-47; 47 C.F.R. §§ 1.1307, 2.1091, 2.1093; FCC Knowledge Database Publication 447498 (Oct. 23, 2015) (KDB 447498), https://www.fcc.gov/general/equipment-authorization-measurement-procedures (last visited Sept. 18, 2020).

The Commission-approved testing procedures employ a "specific anthropomorphic mannequin" for measuring the head's exposure to radiofrequency radiation from cell phones. 28 FCC Rcd at 3586 ¶ 245 n.434.[21] To account for other ways in which cell phones are used, such as "using a headset while the device is in a pocket, holster, or clip," the procedures "a flat body model," *id.* at 3586 ¶ 248 n.441, and call for a separation distance from the body of "up to 2.5 [centimeters] (about one inch)." *Id.* at 3587 n.441. The selected distance from the body "must be clearly explained" in the test report. KDB 447498 at 11; *see* 28 FCC Rcd at 3587 ¶ 250 ("Portable devices must comply with the localized [radiofrequency exposure] limits as they are normally used.").

In response to the notice of inquiry, some commenters argued that the Commission should require testing with no separation from the body because some users carry cell phones that way. Order ¶ 14 (JA ___). The FCC declined to propose such a requirement. *Id.* As the agency explained, "any potential dangers" from using phones with no separation from the body are "mitigated" by the fact that the phones are tested against the head "at maximum power, even though they are not consistently operated at such power levels." *Id*. In addition, "actual testing"

[21] The mannequin is "a special head mannequin with a simulated plastic pinna (outer ear)" that "is used to simulate the separation distance from the head." 28 FCC Rcd at 3586 ¶ 245 n.434, 3587 ¶ 248 n.441.

distances "tend to be less than" 2.5 centimeters "for many devices. For example, phones with tethering capabilities"[22] "are tested at a maximum separation distance from" the body of one centimeter. *Id.* Moreover, the Commission emphasized, the radiofrequency exposure limits "are set with a large safety margin," so even if the phone is used very close to the body, any increase in exposure "would still be well below levels considered to be dangerous." Order ¶ 14 (JA___).

b. Petitioners challenge two principal aspects of the FCC's decision. First, they contend that the testing procedures for cell phones should be revised to measure non-thermal effects. Br. 72; *see id.* 42-43, 45. But non-thermal effects do not furnish a basis for revision because, as discussed above, the weight of the scientific evidence does not support the existence of such effects.[23]

Second, Petitioners contend that the procedures understate radiofrequency exposure from cell phones. They challenge the FCC's failure to propose correction of purported inaccuracies in the model used for testing the head's exposure to radiofrequency radiation, and the FCC's decision not to require testing of cell

[22] Tethering is the ability to share a cell phone's Internet connection with computers or other devices through Wi-Fi or other means.

[23] Petitioners' dispute (Br. 74) with the magnitude of the safety margins incorporated into the exposure limits fails for a similar reason. The FCC was not required to retread the same ground because some commenters disputed the scientific underpinnings of the limits the Commission adopted in 1996.

phones with no separation from the body. Br. 72-75; *see id.* 42-47. These contentions lack merit.

Petitioners misconstrue the agency's recognition that the mannequin is unrealistic in some respects, *see* 28 FCC Rcd at 3585-86 ¶ 245 (mannequin "does not model children, tissue layers, or a hand holding the device but … was designed to be conservative relative to these factors."), to suggest that using the mannequin renders the testing procedures inaccurate or misleading. *See* Br. 72 n.215 and accompanying text. The agency did not ignore "relevant evidence." *Id.* at 73. On the contrary, the Commission recognized that there was debate as to whether "dosimetric (*e.g.*, higher conductivity of skull and brain tissues in children's heads) or anatomical differences … in children could result in unacceptably high exposures depending on use conditions." Order ¶ 15 (JA___). But the FCC did not find enough evidence in the record to call the testing procedures into question. *See id.* (noting the FDA's position that the "scientific evidence does not show a danger to any users of cell phones from [radiofrequency] exposure.") (internal quotations and citations omitted); *id.* at nn.50, 53 (emphasizing that the testing procedures represent "a conservative case 'for men, women, and children' alike"); *see also* MMF Comments at 101-02 (JA___) (the mannequin produces "'a conservative estimate of [specific absorption rate] in the head and assures compliance'" with the exposure limits) (quoting Beard et al., *Comparisons of computed mobile phone*

induced SAR in the SAM phantom to that in anatomically correct models of the human head, IEEE Transactions on Electromagnetic Compatibility Vol. 48, pgs. 397-407 (2006)). Under these circumstances, the FCC's decision not to propose overhauling the testing procedures was reasonable. *See EMR Network*, 391 F.3d at 273-74 (no basis for overturning FCC refusal to initiate rulemaking absent evidence that "'a significant factual predicate of a prior decision on the subject has been removed.'") (quoting *WWHT*, 656 F.2d at 819).

Petitioners argue (Br. 46) that the mannequin "erroneously assumes all human tissue in the head contains uniform electrical properties." Not so. The mannequin uses homogeneous liquid to simulate the electrical properties of tissue in an actual human head, accounting for variations between and among adults and children. *See* KDB 447498; IEEE Std 1528-2013; *see also* Drossos, et al., *The Dependence of Electromagnetic Energy Absorption Upon Human Head Tissue Composition in the Frequency Range of 300–3000 MHz*, IEEE Transactions on Microwave Theory and Techniques, Vol. 48, No. 11, p. 1994 (Nov. 2000) (explaining that parameters on which the mannequin is based "simulate the maximum absorption of the worst-case tissue composition"), https://doi.org/10.1109/22.884187 (last visited Sept. 21, 2020).

Petitioners' argument (Br. 45-46) that the mannequin underestimates radiofrequency exposure "in specific brain regions, especially for adults with heads

smaller than the [] model and children," also lacks merit. If anything, the mannequin tends to *overestimate* exposure of the heads for most adults and children because it is designed based on the dimensions of large adult heads.[24] Two large scale studies using "highly realistic exposure scenarios" and "[magnetic resonance imaging] based human head and hand models" for adults and children found the mannequin "to be conservative in the large majority of cases." J. Keshvari, *et al.* at 2991-92. Moreover, the FCC's testing procedures evaluate compliance with the radiofrequency exposure limits based on the highest measurement of the head's localized exposure. 47 C.F.R. § 1.1310(c). In other

[24] "The rationale for choosing a large head-[mannequin] size is the reduced distance between those components of the phone which carry the [radiofrequency] currents and the tissue simulating liquid in which the [radiofrequency exposure] is measured. As the [radiofrequency exposure] rapidly decays as a function of the distance, the [mannequin] can be regarded as a 'conservative method for estimating [radiofrequency exposure] in both large and small heads.'" J. Keshvari, et al., *Large scale study on the variation of RF energy absorption in the head & brain regions of adults and children and evaluation of the SAM phantom conservativeness*, Physics in Medicine & Biology, 61(8), p.2992 (2016), https://iopscience.iop.org/article/10.1088/0031-9155/61/8/2991 (last visited Sept. 19, 2020) (quoting *IEEE recommended practice for determining the peak spatial-average specific absorption rate (SAR) in the human head from wireless communications devices: measurement techniques*, Clause 5.1.2, ICES TC34/SC2, New York 10016-5997, USAIEEE 2013), https://standards.ieee.org/standard/1528-2013.html (last visited Sept. 19, 2020); Christ and Kuster, *Differences in RF energy absorption in the heads of adults and children*, Bioelectromagnetics, 26(S7), pp.S31-S44 (2005) (concluding that the available data does "not support the assumption that the energy exposure increases due to smaller heads"), https://doi.org/10.1002/bem.20136 (last visited Sept. 21, 2020).

words, the procedures conservatively assume that every location in the head receives the maximum level of exposure reflected in the test results.[25]

The FCC also reasonably declined to propose a requirement that cell phones be tested with no separation from the body. A number of factors, it explained, mitigate concerns that the testing procedures understate radiofrequency exposure for users who carry phones against their bodies. Order ¶ 14 (JA___). Measurement against the head "is performed under more extreme conditions than a user would normally encounter," because the procedures call for testing at maximum power, even though users do not operate phones at maximum power. *Id.* Phones also incorporate design features to ensure that they "operate well below maximum power for the vast majority of the time." *Id.* n.47 (JA___). In addition, although the procedures provide for separation from the body of *up to* 2.5 centimeters, they call for less separation in many cases. *Id.* ¶ 14 (JA___). "For example, phones with tethering capabilities (*i.e.*, 'hotspot mode') are tested at a maximum separation distance from" the body of one centimeter. *Id.*; *see* 28 FCC Rcd at 3587-88 ¶ 250

[25] The "surface of the brain is located farther from the antenna than the surface of the head," so the level of radiofrequency exposure "for the brain is always smaller than that for the head as a whole." Foster and Chou, *Response to "Children Absorb Higher Doses of Radio Frequency Electromagnetic Radiation From Mobile Phones Than Adults" and "Yes the Children Are More Exposed to Radiofrequency Energy From Mobile Telephones Than Adults"*, IEEE Access, pg. 5323 (2016), https://ieeexplore.ieee.org/document/7579119 (last visited Sept. 19, 2020).

("we have established evaluation procedures for newer technologies with reduced body-worn separation distances as small as 0.5 centimeters."); KDB 447498 at 11 ("Devices that are designed to operate on the body of users" "must be tested" at a distance from the body of five millimeters or less.)

Further, the exposure limits incorporate "a large safety margin." *Id.*; *see* 28 FCC Rcd at 3588 ¶ 251 ("The limits were set with a large safety factor, to be well below a threshold for unacceptable rises in tissue temperature."). In light of these factors, the FCC reasonably declined to propose a new requirement, and instead decided to continue to be "guided by good engineering practice." *Id.* at 3585 ¶ 244. This Court should give "considerable deference" to the agency's decision in making "highly technical" judgments of this nature. *Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 233 (D.C. Cir. 2008) (quoting *MCI Cellular Tel. Co. v. FCC*, 738 F.2d 1322, 1333 (D.C. Cir. 1984)); *see NTCH,* 950 F.3d at 881.

III. THE FCC HAD NO DUTY UNDER NEPA TO SUPPLEMENT ITS ENVIRONMENTAL IMPACT STATEMENT.

Petitioners argue (Br. 75-80) that the challenged decision not to propose new radiofrequency exposure limits required the Commission to prepare an environmental impact statement. Petitioners misconstrue NEPA and misrepresent the record. The agency's decision not to consider revised exposure limits was not a major federal action "significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). And in reviewing the Commission's decision

not to prepare an environmental impact statement, this Court applies the APA's deferential standard of review – the decision "can be set aside only upon a showing that it was 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'" *DOT v. Pub. Citizen*, 541 U.S. at 763 (quoting 5 U.S.C. § 706(2)(A)).

The FCC previously prepared the equivalent of an environmental impact statement when it initially adopted the radiofrequency exposure limits. *Cellular Phone Taskforce*, 205 F.3d at 94-95 (rejecting NEPA challenges to the original exposure limits). In doing so, the agency "functionally" satisfied NEPA's procedural requirements "in form and substance." *Id.* As in *EMR Network*, the Commission's decision not to propose new exposure limits in this case involved "no 'ongoing' federal action, and no duty to supplement the agency's prior environmental inquiries." *EMR Network*, 391 F.3d at 272 (quoting *Norton v. S. Utah Wilderness All.*, 542 U.S. 55, 72-73 (2004) (*SUWA*)). In all events, the FCC had no duty to supplement under NEPA because new information regarding the biological effects of radiofrequency exposure does not provide "'a *seriously* different picture of the environmental landscape.'" *Mayo*, 875 F.3d at 16 (quoting *City of Olmsted Falls v. Fed. Aviation Admin.*, 292 F.3d 261, 274 (D.C. Cir. 2002)). The agency complied with NEPA.

A. There Is No "Ongoing Federal Action" Regarding the Radiofrequency Exposure Limits.

Agencies must supplement environmental impact statements in response to "'significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.'" *EMR Network*, 391 F.3d at 272 (quoting 40 C.F.R. § 502.9(c)(1)(ii)(2017)). As the Supreme Court clarified in *Marsh v. Oregon Nat'l Res. Council*, *490* U.S. 360 (1989), "this duty to supplement requires agencies to take a hard look at the environmental effects of their planned action, even after a proposal has received initial approval when (1) there remains major Federal action to occur, and (2) the new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered." *W. Org. of Res. Councils v. Zinke*, 892 F.3d 1234, 1242 (D.C. Cir. 2018) (internal quotations and citations omitted). Here, the Commission did not have to supplement its earlier analysis because no major federal action remained under the first requirement. The radiofrequency exposure limits were not subject to a "still pending decisionmaking process." *Marsh*, 490 U.S. at 374.

In *Marsh*, the Supreme Court considered whether the Corps of Engineers had a duty to supplement its earlier environmental analysis one third of the way through construction of a dam after the Corps received new information suggesting that the dam could cause more severe environmental harm than had been

anticipated in its earlier analysis. Circumstances here are markedly different. Unlike the dam in *Marsh*, the Commission completed its review of the radiofrequency exposure limits back in 1996, so there was no duty to take a "hard look" at alleged new information regarding the health effects of radiofrequency exposure. *EMR Network*, 391 F.3d at 272.

Indeed, the Supreme Court has declined to apply *Marsh* in similar circumstances. In *SUWA*, 542 U.S. at 72-73, the Court "declined to apply *Marsh* where the federal action in question was approval of a land use plan [because,] [u]nlike the dam in *Marsh*," approval of the land use plan already "was complete when the new information was received." *EMR Network*, 391 F.3d at 272. This Court previously reasoned that the radiofrequency exposure limits, "having been adopted," provided "no 'ongoing' federal action, and no duty to supplement the agency's prior environmental inquiries." *Id.* The same analysis governs the outcome here.

Petitioners contend (Br. 78) that the radiofrequency exposure limits continue to impact public health and safety, thus requiring supplemental environmental analysis. But NEPA imposes no such requirement. "Neither *Marsh* nor *SUWA* looked to decisions made pursuant to the relevant action in determining whether the duty to supplement applied." *Zinke*, 892 F.3d at 1243. The duty to supplement instead turned on "the status of the action itself." *Id.* In *SUWA*, "the *approval* of

the land management plan was the relevant 'major Federal action.' The action thus terminated with the plan's approval, and there was no duty to supplement … after that point." *Id.* In other words, it "did not matter that the plan continued to govern actions that took place after the approval." *Id.* The same is true here. For purposes of the duty to supplement earlier analysis, it does not matter that the radiofrequency exposure limits remain in effect. The Commission had no duty to supplement its earlier analysis of an agency action already taken. *See id.*

Nor does the Commission's refusal to initiate a rulemaking to propose new radiofrequency exposure limits to protect against non-thermal effects trigger a duty to supplement. *See EMR Network*, 391 F.3d at 272. *EMR Network* involved the denial of a rulemaking petition, whereas here the decision not to initiate a rulemaking was based on the record in response to the notice of inquiry. In both cases, however, the agency decision involved a refusal to reopen the already-adopted radiofrequency exposure limits. Just as in *EMR Network*, "the regulations having been adopted, there is … no 'ongoing' federal action, and no duty to supplement the agency's prior environmental inquiries." *Id.*[26]

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[26] Petitioners' reliance (Br. 75) on *American Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027, 1033 (D.C. Cir. 2008), is misplaced. There, the Court rejected the agency's "demand for definitive evidence of significant effects" as inconsistent with NEPA, which requires an environmental assessment "when an action 'may' have a significant environmental effect." *Id.* In contrast, here the agency already

B. New Information Has Not Changed the Scientific Consensus That the Radiofrequency Exposure Limits Are Safe.

Even if this Court were to conclude that a major federal action remains pending, there is still no duty to supplement under *Marsh*. To satisfy the second requirement, the new information must provide "a *seriously* different picture of the environmental landscape." *City of Olmsted Falls*, 292 F.3d at 274 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir. 1984)); *Mayo*, 875 F.3d at 16. Here, the picture has not changed.

Weinberger is particularly instructive. In that case, the Navy had prepared an environmental impact statement analyzing human exposure to extremely low frequency electromagnetic radiation, which was to be used in a Navy submarine communications project. *Weinberger*, 745 F.2d at 415. The district court ordered the Navy to update the environmental impact statement in light of new research on the biological effects of such radiation. *Id.* The Seventh Circuit reversed, holding that an agency need not update its environmental impact statement simply because it is presented with information that "may be worthy of further inquiry or may be considered important research." *Id.* at 420. The information must present "a seriously different picture" of the proposed action's environmental impact that was

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had fulfilled its NEPA duties when it adopted the radiofrequency exposure limits. *Cellular Phone Taskforce*, 205 F.3d at 94-95.

"not adequately envisioned" in the initial statement. *Id.* at 424. "Not every new publication, … or even a stack of new articles, will necessarily meet that test." *Id.*

As discussed above, the Commission based its decision not to propose new radiofrequency exposure limits on the fact that the information developed since it had adopted the limits has not changed the scientific consensus that the limits remain safe and adequate to protect the public health.[27] The FDA recommended maintaining the existing limits, and no agency with regulatory responsibility or expertise in this area advised otherwise. Order ¶¶ 10, 11 (JA__); *see Marsh*, 490 U.S. at 384 ("The concerns disclosed … apparently were not sufficiently serious to persuade [the state agency] to abandon its neutral position"). And standard-setting bodies have long maintained radiofrequency exposure guidelines based on the avoidance of thermal effects. *See* 28 FCC Rcd at 3575-76 ¶¶ 218, 220. Petitioners have not shown that non-thermal effects are any less "controversial" than in the past. *Cellular Phone Taskforce*, 205 F.3d at 90; *see* p.29.

[27] Accordingly, Petitioners' argument (Br. 77) that "the *Order* essentially establishes new [exposure limits] as they are based on an entirely new administrative record which did not exist in 1996" lacks merit.

In sum, the record before the Commission in response to the notice of inquiry did not present a "*seriously* different picture," but instead the same picture that the Commission had confronted in the past. *Mayo*, 875 F.3d at 16.[28]

IV. PETITIONERS' ADDITIONAL ARGUMENTS ARE NOT BEFORE THE COURT AND ARE WITHOUT MERIT.

A. The Commission Properly Did Not Address the ADA and FHA.

1. Petitioners contend that the Commission "erred by not addressing . . . [t]he question" whether the agency's radiofrequency regulations "preempt . . . obligations" under the Fair Housing Act (FHA) and the Americans with Disabilities Act (ADA). Br. 82; *see also* Br. 91-95. But no commenter in this proceeding asked the FCC to do so. Because the Communications Act provides that a petition for reconsideration is a "condition precedent to judicial review" of arguments on which the Commission "has been afforded no opportunity to pass,"

[28] Amici raise NEPA arguments that Petitioners did not raise in their opening brief. *See* Amicus Br. of Dan and Catherine Kleiber 8-10 (FCC must prepare an environmental impact statement due to "the vastly disparate energy footprint of wired vs. wireless technologies and the implications for the future survival of the human race."); Amicus Br. of NRDC, *et al.* 17-19 (arguing that a portion of the decision on review that Petitioners did not challenge violates NEPA and circumvents the Court's decision in *United Keetoowah Band*, 933 F.3d at 728). These arguments are barred. *Prison Legal News v. Samuels*, 787 F.3d 1142, 1147 n.6 (D.C. Cir. 2015) ("The court will not entertain an argument made for the first time on appeal by an amicus."); *Cook v. Food & Drug Admin.*, 733 F.3d 1, 5-6 (D.C. Cir. 2013) ("ordinarily 'we would not entertain an amicus' argument if not presented by a party'") (quoting *Michel v. Anderson*, 14 F.3d 623, 625 (D.C. Cir. 1994)); *Eldred v. Ashcroft*, 255 F.3d 849, 850-51 (D.C. Cir. 2001).

47 U.S.C. § 405, this argument is not properly before this Court. *See*, *e.g.*, *NTCH, Inc. v. FCC*, 841 F.3d 497, 508 (D.C. Cir. 2016) (under 47 U.S.C. § 405(a), "the FCC must be 'afforded [an] opportunity to pass' on all arguments made to a court").

None of the comments that Petitioners cite (Br. 81 & n.223) asks the Commission to address the circumstances under which a plaintiff may properly assert ADA or FHA remedies against radiofrequency sources that comply with the Commission's exposure limits. "[V]ague allusions" to the ADA "do not serve to satisfy the requirements of section 405(a)." *NTCH*, 841 F.3d at 508.[29] Neither do pleadings from state proceedings, re-filed as comments before the Commission.[30] "The Commission need not sift pleadings and documents to identify arguments that are not stated with clarity." *FiberTower Spectrum Holdings, LLC v. FCC*, 782 F.3d 692, 696–97 (D.C. Cir. 2015).

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[29] *See, e.g.*, Testimony of Patricia Burke at 1, (undated), https://ecfsapi.fcc.gov/file/1093087536094/FCC%20Testimony%20Patricia%20Burke.pdf (Br. 81 & n.223) (JA __) (stating without citation or substantive argument that "[u]ntil the US takes steps to insure that the conflict between the Americans with Disabilities Act and the Telecom Act of 1996 are resolved, any further action by the FCC to increase the radio frequency exposure of the citizen population is an assault on the human rights codified by the United Nations").

[30] *See, e.g.*, Opening Brief of Southern Californians for Wired Solutions to Smart Meters, Application 11-03-014 (July 19, 2012), https://ecfsapi.fcc.gov/file/7022311487.pdf (Br. 81 & n.223) (JA __).

Contrary to Petitioners' claims (Br. 81), the cities of Boston and Philadelphia did not "s[eek] clarification" of this issue; they urged the Commission to "lead in advice to electrosensitive persons about prudent avoidance." Reply Comments of Cities of Boston and Philadelphia, ET Docket No. 13-84 at 7-8 (Nov. 18, 2013) (JA __). Chris Nubbe argued that the ADA requires "cities" to protect allegedly sensitive individuals. Comments of Chris Nubbe, ET Docket No. 13-84 at 4 (July 13, 2016) (JA __). But these comments neither expressly raise, nor "necessarily implicate[]," Petitioners' preemption argument, so that argument is "barred under § 405(a)." *FiberTower*, 782 F.3d at 697.[31]

2. Even if this Court concludes this argument was properly presented below, the Commission was not required to address the circumstances under which its radiofrequency exposure limits "preempt ADA/FHA accommodation obligations."

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[31] Petitioners do not argue that the Commission's radiofrequency exposure limits violate the ADA, and Amici's conclusory assertion of this argument (Kleiber Br. at 21-22) is not before the Court because it was "made for the first time on appeal by an amicus." *Prison Legal News*, 787 F.3d at 1147 n.6. The argument is also barred under 47 U.S.C. § 405(a) because it was made, at best, in vague allusions. *NTCH*, 841 F.3d at 508; *see, e.g.*, Comments of Cynthia Edwards, ET Docket 13-84 at 2-3 (Nov. 5, 2013), https://ecfsapi.fcc.gov/file/7022311409.pdf (cited at Kleiber Br. at 22 & n.42) (JA __) (asserting without citation that the ADA "recognizes electronic sensitivity as a legitimate disability and yet smart meters and digital meters are making their lives a living hell. This means that the FCC standards are allowing a violation of the ADA"). In any event, this argument is without merit. *Cf. Cellular Phone Taskforce*, 217 F.3d at 74 (holding that Title II of the ADA does not apply to the FCC).

Br. 82. An agency need not "discuss every item of fact or opinion included in the submissions made to it." *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993). The Commission initiated the notice of inquiry "to determine whether there is a need for reassessment of the Commission radiofrequency . . . exposure limits and policies." 28 FCC Rcd 3498 ¶ 5. It was not necessary for the Commission to determine the circumstances under which "discrete individuals" who feel "uniquely or especially harmed" by radiofrequency exposure, Br. 93, can assert rights under the ADA or FHA in order to resolve the question before it—whether the Commission's limits are set at the appropriate level to protect human health.[32] The APA obligates agencies to respond to those comments that raise "significant" issues, *Covad Commc'ns Co. v. FCC*, 450 F.3d 528, 550 (D.C. Cir. 2006), but it does not require an agency to discuss those matters that are outside the scope of the proceeding or at most highly collateral to it, *see Carlson*, 938 F.3d at 344.[33]

Petitioners cite no authority to the contrary. *Little Sisters of the Poor Saints Peter & Paul Home v. Pennsylvania*, 140 S. Ct. 2367, 2383 (2020) (cited at Br.

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[32] The Commission reasonably addressed the distinct question whether its radiofrequency limits sufficiently protect human health, including claims of sensitivity, as described *supra* at pages 33 to 41.

[33] The Commission also reasonably declined to address comments claiming that utility companies improperly denied requests for smart meter exemptions. *See, e.g.*, Kleiber Br. at 10-11 and comments cited therein. The Commission does not administer the state utility codes cited as the basis for such denials.

95), rejected the argument that an agency rulemaking could *not* consider the Religious Freedom Restoration Act after a series of Supreme Court decisions "all but instructed the Departments to consider RFRA going forward." No such instruction is at issue here. *WAIT Radio v. FCC*, 418 F.2d 1153, 1156 (D.C. Cir. 1969) (cited at Br. 93), stands for the premise that an agency cannot dismiss a "non-frivolous First Amendment contention . . . with the routine treatment that might suffice in the ordinary case." The Commission's decision does not implicate the First Amendment. And because the Commission did not delay issuing a notice of proposed rulemaking, *Pub. Citizen Health Research Grp. v. Brock*, 823 F.2d 626, 629 (D.C. Cir. 1983), and *Pub. Citizen Health Research Grp. v. Auchter*, 702 F.2d 1150, 1157-58 (D.C. Cir. 1983) (cited at Br. 95), are also inapposite.

3. Nor did the Commission "indirectly impl[y]" that its radiofrequency exposure limits "overrule, pre-empt or impliedly repeal all individual rights and remedies granted by other federal statutes like ADA/FHA." Br. 93. To be sure, the Commission confirmed that its limits would preempt certain *state* regulations and tort claims. *See* Order ¶ 6 n.5 (JA __), *id.* ¶ 114 nn. 306 & 308 (JA __). But the Commission's decision nowhere addresses the distinct question of when *federal* ADA or FHA remedies are available to those who claim radiofrequency sensitivity, and declining to do so was not arbitrary for the reasons set forth above.

Because the challenged decision does not implicate implied repeals, Petitioners' citations to cases addressing those doctrines (Br. 91-94) are inapposite.

B. Petitioners' Tort and Constitutional Arguments Are Not Before the Court and Are Without Merit.

The Commission reasonably addressed comments by individuals who object to radiofrequency exposure on the basis of purported non-thermal effects. *See* pp. 33-41 *supra*. The Commission was not required to provide additional responses to specific comments that claimed non-thermal radiofrequency exposure constitutes a tort, as Petitioners appear to contend (at Br. 80). *See, e.g.*, Comments of Kate Reese Hurd in ET Docket No. 13-84 at 4 (Oct 29, 2013) (JA __), https://ecfsapi.fcc.gov/file/7520953267.pdf (Br. 80 & n.221) (asserting that smart utility meters are a "permanent invasion" that constitutes "toxic trespass"). Even assuming that "passing reference[s]" to tort principles are properly before this Court, *but see GLH Commc'ns, Inc. v. FCC*, 930 F.3d 449, 455 (D.C. Cir. 2019) (citing 47 U.S.C. § 405(a)), Petitioners do not explain how these arguments are sufficiently "significant" or "relevant" to require a more specific response.[34] *Covad*, 450 F.3d at 550; *Carlson*, 938 F.3d at 344. In setting radiofrequency

[34] The only authority Petitioners cite for their conclusory invocation of tort principles is *Doe v. Dist. of Columbia*, 796 F.3d 96, 107 (D.C. Cir. 2015), a suit challenging the removal of adopted children from their home by a child protection agency. The decision affords no basis to conclude that radiofrequency exposure can constitute battery.

exposure limits, the Commission balances potential safety risks against "the requirement" to ensure telecommunications services are provided "in the most efficient and practical manner possible." *Cellular Phone Taskforce*, 205 F.3d at 92. Nothing in this framework requires the Commission to defer to or address state tort law. *See, e.g.*, *Farina v. Nokia Inc.*, 625 F.3d 97, 125-126 (3d Cir. 2010) (Commission's radiofrequency balance preempts conflicting state tort law).

Petitioners also do not identify any comments making the "property rights" and "bodily autonomy" arguments they raise for the first time here (Br. 88-91), and therefore these claims also are not properly before the Court. *See FiberTower*, 782 F.3d at 697. Even if they were preserved, however, the arguments lack merit.

Petitioners' vague invocations of property rights do not suggest any legal infirmity, nor that the Commission erred in failing to anticipate and address such arguments. *See Thompson v. Clark*, 741 F.2d 401, 408 (D.C. Cir. 1984) (Commission need not "analyse every issue or alternative raised by the comments, no matter how insubstantial"). Petitioners do not explain how radiofrequency exposure can constitute a taking under any recognized test. *See Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 538 (2005) (describing categories of takings claims). To the extent courts have considered radiofrequency-based takings claims, they have rejected them. *See Merrick Gables Ass'n, Inc. v. Town of Hempstead*, 691 F. Supp. 2d 355, 360-361 (E.D.N.Y. 2010) (dismissing complaint alleging that authorization

of radiofrequency-emitting equipment on utility poles constitutes a taking); *Santa Fe All. for Pub. Health & Safety v. City of Santa Fe*, No. CV 18-1209 KG/JHR, 2020 WL 2198120, at *8 (D.N.M. May 6, 2020), appeal filed, *Santa Fe All. v. City of Santa Fe*, No. 20-2066 (10th Cir.) (similar); *see also Barnett v. Carberry*, 420 F. App'x 67, 69 (2d Cir. 2011) ("no case establishes a constitutional or common-law privacy or property right to be free from" radiofrequency emissions). Petitioners' reliance on *United States v. Causby*, 328 U.S. 256, 267 (1946), is unavailing. The record evidence in that case established that an airport's flight path had reduced a property's market value and was tantamount to an easement. *Id.* at 267. Petitioners offer nothing of the kind here.[35]

The Commission did not err in failing to anticipate and address Petitioners' meritless "bodily autonomy" argument. None of the decisions Petitioners cite (Br. 89) involves radiofrequency exposure, and courts have repeatedly refused to extend those decisions to the circumstances presented by radiofrequency exposure.

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[35] Neither *Coll. Sav. Bank v. Fla. Prepaid Postsecondary Educ. Expense Bd.*, 527 U.S. 666, 673 (1999) (property entails the right to exclude) (cited at Br. 89), nor *Kyllo v. United States*, 533 U.S. 27, 40 (2001) (use of thermal-imaging device constitutes a Fourth Amendment "search") (cited at Br. 89), supports the premise that a "property-based right to exclude" prevents the Commission from authorizing radiofrequency emissions. Rather, the Supreme Court has long recognized that "[g]overnment hardly could go on" without affecting property. *Murr v. Wisconsin*, 137 S. Ct. 1933, 1943 (2017) (quoting *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 413 (1922)).

See Santa Fe All., 2020 WL 2198120, at *8 (collecting cases); *Barnett v. Carberry*, No. 3:08CV714(AVC), 2010 WL 11591776, at *8 (D. Conn. Mar. 16, 2010) (similar), *aff'd*, 420 F. App'x 67 (2d Cir. 2011). Courts in analogous contexts also have refused to find a constitutional "right to be free from the introduction of an allegedly contaminated substance." *Coshow v. City of Escondido*, 132 Cal. App. 4th 687, 709 (2005) (rejecting claim against fluoride in drinking water, and citing cases involving, *inter alia*, tobacco smoke); *MacNamara v. Cty. Council*, 738 F. Supp. 134, 142 (D. Del.), *aff'd*, 922 F.2d 832 (3d Cir. 1990) (finding, in case challenging location of electric substation, no "constitutionally protected liberty interest in a person's health").

Because radiofrequency exposure does not implicate liberty or property rights, Petitioners err in relying on *Jacobson v. Massachusetts*, 197 U.S. 11 (1905), which established that emergency health measures that "curtail constitutional rights" must allow exceptions in "extreme cases." *In re Abbott*, 954 F.3d 772, 784 (5th Cir. 2020) (Br. 91); *see also id.* at 786 (legislative discretion is "wide" in areas of "medical and scientific uncertainty"); *cf. Coshow*, 132 Cal. App. 4th at 710 (refusing to extend *Jacobson* to claim against fluoridated drinking water). And contrary to Petitioners' claims (Br. 91), nothing required the Commission to

address the circumstances under which an individual could assert these or other constitutional arguments in an as-applied challenge.[36] *See* 47 U.S.C. § 405(a).

CONCLUSION

The petitions for review should be denied.

Respectfully submitted,

Thomas M. Johnson, Jr.
General Counsel

Ashley S. Boizelle
Deputy General Counsel

Jacob M. Lewis
Associate General Counsel

/s/ William J. Scher

William J. Scher
Rachel Proctor May
Counsel

Federal Communications
Commission
Washington, D.C. 20554

Jonathan D. Brightbill
Principal Deputy Assistant Attorney
General

Eric Grant
Deputy Assistant Attorney General

Jeffrey Beelaert
Justin Heminger
Attorneys

United States
Department of Justice

September 22, 2020

[36] Petitioners' argument (at Br. 95) that the Commission should follow decisions concluding that "case-by-case claims are . . . outside [the] jurisdiction" of state utility commissions fails for the same reason; and in any event, the Commission's jurisdiction is not analogous to that of a utility commission. *See* 47 U.S.C. §§ 151, 152.

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William J. Scher
Counsel

Federal Communications Commission
Washington, D.C. 20554
(202) 418-1740

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I, William J. Scher, hereby certify that on September 22, 2020, I filed the foregoing Brief for Respondents with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the electronic CM/ECF system. Participants in the case who are registered CM/ECF users will be served by the CM/ECF system.

s/ William J. Scher

William J. Scher
Counsel

Federal Communications Commission
Washington, D.C. 20554
(202) 418-1740