

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

In the Matter of)	
)	
Ensuring Customer Premises Equipment Backup Power for Continuity of Communications)	PS Docket No. 14-174
)	
Technology Transitions)	GN Docket No. 13-5
)	
Policies and Rules Governing Retirement Of Copper Loops by Incumbent Local Exchange Carriers)	RM-11358
)	
Special Access for Price Cap Local Exchange Carriers)	WC Docket No. 05-25
)	
AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services)	RM-10593
)	

**COMMENTS OF THE
EDISON ELECTRIC INSTITUTE**

The Edison Electric Institute (“EEI”) hereby submits these comments in response to the Federal Communications Commission's ("FCC" or "Commission") Notice of Proposed Rulemaking and Declaratory Ruling ("NPRM") released in the above-referenced proceeding on November 25, 2014.¹ In the NPRM the Commission asks, *inter alia*, a number questions regarding what changes are required to ensure that the Commission's copper retirement process protects retail customers (including non-residential users such as businesses and anchor institutions) and facilitates completion, and whether the FCC should revise its rules with regard to Section 214 service discontinuances.

¹ *In the Matter of Ensuring Customer Premises Equipment Backup Power for Continuity of Communications, et al.*, Notice of Proposed Rulemaking And Declaratory Ruling, PS Docket No. 14-174, *et al.* (Nov. 25, 2014).

Given the importance to electric utilities of copper loops and various services and equipment related thereto, as well as problems utilities are coming to face as a result of copper retirement and section 214 discontinuances, EEI focusses its comments on these topics.

I. SUMMARY

Electric utilities welcome the FCC's inquiry into these matters, though they are troubled that – with the noted exception of the Utilities Telecom Council (“UTC”) – no party commenting in this proceeding has addressed the issues that are critical to electric utilities and essential to their continuing provision of reliable, resilient and secure service. Electric utilities extensively rely on copper-based services and facilities provided by Incumbent Local Exchange Carriers (“ILECs”) for a variety of important utility functions, some of which are critically related to public safety as well as system control and monitoring.

Electric utilities have suffered from every problem recounted by the FCC in its NPRM related to copper retirement and service discontinuance including *de facto* retirements, inadequate notice of retirement or discontinuance, the imposition of repeated price increases as a means of effectively forcing utilities off copper, being forced to accept much higher fiber-related costs, ILEC offerings of inadequate substitutes, and impairment of services provided to electric utilities by competitive Local Exchange Carriers (“CLECs”) resulting from copper retirements and discontinuances. The problem is exacerbated for electric utilities because the transition to all-Internet Protocol (“IP”) networks involves thousands of lines in many locations, can take up to five years to achieve, and can result in additional costs of \$60-85 million which must be recovered by electric utilities in state rate cases. Moreover, some of the substitute services offered to utilities by ILECs are inadequate for their communications needs, while IP services come at a higher cost, forcing many electric utilities to replace ILEC service altogether by

building their own internal networks, even though they face the problem of the lack of available spectrum.

Faced with these realities and their implications for electric utilities' provision of safe, reliable service to customers nation-wide, EEI urges the FCC to take the following actions with respect to copper retirements:

1. Ensure that electric utilities as well as other impacted business and retail customers of carriers are provide adequate notice of, and an opportunity to comment on, copper retirements and service discontinuances contemplated by carriers.
2. Require carriers to provide an adequate transition period (*i.e.*, 3-5 years), rate stability for customers during that transition period, and to continue maintenance on all copper facilities until they are fully retired at the end of the transition period.
3. Ensure that ILECs offer reliable, resilient and cost-efficient substitutes for retired or discontinued facilities and services.

II. COMMENTS

A. Edison Electric Institute

EEI is an association of United States investor-owned electric utilities and industry associates worldwide. Its U.S. members serve almost 95 percent of all customers served by the shareholder-owned segment of the U.S. industry, about 70 percent of all electricity customers, and generate about 70 percent of the electricity delivered in the U.S. EEI frequently represents its U.S. members before Federal agencies, courts and Congress in matters of common concern, and has filed comments with this Commission and others in various proceedings affecting the interests of its members.

EEI's members make extensive use of communications as providers of critical infrastructure industry ("CII") services, both as owners and operators of private communications systems, and as end-users of commercial communications networks. They are in fact among this

nation's largest users of communications networks and services and, over the years, have invested and continue to invest billions of dollars in communications plant as this nation's electric grid is modernized. Even with these investments in their own networks for the purposes of security, reliability and efficiency, these utilities still tend to make extensive use of wireline services, particularly copper loops and related services and equipment for their non-critical (*e.g.* not related to public safety or grid management) but still important communications.

B. Electric Utilities Make Extensive Use of Communications – Particularly Copper Facilities and Services – in the Provision of CII Electric Service, and Therefore Have A Substantial Stake in the IP Transition.

This nation's electric utilities have a clear stake in the discussion surrounding IP transition, copper retirement and section 214 discontinuances. Nearly every electric utility today relies on Frame Relay and other time-division multiplexed (“TDM”) enterprise wireline carrier services to support critical control data as well as critical facilities such as substations. A recent survey of the types of services leased by electric utilities found that 44% of respondents leased Frame Relay, 42% leased 4-Wire, Class A Service, and 82% leased 4-Wire, Class B Service, Full Duplex (Data).²

Like the telecommunications industry, the electric grid is in the midst of a far-reaching modernization effort vis-à-vis grid modernization. Mindful of this, EEI recognizes that transitions of the sort in technology and infrastructure are inevitable, and the electric industry wishes to facilitate, rather than impair, this transition process. However, any transition away from a technology that is so heavily relied upon by the utility industry must be done in a manner so as to avoid impacting the ongoing reliability, resiliency and security of the electric grid.

² EEI Transmission Strategic Advisory Committee, Telecommunications Survey Presentation at 11 (Apr. 9, 2014).

Yet while numerous telecommunications carriers have announced plans to discontinue Frame Relay and other service, electric utilities have no firm assurance that they will be timely notified by carriers in advance with sufficient enough time to take action, or afforded opportunity to comment on, or object to, such changes. In fact, some utilities have either been notified after the fact or given less than ninety (90) days' notice of discontinuance. This poses much uncertainty and numerous operational problems for utilities in their provision of critical electric service.

C. Most Electric Utilities Have Been Impacted by *De Facto*, Actual or Proposed Retirement of Copper, and Service Discontinuance.

Significantly, 73% of respondents had been notified by their carrier that services would be terminated. 55% had been notified that their Frame Relay services would be terminated, 39% that their 4 Wire Class A services would be terminated, and 52% that their 4 Wire Class B services would be terminated.³ Moreover, electric utilities have suffered from *de facto* service discontinuances as ILECs have begun to cease to maintain their copper facilities. In many of these cases the notice provided to utilities from their carriers has been totally inadequate because, given the thousands of lines, numerous locations, and millions of dollars of transition costs involved, it is impossible for electric utilities to reasonably transition away from discontinued services in less than 3-5 years.

The problems faced by utilities are significant: 87% of the respondents indicated that there had been capital budget impacts, and 82% that there had been manpower resource issues as a result of the discontinuances.⁴ Among the difficulties cited by the companies were the following:

³ *Id.*

⁴ *Id.* at 14.

- The need to build private networks to replace the copper facilities.
- Unrealistic conversion schedules.
- Potential operational and security impacts.
- Lack of resources to complete the conversion.
- O&M budget impact with higher monthly recurring costs and unexpected rate increases.
- Inability to find low-cost or adequate substitute services.

D. FCC Should Revise its Copper Retirement Rules and Processes to Require ILECs to Provide Notice To, and Permit Comment By, Their Customers, Including Business Customers Such As Electric Utilities.

Attached as Exhibit A to these comments are responses from various electric utilities of differing sizes and service territories to questions posed by EEI in an attempt to secure anecdotal information regarding the problems faced by electric utilities as a result of copper retirements and discontinuances.⁵ The questions are similar to those posed by the Commission and the answers parallel the results of the survey.

EEI agrees with UTC that there is good reason for the Commission to revise its copper retirement rules to expand notice requirements to electric utilities as well as other business customers who have come to rely on these services.⁶ As it stands, utilities are being provided with inconsistent and insufficient levels of notice from the carriers concerning service discontinuances, at times forcing utilities to find alternative solutions for their communications in short order to maintain their critical operations. UTC is correct to note that the services being discontinued by carrier impact the safety, reliability and security of utility operations, and it is for this reason that the public interest would be served if the Commission were to extend its

⁵ See EEI Member Responses: FCC IP Transition Survey – Feb. 2015, attached hereto as Exhibit A (“EEI Exhibit A”).

⁶ See Comments of the Utilities Telecom Council, PS Docket No. 14-174, at 7-9 (filed Feb. 5, 2015).

notice requirements to include customers of ILECs and, in particular, electric utilities.⁷ It is crucial that such notice period be longer than the 30 days provided under the FCC's current rules for CLECs. To accommodate the needs of utilities, which have thousands of lines at numerous locations, and which have high standards for reliability and resiliency, EEI supports UTC's suggestion that carriers be required to provide utilities with at least a year of advance notice.⁸

And, like UTC, EEI voices strong support for the Commission's proposal to provide an opportunity for consumers to comment in response to notification by the Commission that a carrier intends to discontinue service in a given area. This proposal should be made to apply specifically to electric utilities and CII.⁹

E. FCC Should Establish an Adequate Transition Period (*i.e.*, 3-5 years), During Which Time Carriers Are To Provide Rate Stability for Customers and Continued Maintenance of Copper Facilities.

EEI urges FCC to establish an adequate transition period of three to five years, over which time carriers may retire or discontinue copper and related services. A three- to five-year transition window is essential for electric utilities given the numerous circuits involved, as well as the planning that must be done by utilities in response to such retirements. The FCC should further require carriers to provide such notice in a clear, consistent manner to ensure utilities are properly notified. Currently, electric utilities report receiving notice from their carriers of facility or service retirements or discontinuances in an inconsistent and disjointed manner – at times through verbal communications or other non-formal channels – and with insufficient lead-time to enable utilities to plan.¹⁰ This phenomenon is troubling, and effectively denies utilities

⁷ *Id.* at 8.

⁸ *Id.* at 8-9.

⁹ *Id.* at 8.

¹⁰ *See, e.g.*, EEI Exhibit A at 1 (Ameren), 6 (Cleco), 10 (LG&E/KU), 12 (NextEra), 14 (PG&E), 16 (PPL), 18 (PSEG)

the time they need to conduct thorough reviews of security protocol services and reliability, and engage in financial preparation and implementation of new services.¹¹

The FCC should further ensure that, during this three- to five-year transition period for retirements or discontinuances, carriers provide rate stability for their customers, and continue to maintain all copper facilities until they are fully retired at the end of the transition period.

F. FCC Should Ensure that ILECs Provide Reliable, Resilient and Cost-Efficient Substitutes for Retired or Discontinued Facilities and Services.

In order to protect customers, competition and public safety, the Commission has sought comment on what constitutes an adequate substitute for a retail (including business) service being discontinued, reduced, or impaired. In the view of EEI, the FCC should require a demonstration, as part of the section 214 discontinuance process, that any IP-supported network or network components offer comparable communications security, integrity and reliability. In addition, the FCC should adopt a rebuttable presumption that section 214 approval is required where the discontinuance or impairment pertains to wholesale service given the importance of these services to CII entities such as electric utilities.

Finally, the FCC is correct in concluding that it should require ILECs seeking section 214 authority with regard to a legacy service used as a wholesale input by CLECs to commit to providing equivalent wholesale access on equivalent rates, terms, and conditions.

III. CONCLUSION

EEI supports the FCC's efforts in this proceeding to consider issues critical to the IP Transition, and it asks the Commission to act consistent with these comments to ensure that its copper retirement process protects electric utilities and other impacted customers by:

¹¹ See EEI Exhibit A at 16 (PPL).

1. Ensuring customers of carriers are provide adequate notice of, and an opportunity to comment on, copper retirements and service discontinuances contemplated by carriers;
2. Requiring carriers to provide an adequate transition period (*i.e.*, 3-5 years), rate stability for customers during that transition period, and to continue maintenance on all copper facilities until they are fully retired at the end of the transition period; and
3. Ensuring that ILECs offer reliable, resilient and cost-efficient substitutes for retired or discontinued facilities and services.

Respectfully submitted,

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Exhibit A

**EEI Member Responses: FCC IP Transition Survey
February, 2015**

EEI Member Company: Ameren**1. What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**

- A. Ameren utilizes 4 wire Type 3002 Class A and Class B circuits for SCADA and Relaying services. We utilize VM circuits for Telemetry services. We have some dry copper pairs for misc. substation services. We utilize T-1 services for substation and WAN connectivity. We have some 56kb digital circuits for some substation communications. We also have TDM based DS-3 circuits for WAN connectivity. For voice, we still utilize POTS, T-1, ISDN, analog DID, analog COT, analog DOD, and E911 CAMA trunks. In addition, we utilize copper based ADSL for some remote connectivity to facilities.

2. Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?

- A. AT&T has informed Ameren of their intention to eliminate all TDM services by 2020.

Some smaller regional/rural phone companies have informed us and have already eliminated copper plant from their facilities and have forced us over to a cellular connection or forced us to install additional power facilities to power their fiber equipment.

3. Have any of the copper facilities used by your company been "de facto" retired?

- A. Yes, but only by smaller, rural/regional phone companies that have gotten grants/funding to move all facilities off of copper. Widespread elimination of facilities have not yet occurred.

4. How were the retired or discontinued facilities or services used?

- A. Mainly for voice communication and modem communication to non-critical locations.

5. If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?

- A. Approximately 180 days on average

6. How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?

- A. Analog services have gone up over 120% at the last contract renewal and we have been informed to expect similar, if not higher increases to the costs at each renewal.

Over the last 6 months, phone companies are now starting to charge infrastructure installation charges for traditional T-1 services based upon "special construction charges". This has not been seen in the last 15 years for non-fiber based construction or for non-high voltage cable construction.

Reliability and Service restoral has drastically gotten worse. The phone companies no longer will send personnel out after normal business hours or weekend to repair any analog

service. Their core T-1 services have also been impacted by reliability and repair issues where the circuits are not being repaired in a timely manner.

For any substations that are needing any changes to communications, the phone companies are beginning to push for fiber into the substation and has priced a very large installation cost for install of the fiber and expects the customer to pay for that large expense.

7. What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?

- A. Ameren will be investing in a mainly private solution of fiber, microwave, and wireless to eliminate most telephone company services. This investment will be made over the next 5-10 years.

8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?

- A. No, not yet.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

- A. Nothing from a telephone company provided service. We are looking to go mostly all private.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

- A. We would need to evaluate the business case for the purchase of the existing facilities and compare it to the cost of running our own facilities on our existing Right of Ways.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

- A. There is a concern with cyber security surrounding how secure the data to critical assets would be utilized public data networks.

From a reliability standpoint, the phone companies have told us their plan to provide last mile service is from the utilization of cellular technologies, which are not reliable enough in the event of a major disaster or event.

For relaying services, the existing RBOC provided data circuits will not provide compatible services or reliability needed for critical power line tripping/monitoring capability.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

- A. Ameren only utilizes POTS lines and PBX trunks from CLECs. We he not be notified of any changes in service, but expect that to occur since the CLEC we utilize is just reselling services provided by the local RBOC..

EEI Member Company: ATC

1. What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?

- A. Frame Relay/MPLS with Class B Service
Channelized T1 with Class A and Class B Service
4-Wire with Class A Services

2. Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?

- A. No retirements at this time, but ATC has been notified 4-wire services will be disconnected in Oct-2019.

ATC has been told that Channelized T1 services are not available in all areas. It appears the RBOC will only provide only MPLS-IP over T1 services.

3. Have any of the copper facilities used by your company been "de facto" retired?

- A. Not at this time, but were told by RBOC field service technician that 4-wire service equipment is not supported by the manufactures and replacement cards are becoming difficult to find.

4. How were the retired or discontinued facilities or services used?

- A. During our AT&T October 2014 Stewardship meeting, ATC was notified of the 4-wire planned retirement (October 2019).

During our Wisconsin Inter-Utility Telecom Meeting (February 2015), we heard that TDM services and High Voltage Equipment has been targeted for retirement around 2020. At our next AT&T Stewardship meeting, the TDM services and HVP equipment retirement plan will be added to our meeting agenda.

5. If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?

- A. AT&T formal 4-wire notification came five years before the termination date. Five year notification is too short for proper planning and execution. A seven year notification would be our preference.

6. How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?

- A. The Analog (4-wire) circuits were no longer eligible to group term rate discounts. The 4-wires circuits now are month to month services which has been subjected to 25 percent increase every four months. We considered this as price gouging.

7. What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?

- A. ATC has taken steps to develop the following strategy:
- i. Install OPGW (Optical Ground Wire) to replace 4-wire circuits
 - ii. Install Power Line Carrier to replace 4-wire circuits
 - iii. Evaluate Cellular services for voice and data applications to replace analog services
 - iv. Evaluate Wireless services (Microwave and Radio)

8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?

- A. Channelized T1 are difficult to order – Replaced by MPLS-IP T1 services.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

- A. ATC has developed a replacement plan for 97% of 4-wire circuits. The remaining 3% involve collaboration with non-ATC customers for the appropriate solution.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

- A. Yes – In our industry, our critical communication infrastructure is highly dependent on copper to support TDM base communication services. In addition, most of our substations locations are rural areas where cellular and fiber infrastructure is not available or cost prohibitive to build-out cost.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

- A. ATC is currently evaluating best integration and security practices for IP-based services.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

- A. Yes, but it appears the larger CLECs are moving away from TDM and over to MPLS-IP base services.

EEI Member Company: Cleco

1. **What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. T1 and less than six 4-wire. We disconnected all 4-wire possible due to escalating cost.
2. **Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. N/A
3. **Have any of the copper facilities used by your company been "de facto" retired?**
 - A. Forced to discontinue 4-wire due to 30% price increase semi-annually
4. **How were the retired or discontinued facilities or services used?**
 - A. SCADA
5. **If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. 3 months. 2 years is desirable.
6. **How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Spent capital dollars to install wireless networks to accommodate offloaded circuits.
7. **What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. Built out private wireless networks.
8. **Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. No.
9. **Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?**
 - A. Yes, private wireless.
10. **Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?**

A. No.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. N/A

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. No, only AT&T.

EEI Member Company: Integrys

- 1. What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. 4 wire services, copper loops, copper T-1.
- 2. Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. They have not been retired yet but we have been told of discontinuance but not with any formal date as of yet.
- 3. Have any of the copper facilities used by your company been "de facto" retired?**
 - A. No but support of those facilities has become practically non-existent.
- 4. How were the retired or discontinued facilities or services used?**
 - A. N/A
- 5. If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. N/A
- 6. How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Although not discontinued as of yet, the increased cost of these facilities makes them very undesirable.
- 7. What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. All of the above. We will use every strategy available to us to remove these old legacy copper facilities and move them to an IP based service. We have even used satellite to good success. We also use M-M cellular.
- 8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. Yes.
- 9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?**

A. Yes but it takes a big investment in time and money on our part to do this.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

A. No.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. For the most part, yes however the RBOC's are usually higher priced than their competitors, including cable companies.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. Yes we look for the best provider based on cost, availability and service. We use many competitive carriers in our search for new network facilities usually at a competitive advantage to us.

EEI Member Company: Louisville Gas & Electric Company; Kentucky Utilities Company

1. **What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. 4-Wire Class B Service Full Duplex, T1's, POTS lines.
2. **Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. Yes, we have received notice (verbal) of retirement of copper based T1's and 4 Wire Class B service; we have been told T1's will be retired in the 2020 time frame and 4 Wire Class A service will be retired by the end of 2019. We have also had several regional telco's already discontinue analog services (we have replaced these with T1's).
3. **Have any of the copper facilities used by your company been "de facto" retired?**
 - A. Not yet.
4. **How were the retired or discontinued facilities or services used?**
 - A. SCADA circuits, Security circuits, Radio circuits, IP Data.
5. **If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. We were given verbal notice of the 4 Wire Class B service retirement in 2013 and for the T1s, in late 2014.

Timing was inadequate and no formalized document was shared with us showing exact turn down dates. Carrier would not commit to verbal dates in recent contracts.

We would prefer to receive 5-10 years notice depending on the applications using retired services

For the regional telcos, virtually no advanced notice is given.
6. **How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Higher telecom bills, increased O&M expense and effort, equipment made obsolete, poor service restoration by carriers; significant capital cost to provide channel equipment and modernize high voltage protection packages.
7. **What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**

- A. Considering multiple options: MPLS, VPLS, Ethernet service, wireless, building out our internal network to reach sites traditionally served by sites served by these retired services, etc.

- 8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. Not yet.

- 9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?**
 - A. Investigating possible solutions now.

- 10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?**
 - A. No.

- 11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?**
 - A. Unsure at this point; none are being used.

- 12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?**
 - A. Yes, and meet point circuits are impacted as well.

EEI Member Company: NextEra

- 1. What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. Pretty much all of the items listed. As large as NextEra (NEER) is we are going to have a pretty much all types of services offered by the RBOCs.
- 2. Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. We have seen the retirement of Frame Relay by ATT. Now moving in the same direction with Embarq.
- 3. Have any of the copper facilities used by your company been "de facto" retired?**
 - A. I would say we are seeing a form of "de facto" retirement in that the carriers are beginning to drop SLAs and move to best effort service for systems the carriers are phasing out.
- 4. How were the retired or discontinued facilities or services used?**
 - A. No response.
- 5. If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. NEER was not satisfied with the timing of the notification nor the willingness of the carriers to negotiate a transition schedule. Proper notice should be handled through an annual update by the carriers on their technology roadmap.
- 6. How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. High system replacement cost and higher O&M cost for replacement service.
- 7. What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. Have constructed numerous MPLS systems for recently replaced systems and will need to build more MPLS systems as other services are retired or experience service degradation as systems reach EOL.
- 8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. Degrading performance on DSOs, DS1s and similar services are leading us to transition systems to IP services.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

A. Solutions have been found but it has created a challenge in the acquiring budget and resources to implement.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

A. NEER is probably not interested in this option. At most this would be considered for a special case situation only where the business impact of change is extremely burdensome.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. For the most part there is the option to provide a solution that is comparable or better though the cost to deliver the service is typically much higher.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. Don't really utilize enough of the competing services to see an impact.

EEI Member Company: PG&E

1. **What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. Minimal Frame Relay services,
Approximately 3500 DS0 Class A and Class B, 2 Wire and 4 Wire leases
Approximately 1000 DS1 leases
2. **Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. Yes, Verizon has provided notice that "Class" A DS0 level leases have been discontinued
3. **Have any of the copper facilities used by your company been "de facto" retired?**
 - A. Yes, one power plant experienced outages during rain storms and despite repeated trouble tickets was never adequately repaired. Eventually, PG&E paid AT&T to replace the copper cable with Fiber to improve the reliability and allow safe and reliable operations of the power plant.
4. **How were the retired or discontinued facilities or services used?**
 - A. Electric Protection, Station Automation (SCADA), IP Network Connections.
5. **If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. Verizon stopped filling orders for Class A services in January 2014, and notified PG&E via a bill insert in Sept 2014. This is about a negative 9 month notice. Notification was not timely given the amount of circuits involved, clearances and notifications needed, and budgetary planning necessary to facilitate replacements. We would need 3-5 years to effect a change of this magnitude given the number of circuits involved.
6. **How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Replacement services proposed by carriers are approximately 20-30 times the current monthly recurring cost. Most DSO leases are \$40-50/Mo, MPLS services are \$1000-1500/Mo. At this point carrier based MPLS services have not been tested and approved for some utility applications (electric protection).
7. **What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. We have a program that proposes to migrate to satellite, Private Radio, MPLS Leases, Private Microwave, or Fiber as necessary to meet the communications needs of the facility. However, given the minimum notification time we still need to explore other options.

8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?

A. Yes, aside from the hydro site mentioned above, we had another instance where unreliability of telephone service remote facilities caused PG&E to install a private system for employee safety.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

A. For some services such as SCADA, replacement services are available and adequate, for others such as electric protection no reliable replacement has been identified.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

A. This does not appear to be a practical option due to the significant amount of unknowns involved in this type of agreement.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. No they have not offered any solutions which match Class A level circuit security, integrity or reliability.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. Yes we do lease from CLECs, they have not been affected to my knowledge at this point.

EEI Member Company: PPL

1. **What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. Currently we purchase Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops; 2 and 4 wire RTNA circuits.
2. **Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. Currently no services have been retired. Yes, our company has received notice that Newbridge equipment and 4W services will be affected.
3. **Have any of the copper facilities used by your company been "de facto" retired?**
 - A. Currently, no.
4. **How were the retired or discontinued facilities or services used?**
 - A. N/A
5. **If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. Our company would prefer to receive a minimum of 5 years. This time is to allow for research of security protocol services, reliability, financial preparation and implementation of the new services.
6. **How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Currently not impacted.
7. **What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. Our company has documented all circuit requirements from a security service and reliability perspective, issued an RFI to understand replacement technologies being offered and engaged vendors in discussions of the services mentioned above.
8. **Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. No.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

A. Although not cost effective, we have determined there are technologies we expect to be able to deploy in lieu of current technologies.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

A. We would explore that option.

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. To our knowledge, we believe they do.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. No CLECs.

EEI Member Company: PSEG

- 1. What type of copper based services and facilities does your company obtain from the Regional Bell Operating Companies (RBOCs) (e.g. Frame Relay, 4-Wire Class A Service, 4-Wire Class B Service Full Duplex, copper loops or feeders etc.)?**
 - A. Frame Relay, ISDN, POTS
- 2. Have any copper facilities and services used by your company been retired by the RBOCs or has the company received any notices of discontinuance?**
 - A. Yes, Frame Relay service; we've been told that TLS also will sunset, but no specific date has been announced.
- 3. Have any of the copper facilities used by your company been "de facto" retired?**
 - A. Not 'retired', per se. For example, Verizon invokes IEEE 487 any time a VZW service is placed at a location that involves voltages of 20kV or above. This forces us to add ground potential rise isolation that adds significant cost.
- 4. How were the retired or discontinued facilities or services used?**
 - A. Monitoring of data points (SCADA), physical security.
- 5. If facilities or services were retired or discontinued, how much notice was given? Was this notice either timely or adequate? How much notice would your company prefer to receive?**
 - A. The carriers do not inform us directly. We learn of service discontinuance via FCC Public Notices, industry associations or, sometimes, from the carrier's account manager. Notice via these means never is timely. Because the design of replacement services can take several years, the notice provided never has been sufficient.
- 6. How was your company affected by the retirements or discontinuances (e.g. higher telecom bills, increased O&M expense and effort, software or equipment made obsolete, etc.)?**
 - A. Higher telecom rates for the minimum replacement service, each location requiring construction to pull in Fiber services.
- 7. What steps did your company take or will it have to take to replace the retired or discontinued facilities and services (e.g. lease fiber, move to Multiprotocol Label Switching (MPLS), build internal networks, move to wireless etc.)?**
 - A. Moved Frame Relay services to MPLS, with Fiber into facilities from the LEC's serving central office. We will move approx. 35% of the carrier provided circuits to private fiber.
- 8. Independent of any retirement or discontinuance, have any of your company's leased telecom services been impaired to the extent that your company has been forced to move to RBOC IP services and facilities?**
 - A. No.

9. Has your company found adequate substitutes for the retired, discontinued or impaired facilities and services?

A. Yes, but at a 30% rate increase.

10. Would your company be interested in purchasing the copper facilities from the RBOCs in lieu of retirement?

A. Yes

11. Do the RBOCs IP-supported networks or network facilities offer comparable communications security, integrity and reliability?

A. Yes.

12. Does your company lease services or facilities from competitive carriers (CLECs)? If so have these services been affected?

A. No, not impacted.