Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Commission's Rules Governing the 896-901/935-940 MHz Band	)	WT Docket No. 17-200
	)	
	)	

To: The Commission

COMMENTS OF NEXTERA ENERGY, INC.

William P. Cox
Florida Power & Light Co.
700 Universe Boulevard
Juno Beach, Florida 33408
Will.P.Cox@fpl.com
Counsel for NextEra Energy, Inc.

Bryan N. Tramont
Timothy J. Cooney
Wilkinson Barker Knauer, LLP
1800 M Street, N.W., Suite 800N
Washington, D.C. 20036
(202) 783-4141

June 3, 2019

TABLE OF CONTENTS

EXECUTIVE SUMMARY

NextEra strongly opposes any rule changes that would reconfigure the 896-901/935-940 MHz band ("900 MHz band"), which is currently authorized exclusively for narrowband services, to insert an incompatible broadband technology in a 3/3 megahertz segment mid-band. The massive broadband reconfiguration process is championed by PDVWireless, a startup company with essentially no customers, no track record, and an unproven technology.

The 900 MHz band currently is utilized by many utilities to provide reliable voice and data communications that are essential for ensuring the safe, reliable, and secure delivery of energy and water services. The proposed reconfiguration would relegate incumbent narrowband operations that currently are spread across the band into small portions of the remaining spectrum. NextEra and other utilities need more 900 MHz narrowband spectrum, however, not less.

The Notice of Proposed Rulemaking ("NPRM") claims that it would "rely on purely voluntary mechanisms" to reconfigure the band, but these claims are brought into question by the 13 times that "mandatory relocation" is referenced. NextEra opposes rule changes (a) that are not truly voluntary for individual markets and (b) that do not fully protect the operations of incumbent site-based narrowband licensees choosing not to relocate. Introducing an incompatible technology into the band would cause interference extending across the remaining narrowband segments, and a mandatory broadband reconfiguration would block expansion possibilities for narrowband incumbents.

All this disruption would be for a small 3/3 megahertz broadband segment that even the NPRM acknowledges (¶ 12) "would have relatively limited capacity and speed compared to existing nationwide and regional 4G networks." A small broadband segment would not be the best and highest use of the 900 MHz band, and it may not be needed now that FirstNet/AT&T and Verizon Priority Access offer priority levels of broadband service with significantly more bandwidth.

Moreover, if the FCC were to mandate relocation, the Commission necessarily would "own" the transition process. The FCC would need to oversee the timing and implementation of the multi-year transition, the reimbursement of all the reasonable expenses of the incumbents, and confirmation that the displaced operators received comparable facilities and coverage.

The NPRM proposals for mandatory reconfiguration must be evaluated in the context of various Executive Orders that require the FCC to balance the need for regulation against the resulting burdens. Through its numerous comments and data-driven analyses filed to date, NextEra has demonstrated that the proposed broadband reconfiguration poses a great risk to massively disrupt and interfere with mission critical communications for its subsidiary Florida Power & Light ("FPL"). Specifically, NextEra has submitted two expert technical reports demonstrating that the insertion of a 3/3 megahertz broadband segment is not manageable for coordination and interference mitigation with narrowband services. Although the NPRM recognizes the need for a guard band to protect narrowband users in adjacent spectrum from the proposed broadband licensee, the NPRM inexplicably does not address whether incumbent licensees in the proposed two narrowband segments also need a guard band.

NextEra also submitted a cost-benefit analysis, which documented the transition costs and the enormous economic impact associated with any disruption of the 900 MHz band, as much as a billion dollars in Florida alone, which would slow down electric service restoration in the wake of hurricanes. The NextEra analysis addressed only portions of Florida and only the impacts on FPL and its customers. Once other users in Florida and across the nation are considered, the NPRM proposal easily satisfies the threshold established for the FCC's new Office of Economics and Analytics ($100 million of economic impact) for conducting a rigorous cost-benefit analysis.

NextEra supports the NPRM's proposal (¶ 38) that an "applicant will only be able to acquire a license for the new 3/3 megahertz broadband segment in a county where it either has reached an agreement to voluntarily relocate, or has demonstrated how it will provide interference protection to, all covered incumbents," with a couple of qualifications. First, the required demonstration of interference protection must be to the satisfaction of the affected incumbent 900 MHz licensee. Second, the licensed contours of narrowband incumbents extending into adjacent, non-transitioning counties must be properly accounted for and protected. Unless all 900 MHz narrowband incumbents in a market voluntarily agree that they are protected or agree to move to new spectrum, a broadband reconfiguration should not take place.

If the Commission nevertheless moves forward with its realignment proposal, narrowband systems must be fully protected by adopting the same interference standard used in the 800 MHz band realignment (-104 dBm at a mobile unit and -101 dBm at portable station). The Utilities Technology Council has also recommended adopting the 800 MHz interference parameters. In mixing broadband and narrowband together without a guardband, caution must be exercised in defining the interference criteria. Equipment used in the 900 MHz band can have sensitivities that are 15 dB below the -104 dBm interference level.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Commission's Rules Governing the 896-901/935-940 MHz Band	)	WT Docket No. 17-200
	)	
	)	

To: The Commission

COMMENTS OF NEXTERA ENERGY, INC.

NextEra Energy, Inc. ("NextEra"),[1] by its counsel and pursuant to Section 1.415 of the Commission's rules,[2] hereby submits its initial comments opposing the Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding.[3] The NPRM addresses the 896-901/935-940 MHz band ("900 MHz band"), which is currently authorized exclusively for narrowband wireless services and is used by NextEra and other energy companies for mission critical voice and data communications to provide safe and reliable electric service to tens of millions of Americans across the nation.

I. BACKGROUND

A. NEXTERA UTILIZES THE 900 MHZ BAND FOR CRITICAL ELECTRICAL SERVICE RESTORATION COMMUNICATIONS, AS

[1] NextEra is the parent company of Florida Power & Light Company ("FPL"), one of the largest electric utilities in the United States serving approximately 5 million customer accounts in Florida, and holds numerous FCC licenses as well as pending applications in the 900 MHz band. NextEra also owns Gulf Power Company, which serves more than 460,000 customers in eight counties throughout northwest Florida.

[2] 47 C.F.R. § 1.415.

[3] *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Notice of Proposed Rulemaking, FCC 19-18 (March 14, 2019) ("NPRM").

WELL AS FOR NUCLEAR PLANT OPERATIONS, PUBLIC ALERTS, AND SECURITY COMMUNICATIONS.

NextEra and its subsidiaries are the holders of numerous B/ILT licenses in the 900 MHz band. NextEra is an energy company that includes FPL, the largest Florida electric utility and third largest in the U.S. with approximately 5 million customer accounts serving an estimated 10 million people across nearly half of the state of Florida. NextEra's holdings also include a host of electricity generation, transmission, and retail assets in 27 states and Canada. Through its subsidiaries, NextEra Energy generates clean, emissions-free electricity from eight commercial nuclear power units in Florida, New Hampshire, Iowa, and Wisconsin. NextEra Energy Resources, LLC, together with its affiliated entities, is also the world's largest generator of renewable energy from the wind and sun.

FPL uses its 900 MHz band narrowband B/ILT licenses extensively and has invested commensurately. Specifically, FPL has invested $140 M in its existing Part 90 PLMR system**s**, including $59 M in the last three years. FPL employs its 900 MHz system for dispatch communications associated with electrical service restoration and maintenance including emergency notifications and disaster recovery communications; voice communications for nuclear power plant security operations required by Nuclear Regulatory Commission regulations;[4] nuclear siren system operations for public alerts within the 10 mile Emergency Protection Zone ("EPZ") of the Turkey Point and St. Lucie Nuclear Power Plants; smart grid energy efficiency monitoring; and electric distribution system controls. Degradation of this service would place electrical service workers at a safety risk, as the current system includes an emergency notification feature to alert dispatch command of any immediate risk that represents a

[4] 10 C.F.R. § 73.55.

threat to life and limb being experienced in the field. Because such communications affect public safety and the safety of FPL employees and contractors, they need to be operational 24 hours per day, seven days per week.

B. THE DOCKET NO. 17-200 RECORD TO DATE

As the NPRM explains, the 900 MHz band currently is designated for narrowband private land mobile radio ("PLMR") communications by Business/Industrial/Land Transportation ("B/ILT") licensees and for Specialized Mobile Radio ("SMR") providers.[5] The 900 MHz band consists of 399 narrowband (12.5 kilohertz) frequency pairs grouped into 10-channel blocks that alternate between SMR blocks that are geographically licensed by Major Trading Area ("MTA") and B/ILT blocks in which channels are assigned on a site-by-site basis. NextEra and other energy companies use the 900 MHz band for mission critical voice and data communications to provide safe and reliable electric service to tens of millions of Americans across the nation. The 900 MHz band is immediately below the Narrowband Personal Communications Service, which uses the spectrum at 901-902/940-941 MHz, most commonly for two-way paging and telemetry, such as the monitoring of utility meters.[6]

In 2017, the Commission released a Notice of Inquiry ("NOI") in this docket to examine whether any rule changes may be appropriate to create a broadband service in the 900 MHz band,[7] as suggested jointly by the Enterprise Wireless Alliance and pdvWireless, Inc.

---

[5] *Id.* ¶ 1.

[6] *Id.* ¶¶ 2-3.

[7] *See Review of the Commission's Rules Governing the 896-901/935-940 MHz Band; Realignment of the 896-901/935-940 MHz Band to Create a Private Enterprise Broadband Allocation; Amendment of the Commission's Rules to Allow for Specialized Mobile Radio Services Over 900 MHz Business/Industrial Land Transportation Frequencies,* Notice of Inquiry, 32 FCC Rcd 6421 (2017) ("*NOI"*).

(collectively, "EWA/PDV"). NextEra participated extensively in the proceeding, opposing the EWA/PDV proposal because it would adversely affect existing 900 MHz band site-based B/ILT users with comparatively little commensurate public benefit.[8] In addition to filing initial and reply comments on the NOI, NextEra submitted two technical reports and a cost-benefit analysis in support of its opposition.[9] The NPRM seems to have not provided appropriate appreciation to the numerous opponents to the broadband reconfiguration proposal,[10] while exaggerating support for reconfiguration. Specifically, the NPRM claimed "most commenters support, at least in principle, the creation of a 900 MHz broadband service"; but the NPRM cited in support of this claim only one set of comments that did not actually propose reconfiguring the 900 MHz band for broadband.[11] Similarly, although Duke Energy Corporation filed comments strongly

[8] NextEra also participated in and was a signatory to the filings by the Critical Infrastructure Coalition.

[9] *See* Letter from Bryan N. Tramont & Timothy J. Cooney, Counsel to NextEra Energy, Inc. to Marlene H. Dortch, Secretary, FCC, WT Docket No. 17-200, Attachment "The Economics of the 900 MHz Rebanding Proposal" prepared by the Brattle Group (filed Sept. 14, 2018) ("Brattle Group CBA"); Letter from Bryan N. Tramont & Timothy J. Cooney, Counsel to NextEra Energy, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 17-200, Attachments "Engineering Report" prepared by Gillespie, Prudhon & Associates, Inc. ("GP&A Report") and "A Study of Issues" prepared by Dan Harris, Senior Scientist, Harris Corporation (filed Sept. 21, 2018) ("Harris Report").

[10] Although the NPRM referenced the NextEra technical reports and cost-benefit analysis in separate footnotes, the NPRM did not address the issues raised in these reports, except in the most generic of terms.

[11] NPRM ¶ 5 n. 17, referencing Reply Comments of the Utilities Technology Council and GridWise Alliance, WT Docket No. 17-200, at 2 (filed Nov. 1, 2017) ("Utilities Technology Council Reply Comments"). In fact, these reply comments did not support reconfiguring the 900 MHz band for broadband but rather stated: "The position of UTC and the GridWise Alliance remains that utilities need access to licensed broadband spectrum in a frequency range below 1 GHz, but that utilities and other incumbents in the 900 MHz band must be protected from interference and be able to expand capacity for narrowband systems upon which they rely to maintain operational safety, security and reliability."

opposing any realignment of the 900 MHz band,[12] the NPRM incorrectly cited Duke Energy as suggesting "realigning the entire band to create a 5/5 megahertz broadband channel."[13] What Duke Energy actually stated was that "Rather than adopting the EWA/PDV proposal, Duke Energy proposes that . . . broadband spectrum be created in a sub-one GHz range other than the 896-901/935-940 MHz PLMR band."[14] In stating "[s]ome commenters unreservedly advocate adoption of EWA and PDV's realignment plan," the NPRM cited only a single commenter, one who is not a current licensee of the 900 MHz band (and thus one who would not be adversely affected by a reconfiguration).[15] In contrast, numerous commenters, both individually and as part of the Critical Infrastructure Coalition, filed in opposition to at least some significant aspects of the reconfiguration proposal.[16]

---

[12] Comments of Duke Energy Corporation, WT Docket No. 17-200, at 1 (filed Oct. 2, 2017) ("Duke Energy Comments").

[13] NPRM ¶ 20 & n.48.

[14] Duke Energy Comments at 4. After stating that "[t]he best and highest use of the 900 MHz band for the American public is the current use of this band, which provides discrete narrowband channels to support utilities' highly reliable PLMR voice and narrowband data communications," Duke Energy mentioned a two-step approach for converting to 5/5 megahertz broadband only "if the Commission is intent on reallocating the 900 MHz band." *Id*. at 7-8.

[15] NPRM ¶ 5 & n. 20, citing Comments of A Beep, LLC, WT Docket No. 17-200, at 1-2 (filed Oct. 2, 2017). Other commenters cited in the NPRM as supporting broadband reconfiguration that are not current licensees of the 900 MHz band include Western Farmers Electric Cooperative and Traverse City Light & Power, cited in footnotes 18, 19, and 21.

[16] *See, e.g.*, Comments of the Critical Infrastructure Coalition, WT Docket No. 17-200 (filed Oct. 2, 2017); Reply Comments of the Critical Infrastructure Coalition, WT Docket No. 17-200 (filed Nov. 1, 2017); Comments of the Association of American Railroads, WT Docket No. 17-200 (filed Oct. 2, 2017); Reply Comments of the Association of American Railroads, WT Docket No. 17-200 (filed Nov. 1, 2017); Duke Energy Comments; Comments of the Edison Electric Institute, WT Docket No. 17-200 (filed Oct. 2, 2017); Comments of Exelon Corporation, WT Docket No. 17-200 (filed Oct. 2, 2017); Comments of Lower Colorado River Authority, WT Docket No. 17-200 (filed Oct. 2, 2017); Reply Comments of Lower Colorado River Authority, WT Docket No. 17-200 (filed Nov. 1, 2017); Comments of the National Association of Manufacturers and MRFAC, Inc., WT Docket No. 17-200 (filed Oct. 2, 2017); Reply Comments

With this backdrop, the NPRM proposes to realign the 900 MHz band to create a broadband segment and to relegate narrowband operations to the remainder of the 900 MHz band, and leaving little opportunity for incumbents to grow their systems as their needs require and circumstances change. The NPRM proposes a paired three megahertz (3/3 megahertz) broadband segment in the middle of the 5/5 megahertz 900 MHz band at 897.5-900.5 MHz/936.5-939.5 MHz. This would leave two separate paired narrowband segments into which relocated narrowband incumbents would squeeze: a 1.5/1.5 megahertz segment (896-897.5/935-936.5 MHz) below the broadband segment and a .5/.5 megahertz segment (900.5-901/939.5-940 MHz) above the broadband segment.[17] The NPRM cites as a benefit of this proposed arrangement the 1.5 megahertz of separation between the broadband segment and the 894-896 MHz Air-Ground Radiotelephone Service/932-935 MHz fixed microwave systems spectrum, and 500 kilohertz of separation between the broadband segment and the 901-902/940-941 MHz Narrowband Personal Communications Service ("NPCS") spectrum.[18] The NPRM notes that the latter separation (*i.e.*, a guard band) benefits Sensus, Inc., an operator of metering systems in NPCS spectrum, which had warned of potential interference from placing the broadband segment immediately adjacent to its spectrum.[19] In contrast, narrowband PLMR communications, particularly for emergency service restoration, inexplicably are not afforded similar protection via a guard band.

---

of Space Data Corporation, WT Docket No. 17-200 (filed Nov. 1, 2017); Comments of the Utilities Technology Council, WT Docket No. 17-200 (filed Oct. 2, 2017); Comments of Westar Energy, Inc., WT Docket No. 17-200 (filed Oct. 2, 2017).

[17] NPRM ¶ 15.

[18] *Id.*

[19] *Id.*

To effectuate a broadband transition, the NPRM proposes, on the one hand, a "market-driven, voluntary exchange process" that would allow existing 900 MHz licensees to come together and mutually agree to a plan for transitioning the band for broadband use,[20] hinting that some markets may choose not to transition. On the other hand, the NPRM also indicates an underlying goal "to facilitate a nationwide realignment for broadband uses"[21] and solicits comment on a number of non-voluntary alternative mechanisms to mandate a transition to broadband.[22]

II. DISCUSSION

A. MANDATORY RECONFIGURATION WOULD UNDERMINE THE PUBLIC INTEREST.

The Commission should not mandate a reconfiguration of the 900 MHz band to create a broadband segment because that would adversely affect critical narrowband operations in certain markets, such as FPL's. The participants in each market should make a truly voluntary decision based on their individualized circumstances.

In this regard, continued access to 900 MHz band spectrum for narrowband applications is crucial for NextEra. For example, NextEra recently acquired Gulf Power and has applied to expand its 900 MHz system to this new service territory to facilitate inter-system coordination. This will be an additional $17 M investment. NextEra and its affiliates also are developing plans for future use of additional channels for Smart Grid energy efficiency monitoring and related

[20] *Id.* ¶¶ 25-26, ¶ 37.

[21] *Id.* ¶ 25.

[22] *See, e.g., id.* ¶ 38, ¶¶ 41-46, ¶¶ 48-49, ¶ 55.

controls for electric distribution systems. NextEra needs more narrowband channels in the 900 MHz band in its service territories, not less.

The critical need for reliable internal communications systems was illustrated in the recovery efforts after Hurricane Irma in 2017, the largest hurricane event FPL has ever faced. The powerful storm affected all 35 counties and 27,000 square miles of FPL's service territory, causing more than 4.4 million customers to lose power. FPL's massive Hurricane Irma restoration effort utilized a record workforce of nearly 19,500. Due to the robust design of FPL's narrowband deployment, 90% of FPL's critical dispatch communications capability was available within 12 hours of storm impact. In many cases this was the only communications available to field restoration workers. Commercial cellular communications were disrupted and then congested for many days after Irma made landfall. FPL's preparation and coordinated response, supported by its robust 900 MHz internal communications system, enabled the company to restore service to over two million customers in one day.[23]

The rapid restoration of utility service would not have been possible without the availability of FPL's hardened 900 MHz band voice dispatch system, which was used for 4.5 million transmissions to coordinate restoration operations. FPL estimates that use of its 900 MHz PLMR radios for dispatch and emergency communications saves the company 1 to 2 days in total restoration time, compared to estimated restoration without the use of 900 MHz communications. Given the estimates of the daily cost to the company for electric service restoration following a major storm as roughly $40 to $50 million, use of the 900 MHz narrowband B/ILT network saves the company between $40 and $100 million during each major

[23] In comparison to Hurricane Wilma, a Category 3 storm in 2005 where the average customer outage lasted for over five days, the average outage for customers affected by Hurricane Irma was roughly two days, a 60% improvement.

recovery effort. As the total GDP within the FPL service territory averages over $1 billion per day, the expedited service restoration time has a positive economic impact on the entire affected service territory, allowing for the delivery of public services, enabling businesses within the territory to reopen their doors, and stemming further economic losses while helping to maintain public safety and stability. Customers that benefit from accelerated restoration include hospitals, police, fire and rescue services, and state and local government, as well as federal facilities.

As NextEra has discussed in its prior submissions in this docket, a reconfiguration to mandate broadband operations in the 900 MHz band would result in increased interference and expenses and would thwart NextEra's future expansion and optimization of critical narrowband operations in its markets.

NextEra previously submitted two spectrum engineering reports, one by its equipment vendor Harris Corporation and the other by an independent engineering consultant firm, Gillespie, Prudhon & Associates, Inc. ("GP&A").[24] Although the NPRM proposal for the broadband reconfiguration differs slightly from the EWA/PDV proposal that was the subject of the two reports, the essential points of the two studies remain valid:

- The NPRM proposal to reduce the bandwidth available for narrowband operations from 5 MHz to 2 MHz may not provide sufficient spectrum for FPL to replicate its existing operations.[25]

- The Harris and GP&A Reports each show that the effective narrowband allocation is even smaller than the nominal 2 MHz.[26] A reconfigured band can be expected to reduce the coverage of an existing LMR communications system through two primary

[24] *See* n.9, *infra*.

[25] Harris Report, n. 9 *infra*, at 3-10;

[26] GP&A Report, n. 9 *infra*, at 5; Harris Report at 4, 20.

mechanisms: interference caused by LTE broadband sites and closer spacing of LMR transmitter carriers.[27]

- Within the proposed compressed narrowband allocation, frequency planning and network design would be far more difficult in terms of co-channel re-use, adjacent channel re-use, and combiner spacing requirements. Closer spectrum spacing will require users to deploy more complex, higher loss antenna systems, which will increase the number of required sites by 200% or more. The GP&A Report estimates at least 45 new sites would be needed to replicate FPL's existing coverage.[28]

- The lack of a proposed guard band between broadband LTE and site-based narrowband 900 MHz operations also raises major concerns. A band structure without a guard band was considered and rejected in the 700 and 800 MHz bands.[29] The adjacent band interference issues are likely to be exacerbated over time as additional narrowband requirements would need to be squeezed into an already constrained narrowband segment.

- The bifurcation of the residual 900 MHz narrowband allocation into two segments on either side of the LTE broadband signal effectively maximizes potential LTE interference to site-based narrowband operations.[30] The insertion of a required guard band would further undermine the efficient use of spectrum in the band.[31]

NextEra also submitted a cost-benefit analysis ("CBA") prepared by The Brattle Group finding that the direct costs to FPL alone of reallocating the 900 MHz band in the parts of Florida served by FPL alone are $98 million. These costs do not include those incurred by other incumbents in the market. By adding the direct costs of all affected parties, the total costs would greatly exceed in Florida alone the $100 million threshold for the FCC's Office of Economics and Analytics to conduct a CBA.

---

[27] Harris Report at 3-22;

[28] GP&A Report at 13.

[29] Harris Report at 19; GP&A Report at 17.

[30] Harris Report at 22, 40.

[31] *Id.* at 20.

Using the results of the 600 MHz spectrum auction as a means of valuing the 900 MHz band in question, the benefits of the EWA/PDV proposal in this same region are only $83 million. Even these results may be overstated because the 600 MHz spectrum auction related to larger, more valuable spectrum blocks (5/5 MHz) attractive to established wireless service providers for consumer commercial services. In this proceeding, the NPRM is focusing on a 3/3 megahertz broadband segment, which the NPRM acknowledges "would have relatively limited capacity and speed compared to existing nationwide and regional 4G networks and, by itself, might not be able to serve direct-to-consumer demand in densely populated areas."[32] As an alternative means of valuing the 900 MHz band, therefore, the Brattle Group CBA also used the results of the 2007 1.4 GHz spectrum auction of paired blocks 3 MHz or smaller, which indicated that the benefits of the 3/3 megahertz proposal in the FPL region are even lower, only $4 million.[33] Thus, the overall costs of a broadband reconfiguration solely within FPL's service area would exceed the benefits by at least $15 million, and perhaps by as much as $93 million.

Those figures may understate the negative impact to the extent that they optimistically assume that FPL can successfully reconfigure its current 900 MHz network to provide the same level of service after reconfiguration. Should the transition not work as planned and FPL is unable to replicate its network, up to $236 million in additional costs could be borne by the residents and businesses of Florida in FPL's areas of operation. And as stated previously, the Brattle Group numbers do not reflect the costs that will be incurred by other narrowband incumbents forced to move channels. For example, the NPRM does not address where it will relocate the three channels within the proposed broadband segment that currently are assigned

[32] NPRM ¶ 12.

[33] Brattle Group CBA at 39-40.

throughout the country to the railroad industry for advanced train control systems,[34] the costs associated with any such relocation, and how that relocation will affect other narrowband incumbents that will need to squeeze into the truncated narrowband segments.

While critical infrastructure industry entities need new broadband spectrum for their operations, the small amount of broadband service gained under the 3/3 megahertz proposal would not offset the negative cost-benefits summarized above, including the disruption that would be caused by rebanding, the need for a guardband between the broadband and narrowband segments, [35] the reduction of available channels for future narrowband growth, and the likelihood of interference among the users in the compressed narrowband segments. Undertaking a reconfiguration is especially risky when the costs and burdens are borne by utilities, and their customers, solely based on one company's business plan to monetize its underutilized spectrum.

The proposed realignment also would not help current B/ILT narrowband users meet their current and future broadband needs.[36] While utilities and other CII users need access to broadband spectrum in the sub-one GHz band to establish their own dedicated broadband networks,[37] utilities need a solution that would allow for the implementation of a broadband IP network capable of delivering both the high availability and the reliability required to support critical command, control, and monitoring functions.

---

[34] NPRM ¶ 16 & n.44.

[35] NextEra supports the efforts of the Utilities Technology Council to bring together narrowband and broadband/LTE stakeholders to test and validate a means for narrowband and broadband systems to coexist in a non-interfering manner.

[36] *Id.* ¶ 12.

[37] *See* Utilities Technology Council Reply Comments at 2.

When PDV/EWA initially petitioned the FCC, viable options for utility broadband other than commercial LTE services did not exist. Since that time several alternatives have developed. FirstNet/AT&T and Verizon now offer priority levels of service with significantly more bandwidth than 3/3 megahertz for critical communications services for utilities and for other B/ILT eligibles. These systems offer in the range of 5 to 10 megabits of bandwidth. Based on these available offerings, it makes no sense to disrupt the 900 MHz band on a mandatory basis to gain a small sliver of broadband service while putting mission critical communications in jeopardy.

B. THE PROPOSAL TO RECONFIGURE, AT LEAST ON A MANDATORY BASIS, IS INCONSISTENT WITH EXECUTIVE ORDERS AND WITH THE NEED FOR A COST-BENEFIT ANALYSIS.

Although the NPRM proposes to reconfigure the 900 MHz band into a broadband segment and a narrowband segment on a purely voluntary basis,[38] it also solicits comments on various proposals to implement a broadband reconfiguration on a mandatory basis. NextEra vigorously opposes any reconfiguration that is not truly voluntary. Indeed, the proposals for mandatory reconfiguration violate various Executive Orders that require the FCC to balance the need for regulation against the resulting burdens.[39]

For example, pursuant to Executive Order 12866, agencies must "assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating" before adopting new regulations.[40] This analysis must be supported by "the best available science" and

[38] NPRM ¶ 37.

[39] *See* Exec. Order No. 12866, 58 Fed. Reg. 51735 (Oct. 4, 1993) ("EO 12866"); Exec. Order No. 13563, 76 Fed. Reg. 3821 (Jan. 21, 2011) ("EO 13563"); Exec. Order No. 13579, 76 Fed. Reg. 41587 (July 14, 2011) ("EO 13579").

[40] EO 12866, 58 Fed. Reg. 51735, at 51735 (Oct. 4, 1993).

"identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends."[41] The FCC also must determine whether new regulations are necessary because of "material failures of private markets to protect or improve the health and safety of the public."[42]

In 2018 under the leadership of Chairman Pai, the Commission established for the first time an Office of Economics and Analytics ("OEA").[43] This new unit is intended to help ensure that economic analysis is deeply and consistently incorporated as part of the agency's regular operations because "it is essential that the Commission adopt policies that are both effective and efficient—that is, policies that accomplish their objectives without unnecessarily distorting the market or wasting resources."[44] In particular, Chairman Pai explained that the Commission will "conduct a rigorous cost-benefit analysis for rulemakings estimated to have over $100 million of economic impact." Commissioners Carr and O'Rielly each noted the importance of establishing OEA and that the decision to bring greater economic rigor to agency decision-making is one that draws on a long, bipartisan tradition.[45]

Thus, unless a reconfiguration was strictly voluntary and market-driven, the FCC would need to conduct an appropriate cost-benefit analysis ("CBA") before adopting any mandatory options to transition to broadband. The importance of a rigorous CBA cannot be understated. It allows the Commission to "intelligibly apply" the public interest standard. Without a CBA, the

---

[41] EO 13563, 76 Fed. Reg. at 3821.

[42] EO 12866, 58 Fed. Reg. at 51735.

[43] *Establishment of the Office of Economics and Analytics*, Order, 33 FCC Rcd 1539, 1548 (2019) (Statement of Chairman Ajit Pai).

[44] Wayne Leighton et al., *Plan for Office of Economics and Analytics: Recommendations and Report to Chairman Ajit Pai*, Federal Communications Commission (Jan. 9, 2018) at 3.

[45] *Id.* at 1551 (Statement of Commissioner Michael O'Rielly) and at 1553 (Statement of Commissioner Brendan Carr).

Commission would be lost – "essentially putting [a] finger in the wind and making it up as [it] go[es] along" – and that approach, in the words of Chairman Pai, "is no basis for reasoned, evidence-based decision-making by an expert agency."[46] The far better approach is for the Commission to avail itself of the "economic gut check"[47] that weighing costs and benefits provides on agency decision making. Doing so, according to Commissioner O'Rielly, will prevent the agency from turning a "blind eye" to the potential burdens and costs of its actions.[48]

The FCC has not undertaken these analyses and thus must not implement any mandatory reconfiguration.

C. A MARKET-DRIVEN APPROACH FOR RECONFIGURING THE 900 MHZ BAND IS ESSENTIAL AND MUST BE TRULY VOLUNTARY.

The NPRM purports to be very clear when it states that its central proposal for potential reconfiguration is intended to be market-driven:

> We reiterate that this proposal is intended to rely on purely voluntary mechanisms for realigning the 900 MHz band. An applicant will only be able to acquire a license for the new 3/3 megahertz broadband segment in a county where it either has reached an agreement to voluntarily relocate, or has demonstrated how it will provide interference protection to, all covered incumbents. This market-driven approach permits the prospective broadband licensee and covered incumbents to negotiate the specific terms of their Transition Plan (*e.g.*, payment of relocation costs, replacement facilities, administrative duties). Unless the prospective broadband licensee agrees to protect incumbents from interference, all covered incumbents must agree to clear.[49]

Despite these apparently clear statements about "purely voluntary mechanisms," the NPRM also proposes options for mandatory reconfiguration, soliciting comment on whether

---

[46] *Id. at* 1549 (Statement of Chairman Ajit Pai).

[47] *Id.* at 1553 (Statement of Commissioner Brendan Carr).

[48] *Id.* at 1551 (Statement of Commissioner Michael O'Rielly).

[49] NPRM ¶ 37.

"requiring mandatory relocation as a component of this transition mechanism [would] be an effective means of mitigating against holdouts, while also preserving the advantages of a purely voluntary and market-driven approach?"[50] The NPRM uses the phrase "mandatory relocation" thirteen times, and the NPRM's two auction proposals both include the potential for mandatory relocations.

The concepts of voluntary, market-driven on the one hand and mandatory reconfiguration on the other hand are inherently contradictory. Market-driven processes are intended to discover which service creates more value in a given market: existing narrowband services or a new 3/3 megahertz broadband service that must provide compensation to adversely affected incumbents. The proposed backstop of mandatory relocation, however, totally eviscerates the market choice. Mandatory relocation only makes sense if the regulatory decision has been made to clear the band (such as when the FCC decided to clear bands for PCS). If the regulatory decision to clear the 900 MHz band for broadband services has not been made (following an appropriate cost-benefit analysis subject to public input and scrutiny), then the marketplace alone should determine if the benefits of reconfiguration exceed the costs through the voluntary agreement process. The notion of requiring involuntary relocations by an overlay auction also is internally inconsistent with a "market-driven voluntary exchange process."

Another problem of sidestepping truly voluntary negotiations and mandating reconfiguration is that the FCC would need to become deeply involved to oversee and manage the broadband realignment process for the 900 MHz band. Once relocation is required by regulatory fiat, the FCC needs to "own" the process and manage it, with all of its market-by-market complexities. For example, the 800 MHz rebanding process first ordered in 2004 has

[50] *Id.* ¶ 38.

taken much, much longer than anticipated (over four times the initial estimate) and the FCC is still resolving disputes as late as May 2019,[51] even though a single, experienced nationwide provider is involved.[52] The FCC would need to oversee the timing and implementation of the multi-year transition and the reimbursement of all the reasonable expenses of the incumbent and confirm that the displaced operators received comparable facilities and coverage. The FCC's burdens of managing a mandatory process would be exacerbated if the broadband licensee went bankrupt in mid-transition or otherwise did not have the experience and financial resources to complete the reconfiguration.[53]

Because NextEra opposes any mandatory reconfiguration, it supports the NPRM's paragraph 38 proposal that an "applicant will only be able to acquire a license for the new 3/3 megahertz broadband segment in a county where it either has reached an agreement to voluntarily relocate, or has demonstrated how it will provide interference protection to, all covered incumbents," with a couple of qualifications. First, the required demonstration of interference protection must be to the satisfaction of the affected incumbent 900 MHz licensee. Second, the licensed contours in adjacent, non-transitioning counties must be properly accounted for and protected. For example, FPL's 900 MHz system may provide coverage in one county

[51] *See Tom D. Phillips and Nextel of Texas, Inc.*, Memorandum Opinion and Order, DA 19-456 (PSPHB May 23, 2019).

[52] *See Improving Public Safety Communications in the 800 MHz Band, Report and Order*, Fifth Report and Order, *Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969 (2004); Improving Public Safety Communications in the 800 MHz Band*, Memorandum Opinion and Order, 20 FCC Rcd 16015 (2005).

[53] The NPRM's statement at ¶ 53 in the context of an incentive auction that the costs of relocating existing incumbents may be relatively low given that equipment is interoperable across the entire band and would therefore only require incumbents to retune their existing radio equipment is unrealistic and contradicted by the two technical reports submitted by NextEra on September 21, 2018.

from sites located in another. Unless all narrowband incumbents are protected or agree to move to new spectrum, a broadband reconfiguration should not take place.

NextEra also opposes the NPRM's alternate proposal for 5/5 MHz broadband segment,[54] unless all incumbents in a given market agree. In many markets, such unanimity is not likely for many service applications because narrowband operations are more efficient than broadband.[55] Even if a market unanimously agrees to transition to 5/5 MHz broadband, provision must be made to protect narrowband operations in adjacent markets that do not make the same transition.

Consistent with a purely voluntary approach, the Commission should permit – but not require – individual markets to choose to adopt a 1.4/1.4 MHz broadband configuration if the licensees choose to do so and all narrowband incumbents are protected or choose to relocate. Although a 1.4/1.4 MHz configuration may not provide sufficient broadband capacity for current utility requirements, a voluntary transition to 1.4/1.4 MHz may provide a means of validating that interference can be addressed and that there is market interest to develop private broadband services in the market.

D. IF MANDATORY REOLCATION IS ADOPTED – WHICH IT SHOULD NOT BE – NARROWBAND INCUMBENTS MUST BE PROTECTED.

Although the Commission should not adopt any form of mandatory relocation, if a mandatory approach is taken, the Commission must ensure that it not go forward until a demonstration is made on a market-by-market basis that all site-based incumbents being relocated will receive systems with comparable coverage and capacity. The Commission should reject the NPRM's tentative proposal that the replacement spectrum the prospective broadband

[54] *Id.* ¶ 20.

[55] For example, for emergency and restoration communications narrowband operations with its fewer, higher sites covering more territory is more efficient than broadband.

licensee offers for the purposes of relocation may not exceed the incumbent's current spectrum holdings in the county.[56] As NextEra previously has explained, compression of the spectrum available for narrowband likely will require remaining incumbents to deploy significantly more sites closer together and more channels to achieve the same coverage and a comparable system.[57]

The Commission also should ensure that incumbents are adequately protected from interference by adopting the same interference criteria that it developed for the 800 MHz band after it was segmented into separate narrowband and broadband parts of the band. Specifically, the Commission should align the 900 MHz B/ILT interference standard with the standard used for the 800 MHz band.[58] Under this approach, prohibited interference would be deemed to occur when the transceiver is receiving a median desired signal strength of -104 dBm or higher as measured at the radiofrequency input of the receiver of a mobile unit, or -101 dBm or higher as measured at the radiofrequency input of the receiver of a portable station and when the carrier to interference plus noise ratio (C/(I+N)) is lower than 20 dB.[59] The Utilities Technology Council has also recommended adopting the 800 MHz interference parameters. In mixing broadband and narrowband together without a guardband, caution must be exercised in defining the interference criteria. Equipment used in the 900 MHz band can have sensitivities that are 15 dB better than the -104 dBm interference level. Defining interference protection levels at the 800 MHz levels accepts a substantial degradation for narrowband users from today's environment. The Commission should not adopt the -88 dBm unacceptable interference level that is proposed in the

[56] NPRM ¶ 36.

[57] GP&A Report at 14 n.8.

[58] *Id*.

[59] *See* 47 C.F.R. § 90.672(a).

NPRM,[60] as this level is 31 dB higher than the sensitivity of 900 MHz band equipment and could make continued narrowband operations in the 900 MHz band infeasible.

The FCC also should reject the notion that requiring narrowband incumbents to transition from the current 12.5 kHz bandwidth to 6.25 kHz bandwidth would facilitate transactions to effectuate relocation.[61] FPL has invested tens of millions of dollars in technology that efficiently uses the bandwidth by implementing two voice channels within the 12.5 kHz channel. A forced migration to 6.25 kHz channels only would degrade the FPL system's efficiency.

Clearly, all the transition costs of any mandatorily relocated incumbents must be reimbursed.[62]

Incumbents subject to mandatory relocation also would need to be made whole for the extra recurring costs attributable to their relocation for the life of their narrowband systems. Such extra recurring costs would include the extra recurring rent payments if the incumbent must add more sites to recreate its pre-existing coverage and capacity. These funding provisions need to be in place indefinitely, and the funding must be guaranteed.

E. COMPLEX NARROWBAND SYSTEMS SHOULD BE EXEMPT FROM MANDATORY RELOCATION.

The NPRM effectively acknowledges that markets that are heavily encumbered should not be transitioned at all, absent the agreement of the incumbents. The NPRM proposes to exclude "complex systems, which could be defined as systems with 65 or more integrated 900

---

[60] NPRM ¶ 73.

[61] NPRM ¶ 36.

[62] Such costs would include coordinating the frequency changes, coordinating the license changes, documenting and developing the change procedures, providing additional training as required, implementing the changes, and updating the "as built" documentation. Antenna systems may require replacement to address the closer frequency spacing.

MHz sites," from mandatory relocation.[63] NextEra agrees that certain markets that are extensively used by narrowband incumbents for critical communications should not be subject to the uncertainty of potential reconfiguration and relocation. The number of sites to trigger the exclusion, however, should be reduced to 25. This is based on reviewing the infrastructure of a system the size of FPL's system between Miami and Vero Beach that supports power restoration, critical communications for two nuclear power plants and their security workforce, and siren public alert systems for the two nuclear plants, which are all integrated with numerous diverse control switches. The complex system policy also should recognize that complex systems may not be contiguous and may cross county or State lines. NextEra recommends that the criteria for being considered a "complex system" excluded from potential mandatory relocation include:

> a) a system ultimately controlled by a single entity that has a central means of controlling the entire system that is integrated together through a network that allows for operability across all sites. The system is comprised of 25 or more sites, may span large geographic regions, including across county or State lines, while bridging together non-contiguous areas, and may have large channel capacity on a site by site basis.
>
> b) an aggregation of systems authorized to separate licensees that together are comprised of 25 sites or more in the same market, may span large geographic regions while bridging together non-contiguous areas, and may have large channel capacity on a site by site basis.
>
> c) a system that involves direct communications to the public for high risk alerts with direct ties to public wellbeing. A siren/public notification system that operates in a radius of 10 miles of a nuclear power plant is an example of this.

In addition, the Commission should consider exempting markets that are heavily congested, like in parts of Florida where almost every channel is assigned,[64] even if no

[63] NPRM ¶ 38.

[64] *Id.* ¶ 24.

individual incumbent satisfies the trigger amount. A "complex market" approach should reflect the fact that in congested markets all of the systems are affected by the spectrum requirements of all the other systems in the market. Once designated as complex, the exclusion should remain in place indefinitely. Due to the large investments made and potential public impact, complex systems should be relocated only if the affected licensees voluntarily choose to do so.

III. CONCLUSION

The Commission should take actions consistent with the views expressed above.

Respectfully submitted,

By: _____/s/_____

William P. Cox
Florida Power & Light Co.
700 Universe Boulevard
Juno Beach, Florida 33408
Will.P.Cox@fpl.com
Counsel for NextEra Energy, Inc.

Bryan N. Tramont
Timothy J. Cooney
Wilkinson Barker Knauer, LLP
1800 M Street, N.W., Suite 800N
Washington, D.C. 20036
(202) 783-4141

June 3, 2019