Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 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.

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October 2, 2017

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NextEra Energy, Inc. ("NextEra"),[1] by its counsel and pursuant to Sections 1.415 and 1.430 of the Commission's rules,[2] hereby submits its initial comments on the above-captioned Notice of Inquiry to examine whether any rule changes may be appropriate in the 896-901/935-940 MHz band ("900 MHz band").[3] NextEra appreciates the Commission providing a two-week extension of the comment deadline to reflect the fact that many utilities dependent on 900 MHz band licenses needed to focus on service restoration efforts in the aftermath of Hurricanes Harvey and Irma.[4]

I. INTRODUCTION AND SUMMARY

NextEra and its subsidiaries are the holders of numerous Business/Industrial/Land Transportation ("B/ILT") wireless licenses in the 900 MHz band, and NextEra participated extensively in the predecessor 900 MHz band proceeding triggered by the Petition for

[1] NextEra is the parent company of Florida Power & Light Company ("FPL"), which serves approximately 4.9 million customer accounts in Florida and is one of the largest electric utilities in the United States.

[2] 47 C.F.R. §§ 1.415, 1.430.

[3] *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Notice of Inquiry, 32 FCC Rcd 6421 (2017) ("*NOI*").

[4] *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Order, WT Docket No. 17-200, DA 17-868 (WTB rel. Sept. 8, 2017).

Rulemaking in RM-11738 submitted jointly by the Enterprise Wireless Alliance and Pacific DataVision, Inc. (collectively "EWA/PDV").[5] Serious concerns were raised in the proceeding that the EWA/PDV proposal for reconfiguring the 900 MHz band would adversely affect existing 900 MHz band B/ILT users, including NextEra and its subsidiaries, with no commensurate public benefit. The Commission appropriately denied the EWA/PDV Petition for Rulemaking and instead initiated this *NOI*. Because the concerns raised in the prior proceeding are relevant to the issues raised in the *NOI*, the Commission should incorporate the entire RM-11738 record into this docket.

As discussed below, the FCC should continue to reject proposals to reconfigure the 900 MHz band to create a new broadband service segment. First, any such reconfiguration would significantly disrupt critical communications of utilities like FPL during the migration period. The adverse impact would be severe because FPL uses its 900 MHz private land mobile radio ("PLMR") 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;[6] 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. 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. Second, creating a new broadband

[5] *See Wireless Telecommunications Bureau Seeks Comment on Enterprise Wireless Alliance and Pacific DataVision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum*, Public Notice, 29 FCC Rcd 14424 (WTB MD 2014); *Wireless Telecommunications Bureau Seeks Comment on Supplement to Enterprise Wireless Alliance and Pacific DataVision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum*, Public Notice, 30 FCC Rcd 4763 (WTB MD 2015).

[6] 10 C.F.R. § 73.55.

segment necessarily means reducing the available spectrum for narrowband operations. Initial engineering estimates show that this will require FPL to reconfigure its existing systems potentially adding more than double the number of antenna sites, thereby increasing FPL's costs and the systems' susceptibility to interference. Third, placing the broadband segment next to a compressed narrowband segment for B/ILT communications also would increase the likelihood of interference. Those interference concerns will be present whether the Commission pursues realignment of the band as proposed by EWA/PDV, through voluntary realignment on a market-by-market basis or by granting increased operational flexibility that would allow broadband operations in the 900 MHz band. Because broadband services today may be obtained through a number of commercial service options, the costs, disruptions, and potential interference attributable to reconfiguring the 900 MHz band would outweigh the limited benefits of introducing a 900 MHz band broadband segment.

Instead of reconfiguring the band, the Commission should retain the current B/ILT eligibility and licensing rules. The FCC also should adopt rules that will allow it to reclaim spectrum from licensees like PDV that do not utilize their 900 MHz band spectrum, and to make the spectrum available to critical infrastructure users like utilities, pipeline operators and other similar entities that actually will use this valuable resource.

II. NEXTERA AND ITS SUBSIDIARIES UTILIZE THE 900 MHZ BAND FOR CRITICAL ELECTRICAL SERVICE RESTORATION VOICE COMMUNICATIONS, SUCH AS AFTER HURRICANE IRMA, AS WELL AS FOR NUCLEAR PLANT OPERATIONS AND SECURITY COMMUNICATIONS.

NextEra is an energy company that includes FPL, the largest Florida electric utility and third largest in the U.S. with approximately 4.9 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 the world's largest generator of renewable energy from the wind and sun.

NextEra uses its 900 MHz band narrowband licenses extensively and has invested commensurately. Specifically, FPL has invested $81M in its existing Part 90 Private Land Mobile Radio ("PLMR") systems to facilitate daily dispatch, maintenance and power plant operations, including voice communications required to comply with Nuclear Regulatory Commission regulations for plant security and operations at nuclear power plants, and for nuclear siren system operations for public alert notifications. FPL also uses its 900 MHz band facilities for critical electrical service restoration voice communications, providing instant emergency access communications, long range transmissions, and easily restored two-way radio systems. Degradation of this service would place electrical service workers at a high safety risk as the current system includes an emergency notification feature to alert dispatch command of any immediate risk that represents a threat to life and limb being experienced in the field.

Continued access to 900 MHz band spectrum for narrowband applications is crucial for NextEra and other critical infrastructure industries ("CII") operators. For example, NextEra and its affiliates are developing plans for future use of additional channels for Smart Grid energy efficiency monitoring and related controls for electric distribution systems. Unless there is a regulatory change in the 900 MHz license structure, FPL plans to invest an additional $59M over the next few years to modernize its current systems. Consistent with utility industry service life norms, these systems will have supplier commitments to operate beyond 20 years.

The critical need for reliable internal communications systems was most recently illustrated in the ongoing recovery efforts after Hurricane Irma. FPL's massive Hurricane Irma restoration effort utilized a record workforce of nearly 19,500 responding to the largest number of outages in company history, estimated in the range of 4 to 5 million. Consumer cellular communications were disrupted and then congested for many days after Irma made landfall. Due to the robust design of FPL's narrowband deployment, however, 90% of the critical dispatch communications was available immediately following Irma's passing. In many cases this was the only communications available to field restoration workers. FPL needs to have the assurance that it can rely on its own hardened network for its critical voice and data service restoration communications and cannot rely on commercial providers when cell service is impacted over substantial parts of the State, as was the case with Hurricane Irma.

III. THE FCC SHOULD RETAIN, BUT TWEAK, THE CURRENT 900 MHZ BAND LICENSING RULES.

The public interest would be served by continuing to reserve 900 MHz band channels for site-based B/ILT licenses to ensure that spectrum is available to B/ILT entities' private internal communication needs.[7] Continued access to 900 MHz site-based B/ILT licenses is essential because, as discussed in the *NOI*,[8] utilities like NextEra require low latency (under 20 milliseconds) and ultra-high reliability (99.999%); they must serve rural and suburban communities as well as more populated areas; and they require greater certainty and hardness for their vital communications needs than commercial carriers generally are able or willing to provide. FPL's systems are currently configured to provide optimal performance for its service territories by minimizing interference through larger geographical separation of adjacent

[7] *NOI*, 32 FCC Rcd at 6433 ¶ 41.

[8] *Id.* at 6424-25 ¶ 9.

frequencies. The 900 MHz band represents one of the few remaining opportunities for FPL and other utilities to obtain much-needed spectrum for mission critical services.

A significant problem with the FCC's current licensing regime, however, is that 900 MHz B/ILT licensees are allowed to convert their PLMR authorizations to CMRS authorizations or assign their authorizations to others for CMRS use. This conversion process has resulted in SMR licensees like PDV acquiring more spectrum than they utilize and preventing traditional B/ILT licensees from expanding their systems for Smart Grid energy efficiency monitoring and controls for electric distribution systems. The Commission should revisit the rules that allow B/ILT licenses to be converted to CMRS use and then lie fallow or underutilized.

The FCC also should once again reject geographic licensing as it did in 2008.[9] For example, transitioning to geographic licensing could restrict beneficial system growth and would do little in terms of meeting the needs of current and future 900 MHz B/ILT licensees. To obtain needed spectrum, utilities would be forced to acquire at auction more spectrum than what they actually need, or that their customers can afford, to ensure that they have adequate spectrum necessary to support their operations. The Commission was appropriately concerned that with geographic licensing portions of the spectrum would remain unused and undervalued, precisely the result the Commission was seeking to avoid.[10]

IV. RECONFIGURING THE 900 MHZ BAND TO CREATE A BROADBAND SERVICE WOULD DISRUPT CRITICAL UTILITY OPERATIONS AND SERVE ONLY THE NARROW INTERESTS OF A COMMERCIAL PROVIDER.

The Commission should not reconfigure the 900 MHz band to create a narrowband and a broadband segment to serve the commercial interests of a single provider. As NextEra has

[9] *See Amendment of Part 90 of the Commission's Rules to Provide for Flexible Use of the 896-901 MHz and 935-940 MHz Band Allotted to the Business and Industrial Land Transportation Pool*, Report and Order, 23 FCC Rcd 15856, 15865 ¶ 14 (2008).

[10] *Id.* at 15863 ¶ 12.

discussed in its prior submissions, a reconfiguration, either as proposed by EWA/PDV, through voluntary realignment on a market-by-market basis, or by granting increased operational flexibility that would allow broadband operations in the 900 MHz band, likely would result in increased interference and a host of other problems.

For example, the 800 MHz rebanding process has taken much longer than was expected. It was started in 2004,[11] and it is not finished yet, even though a large, experienced nationwide provider was involved. The 900 MHz environment is even more complicated. FPL's existing systems currently are configured to operate across the current 5 MHz of 900 MHz band spectrum to provide optimal performance. Creating a new broadband segment will reduce the amount of spectrum available for narrowband operations and require repacking of traditional B/ILT licensees into a narrowband segment with frequencies (channels) more closely spaced together. This channel compression, especially in large metropolitan areas, will adversely affect system performance for current B/ILT licensees. Closer spectrum spacing also will require users to deploy more complex, higher loss antenna systems, which will increase the number of required sites by 200% or more. Not only will this have a substantial cost impact on FPL and other B/ILT users, but it will make their systems more vulnerable to the interference and ducting that occurs naturally and periodically in FPL's service area.[12]

Broadband technologies tend to raise the overall noise floor in the environment in which they operate, which would reduce existing system performance levels for B/ILT licensees that are more limited in their abilities to mitigate interference issues to their 12.5 kHz narrowband

[11] *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).

[12] Ducting is a phenomenon that occurs when radio waves get trapped by a variation in the atmospheric density. The waves can then travel along by refraction. Ducting usually occurs over homogenous surfaces, including water. *See, e.g., Amendment of the Commission's Rules Regarding Maritime Automatic Identification Systems*, Second Report and Order, 23 FCC Rcd 13711, 13717 ¶ 11 n.45 (2008).

channels. This is because existing 900 MHz narrowband systems are designed and operated as "noise limited" systems, meaning a few high base station sites are used to cover large geographical areas. Broadband LTE systems, on the other hand, are designed and operated as "interference limited" systems, meaning many base stations are located in closer spacing at "ground level." Thus, interference to narrowband operations will occur with the introduction of broadband services, whether by mandatory reconfiguration, voluntary realignment, or increased operational flexibility.

As NextEra explained in the prior proceeding,[13] even when a CMRS provider is operating lawfully within its authorized band and with out-of-band emissions compliant with FCC limits, the allowed levels will desensitize narrowband receivers to at least 250 KHz from band edge, reducing the spectrum available for narrowband operations. For these reasons, protecting high-site, incumbent narrowband systems from an adjacent, closely spaced broadband system will not only require retaining the existing noise floor and emission mask but creating a guard band in the range of a full 1 MHz.[14] The insertion of a new guard band will further undermine the efficient use of spectrum in the band. Moreover, the adjacent 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 ill effects of creating a new 900 MHz band broadband segment would not be offset by requiring the provider to offer B/ILT entities priority service.[15] Electric utilities and other CII users need access to a highly reliable broadband network dedicated to support the growing need

[13] Comments of NextEra Energy, Inc., RM-11738, (filed Jan. 12, 2015) ("NextEra Comments") at 3. *See also* Letter from William P. Cox, counsel for NextEra Energy, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission, RM-11738, at 2 (filed Dec. 23, 2015).

[14] For example, typical guard band allocations at 700 MHz are 1 MHz. NextEra Comments at 4.

[15] *NOI*, 32 FCC Rcd at 6430 ¶ 29.

for high capacity IP networking interconnections that are required to execute critical command, control, and monitoring functions. 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. Third party broadband service providers cannot provide the required network services for the exclusive use by the utilities and other CII users, nor can they provide the consistent network availability and reliability that is critical in all cases and imperative in emergency situations. While utilities and other CII users need access to broadband spectrum in the sub-one GHz band to establish their own dedicated broadband networks, this needed bandwidth should not be provided by sacrificing 900 MHz spectrum already being used for critical restoration communications. Utilities will have little interest in CMRS services that do not provide the necessary levels of control, availability, and reliability required for restoration communications systems.

When PDV/EWA initially petitioned the FCC there were not any options other than commercial LTE providers for broadband. Since that time many alternatives have developed. AT&T and Sprint both offer utilities an option to secure and build out broadband systems under extended agreements. FirstNet is continuing to define its plan, and there will most likely be an option for utilities to share in the system. Verizon is also positioned to offer a service to mission critical users. All of these systems will offer in the range of 5 to 10 megabits of bandwidth to utilities. Based on these offerings it makes no sense to disrupt the 900 MHz narrowband spectrum to gain a small sliver of broadband service while putting mission critical communications in jeopardy.

Finally, the creation of a broadband segment within the 900 MHz band would not provide any unique consumer benefits because numerous other commercial options are available.

Moreover, the spectrum available for new 900 MHz broadband services will be limited by the need to accommodate continued narrowband operations, as well as the minimum 1 MHz guard band that would be required to minimize interference to narrowband operators.

V. IF THE FCC DECIDES TO RECONFIGURE THE 900 MHZ BAND RULES, IT MUST ENSURE THAT B/ILT INCUMBENTS ARE MADE WHOLE.

As discussed above, NextEra strongly opposes the proposal to reconfigure the 900 MHz band into a broadband segment and a narrowband segment. If, however, the Commission decides to go forward, it must consider the costs of relocating B/ILT incumbents like FPL. Such costs would include the following: 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. All antenna systems would require replacement to address the closer frequency spacing. Based on the vintage of NextEra's systems, all site and control hardware would have to be replaced. With reduced RF propagation and increased interference issues, the number of sites and the overall system capacity would need to be doubled at a minimum. This will entail a substantial site construction effort involving both NextEra owned and leased tower facilities. The cost impact to electric utilities will be substantial and long-term *(i.e.,* over 25 years). NextEra's capital impact alone is estimated at approximately $70 to $90 million, and the annual operating cost impact would be estimated at no less than $7 to $9 million.

In proposing a new broadband segment in the 900 MHz band, the Commission also would need to consider the following factors:

- Any changes to technical rules should be based on the current noise floor environment in the 900 MHz band;

- Any changes to the 900 MHz band plan should provide operating alternatives that address the potential increase in interference to B/ILT narrowband incumbents, and incumbent licensees should not bear the burden of interference mitigation;

- Any relocation must be voluntary, and all costs incurred by existing licensees related to relocation must be reimbursed;

- Funding for any relocation plan must be guaranteed through the end of all relocations.

In sum, the costs and disruptions to incumbent B/ILT licensees such as FPL and other CII users greatly outweigh the benefits that would accrue in creating a broadband segment in the 900 MHz band.

VI. LICENSEES THAT HAVE NOT BUILT OUT SHOULD NOT RECEIVE A WINDFALL FROM ANY RECONFIGURATION BUT SHOULD HAVE THEIR UNUSED SPECTRUM RECLAIMED.

To date FPL has demonstrated its commitment to building out and loading the 900 MHz narrowband spectrum licenses granted to it by the FCC and utilizing this spectrum in the public interest. In the South Florida market, however, FPL is not able to secure much needed spectrum because of other licensees holding undeveloped spectrum for speculative purposes. For example, PDV holds spectrum in the Miami area that supposedly would be developed into dispatch systems and later transitioned to broadband. To date, however, PDV has not developed this spectrum, and recently FPL determined that at least one major tower leasing company was unaware that PDV had licensed system on the tower company's site that PDV has no lease agreement to construct.

FPL, on the other hand, has more users deployed in its 27,000 square mile service territory than PDV has nationally (as published on PDV's web page and SEC filings). If the FCC moves forward with some form of a spectrum reallocation, PDV, who has not demonstrated a willingness to build out its licensed systems, should not be rewarded with additional spectrum

just because it is the largest spectrum holder of undeveloped spectrum. Instead, undeveloped spectrum should be reclaimed by the FCC and be made available to critical infrastructure users like utilities, pipeline operators and other similar entities.

VII. CONCLUSION

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

Respectfully submitted,

By: _____/s/_____

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