

systems to support their core services, including not only mobile voice and data networks to protect the safety and enhance the efficiency of crews in the field, but advanced wireless metering networks and fixed-service control systems that protect electric, gas and water “grids.” Because of their heavy use of wireless for internal purposes, and their need for coverage and reliability not met by commercial services, most CI entities build and own communications towers. These towers are used for critical communications functions that protect the lives, not only of workers, but of all Americans relying on safe drinking water, natural gas service and electricity. Utilities alone cumulatively own tens of thousands of communications towers throughout the United States, while leasing space on many more. Therefore, they have a substantial interest in the outcome of this proceeding.

II. Discussion

In the NPR, the Commission reviews the history of its own actions in this matter, considers data from several sources, and tentatively concludes that, “for communications towers subject to our Part 17 rules, medium intensity white strobe lights for nighttime conspicuity is to be considered the preferred system over red obstruction lighting systems to the maximum extent possible without compromising safety.”² It also asks questions about other possible actions with regard to communications towers that might have the effect of reducing the number of migratory birds that die due to their impact with towers.

² NPR at ¶ 3.

**A. Commission Action Should be Limited to That
Definitively Shown to be Effective.**

UTC is not convinced that the data collected to date and described in detail in the NPR offers real proof that a change in lighting systems will effectively reduce the number of migratory bird deaths. Moreover, the “estimates” of deaths from sources such as the U.S. Fish and Wildlife Service are highly speculative, ranging from four to 50 million birds per year.³ However, other environmental groups concede that there is no data about bird deaths at most towers in noting that “the vast majority of tower sites are never checked for mortality.”⁴ UTC would have to agree about the lack of data. UTC member utilities comply routinely with many environmental regulations, including state and federal requirements concerning preservation of several bird species and their nests that directly impact electric infrastructure and communications towers. However, they have not been able to supply information about a single migratory bird death due to collision with any of their towers, anywhere in the country.

The real impact of communications towers, either in themselves or as opposed to other obstacles, is not known. Moreover, the deaths of a small percentage of migratory birds must be weighed against the importance of critical communications systems whose operations make necessary towers of more than 200 feet. Nevertheless, UTC recognizes that the FCC has a responsibility to comply with federal environmental statutes and wishes to take action to

³ *Id.* at ¶ 16.

⁴ *Id.* at ¶ 17, quoting the American Bird Conservancy NOI Joint Comments.

ameliorate the possible impact of towers it regulates under Part 17. UTC generally supports measures to mitigate the effects of towers on migratory birds, so long as critical communications systems are not threatened and air navigation – the reason behind tower lighting and painting requirements – is not endangered. Given these issues, as well as the major economic impact of its possible rule changes on tower owners, the Commission must consider any such action carefully.

The studies described in the NPR point most strongly to an indication that red, steady lighting appears to result in more bird deaths than other lighting systems on communications towers higher than 200 feet, and that deaths likely are increasing due to tower proliferation. Therefore, UTC would not object to the required use of medium-intensity white strobe lights on new towers. This would be an acceptable alternative, as it would not adversely affect utilities' or others' construction of new communications towers as needed. Such an action also would align with the Federal Aviation Administration's internal memorandum concerning lighting recommendations.⁵ UTC urges the Commission to take no action that would create inconsistencies in its Rules with those of other agencies with authority over these issues, as such conflicts create severe difficulties for licensees seeking to comply with all applicable regulations.

⁵ 2004 FAA Memorandum, cited at NPR ¶ 41.

B. The FCC Must Consider the Costs of Lighting Changes.

UTC recommends against the required retrofitting of existing towers. The total number of towers that would be affected by a required lighting change is huge, but unknown; however, the burden would fall more heavily on “high-site” private land mobile and fixed service licensees (along with broadcasters) than on service providers that often use shorter monopoles or other wireless facilities not subject to the FCC’s lighting requirements. UTC also assumes that lighting changes would be the responsibility of tower owners, not space lessees. As owners of tens of thousands of towers, CII entities – who must fight to budget telecom-related expenses as just one aspect of their operations in wholly different industries – would be significantly impacted by a retrofit requirement.

One UTC member, Dairyland Electric Cooperative of Wisconsin, offered real data concerning costs related to such changes.⁶ Combining equipment costs and labor charges, Dairyland estimates basic charges of changing to white strobe lights to be at least \$5200 per tower. With 45 towers, the cost to this single rural electric cooperative would be at least \$234,000 – definitely *not* an amount that can be found to be added to a co-op’s telecom budget. While lighting equipment costs may be assumed to be roughly equivalent across the country, UTC notes that labor charges could be substantially higher in other areas, raising the per-tower cost significantly.

⁶ Dairyland’s complete submission is attached to these comments as an Appendix.

Should the Commission decide to require lighting changes to existing towers, UTC urges that such changes be introduced gradually, over a period of at least ten years.⁷ Utilities plan wireless upgrades, tower construction and maintenance, and system expansion over multi-year periods: it would be difficult to find funding quickly for additional costs that do not actually improve the wireless system, and impossible to allocate the necessary personnel. Moreover, UTC assumes that retrofitting a huge number of towers over a short period of time also would strain the resources of lighting equipment manufacturers, leading to possible non-compliance due to lack of available equipment.

C. No Other Rule Changes Are Justified.

The NPR includes several questions relating to other possible rule changes designed to reduce migratory bird deaths from communications towers. UTC opposes any such changes due to lack of empirical data concerning their efficacy, as well as the extreme difficulties they would cause to many wireless services.

Guy Wires – there is insufficient data to support a requirement that towers be self-supporting, rather than using guy wires. The use of wires contributes significantly to the safety of communications towers, as well as substantially reducing the size of higher towers. Once again, Dairyland provides real-life data: its recent studies for a new, 325-foot tower included both self-supporting and guyed versions. The self-supporting tower would have been

⁷ UTC notes that, since replacing red steady lighting with white strobes requires much more than replacing bulbs, the Commission's idea of tying a retrofit requirement to bulb replacement is not applicable here. See NPR at ¶ 47.

required to be a full 33 feet wide at its base and some 25 feet wide at treetop height, versus only three feet for the guyed tower. Beyond the obvious aesthetic issues of great concern to local communities, the self-supporting tower also would have cost 3.5 times as much to build (*see* Appendix). UTC recommends that no such requirement be considered without a study of whether the much-larger size of a 300+-foot tower is not more of a danger to birds than guy wires supporting a much smaller structure.

Tower Height – The Commission’s suggestion that it might consider requiring that towers be limited in height seems to ignore the realities of wireless communications. Many types of services, including critical infrastructure fixed and mobile networks, would be rendered nearly impossible if towers were limited to less than 200 feet merely to avoid lighting requirements. Utilities rely on lower frequency bands transmitting signals from higher towers over greater distances in order to provide reliable coverage across their entire service territories (*see* Appendix). Most private land mobile radio systems use higher towers, in non-residential areas to avoid aesthetic issues. Microwave and other line-of-sight signals must originate high enough to create viable links.⁸ Without higher towers, the Commission must be prepared for a massive proliferation of shorter towers to cover the same area in nearly every frequency band, still resulting in less-reliable communications after a huge outlay of capital (assuming enough sites

⁸ While UTC does not speak for broadcasters, it notes that these towers are among the highest in use, enabling omni-directional signals over large areas.

were available). This simply is not a viable alternative: the position of many municipalities encouraging collocation on fewer towers would seem a better idea.

III. Conclusion

UTC recognizes the Commission's wish to ameliorate the impact of the towers it regulates on migratory birds. A full understanding of this complex issue would take many more studies, as well as large expenditures of arguably better-spent funds. While UTC does not support radical rule changes, it believes that a reasonable Commission action at this time, based on the data in the record, would be better than several more years of debate and uncertainty. Therefore, UTC would not object to a requirement of white strobe lights rather than red steady lighting for Part 17-regulated towers constructed after the effective date of a decision in this proceeding. UTC strenuously opposes, however, other measures that are not supported by strong scientific data and would also be highly detrimental to critical communications networks and the people they support.

Respectfully submitted,

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Migratory Bird Proceeding – Dairyland Power Cooperative, WI

There are many proposed regulations regarding the issue of migratory birds having fatal collisions with towers. Some of these, such as regulating tower heights, the types of new towers constructed, and the types of tower lighting used, would present an impact to utilities that are trying to provide critical data and voice communications throughout their service territories.

Tower Height

Regulating tower heights to remain below 200 feet AGL would require more towers to be constructed. The majority of the towers that Dairyland Power Cooperative builds are for the microwave network which is the backbone of our communications network. There are several paths that are over 20 miles in length, and with the varying terrain differences throughout our service territory these hops often require tower heights over 200 feet. In northern Wisconsin, we are also dealing with 80 to 90 foot trees which then require a minimum of 100 feet of clearance above ground level along the microwave paths. This in turn can require tall tower heights.

Often many assume that the additional cost for new tower sites is just a matter of paying for another tower itself. This is not the case at all. Additional sites require so much more than just steel and construction costs. Labor is required from engineering, project management, legal departments, and right of way departments to name just a few. Land must be acquired, and it takes a significant cost in labor to find that land in an acceptable spot. Labor and technical expertise is then required to fulfill all local and county zoning requirements. More equipment shelters are needed, and additional radios must be purchased for the extra sites. In the past two years, Dairyland Power has expanded our microwave network and built four new towers. Of these four towers, the least expensive project was \$330,000. The building and construction of new tower sites for utilities is not something that is taken lightly. Limiting the height of new towers for the communication networks will have a great impact economically for the utilities and also on the proliferation of towers in general.

Type of Tower

There are several reasons that requiring self-support towers over guyed towers should not be considered by the FCC as a response to the migratory bird issue. Dairyland feels that a well-built guyed tower provides the most stability and least amount of sway for microwave communications. The visual impact of a self-support tower over that of a guyed tower can be

enormous. A recent example is a 325 foot tower Dairyland recently constructed in northern Wisconsin. The design for this tower was done for both a self-support and a guyed tower. The guyed tower had a uniform face width of 3 feet. The self-support tower had a face width of 33 feet at the base. This tapered up to a 3 foot face width starting at the 300 foot level. Between the levels of 80 and 100 feet AGL (the approximate tree height in the surrounding area), the tower face tapered between 25 and 23 feet. The self-support tower would stand out much more than the guyed tower, and in fact would definitely be described as an eye-sore. Forcing utilities to build self-support towers versus guyed towers would also have an economic impact to utilities. Utilities do not “skimp” on tower when they are built; rather they are built for the long haul to withstand additional loading and the worst types of weather conditions. Towers are not built for the minimal amount of antennas required, and therefore are generally more expensive anyhow. Self-support towers require more steel and larger foundations. The table below shows the difference in costs for the 325 foot tower mentioned earlier.

	Guyed Tower	Self-Support Tower
Tower Materials	\$38,161	\$135,210
Lighting System	\$5,465	\$5,465
Foundation Installation	\$12,482	\$111,226
Tower Erection	\$26,256	\$40,115
Tower Freight	\$2,359	\$3,527
Anchor Freight	\$393	\$634
TOTAL	\$85,116	\$296,177

These costs are only for the tower and its construction. It does not include anything for land, land improvements, access, or any radio equipment purchases.

Tower Lighting Systems

The consensus appears to be that the FCC will determine that red steady lights on existing towers at night will need to be changed to a different system, with white strobes at night being the preferred method. For a 250 foot tower, the cost of the equipment (FlashTech 310 by Flash Technology) alone is approximately \$3700. The cost for a tower crew to change out the existing lighting would be at least \$1500. This is a cost of over \$5000 per tower. Since this cost would be unplanned and unbudgeted, the Commission needs to allow a proper time-line for the change to occur. Dairyland currently has 45 existing towers with lighting within our service territory. It would realistically take several years to change out all of the lighting systems of those towers while still being able to continue the yearly maintenance and additions to the vital communication network.

Dairyland has already been upgrading the tower lighting systems in our network over the past five years. We have transitioned from painted towers

with strobes at night to a dual lighting system with white strobes during the daytime and red strobes at night. We have found that the red strobes at night are more “neighborhood friendly” than the brighter white strobes. The specific type of lighting at towers is often determined by local zoning ordinances, which strive to provide the least amount of visual impact. As previously mentioned, white strobes at night are the preferred lighting method over steady red lights. There doesn’t appear to be a consensus about changing existing red strobe lights at night. If the Commission were to rule that a change was required to red strobes at night as well as the red steady lights, then a substantial amount of capital expenditures and labor costs would have all been for nothing.