

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Technology Transitions)	GN Docket No. 13-5
)	
Policies and Rules Governing)	RM-11358
Retirement of Cooper Loops by)	
Incumbent Local Exchange Carriers)	
)	
Special Access for Price Cap Local)	WC Docket No. 05-25
Exchange Carriers)	
)	
AT&T Corporation Petition for)	RM-10593
Rulemaking to Reform Regulation)	
of Incumbent Local Exchange)	
Carrier Rates for Interstate Special)	
Access Services)	

To: The Commission

**COMMENTS OF
THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION**

The National Rural Electric Cooperative Association (“NRECA”) hereby submits its Comments in response to the Further Notice of Proposed Rulemaking in which the Commission requests input on the appropriate criteria for the Commission to consider in determining whether to authorize telecommunications carriers to discontinue legacy retail services in favor of a retail service based on a newer technology.¹

¹ *Technology Transitions et al.* GN Docket No., 13-5 et al., Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, FCC 15-97 (rel. August 7, 2015) (collectively referred to as the “Further Notice”).

INTRODUCTION

NRECA is the national service organization for more than 900 not-for-profit rural electric cooperatives that provide electric energy to approximately 42 million people in 47 states or approximately 12 percent of electric customers. Rural electric cooperative infrastructure covers 75% of the land mass of the United States. NRECA's members include approximately 65 Generation and Transmission ("G&T") cooperatives and 840 Distribution cooperatives. Rural electric cooperatives were formed to provide safe, reliable electric service to their member-owners at the lowest reasonable cost. Rural electric cooperatives are dedicated to improving the communities in which they serve; management and staff of rural electric cooperatives are active in rural economic development efforts. Electric cooperatives are private, non-profit entities that are owned and governed by the members to whom they deliver electricity. Electric cooperatives are democratically governed and operate according to seven Cooperative Principles.²

DISCUSSION

Rural Electric Cooperatives Require Highly Reliable Wireline Data and Voice Telecommunications Services To Support Safe and Reliable Delivery of Electric Service

Rural electric cooperatives make extensive use of wireline voice and data telecommunications services provided by telecommunications carriers to support the generation and transmission of electricity and in the distribution of electricity to residential and business customers. A price cap ILEC (in conjunction with or through an affiliated interexchange carrier) often provides both the access service and the interoffice/interexchange service to NRECA members, including TDM private line service acquired to meet the cooperatives' data

² The seven Cooperative Principles are: Voluntary and Open Membership, Democratic Member Control, Members' Economic Participation, Autonomy and Independence, Education, Training and Information, Cooperation Among Cooperatives, and Concern for Community.

communications requirements. The same is largely true for wireline voice communications. Neither competitive local exchange carriers nor competitive interexchange carriers have extended their networks to the rural communities served by NRECA members to the same extent as the incumbent carriers or even to the same extent that these competitive carriers have deployed network facilities in more densely populated urban areas.

NRECA supports the principles adopted by the Commission in connection with the discontinuance of TDM special access services, particularly the “totality of the circumstances” analysis for determining whether discontinuance of a TDM special access service in favor of an IP replacement service is in the public interest.³ This approach has merit and value in assessing whether TDM retail services (that incorporate special access service and dedicated TDM interexchange private line service) should be discontinued in favor of IP replacement services. As under its wholesale service discontinuance analysis, in assessing the discontinuance of retail services, the Commission should fully incorporate the “consumer impact into the discontinuance analysis [as it] is entirely consistent with and necessary to accomplish the purposes of section 214 and should not present a point of confusion for affected parties.”⁴

Reliable wireline data telecommunications services are essential for the day-to-day operation of the electric grid including protective relaying which encompasses the ongoing monitoring of grid performance by intelligent monitoring devices, referred to as protective relays. These devices assess whether grid components are operating within specified values and,

³ Further Notice, ¶159. Three of the five questions that constitute the totality of the circumstances analysis are equally applicable to the retail services provided to business customers such as rural electric cooperatives: Will the price per Mbps increase (focusing on the pricing relationship of dedicated IP replacement services to the current rates for DS1 and DS3 services)? Will reasonably comparable basic voice and data services be available? Will service delivery or quality be impaired? As discussed herein, the ability of IP services to meet the generally-accepted service metrics, such as latency, that are achieved with dedicated TDM services is the threshold consideration in determining whether discontinuance of retail TDM services is in the public interest.

⁴ *Id.* ¶198.

as necessary, send a trip signal to circuit breakers to disconnect a non-compliant component. Protective relaying isolates faults and prevents the cascading of faults throughout a utility electric grid. TDM-based dedicated services such as DS-1 private line service (including access and inter-office components) are used extensively by utilities in connection with protective relaying because the service metrics are sufficiently aggressive and highly deterministic. As a rule, the communications reliability and performance needed for protective relaying are more stringent than those generally required for telecommunications services. Packet-based IP services have variable transmission times and the delivery order of packets is non-deterministic and, therefore, may not be capable of consistently meeting the 40 milliseconds round-trip delay performance level that is critical to protective relaying.⁵

Reliability is also essential for electric cooperative wireline voice communications that support both inbound and outbound calling. In addition to day-to-day communications that are typical of many businesses, wireline voice services are used by cooperatives' members (consumers) to receive notices of service outages and to obtain information related to service installations and repairs. Electric power outage notifications are essential to the prompt service restoration and the safety of life and property in the communities served by NRECA members and to the integrity of their transmission and distribution networks. Circuit-switched voice services, including those delivered over Primary Rate Interface ("PRI") circuits, have proved extremely reliable and durable. NRECA members understand the interest of wireline carriers looking to maximize efficiency and that IP-based voice services are being deployed in many organizations, but the substitution of these services for reliable TDM services should still be

⁵ *Id.* ¶217, n.670 (The Commission expressly acknowledges the unique requirements of electric utilities for highly reliable dedicated services).

assessed consistent with the “totality of the circumstances” analysis with a focus on the requirements of end-users.

Major Concerns of NRECA Member Cooperatives

The Further Notice requests comment on criteria the agency should utilize in considering requests by domestic carriers to replace TDM-based services with IP-based services, indicating that the eight factors proposed by Public Knowledge appear to “align the Commission’s dual incentives of: (1) meeting the statutory obligations to protect consumers, competition, and the public safety; and (2) resolving discontinuance applications as briskly as possible.”⁶ As the “totality of the circumstances” analysis for special access service, the proposed criteria for retail services replacements emphasize the reliability and functionality of the replacement services. While residential and small business customers in rural communities need and deserve reliable service, generally they do not have the same needs in terms of capacity and reliability as entities engaged in the transmission and distribution of electricity. Similarly, many enterprise customers do not require the aggressive service metrics for latency, bit error rate, and end-to-end service availability as electric utilities and other critical infrastructure industries require in support of their core operations and functions.⁷

⁶ *Id.* ¶207. The proposed factors include network capacity and reliability; quality of service; interoperability; service for disabled individuals; ability to access Public Safety Answering Points and 911 services; cybersecurity; service functionality; and coverage. *Id.* ¶208.

⁷ High speed Internet access is not a replacement service for end-to-end dedicated DS1 and DS3 services, particularly for NRECA members and other utilities. It is not a question of capacity but, as the carriers have asserted in many contexts, high speed Internet access is a “best efforts” service. More broadly, it is noteworthy that many businesses other than electric utilities decline to place general business traffic on the public Internet, preferring Multiprotocol Label Switching (“MPLS”). This is an IP-based service offered by the major interexchange carriers to enterprise customers that provides “any-to-any” connectivity among the enterprise’s defined locations. Significantly, MPLS traffic does not traverse the public Internet and extensive service level agreements measuring service metrics such as availability, jitter and latency are provided.

NRECA understands the interest of telecommunications carriers and the Commission in looking to resolve discontinuance applications “as briskly as possible.” However, NRECA believes it may be premature at this time to establish a self-certification option in connection with services offered as substitutes for end-to-end dedicated DS1 and DS3 services. NRECA appreciates that to require testing to support every application filed by end-to-end services providers under Section 214 to discontinue dedicated TDM services could prove unduly burdensome and cumbersome for all interested parties.⁸ However, limited real-world testing of proposed replacement IP services by end-to-end services providers and interested customers should be explored fully. Interested end-user groups could work with carriers to establish these testing procedures. One possible outcome is that carriers may offer replacement service options for dedicated DS1 and DS3 services having multiple levels of latency, bit error rate, end-to-end service availability and other metrics. This would be a far better outcome than a one-size-fits-all set of service metrics, as the Further Notice acknowledges.⁹ Assuming the provision of IP services is as compelling as projected by telecommunications carriers, the IP transition will move forward in many instances. In connection with certain end user requirements, the IP transition may be deferred.

The migration to IP-based voice services may be less of a reliability challenge for business customers, including electric cooperatives, as compared to critical wireline data communications requirements. It bears emphasizing, however, that wireless service is not a viable replacement for electric cooperatives’ wireline voice service requirements.

Fundamentally, wireless carriers do not warrant the availability of service in any area, rural or urban, and do not warrant that even if a wireless customer is within the provider’s network

⁸ Further Notice, ¶ 214.

⁹ *Id.* ¶ 217, n.670.

service footprint that a wireless connection will be established. Rural electric cooperatives that have substantial 24 x 7 responsibilities to provide reliable electric service to their customers and to respond promptly to service outages cannot be asked to rely on best efforts commercial wireless service to meet the voice telecommunications requirements currently supported by circuit switched wireline services, particularly in rural areas.¹⁰

NRECA generally supports the Commission's goals with regard to cybersecurity. An established cyber security best practice among the vast majority of all companies engaged in the generation and transmission and distribution of electricity is that communications services and facilities associated with essential utility functions, such as supervisory control and data acquisition ("SCADA") and protective relaying are separated from other wireline and wireless voice and data services, particularly high speed Internet service, utilized by these companies for general business communications. This practice has minimized the extent to which cyberattacks have adversely impacted the operation of the Nation's electric infrastructure.¹¹ Nevertheless we are concerned that the Commission should not be introducing new service standards particularly for rural carriers in this proceeding.

The IP transition involves either the transition to all-IP customer premises equipment ("CPE") or the installation of gateway devices that permit interoperability between circuit-switched CPE and IP services. NRECA agrees with the Commission that a successful IP-

¹⁰ NRECA acknowledges the importance of the Department of Homeland Security's Wireless Priority System (WPS), the expansion of which to data communications would be prudent in the emerging all-LTE wireless environment. However, exclusive reliance on wireless service for voice communication is not a viable option for rural electric cooperatives.

¹¹ J. Pagliery, *Hackers Attacked the U.S. Energy Grid 79 Times This Year*, CNN Money (Dec. 29, 2014, 1:41 PM), <http://money.cnn.com/2014/11/18/technology/security/energy-grid-hack/index.html> (Cyber damage to the Nation's electric grid has been minimized by industry practices separating energy companies' Internet-connected corporate computers from the stations that control critical machines).

transition is dependent on the availability of compatible CPE and other end user devices.¹² Adequate notice to deploy compatible CPE and other end user devices is equally important. For NRECA members, cooperative-wide replacement of CPE will entail a significant expenditure of funds and resources to install and test. The Commission has established a minimum notice period of 180 days for copper replacements. At a minimum, the same notice period should apply to the transition to IP-based services after end-to-end services providers are authorized to migrate to IP services.

The IP transition will entail substantial planning by telecommunications carriers. Based on this planning, the major facilities-based carriers will have reasonably detailed, transition project plans. Thus, these carriers are well- positioned to establish and maintain web sites that depict the timelines for the service transitions in their respective service areas, possibly on a state-by-state basis. This transition time line information will facilitate planning by end users for the migration to all IP-communications. Carrier-managed web sites that depict transitions by areas and timeframes would be beneficial to all end users at little or no additional cost to the carriers.

In light of the substantial savings that the major telecommunications carriers project from the operation of all-IP networks,¹³ the Commission should adopt several guidelines to minimize end user concerns related to migration costs and service continuity. First, there should be no ambiguity that telecommunications carriers will bear the capital costs of the IP-transition. End users should not pay the costs, characterized as “special construction charges” or otherwise, for replacing copper lines, upgrades to copper facilities to support Ethernet services, new IP

¹² Further Notice, ¶¶219-220.

¹³ *Id.* ¶159, n.551 (“[T]he record is replete with references to the efficiencies inherent in IP-based networks and services and the cost savings that the incumbent LECs should realize from transitioning away from TDM networks and services.”).

transmission equipment or construction costs of replacement fiber facilities. Second, end users should have the option to test replacement IP services. When enterprise customers migrate to different network topologies or move circuits from the incumbent to the successor carrier, the standard practice is that these customers continue to operate the existing services and circuits until successor's services and circuits are installed, tested and accepted. Unlike the enterprise customer initiating the service and circuit migration on its schedule and at its request, the IP transition is carrier-driven. During transition testing, electric cooperatives and other end users should only be obligated to pay for the existing service until the replacement service is accepted.

NRECA supports the concept that the substitute service must remain available in the affected service area to the persons to whom the discontinued service had been available. However, NRECA has a related concern associated with the concept of coverage.¹⁴ As the IP-transition moves forward with reliable replacement IP services, CPE manufacturers will progressively abandon production and support of TDM products. From the perspective of rural communities, the IP transition should be systematically implemented by facilities-based carriers throughout their service territories so that another version of the “digital divide” does not arise between rural and urban areas.

¹⁴ *Id.* ¶231.

