

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

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

**REPLY COMMENTS
OF
PDVWIRELESS, INC.
d/b/a
ANTERIX**

Respectfully submitted,

**PDVWIRELESS, INC.
d/b/a ANTERIX**

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EXECUTIVE SUMMARY

Reliable energy and power is the cornerstone of our advanced digital economy and is essential for critical operations in transportation, water, communications, finance, food and agriculture, emergency services, and more. Today, any cyber incident has the potential to disrupt energy services, damage highly specialized equipment, and threaten human health and safety. As nation-states and criminals increasingly target energy networks, the federal government must help reduce cyber risks that could trigger a large-scale or prolonged energy disruption.

DOE, Office of Cybersecurity, Energy Security, and Emergency Response: Integrated Strategy to Reduce Cyber Risks for the U.S. Energy Sector (May 14, 2018).

SDG&E plans to deploy long-term evolution (LTE) using a dedicated radio frequency (RF) spectrum. This will improve the overall reliability of SDG&E's communication network, which is critical for fire prevention and public safety. This RF spectrum will be lower frequency with higher transmit power levels, which will allow the LTE network to operate over broader areas and in the presence of foliage. LTE is a globally recognized standard, with a very broad ecosystem made up of multiple vendors that provide equipment that is certified interoperable.

San Diego Gas & Electric Company's (U 902 E) Wildfire Mitigation Plan, Sec. 4.3.16, CA PUC, R.18-10-007 (filed Feb. 6, 2019).

Southern California Edison describes this 900 MHz broadband proceeding as having the potential for “a defining, once-in-a-generation impact on the ability of utilities to continue to deliver safe and reliable power to their customers.”

Ameren Services Company says “[T]he need is now” for creating timely access to “a broadband solution [that] is critical in enabling Ameren to address its evolving communication needs and capabilities.

WHY IS THE NEED FOR FCC ACTION URGENT?

While many industries in this country are eager for access to private broadband capability, two mutually reinforcing factors have made it an existential necessity for the electric utility community: the need to modernize the grid to prevent cascading power outages and the need to shield the grid from cybersecurity attacks.

In mid-June 2019, a blackout eliminated electric power throughout all of mainland Argentina, Paraguay, and Uruguay. Tens of millions of people, a population greater than California, were plunged into darkness early on a Sunday morning. Parts of Chile and southern Brazil experienced outages as well. Had the event occurred on any other day or at any other time of the day, the impact would have been even more catastrophic. While the cause remains under investigation, experts were quoted as saying that a tree limb bringing down a power line or a lightning strike damaging equipment could be the culprit. Utilities in the United States have made significant strides in avoiding such cascading incidents since the 2003 blackout in the Northeastern US and Canada, but the real solution lies in harnessing the latency, capacity, and capabilities of broadband to stop any problem at its source, leaving the rest of the grid unaffected.

The South American blackout does not appear to have been the result of a cybersecurity attack, but that possibility is uppermost in every utility manager's mind. A 2018 KPMG survey found that almost half of power and utility CEOs believe a cyberattack on their facilities is inevitable. No company, much less nation, wants to succeed the Ukrainian power grid as the most recent example of a successful cyberattack. As the demands of businesses and consumers mean that ever greater numbers of distributed resources are being attached to the electric grid, the criticality of protecting it from vulnerabilities will only increase. Access to private broadband

networks, ones not tied to the Internet, will allow the industry to drive toward ultra-secure air-gapped networks, consistent with national infrastructure security recommendations.

The record in this proceeding is extensive and fully supports adopting rules consistent with the Commission's proposal to create a 900 MHz broadband option "to facilitate the development of broadband technologies and services..., including for critical infrastructure." Doing so as expeditiously as possible will demonstrate the FCC's appreciation that this need is real and it is now.

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pdvWireless, Inc. d/b/a Anterix (“Anterix” or “Company”) is pleased to submit its Reply Comments in response to the above-referenced Federal Communications Commission (“FCC” or “Commission”) Notice of Proposed Rulemaking.¹

The record in this proceeding confirms emphatically Anterix’s belief that “the urgent need for industrial broadband spectrum is documented and accelerating.”²

The electrical utility industry in this country is now at a historic threshold. The telecommunications methods, equipment, and networks of the 20th century are no longer up to the task of meeting 21st century climate conditions and security threats, not to mention the increasing complexity of administering the interconnected grids that make up the nation’s electrical infrastructure. SCE views the current proceeding as holding nothing less than the potential to have a defining, once-in-a-generation impact on the ability of utilities to continue to deliver safe and reliable power to their customers for decades to come.³

Southern supports the Commission’s efforts in this proceeding to expand the availability of broadband spectrum for utility and critical infrastructure industry communications needs. In particular, Southern supports the creation of a 3/3 MHz broadband segment, which would provide utilities and other C[ritical]

¹ *Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200, Notice of Proposed Rulemaking, 84 FR 12987 (Apr. 3, 2019) (“NPRM”).

² PDV Comments at 3.

³ Southern California Edison (“SCE”) Comments at 3.

[Infrastructure] [Industry] and enterprise entities with access to much-needed broadband spectrum.⁴

Timely access to a broadband solution is critical in enabling Ameren to address its evolving communication needs and capabilities. While the use cases may change over time, and may be different from utility to utility, the basic utility need for broadband is the same. The Commission itself recognized this requirement but may not fully appreciate its urgency. The need is now.⁵

Duke Energy is pleased that the Commission is proposing to make licensed broadband spectrum available in the sub-one GHz band that could be used by energy utilities to build private LTE systems that would provide the robust, reliable broadband connectivity so desperately needed by energy utilities. By providing dedicated, licensed broadband spectrum in the sub-one GHz band for private broadband LTE networks, the Commission would enable Duke Energy and other energy utilities to implement purpose-built wireless broadband networks specifically designed to effectively and reliably monitor, manage, and control the energy generation and distribution resources of the future.⁶

UTC echoes the comments on the record (including its own) stating that access to licensed broadband spectrum is necessary because it provides protection against interference, and other alternatives such as unlicensed operations and commercial services do not provide the same level of reliability as private utility networks. As such, a 3/3 MHz segment would help to support the basic utility communications requirements for capacity, coverage and reliability.⁷

A realignment in the 900 MHz band to create a 3 MHz x 3 MHz broadband segment with the remainder of the 900 MHz band left for continued narrowband operations is in the public interest. This block of broadband spectrum creates a balance between maintaining narrowband communications as well as creating a broadband opportunity for critical infrastructure. A 3 MHz x 3 MHz channel size as suggested by EWA and PDV will balance those requirements and will produce a cost-effective approach for obtaining licensed spectrum by CII versus competing in auctions against the major telecommunication carriers in other bands.⁸

The 900 MHz band allocation can play an important role in providing needed spectrum for industry IoT applications, critical infrastructure, and private broadband networks. For examples, as utility companies develop and deploy smart grids, they'll need a vast number of wireless smart meters, sensors, and control devices to monitor various conditions of the grid to optimize energy efficiency. Oil

⁴ Southern Company Services, Inc. ("Southern") Comments at 1.

⁵ Ameren Services Company ("Ameren") Comments at 4.

⁶ Duke Energy Corporation ("Duke") Comments at 4.

⁷ Utilities Technology Council ("UTC") Comments at 2.

⁸ Joint Comments of the American Petroleum Institute ("API") and the Energy Telecommunications and Electrical Association ("ENTELEC") at 2.

and gas industries can leverage LTE for enhanced communications utilizing hand held devices, cameras, etc. for improved safety and reliability of equipment.⁹

...FHR supports the FCC's proposal to create a 900 MHz broadband service that will target the communications needs of industrial operations like ours. Having the opportunity to deploy a private broadband network in this band, one that is not tied to the Internet, would be a welcome addition to the menu of wireless options the company will be evaluating when assessing its future requirements.¹⁰

The Commission asks if a broadband segment should be created out of the 900 MHz Band and how large such a segment should be. A broadband licensee will require a 3 + 3 MHz channel to take full advantage of SG LTE-based capabilities and innovations, especially for enabling efficient use of Cat-NB devices defined by 3GPP. The Hawaiian Electric Companies support the designation of 3 + 3 MHz channel in the 900 MHz Band.¹¹

These words have been translated into action by entities such as Ameren and Southern that already are deploying 900 MHz LTE equipment and evaluating use cases pursuant to FCC experimental authorizations. Anterix understands that other utilities are planning to request experimental licenses as well. The information gleaned from these efforts, as well as from the Department of Energy National Renewable Energy Laboratory project described in the PDV Comments,¹² will accelerate the industry's LTE learning curve to the benefit of all industrial users.

American industry is ready. The ongoing activities of the Utility Broadband Alliance ("UBBA") with its growing membership and mission of assisting its members "in planning and deploying secure, reliable, and resilient private broadband networks to support America's transforming digital grid" is a graphic illustration of the urgency with which the utility community views grid transformation and the role private broadband will play in that effort. These compelling broadband use cases and the experimental initiatives by industry pioneers require a permanent solution. Prompt and favorable Commission action in this proceeding, including a transition

⁹ Ericsson Comments at 2.

¹⁰ Flint Hills Resources *ex parte* letter filed June 13, 2019.

¹¹ Hawaiian Electric Companies ("HEC") Comments at 3.

¹² PDV Comments at 6-7.

process that supports early adopters with immediate broadband requirements, would address what is becoming for electric utilities a crisis-level need.

Anterix recognizes that issues remain regarding how best to introduce a broadband service into the 900 MHz Band while preserving the functionality of narrowband operations. These matters must be resolved, but the Commission has ample experience in crafting appropriate transition and licensing provisions for repurposed bands. A few incumbents oppose any meaningful changes to the current rules. They wish to preserve the 900 MHz Band as a narrowband allocation for traditional land mobile operations, although that would leave this spectrum grossly underutilized in much of the country as it has been for more than 30 years and would deny others the opportunity to deploy private broadband networks considered essential for meeting their 21st century operational requirements. Fortunately, the Commission also has extensive experience in balancing the rights of affected parties as it fulfills its fundamental obligation to manage spectrum in the public interest. It surely will do so in this band.

The record in this proceeding is clear. There is growing urgency throughout much of the American industrial community, among utilities and other entities, for private broadband networks on low-band spectrum as an essential tool in meeting their wireless connectivity requirements. As described by SCE, this proceeding can have a “once-in-a-generation impact.” Ameren says, “the need is now.” When its constituents speak in such compelling, unequivocal terms, Anterix is confident the Commission will respond.

I THE RECORD CONFIRMS BROAD CONSENSUS ON MAJOR ISSUES

During the almost four years that the FCC has been considering how the 900 MHz Band can best serve the public interest, the industrial entities in this country, led by electric utilities with their drive toward grid modernization, increasingly have come to recognize that only private

broadband networks can address their 21st century wireless demands. Southern is in the forefront of this transformation. Its wholly-owned subsidiary, Southern Linc, already operates a commercial digital system that uses an LTE platform. As described in its Comments:

Dedicated broadband service provides utilities and CII the high data capacity and low latency necessary for the deployment of technologies and applications that support the increasing reliability, security, and efficiency needs of the nation's energy infrastructure.¹³

This growing appreciation for the critical role private broadband networks can play in industrial operations has shaped the comments filed in this latest state of the proceeding, which now reflect broad consensus on many issues. Most critically, a significant percentage of parties – incumbents, industrial entities, vendors, consultants – affirmatively support a 3/3 megahertz broadband segment.¹⁴ Others, such as Ericsson, Enterprise Wireless Alliance, SCE, and Southern,¹⁵ also encourage the FCC to consider, or even adopt rules in this proceeding that provide for the possibility of expanding the service to 5/5 megahertz at an appropriate time.

Proponents emphasize that their support is conditioned on ensuring that there is no diminution of interference protection for incumbent narrowband systems, an issue the Commission has addressed by proposing appropriately protective technical standards for 900 MHz BB systems. They also want the rules to confirm that no system will be retuned unless the incumbent receives comparable facilities with the associated costs paid by the 900 MHz BB licensee, a standard obligation in band repurposings and one that Anterix fully supports as discussed below.

There also is general agreement that BB Licenses should be issued on a county basis and that incentive auctions are not an appropriate mechanism for addressing holdout problems.

¹³ Southern Comments at 5.

¹⁴ See, e.g., *supra*, n. 3-11.

¹⁵ Ericsson Comments at 4; Enterprise Wireless Alliance Comments at 2; SCE Comments at 4; Southern Comments at 4.

A few parties still oppose a 900 MHz broadband option. They do not necessarily deny the benefits of deploying more advanced technology, but want the FCC to provide a new, greenfield allocation for CII broadband operations.¹⁶ They believe 900 MHz spectrum should be reserved as expansion capacity for narrowband systems.

Anterix initiated this proceeding precisely because the more than decade-long effort to secure licensed broadband spectrum exclusively for utility and other CII entities had not produced the desired allocation. There was then and still is no indication that one will be forthcoming in the foreseeable future. As evidenced in the Comments, the nation's industrial community increasingly is rejecting the prospect of maintaining the status quo indefinitely as inadequate for meeting requirements that are not addressed on commercial broadband networks. This community cannot continue to wait for new spectrum; it is prepared to repurpose its existing allocation to accommodate both narrowband and broadband operations.

As for 900 MHz narrowband expansion capacity, the markets identified in the NPRM as congested have been 900 MHz spectrum-limited for many years, well before any consideration was given to providing for a broadband segment.¹⁷ To the extent there is a need to increase capacity on narrowband systems in those areas, incumbents might consider upgrading to more efficient digital technology that provides multiple communications paths in the same bandwidth. Moreover, a band realignment may actually increase narrowband channel availability. As discussed below, Anterix has already entered into agreements with some incumbents to voluntarily vacate the 900 MHz band. It expects to enter into more. Other incumbents have expressed their intention to migrate to 900 MHz broadband once that alternative is available. Since those licensees

¹⁶ See, e.g., Duke Comments at 3.

¹⁷ Much of the country has ample 900 MHz expansion capacity for B/ILT entities, as well as channels at VHF, UHF, and 800 MHz.

will not need 900 MHz replacement channels, incumbents that wish to continue operating narrowband systems may find that their expansion options increase as a result of this proceeding.

II TRANSITION ISSUES

A. Voluntary Exchange/Comparable Facilities/Relocation Costs

It appears from the Comments in the proceeding and from statements in post-NPRM discussions that there may be confusion about the rights of incumbents in the transition process. This is a critical issue for incumbents and for parties that wish to pursue a 900 MHz BB license and would benefit from clarification.

The NPRM proposes a voluntary exchange process as the fastest and most efficient way to clear the broadband segment in a county. The Company agrees. By definition, in a voluntary process, an incumbent is free to bargain for any terms it deems reasonable. Some incumbents will retune their existing facilities to channels in the proposed narrowband segments using compensation from the 900 MHz BB licensee for staff, contractors, consultants and, if needed to provide comparable facilities, equipment purchases. Others will seek alternative solutions in other bands or will accept financial compensation in recognition that other wireless options are more appropriate for their current needs. Each incumbent should use this opportunity to determine its best path forward. Several already have by reaching voluntary agreements with Anterix over the last four years. The only limitation proposed by the FCC is the prohibition against a greater than 1:1 exchange of 900 MHz spectrum, unless the incumbent chooses to retune its system within the 900 MHz Band, and additional spectrum is required to maintain capacity and coverage.¹⁸

¹⁸ Anterix does not believe additional spectrum will be needed for that purpose, but, of course, will ensure the provision of whatever channels are required to maintain comparability.

However, as recognized in the NPRM and in the Comments of multiple parties including PDV, there must at some point be a triggering mechanism for mandatory relocation of incumbents whose systems are demonstrably retunable to mitigate the inevitable holdout problem.¹⁹ Anterix supports what it calls the “success threshold” proposed in the NPRM. Under this approach, once a prospective broadband licensee is able to present a Transition Plan²⁰ that documents its right to clear a defined percentage of channels in the broadband segment, it would be able to require the cooperation of any remaining incumbent in the retuning of its system. To the Commission’s credit, this “success threshold” has solid economic support and will do much to alleviate the holdout problem and permit the socially-valuable repurposing of spectrum to occur.²¹

Even then, **Anterix considers it a bedrock principle of any band repurposing that all incumbents, at a minimum, are entitled to comparable facilities and to have the reasonable costs associated with modifying or replacing their facilities paid by the party seeking to clear the band. Anterix encourages the FCC to state explicitly that these rights apply to systems retuned mandatorily under the success threshold approach – or any mandatory approach adopted by the FCC.** This was stated in PDV’s Comments, and Anterix considers it a fundamental right of incumbents and responsibility of the clearing party in any band repurposing. So while an incumbent with a demonstrably retunable system would not be able to derail

¹⁹ G.S. Ford and M. Stern, *Addressing Holdouts in the Repurposing of Spectrum for Broadband Services*, PHOENIX CENTER POLICY PERSPECTIVE NO. 18-10 (December 19, 2018) (available at: <http://phoenix-center.org/perspectives/Perspective18-10Final.pdf>); T.R. Beard and G.S. Ford, *Expediting Spectrum Repurposing Through Market Transactions*, PHOENIX CENTER POLICY PERSPECTIVE NO. 18-08 (October 12, 2018) (available at: <http://phoenix-center.org/perspectives/Perspective18-08Final.pdf>); G. Calabresi and A.D. Relamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARVARD LAW REVIEW 1089-1128 (1972) (available at: <https://tinyurl.com/yd4gnfh3>); F. Menezes and R. Pitchford, *A Model of Seller Holdout*, 24 ECONOMIC THEORY 231-253 (2004); T. Miceli, *THE ECONOMIC THEORY OF EMINENT DOMAIN: PRIVATE PROPERTY, PUBLIC USE* (2011).

²⁰ See proposed Rule Section 27.1503(g).

²¹ T.R. Beard, G.S. Ford and M. Stern, *Addressing Spectrum Holdouts With A Transaction Threshold: A Theoretical Analysis*, PHOENIX CENTER POLICY BULLETIN NO. 46 (July 2019) (available at: <http://www.phoenix-center.org/PolicyBulletin/PCPB46Final.pdf>).

broadband deployment in an area indefinitely, even the most recalcitrant licensee would be entitled to comparable facilities, consistent with the well-tested definition in Rule Section 90.699, and payment of the reasonable costs associated with retuning.

This success threshold approach has an additional critical caveat. As proposed in the NPRM, incumbents with “complex systems” would always be exempt from mandatory retuning. Their facilities could be relocated out of the broadband segment **only** pursuant to a voluntary agreement with the Prospective BB licensee.

Complexity is an appropriate distinction for this purpose. The great majority of 900 MHz systems are relatively small in terms of number of sites and channels. While all entities are entitled to be retuned to different narrowband frequencies with as little disruption as possible, the procedures for doing so are well known and have been successfully implemented both in response to previous FCC band repurposings, or sometimes without FCC direction, by a licensee for its own operational reasons.²² Once an appropriate level of band clearing has been accomplished on a voluntary basis, the remaining systems, by definition, represent a very small percentage of spectrum in the broadband segment. They should not be given veto power over the deployment of private broadband networks in an area.

By contrast, there are a limited number of incumbent 900 MHz systems, typically operated by electric utilities, that have extensive geographic footprints and are licensed for a significant number of channels. The PDV Comments acknowledged that those systems would require especially detailed retuning plans to ensure complete continuity of service and agreed that they should not be subject to mandatory retuning at any time.

²² Incumbents are free to use their internal resources to formulate an appropriate retuning plan and/or contract with a third party to assist in that task with the associated costs paid by the 900 MHz BB licensee. There are numerous organizations with extensive experience in retuning projects that could be engaged for this purpose.

The NPRM defined complex systems as those involving 65 or more integrated sites. While other definitions were suggested in the Comments (smaller number of sites; not necessarily integrated sites),²³ Anterix believes the NPRM definition strikes the right balance and encourages the Commission to retain it.²⁴

One party has stated that various Executive Orders require the FCC to conduct a cost-benefit analysis (“CBA”) before it may include any mandatory retuning provisions for realigning the 900 MHz band.²⁵ It attempts to support that assertion by surrounding it with quotes from the Chairman, and other Commissioners and statements about the FCC’s newly established Office of Economics and Analytics (“OEA”) that emphasize the importance of considering the economic impact of regulations the Commission is considering adopting.

Without in any way discounting the value of CBAs developed in response to the various Executive Orders cited in these Comments, or the role economic input can play in the Commission’s decision-making process as part of its overall public interest analysis, the claim that the FCC must conduct a CBA before proceeding is misplaced as the FCC surely knows. Because the President has no authority to direct the activities of independent agencies such as the FCC, Executive Orders are considered as expressions of policy or guidance only. They apply directly only to executive agencies.

Moreover, the economic elements in a band repurposing wherein a party, in this case the 900 MHz BB licensee, assumes the responsibility for all associated costs does not conform to the typical CBA. As stated in the NextEra Comments, Executive Orders (if they were applicable,

²³ Critical Infrastructure Coalition Comments at 8; Lower Colorado River Authority Comments at 10-1; NextEra (“NextEra”) Energy Inc. Comments at 21-22.

²⁴ It may be necessary to sequence the retuning of multiple systems of a single covered incumbent in different areas to minimize the demands on its internal workforce, but that does not increase the complexity of the retuning work itself.

²⁵ NextEra Comments at 13-15.

which they are not) “require the FCC to balance the need for regulation against the resulting burdens.”²⁶ But there will be no economic burden imposed on any incumbent licensee. The costs are to be paid by a party that has volunteered to be responsible for them. Contrary to the CBA appended to the NextEra Comments, 900 MHz licensees would not “bear the costs of the proposed policy.”²⁷

Similarly, there will be no external performance or safety costs borne by the public.²⁸ No incumbent system will be retuned mandatorily without an agreement that the work can be performed safely and with minimal disruption. The particular Florida Power & Light (“FP&L”) system examined in this CBA would be classified as complex and could not be retuned at all except pursuant to a voluntary agreement. On the other hand, the benefits to the public are detailed in the Comments filed by Ameren, Southern, SCE and others who agree that access to low-band private LTE networks is vital, even existential to development of a modernized, secure electric grid.²⁹ Thus, while Anterix does not agree with the retuning cost estimated in the FP&L CBA, the figure is irrelevant. It is not a cost that will be imposed on the incumbent or assumed by the public, and the societal benefits of realigning the 900 MHz band are beyond dispute.

²⁶ *Id.* at 13.

²⁷ The Economics of the 900 MHz Rebanding Proposal, Brattle Group at 22. This CBA was filed originally with NextEra’s Sept. 14, 2018 *ex parte* presentation in this proceeding and was on the record when the FCC adopted the NPRM.

²⁸ *Id.*

²⁹ It is surprising that the author of the CBA fails to recognize the public benefit from repurposing a portion of the 900 MHz Band for broadband use, a concept he recently embraced when examining the C-Band: “To the extent C-Band spectrum could be redeployed to a higher-value use, market and regulatory failures exist.” Joint Comments of Intel Corporation, Intelsat License LLC, and SES Americom, Inc., GN Docket No. 17-183, filed Oct. 29, 2018, Appendix A, Maximizing the Value of the C-Band: Comments on the FCC’s NPRM to Transition C-Band Spectrum to Terrestrial Uses, prepared by Coleman Bazelon, The Brattle Group at iii (Oct. 29, 2018).

B. Broadband Licensing Procedures

Proposed Rule Section 27.1509 provides a detailed description of the eligibility requirements for prospective broadband licensees under the voluntary exchange process³⁰ and also defines eligibility in the event that an auction is used to complete the band clearing process in a county. The rules do not address the success threshold approach or provide specific guidance regarding the timing of using either a success threshold or auction if needed following the voluntary exchange process. Further definition of these areas would provide useful guidance to all parties. To that end, the following is Anterix's understanding of how that process is intended to proceed. The Company also has included as Attachment A a proposed addition to proposed Rule Section 27.1509, entitled Broadband Service Clearing Threshold, for the FCC's consideration.

The NPRM proposes to begin the voluntary process by issuing a public notice that opens a filing window for prospective broadband licensees.³¹ Applications must include a Transition Plan that, among other elements, specifies how the applicant will either relocate or protect all incumbents in the broadband segment. If band clearing agreements have been reached voluntarily with all incumbents, and assuming the other eligibility requirements are satisfied, the application will be placed on public notice for 30 days and then granted, provided no petitions to deny have been filed.

³⁰ PDV's Comments urged the FCC to allow an applicant to claim credit for a geographically-licensed SMR block under proposed Rule Section 27.1503(g)(2) if that block has been partitioned and/or disaggregated pursuant to a voluntary agreement for the express purpose of allowing an incumbent with channels in the proposed Broadband Segment to deploy a new or upgraded system on channels in the proposed Narrowband Segments. This flexibility would also benefit incumbents relocating their current systems and would accelerate the band clearing process.

³¹ Anterix recommends that this window remain open indefinitely. The time for reaching agreement may vary considerably depending on the number of incumbents with channels in the broadband segment and whether any qualify as "complex systems." Obviously, the voluntary window closes when the mandatory relocation negotiation period begins.

The success threshold will provide a safety valve if the prospective broadband licensee is not able to reach voluntary agreements with every protected incumbent in a county (unless that incumbent qualifies as operating a “complex system” that is exempt from mandatory relocation).³² The NPRM proposes that mandatory relocation would be triggered if voluntary agreements are reached with incumbents controlling 90% of the channels in the broadband segment within the first year or with those controlling 80% within the second year.³³ These percentages are high enough to place a significant obligation on the prospective broadband licensee to engage in good faith, voluntary negotiations with incumbents while also providing assurance that broadband deployments can begin in a timeframe consistent with the urgency expressed by so many parties.

Anterix assumes the voluntary negotiation period would start officially when the Commission issues the filing window public notice, although the Company has already entered into voluntary relocation agreements with a number of incumbents. The one- and two-year periods proposed for success threshold purposes would be triggered by a prospective broadband licensee notifying covered incumbents in the county of its intention to initiate voluntary negotiations with them. Upon achieving voluntary agreements for the requisite percentage of channels within the broadband segment, the prospective broadband licensee is eligible to file an application for a 900 MHz BB license.³⁴ The application would need to demonstrate compliance with all eligibility requirements in proposed Rule Section 27.1509, except that the Transition Plan would identify the incumbent(s) with which a voluntary agreement(s) had not yet been reached

³² See Beard, Ford and Stern, *supra* n.21.

³³ For these purposes, channels controlled by the Commission, ones that it is holding in inventory, are treated as being subject to a voluntary agreement pursuant to proposed Rule Section 27.1503(g)(1).

³⁴ The filing of an application by a prospective broadband licensee triggers the mandatory relocation right; it cannot be triggered by an incumbent.

and document that it controlled fewer broadband segment channels than the prescribed percentage. This application could be filed any time after the filing window has opened. For example, if the prospective broadband applicant could demonstrate that the requisite percentage of broadband segment channels had been accounted for by the time the window opened, it would be free to file an application and invoke mandatory relocation with any remaining incumbent(s).

At the same time that it files the application, the applicant would notify the remaining covered incumbent(s) of the initiation of mandatory relocation. The Company recommends a one-year period for negotiation of a mandatory relocation agreement, a period that was used successfully in the rebanding of incumbents from the upper 200 (861-866 MHz/816-821 MHz) 800 MHz channels.³⁵ Any systems that are subject to the mandatory process, by definition, are not complex. Developing a retuning plan and the associated costs should not be unduly difficult, particularly since any such incumbent will have received notification of initiation of voluntary negotiations previously.

If the parties are unable to reach agreement within that one-year period, a situation that Anterix believes will be exceedingly rare, since an entity that files an application for a 900 MHz BB license can be expected to have a serious intention of clearing the broadband segment as quickly as possible, there are at least two options for the Commission to complete that process. One would be to allow either party to refer the matter to the FCC for resolution. The Commission has adopted that approach in other band repurposings, including for the upper 200 800 MHz spectrum, and, to the best of Anterix's knowledge, the volume has not been overly burdensome for the agency. Only a handful of such matters were referred to the FCC in previous band clearing

³⁵ 47 C.F.R. § 90.699(b)(2) (subsequently deleted).

exercises.³⁶ The alternative would be to accept the failure of negotiations and instead conduct an overlay auction for the BB License in that county.

Each option may have advantages and disadvantages from the Commission's perspective. It likely is not eager to schedule and conduct auctions for a limited amount of spectrum in individual counties. On the other hand, it may not wish to be responsible for adjudicating comparability and cost disputes, although it has done so effectively in the past. Anterix will support whichever approach is most likely to avoid protracted delays in allowing this spectrum to be used by industrial entities to address increasingly critical broadband needs.

III OPERATING AND TECHNICAL RULES

Most parties did not address the proposed operating and technical rules, except to emphasize the vital importance of continued interference protection for narrowband systems. Anterix agrees that co-channel, site-based systems outside the county in which broadband has been deployed are entitled to protection under existing Rule Section 90.621(b). The very stringent out-of-band-emission limits and other technical parameters in the proposed rules will provide the necessary protection for site-based systems in the narrowband segments.

Two areas that did elicit comment were the 900 MHz BB license term and the performance requirements. No party objected to the proposed 15-year term for these licenses, and a few recommended a 20-year term as preferable for the industrial users that are expected to deploy broadband networks on this spectrum.³⁷ Anterix agrees that a 20-year term would correlate well with the typical treatment of similar assets by utilities and other industrial entities.

³⁶ The one exception is the ongoing 800 MHz rebanding project where the requirement that incumbent costs be the "minimum necessary" to effectuate relocation resulted in a highly atypical level of FCC involvement in dispute resolution, one that is not comparable to any other band realignment.

³⁷ Duke Comments at 16; Comments of Lockard & White at 2.

For the same reason, several parties questioned imposing performance requirements based on population coverage.³⁸ They suggested that a methodology used to evaluate the deployment of commercial networks intended to serve the consumer market was not well-suited for industrial networks where users have defined service areas, many of which are outside major population centers. The PDV Comments raised this issue and suggested that the FCC adopt a substantial service alternative that would give the Commission the opportunity to determine on a case-by-case basis whether the spectrum was being used to an appropriate level when 900 MHz BB licensees selected that option.

IV CONCLUSION

Each stage of this proceeding has shown greater consensus within the industrial backbone of this nation of the necessity of a 900 MHz private broadband option. The urgency expressed by these companies, in particular electric utilities, grows increasingly intense. Anterix urges the Commission to adopt rules consistent with the NPRM and with the recommendations herein as expeditiously as possible.

³⁸ Duke Comments at 9, 16-17; Southern Comments at 8-9.

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(b) *Broadband Service Clearing Threshold.* A prospective broadband licensee may initiate a voluntary negotiation period by sending written notification to all covered incumbents in the county with which it does not already have an agreement, with a copy to the Commission. Once the prospective broadband licensee has reached voluntary agreements with covered incumbents whose licenses represent the percentage of channels within the 900 MHz Broadband Service specified below, any remaining covered incumbent is subject to mandatory relocation in accordance with the following provisions:

(1) Mandatory relocation trigger:

(A) 90% of the channels within the 900 MHz Broadband Service within one year of the initiation of the voluntary negotiation period; or

(B) 80% of the channels within the 900 MHz Broadband Service within two years of the initiation of the voluntary negotiation period.

(2) A prospective broadband licensee that has reached the percentage in subsections (b)(1) (A) or (B) above may file an application for a 900 MHz BB license, which application is exempt from subsections (a)(2) (1)-(3) above with regard to remaining covered incumbents (except those with complex systems as defined in § 27. ____ of this chapter), and shall also provide written notification to any remaining covered incumbent of the initiation of the mandatory relocation period.

(3) The applicant and any covered incumbent shall have one year to negotiate a mandatory relocation agreement. Both parties are obligated to negotiate in good faith. If no agreement is reached within one year:

(A) either party may request resolution by the Chief, Wireless Telecommunications Bureau; or

(B) the Commission may conduct an auction to assign the rights to the 900 MHz BB license in that county, consistent with applicable Commission rules.