

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of)	
)	
Review of the Commission's Rules Governing the)	WT Docket No. 17-200
896-901/935-940 MHz Band)	
)	
Realignment of the 896-901/935-940 MHz Band)	RM-11738
to Create a Private Enterprise Broadband)	(Terminated)
Allocation)	
)	
Amendment of the Commission's Rules to Allow)	RM-11755
for Specialized Mobile Radio Services Over 900)	(Terminated)
MHz Business/Industrial Land Transportation)	
Frequencies)	

**COMMENTS OF THE
EDISON ELECTRIC INSTITUTE**

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EXECUTIVE SUMMARY

The Federal Communications Commission (“Commission” or “FCC”) seeks comments to assist it in examining whether any rule changes may be appropriate to increase access to spectrum, improve spectrum efficiency, and expand flexibility in the 896-901/935-940 MHz band (“900 MHz band”) for next generation technologies and services.¹ The Edison Electric Institute (“EEI”) submits these comments in support of the Commission’s goal of “better understand[ing] current and future uses and needs in the band.”²

Electric companies are major users of 900 MHz wireless telecommunications systems to support the provision of safe, reliable, and low-cost power to the public and to ensure safety of life, property, and the environment. EEI member companies have invested heavily and hold licenses in the 900 MHz band in order to provide mission-critical services such as Supervisory Control and Data Acquisition, electrical service restoration communications, and power plant security operations. Indeed, recent electric company experiences demonstrate that when catastrophic natural disasters strike, electric companies must be able to rely on their private 900 MHz communications facilities because commercially available alternatives suffer degradation and overuse. Electric companies further depend on these frequencies and adjacent narrowband channels for Advanced Metering Infrastructure (e.g., smart meters) and other important uses. With the modernization of the electric grid, clean power initiatives, and innovative customer solutions technologies, electric companies face increasing needs for additional access to the 900 MHz licensed spectrum.

¹ Notice of Inquiry (“NOI”), *In the Matter of Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band, et al.*, WT Docket No. 17-200 (Adopted Aug. 4, 2017).

² NOI ¶ 1.

Although electric companies have a critical need for more broadband spectrum to support their current and growing 900 MHz facilities, the realignment proposals the Commission explores in this Notice of Inquiry are not adequate to meet this need. In particular, the technical parameters in the Commission's proposals for a 2/2 narrowband and 3/3 MHz broadband realignment would result in harmful interference to incumbent operations in the 900 MHz and adjacent bands, and threaten the ultra-high communications reliability electric companies depend on. Additionally, the degradation of electric company Private Land Mobile Radio services would place electrical service workers and the public at a high safety risk and result in life-saving disaster recovery and restoration work being delayed.

Finally, if the Commission does ultimately adopt some form of realignment, there are numerous significant transition and relocation issues that must first be considered and addressed by potential FCC-sanctioned broadband service providers. Aside from the actual costs associated with relocation, the Commission should require and fully explore a detailed migration plan to ensure that electric companies and other incumbent 900 MHz users do not suffer a prolonged period of harmful disruption. Similarly, the Commission should carefully consider any proposed build-out plans for new 900 MHz broadband service to ensure that rural and less populated areas are adequately served and electric companies and other Critical Infrastructure Industries ("CII") entities will not have to manage mixed private and commercial systems at an increased cost. Only after careful analysis and weighing of all relocation operational, economic, and intangible costs can the Commission determine whether realigning the 900 MHz band is truly in the public interest.

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Transportation Frequencies)	

**COMMENTS OF THE EDISON ELECTRIC INSTITUTE
ON NOTICE OF INQUIRY**

Pursuant to sections 1.415 and 1.419 of the Federal Communications Commission's ("FCC" or "Commission") Rules, the Edison Electric Institute ("EEI"), on behalf of its member companies, hereby submits these Comments to address questions and issues in the Commission's Notice of Inquiry ("NOI") adopted in the above-referenced proceeding on August 4, 2017.³

I. Introduction.

EEI is the trade organization that represents all U.S. investor-owned electric companies and its members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia. As providers of electricity to much of America and as users of the 900MHz band for critical operational communications throughout the United States, EEI members have considerable expertise in matters concerning the use of this band for electric company operations

³ NOI, *In the Matter of Review of the Commission's Rules Governing the 896-901/935-940 MHz Band, et al.*, WT Docket No. 17-200 (Adopted Aug. 4, 2017).

and disaster response and recovery. EEI members, therefore, have a strong interest in ensuring the Commission's proposals for the "900 MHz Band" properly consider the interests of EEI's member customers. More specifically, electric companies are major users of wireless telecommunications systems that operate in and adjacent to the 900 MHz band to support the provision of safe, reliable, and low-cost power to the public and to ensure safety of life, property, and the environment. With the modernization of the electric grid, clean power initiatives, and innovative customer solutions technologies, electric companies face increasing needs for access to additional licensed spectrum.

EEI member companies have invested heavily and hold licenses in the 900 MHz band in order to provide mission-critical services such as Supervisory Control and Data Acquisition ("SCADA"), electrical service restoration communications, and power plant security operations. Electric companies further depend on these frequencies and adjacent narrowband channels for Advanced Metering Infrastructure ("AMI") (e.g., smart meters) and other important uses. Key future electric company uses for the 900 MHz band include advanced monitoring and controls at the distribution systems level for energy efficiency and integration of renewable power.

Although electric companies have a critical need for more broadband spectrum to support their current and growing 900 MHz facilities, the realignment proposals the Commission explores in this NOI are not adequate to meet this need. In particular, the technical parameters in the Commission's proposals for the 900 MHz band would result in harmful interference to incumbent operations in 900 MHz and adjacent bands, and threatens the ultra-high communications reliability electric companies depend on. Additionally, the degradation of electric company Private Land Mobile Radio ("PLMR") services would place electrical service workers and the public at a high safety risk and result in restoration work being delayed. Finally,

the proposals related to the 900 MHz band by various parties do not address, gloss over, or otherwise underestimate significant relocation issues and therefore cannot properly be measured against the public interest.

II. Electric Companies Use the 900 MHz Band for Critical Communication.

Electric companies have invested significantly in existing PLMR systems and hold licenses in the 900 MHz band (*i.e.*, 896-901/935-940 MHz) that are used for operational and mission-critical purposes. Electric company 900 MHz facilities also play a critical role in disaster recovery and response by ensuring fast and reliable communications with local, state, and federal response teams. As electric companies continue to grow and modernize the electrical grid with “smart” infrastructure, the companies’ need for 900 MHz facilities will continue to grow.

a. Electric Companies Use the 900 MHz Band for Mission-Critical Operations.

Electric companies use the 900 MHz spectrum for mission-critical purposes such as electric service restoration communications, emergency notifications, and disaster recovery communications, as well as other critical purposes. Electric companies also use these frequencies for power plant security operations, including nuclear power plant critical voice communications, and nuclear siren public notification systems.

Electric companies further depend on these frequencies and adjacent narrowband channels for AMI, alarms and outage management, demand response, SCADA, and distribution automation and voltage regulation.⁴ Electric companies have made major investments in AMI systems and view an effective AMI system as a critical part of a modern electric distribution system. Electric companies use AMI systems to interact with electrical and gas meters to read meters and bill customers in an accurate and timely manner, more efficiently operate distribution networks, and identify problems such as outages.

⁴ See NOI ¶¶ 7–10 & citations therein.

Electric companies also may use the 900 MHz system as the primary network for Distribution Supervisory Control and Data Acquisition (“DSCADA”) involving remote sensing and control of reclosers and switches that are mounted on street-side poles and are key components in providing reliable electric service. Benefits of DSCADA units include minimizing electric company service outage duration, isolating downed conductors in remote areas, providing automated switching and tagging in remote locations, and switching critical customers remotely to feed them from an alternate source during planned work on the main feeder. In particular, the ability to isolate from the power source downed conductors that fail to trip off-line due to a high impedance fault condition is critical to public safety and the safety of first responders in the scene of an accident and has become an essential feature of the 900 MHz system.

Electric companies have also integrated 900 MHz systems into mission-critical nuclear power plant operations, such as “for security operations, public alert notifications, and other purposes.”⁵ As just one example, Florida Power & Light Company (“FPL”) depends on 900 MHz systems for its Nuclear Siren Public Notification System, which provides verbal warnings related to critical events at its nuclear plants to local residents within the 10-mile Emergency Planning Zone of each plant and is required by the Nuclear Regulatory Commission.⁶ Both of FPL’s nuclear power plants were within the potential paths of Hurricane Matthew in 2016 and Irma in 2017, highlighting the necessity of protecting FPL’s 900 MHz warning system. Ensuring these communications are not disrupted is imperative.

⁵ NOI ¶ 9 (citing Letter from Bryan N. Tramont, Counsel, NextEra Energy, Inc., to Marlene H. Dortch, Secretary, FCC RM-11738, at 5 (filed Apr. 29, 2016)).

⁶ See CIC Letter at 4.

b. The 900 MHz Band is Critical for Disaster Response and Recovery.

In the NOI, the Commission recognizes that electric companies use PLMR systems “during emergencies, including disaster recovery,”⁷ and for “ensuring and reliable communications with local, state, and federal response teams.”⁸ These statements, however, do not sufficiently reflect the essential nature of the 900 MHz Band to both saving lives during disaster responses and minimizing the impact on the United States economy during disaster recovery.

In fact, during natural disaster recovery efforts, electric companies use 900 MHz and adjacent networks for myriad critical purposes, including internal recovery planning and customer communications.⁹ Electric companies also use the information gained via these networks to coordinate with the Federal Emergency Management Agency, the Department of Homeland Security, the White House, and numerous other federal, state, and local entities like Emergency Operation Centers (“EOCs”) to help assess and address recovery-related needs.

Electric companies rely on their private internal 900 MHz communications facilities rather than commercial networks for these crucial and time-sensitive communications because these PLMR systems are the only systems able to provide the necessary combination of “low latency (under 20 milliseconds) and ultra-high reliability (99.9999%),” and the ability to “serve rural and suburban communities as well as more populated areas[.]”¹⁰ Communications over 900 MHz networks are highly reliable, in part because current users understand and are responsive to

⁷ NOI ¶ 9 (citing, *e.g.*, Lower Colorado River Authority Jan. 12, 2015 Comments, RM-11738, at 3-4; NextEra Energy, Inc. Jan. 12, 2015 Comments, RM-11738, at 5).

⁸ NOI ¶ 8.

⁹ Letter from Critical Infrastructure Coalition, to Marlene H. Dortch, Secretary, RM-11738 (CIC Letter) (filed Dec. 8, 2016).

¹⁰ NOI ¶ 9 (citing Utilities Telecom Council (UTC) Jan. 12, 2015 Comments at 4-6; UTC March 11, 2011 Comments at 12; NextEra Jan. 12, 2015, RM-11738, Comments at 6).

each other's critical requirements, and the Commission has thus far generally ensured that critical communications over 900 MHz networks remain available and free from interference.¹¹

The recent devastation wrought by Hurricane Mathew offers a useful case study into the critical role internal 900 MHz facilities play in disaster response and recovery efforts. Less than one year ago, from October 6 to 10, 2016, Hurricane Mathew charged up the East Coast of the United States causing at least 46 deaths, severe property destruction, and widespread power outages throughout the states of Florida, Georgia, South Carolina, North Carolina, and Virginia.¹² An estimated more than 3 million American customers lost power during the storm, with up to 33 percent of these outages in South Carolina alone.¹³ Fortunately, electric companies in the impacted areas had invested significantly in 900 MHz facilities,¹⁴ and were therefore able to leverage those facilities to restore power to most customers within a matter of days instead of weeks.¹⁵

For example, FPL extensively relied on 900 MHz voice dispatch systems to provide safe, reliable communications for workers in the field during service restoration and recovery. FPL could not rely on commercial cellular voice and data systems because they had been so disrupted by Hurricane Matthew that some workers in the field had to resort to satellite phones. Only FPL's 900 MHz voice radio dispatch communications remained consistently available to the company's field workers. Along with traditional voice communications capabilities, FPL's 900 MHz system also

¹¹ CIC Letter at 1.

¹² Tom Di Liberto, *Record-Breaking Hurricane Matthew Causes Devastation*, Climate.gov (Oct. 18, 2016), <https://www.climate.gov/news-features/event-tracker/record-breaking-hurricane-matthew-causes-devastation>.

¹³ *Hurricane Matthew Caused Millions of Customers to Go without Power*, United States Energy Information Administration (Oct. 17, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=28372>.

¹⁴ See NOI at 7 (mapping the density of 900 MHz B/ILT sites, and showing a cluster along the South-Atlantic Coast).

¹⁵ CIC Letter at 2.

includes an emergency notification feature to alert dispatch command of any immediate threats to life and safety in the field. The emergency alert function is particularly crucial during recovery from natural disasters when safety risks are higher than usual and commercial networks are often not available.¹⁶ FPL found the 900 MHz PLMR to be even more indispensable following Hurricane Irma, which ravaged the entire peninsula of Florida in September 2017, causing power outages and significantly disrupting other communications facilities. In the 10-day period following Irma, there were more than 4.5 million transmissions on FPL's voice dispatch PLMR system.

Similarly, Southern Company relied on its 900 MHz AMI facilities to rapidly and safely restore power to Georgia in the aftermath of Hurricane Matthew.¹⁷ During less severe storms, Southern Company relies on customer calls in addition to AMI outage reports to understand its outages. During Hurricane Matthew, however, the State of Georgia's mandatory evacuation removed customer calls and many company personnel from the equation. Consequently, the company was forced to rely almost exclusively on AMI data to pinpoint the extent and location of outages. Without 900 MHz facilities to transmit the essential AMI data, the company could not have as effectively or efficiently collected and analyzed the scale and location of outages, allowing critical planning and implementation decisions. This early insight into outage locations allowed the company to plan and mobilize key resources, establish additional staging sites, and ensure material delivery to the most impacted areas. As restoration progressed, Georgia Power used the AMI system data to eliminate unnecessary or duplicate truck rolls to locations that had already been restored and instead continuously deploy crews to areas where they could restore power to the greatest number of customers in the shortest amount of time. Additionally, Georgia Power was able to use the AMI-data to provide evacuated customers with up-to-date status on access to power at their homes and businesses throughout the storm's evolution and subsequent restoration efforts. In sum, the ability to

¹⁶ CIC Letter at 2.

¹⁷ *Id.* at 2-3.

use 900 MHz AMI data, in combination with the company's other systems, allowed Georgia Power to shorten the total restoration time by as much as days, and helped Americans return to their homes and businesses that much sooner.

Duke Energy's 900 MHz PLMR system also proved to be indispensable for the Hurricane Matthew recovery efforts in central and west Florida and the eastern portions of North and South Carolina by enabling coordination of damage assessments and subsequent efforts to restore power as quickly and safely as possible.¹⁸ During initial recovery efforts, voice radio system utilization in Duke Energy's service areas in the Carolinas was more than five times higher than normal, and remained very high until all services were restored. Unlike these commercial systems, Duke's internal 900 MHz PLMR systems did not suffer degradation from overuse. During this recovery effort and previous recovery efforts, the reliability, availability, and unimpeded access to the 900 MHz voice radio system have repeatedly proved to be indispensable for the safe and timely restoration of power to public-safety facilities, other critical infrastructure entities, and the general public.

In addition to the specific Hurricanes Mathew and Irma service-restoration examples above, many electric company 900 MHz networks can be used in times of disaster to provide communications services to police, fire, and EMS agencies, as well as to mass transportation agencies and school districts in the affected region.¹⁹ The 900 MHz network provides for a high level of radio interoperability between these critical services, particularly during regional disasters such as floods, hurricanes, tornadoes, and wild fires, saving both lives and property.

Furthermore, the public interest in and economic value of restoring power days, or even hours, sooner cannot be overstated. For example, FPL estimates that major restoration activity within its service area can cost the company \$40 to \$50 million *per day*. If FPL did not have a highly

¹⁸ CIC Letter at 3.

¹⁹ *Id.* at 3.

reliable PLMR system for communications and had to rely on commercial systems alone, restoration efforts after a large event would be extended by one to two days. Of course, until power is restored, most businesses cannot reopen and the United States economy suffers losses of productivity and output. Less than one month ago, Hurricane Irma, which ravaged the Florida peninsula, caused an estimated \$14 billion “of lost economic output,” in large part “because of power loss.”²⁰ Moreover, accelerated restoration of power reduces the likelihood of civil unrest and encourages stability and a return to pre-disaster normalcy on an expedited basis. Thus, any infringement, restrictions, interference, or loss of capacity of the 900 MHz PLMR facilities relied on by electric companies will have a very significant negative impact on their ability to rapidly and safely repair damages and restore power as quickly and safely as possible, and is not in the public interest.

c. The 900 MHz Band is Crucial to Future Electric Company Operations and Technologies.

Key future electric company uses for the 900 MHz band include advanced monitoring and controls at the distribution systems level for energy efficiency and integration of renewable power facilities. Indeed, the Commission recognizes that electric company needs for “narrowband spectrum to support voice for dispatch and other applications” will continue to grow due to both their own business growth and “the deployment of new and better communications technologies.”²¹ Electrical grid modernization programs consistent with the Commission’s National Broadband Plan, such as “Smart Grid,” smarter infrastructure, and AMI backed by Internet of Things (“IoT”) technologies require machine-to-machine communications

²⁰ NBC News, “Why Irma’s Impact on the Economy Will be Worse than Harvey’s”, Sept. 15, 2017, <https://www.nbcnews.com/storyline/hurricane-irma/why-irma-s-impact-economy-will-be-worse-harvey-s-n801696> (last visited Sept. 26, 2017) (comparing the damage wrought by Hurricanes Irma and Harvey, and quoting Moody’s Analytics chief economist Mark Zandi as explaining that “[e]conomic disruption was greater [from Hurricane Irma] because of power loss and disruption of the tourism industry, which is vital to Florida.”).

²¹ NOI ¶ 11.

via electric company 900 MHz networks.²² Far from being able to spare or surrender the 900 MHz band, current electric company license holders will require increased access to data services that utilize this bandwidth in the future.

III. Rebanding the 900 MHz Spectrum Poses an Unacceptable Risk of Harmful Interference.

The new technical parameters for the 900 MHz band discussed in the NOI,²³ and specifically the 2/2 and 3/3 MHz realignment proposal,²⁴ would result in harmful interference to incumbent operations in that band and adjacent bands. Under one proposal, the 900 MHz band would be divided into a 3/3 MHz broadband segment (898-901/937-940 MHz) and a 2/2 MHz narrowband segment (896-98/935-37 MHz).²⁵ The Commission rightfully notes that “current and future B/ILT users” will suffer “operational impacts” from repurposing a portion (or all) of the 900 MHz band for broadband operations.²⁶

The proposed band plan would closely pack existing PLMR systems, increasing the potential for harmful interference to operations outside the broadband segment.²⁷ Indeed, in the prior proceeding in which Enterprise Wireless Alliance (“EWA”) and Pacific Data Vision, Inc. (“PDV”) (collectively “EWA/PDV”) first proposed a 2/2 and 3/3 MHz realignment, EWA/PDV conceded that the 896-898/935-937 MHz segments might not accommodate all the licensees that will need to be relocated in all markets, and relocation will likely need to be supplemented with license acquisition by the PEBB licensee and contribution from incumbent SMR licensees.²⁸

²² See, e.g., NOI ¶ 11 (citing FCC, Connecting America: The National Broadband Plan at 249 (2010)).

²³ See NOI ¶¶ 12–40.

²⁴ NOI ¶¶ 12–16, 27.

²⁵ NOI ¶¶ 12–16, 27.

²⁶ NOI ¶ 26; see NOI ¶¶ 27–29 (seeking comments on the operational impacts of realignment).

²⁷ See, e.g., Duke Energy June 29, 2015 Comments at 3-4; NextEra June 29, 2015 Comments, RM 11-738, at 5.

²⁸ EWA/PDV July 14, 2015 Comments, RM-11738, at 12.

This concession by a potential beneficiary of realignment not only acknowledges the inevitability of harmful interference and degradation, but also that there will be little to no spectrum available for incumbent licensees, such as electric companies, to expand their operations to meet future needs.

The guard band separating a 3/3 MHz broadband service provider from incumbent users needs to be substantially greater than proposed to mitigate adjacent band interference, likely 1 MHz. Moreover, given the combination of out-of-band noise from the proposed Long Term Evolution (“LTE”) wireless channel and lack of proposed guard bands, electric company 900 MHz services effectively will be required to create an internal guard band further reducing capacity.

Although noise floor levels in the 2/2 and 3/3 MHz proposal may be appropriate in a cellular environment, the proposal would reduce existing system performance for electric company 900 MHz PLMR systems. The proposal does not suggest a new 3/3 MHz broadband provider will be able to coexist with incumbent licensees, and instead proposes to raise the noise floor, forcing incumbent licensees to adjust to the new operations. This proposal ignores the low noise floor environment currently and historically existing in the 900 MHz band, which licensees rely on for mission-critical communications. Exacerbated by the lack of guard bands, the magnitude of harmful, wideband interference that the proposed 3/3 MHz broadband operations would create would completely eliminate the ability of many existing electric company PLMR 900 MHz systems to continue operations.

The degradation of the PLMR service that would be caused would place electrical service workers at a high safety risk and result in restoration work being delayed. Critical voice communications could be affected for connection to field workers during wide-ranging

operational activities required to operate and maintain the electric grid, but also for nuclear plant operations. These activities include not only day-to-day routine maintenance activities, but also storm damage responses, especially following major events like ice storms, earthquakes, or hurricanes and large-scale blackout restoration actions.

Similarly, AMI could suffer from harmful interference thereby delaying outage notifications and overload alarms. AMI systems deployed in the narrowband PCS band immediately adjacent to the 900 MHz band are particularly vulnerable to interference from 3/3 MHz broadband operations.

For electric companies, DSCADA communication could possibly become unaffordable and unreliable particularly in rural areas. For example, transitioning AMI and DSCADA systems could cost between \$30 and \$50 million per electric company. Without such a costly transition, 900 MHz systems may not continue to be reliable enough for CII communications and the PEBB band licenses may be sold or transferred.

The Commission also suggests the possibility of fully reconfiguring the band to create a 5/5 MHz broadband channel.²⁹ This proposal exacerbates the risks of harmful interference engendered by the EWA/PDV proposal, and, contrary to the public interest, may effectively require electric companies to abandon their investments in 900 MHz PLMR systems and force adoption of less reliable and technically inferior commercial alternatives.

²⁹ NOI ¶ 28.

IV. The Rebanding Proposals in the NOI Are Solutions in Search of Problems.

There is limited public-interest benefit to the rebanding proposals within the NOI, but tremendous risk. The 900 MHz band currently functions well, and a new broadband service provider, such as PDV, should not be handed a windfall at the Public's expense.³⁰

FCC action is also not warranted because an entity wishing to provide 3/3 MHz broadband (or other broadband offerings within the 900 MHz spectrum) can largely achieve that goal through the existing secondary market and through existing spectrum bands available for commercial operations. Through the secondary market, an entity, such as PDV, can already aggregate a 3/3 MHz block without a Commission-mandated realignment.³¹ Moreover, the record in the now-terminated EWA/PDV Petition process, RM-11738, that preceded this NOI contains a dearth of support for a 2/2 and 3/3 MHz realignment, particularly from the CII entities that are purportedly the reason for realigning the 900 MHz band.³² Indeed, many CII entities explained how and why realignment to create a commercial FCC-sanctioned broadband service does not and cannot meet their operational needs.³³

To the extent the record developed through this NOI proceeding ends up containing some support from CII entities for realignment, the Commission should carefully weigh that limited support against the essential and grave public interests served by protecting and promoting incumbent electric company investment and use of 900 MHz PLMR services. After all, the 2/2 and 3/3 MHz proposal will create an FCC-sanctioned service that will primarily advance the

³⁰ See NOI ¶¶ 30–36 (questioning whether the FCC should structure rebanding and license assignment such that a private entity receives a windfall).

³¹ See Duke Energy Corporation (Duke Energy) June 29, 2015 Comments, RM-11738, at 5; Salt River Project June 29 2015 Comments, RM-11738, at 8; UTC June 29, 2015 Comments, RM-11738, at 5.

³² See Record, RM-11738.

³³ See, e.g., Duke Energy June 29, 2015 Comments at 5; Salt River Project June 29, 2015 Comments at 8; UTC June 29, 2015 Comments at 5.

business interests of entities such as PDV and EWA, not the operational needs of CII licensees or the public interest. Consequently, the Commission should require entities supporting the proposed realignment to prove that the public benefits of rebanding substantially outweigh the costs—something those entities will not likely be able to do.

V. Any Rebanding Proposal Must Address Numerous Transition Issues.

As part of determining whether realigning the 900 MHz band meets the public interest, the Commission should thoroughly consider the logistics of each rebanding-proposal and the impact any related transition will have on electric company operations and the public interest. Indeed, through the NOI, the Commission specifically seeks information and comment on the “relocation process” required to implement any realignment.³⁴

The Commission’s focus on the “relocation process” is critical because any significant realignment of the 900 MHz band risks a prolonged period of disruption to incumbent users during the proposed transition. In particular, the Commission requests comments about how “mandatory relocation” will cause “service disruptions to existing users, and what would be the impacts of those disruptions?”³⁵ The Commission also questions whether, if mandatory relocation occurs, it should “establish procedures to ensure that these existing users receive comparable facilities and appropriate reimbursement for relocation.”³⁶

Given that any realignment proposal will require some form of relocation, no realignment proposal should be approved until the entities benefiting from the forced relocation (those entities who would provide the new FCC-sanctioned broadband service—Private Enterprise Broadband (“PEBB”) licensees—such as PDV), demonstrate that they would be able to relocate incumbent users in an efficient manner, without risking a prolonged period of disruption to

³⁴ See NOI ¶¶ 36–39.

³⁵ NOI ¶ 36.

³⁶ NOI ¶ 36.

incumbent users during the proposed transition.³⁷ For example, any FCC-mandated realignment should include a detailed migration plan so that incumbent 900 MHz PLMR users and licensees can plan and prepare. A detailed migration plan was not filed in the record developed for the preceding EWA/PDV petition.³⁸ The Commission should not move forward with realignment in this proceeding unless it fully considers a detailed migration plan and the new impact on the public interest cannot be credibly weighed if the extent of the operational impact of realignment on incumbents is not fully understood.

Another significant flaw in mandatory relocation required by the proposed realignment is that certain markets do not have enough spectrum capacity to accommodate the proposed migration, and there would be no room for future expansion.³⁹ Consequently, creating a broadband service through realignment would force incumbents to endure harmful interference with mission-critical operations and emergency communications facilities until some indefinite future-time when the broadband service provider deploys a longer-term remedy. Notably, in the earlier FCC EWA/PDV Petition proceeding, RM-11738, PDV avoided statements about relocation of large systems while claiming that a majority of systems will be able to migrate. Whether with regard to PDV's proposal or any other realignment proposal, PDV (or whichever new FCC-sanctioned service provider), must address whether larger systems with site density approaching 30 five-channel sites can fit within the 65/70-mile frequency re-use. Otherwise, those electric companies and other entities that have most-committed to and invested in 900 MHz PLMR systems will be disproportionately damaged by realignment.

³⁷ See NOI ¶¶ 12–16 (describing EWA/PDV proposal); NOI ¶¶ 36–39 (acknowledging concerns about the operational impact of relocation).

³⁸ See Record, RM-11738.

³⁹ See EWA/PDV July 14, 2015 Comments, RM-11738, at 12 (conceding lack of spectrum to migrate all incumbents); NOI ¶ 14 (citing Eversource Energy June 29, 2015 Comments, RM-11738, at 1; LCRA Jan. 12, 2015 Comments at 5; LCRA June 29, 2015 Comments at 1).

The cost of realignment is an additional transition issue that must be adequately addressed before the FCC can sanction any realignment proposal. Indeed, the Commission specifically “invite[s] commentators to provide data on what the costs of relocation would be across the band.”⁴⁰ This is a critical inquiry, and the Commission should not move forward with any of the realignment proposals without first having a comprehensive sense of the costs—both immediate and long-term operational costs—associated with realignment and relocation.

Further, the technical rules proposed by the 2/2 and 3/3 MHz realignment⁴¹ would effectively prevent incumbent users from restoring the current effectiveness of their systems. This is because the proposed noise floor used to design existing electric company 900 MHz systems assumes significantly less than noise than the proposed commercial broadband service. When considering the impact of transition and relocation, the Commission should not ignore that mission-critical electric company operations and emergency response demand ultra-high reliability beyond the commercial services that would result from proposed realignment.⁴² Therefore, the true costs of the 2/2 and 3/3 MHz proposal and the other realignment proposals being explored in the NOI far exceed simple relocation and increased operational cost estimates.

Finally, the Commission should consider whether the entity it may sanction to provide 900 MHz service is committed to the buildout requirements for the PEBB license. Unless the Commission sets comprehensive buildout requirements—and the entity demonstrates its ability to efficiently meet them—it is very likely that any LTE buildout will focus only on highly

⁴⁰ NOI ¶ 36.

⁴¹ See NOI ¶¶ 12–16, 27.

⁴² See NOI ¶ 9 (noting that electric companies require a unique combination of “low latency (under 20 milliseconds) and ultra-high reliability (99.9999%),” and the ability to “serve rural and suburban communities as well as more populated areas[.]”) (citing UTC Jan. 12, 2015 Comments at 4-6; UTC March 11, 2011 Comments at 12; NextEra Jan. 12, 2015 Comments, RM-11738, at 6).

populated areas. Such an eventuality does not serve the public interest because CII users—the purported market for the proposed 900 MHz broadband service—operate in both rural and urban service areas. If rural areas are left underserved by a post-realignment 900 MHz provider, then CII entities, such as electric companies, will have to manage mixed PLMR and commercial systems at an increased cost. The Commission should ensure that such an expensive and complicated eventuality is avoided.

WHEREFORE, EEI respectfully requests that the Commission consider these comments and ensure that any future Commission action ordered as a result of this proceeding is consistent with them.

Respectfully submitted,

EDISON ELECTRIC INSTITUTE

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