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Louis Peraertz**DOCKET FILE COPY ORIGINAL SEP - 6 2006****From:** Gerald Winegrad [gwwabc@comcast.net]Federal Communications Commission
Office of the Secretary**Sent:** Thursday, June 01, 2006 6:19 PM**To:** Donald Johnson; Jeffrey Steinberg; Jane Jackson; Aaron Goldschmidt; John Branscome; Louis Peraertz**Subject:** Towers and Birds

Thank you all for meeting with representatives of American Bird Conservancy on May 9 to discuss measures the FCC could adopt to prevent the killing of millions of migratory birds at communication towers under the FCC's jurisdiction. We also met with Fred Campbell and he informed us that the agreement was to have a NPRM before the FCC in 4-6 months from the FCC dismissal of our Gulf Coast petition which was on April 11, 2006.

We requested that the NPRM include specific measures to prevent avian mortality at towers (see below for our suggestions we gave to Fred and have submitted to you at our meeting). If the NPRM does not propose specific measures, it would only start another round of comments, replies, analyses, and perhaps years more of delay. We are convinced that bird fatalities could be avoided if the FCC would simply adopt avoidance and mitigation measures known to prevent bird kills without in any way inhibiting the provision of telecommunication services and that these measures, all in accordance with the U.S. FWS Guidelines, be adopted in a NPRM:

- 1) Require all applicants to demonstrate to the FCC that they have no viable opportunity for co-location of an antenna and that they cannot practicably keep a tower structure under 200', thus avoiding lighting requirements. Certain lights on towers are known to attract millions of migratory birds to their deaths, particularly at night during migration. Over 10,000 dead birds have been found at one tower in one day;
- 2) If a new antenna structure must be built, and if the structure cannot be kept under 200', only medium intensity white strobes (as recommended by the FAA) or red strobes should be used at 20 pulses per minute (red) or 40 pulses per minute (white), unless exigencies dictate otherwise. When licenses for existing lit towers are being renewed by the FCC, white or red strobe lights should be required to replace other lights;
- 3) Applicants/licensees should not use guy wires for proposed antenna structures under 500' AGL unless they have certified that the structure cannot practicably be built as a monopole or of lattice design. Birds are much more likely to collide with guy wires than towers. The study in Michigan by Dr. Gehring found that towers with guy wires killed 10X more birds than unguyed towers of the same height. The use of red steady burning lights and guy wires are a lethal combination leading to the vast majority of bird deaths; and
- 4) Revise FCC regulations under 47 C.F.R. §§ 1.1307 et seq. to add impacts to migratory birds to the current list of environmental concerns that a tower applicant must review.

By adopting these simple measures, bird deaths would be significantly reduced if not eliminated at most towers without in any way impeding the build-out of telecommunication services. In our discussions, the question of costs of the various tower lighting has been raised and we have information for you on that, including longevity of the lighting systems. We are pleased to report that either white (L-865) or red strobe lights (L-864) last 2-5 years, while the steady burning red lights (L-810) last only about a year if at the lower 120 volts and much less if higher voltage is used. This means that replacement and labor

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costs are substantially higher for the L-810 lights that we are requesting be avoided. The initial cost of the L-810 red steady burning light is cheaper but it is always used with L-864 red slow pulsing lights making this system more expensive than using a white or red strobe lighting system exclusively.

During our meetings at the FCC, staff have often concentrated on tower lighting and questions have been posed regarding the FAA advisory lighting guidelines and what the role of the FCC is on the lighting. We have answered these queries and sent materials and briefs to answer the questions. We also have made suggestions for other measures the FCC can readily take to prevent avian mortality while in no way impeding the provision of telecommunication services, such as trying to keep guy wires from being used for shorter towers. At the risk of being redundant, I am again attaching the materials that support our requests for adoption by the FCC of items 1) through 4) above.

Rather than again detail the documentation here for using strobe lights and trying to keep towers under 500' unguyed, I am attaching that documentation in the first two attachments. There are short scientific summaries of published literature on the lighting and guy wire issue. Also, as further background and documentation for our requests, we attach the April 6, 2004 Memorandum in which the FAA agreed on the efficacy of using white strobe lights (L-865's) and established medium intensity white strobe lights for nighttime conspicuity as the preferred system over red obstruction lighting systems to the maximum extent possible without compromising safety. Where such white strobes cannot be used, red strobes (L-864's) could be.

Finally, we attach the Land Protection Partners detailed analysis (as a pdf file) that was filed with the FCC together with our detailed comment letter in the pending Notice of Inquiry on Birds and Towers. The Land Protection Partners analysis documents that there is a considerable body of research available on bird strikes at towers and the measures which can be taken to avoid them, especially focusing on lighting and guy wires. The authors find that the U.S. FWS Tower Siting Guidelines represent the best measures available for avoiding fatal bird collisions. The Land Protection Partners analysis corroborates, with scientific documentation including new studies, the efficacy of the avoidance and mitigation measures recommended in the U.S. FWS Guidelines.

Dr. Albert Manville submitted reply comments for the U.S. FWS on the FCC Birds and Towers NOI essentially endorsing the analysis by Land Protection Partners authored by Longcore et al. The FWS reply states: "In our opinion, the LPP comments provide a detailed and scientifically-sound analysis of current avian-communication tower interactions." "The population impacts to migratory songbirds (and other avifauna) and impacts to their population status are frightening and biologically significant."

Dr. Manville acting for the U.S. FWS again urged the FCC to adopt the FWS Tower Siting Guidelines and to adopt the FAA preferred white strobe lighting, and to keep towers unlit and unguyed, where possible.

Thank you again for meeting with us and we hope if you need further information, you will contact us. we hope the FCC will finally change the status quo in its tower registration program to prevent the annual killing of millions of migratory birds annually.

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**USING WHITE STROBE LIGHTS OR, IF NOT POSSIBLE, RED
STROBE LIGHTS, WILL GREATLY REDUCE AVIAN
MORTALITY AT COMMUNICATION TOWERS**
***DOCUMENTATION OF TOWER LIGHTING AS A CRITICAL FACTOR IN
TOWER KILLS***

Tower lighting is a major causative factor in bird mortality at towers. The best towers for avian protection are towers erected under 200' without any lighting or guy wires. The scientific and field evidence is strong that the type of tower lights used plays a critical role in attracting birds to the lights and the lighting sphere of influence. Towers with steady burning red (L-810) lights combined with flashing red incandescent L-864 lights cause most avian mortality, including nearly all mass mortality events. Such tower lighting systems are common, particularly on the tallest towers. Simply requiring medium intensity white or red strobe lights (pulse rates at the FAA minimum) will greatly reduce avian mortality.

GEHRING MICHIGAN STUDY. A study of Michigan State Police towers and private and nearby tall private communication towers over two and a half years has shown a 56%-67% percent reduction in nighttime bird losses simply from having removed red steady-burning lights (L-810). Dr. Joelle Gehring has conducted these studies at 24 towers in Michigan. The best results have been obtained by extinguishing steady burning red lights on towers of about 475 feet in height (with guy wires), and leaving only flashing red strobe lights (L-864).

GAUTHREAUX AND BELSER STUDY. Chapter 4 in the recently published book entitled *Ecological Consequences of Artificial Night Lighting*, Rich and Longcore, Editors, Island Press (Dec 2005) documents the significant attraction of migratory birds to tall towers with the solid state red lights as compared to similar tall towers nearby using white strobes (L-865) and to a control site with no towers. Chapter 4 is written by Dr. Sidney Gauthreaux and Carroll G. Belser based on their research on towers in Georgia and South Carolina.

Their conclusion was that birds are attracted to the red solid state lights in much greater numbers and these birds hover and concentrate around these towers as compared to the white strobe lit towers and the control site. They explain why this occurs citing studies of the spectral sensitivity of birds and note that "The type of lighting system on broadcast and communication towers influences the flight behavior of migrating birds at night." See page 85.

COCHRAN AND GRABER STUDY. Birds circling a tower with red solid state lights quickly depart once the lights are turned off. Observation of bird behavior at towers lighted with solid red (L-810) and flashing red (incandescent L-864) lights confirms that light is the stimulus that keeps birds circling the tower and thereby substantially increasing risk of mortality. Cochran and Graber observed birds flying around incandescent red lights on a tower. When the lights were switched off, the birds dispersed. Birds congregated anew when the lights were switched back on. Cochran, W.W., and R.R. Graber. 1958. Attraction of nocturnal migrants by lights on a television tower. *Wilson Bulletin* 70:378—380.

AVERY, SPRINGER, AND CASSEL STUDY. Avery et al. experimented with turning off

lights, and birds dispersed when the lights were extinguished. . Avery, M., P.F. Springer, and J.F. Cassel. 1976. The effects of a tall tower on nocturnal bird migration, a portable ceilometer study. *Auk* 93:281—291.

CANADIAN DEPT. OF FISHERIES AND THE ENVIRONMENT STUDY. As others have noted, “Avery’s data suggest that the tower’s obstruction lights were the sole factor in the congregation of birds.” Weir, R.D. 1976. Annotated bibliography of bird kills at man-made obstacles: a review of the state of the art and solutions. Department of Fisheries and the Environment, Environmental Management Service, Canadian Wildlife Service, Ontario Region, Ottawa, p. 18.

LARKIN AND FRASE STUDY. Another study also documented the circular flight paths of birds around a broadcast tower lighted with solid red and flashing red lights. Larkin, R.P. and B.A. Frase. 1988. Circular paths of birds flying near a broadcasting tower in cloud. *Journal of Comparative Psychology* 102:90–93.

OGDEN STUDY. When stacks and towers at a power plant in Canada were equipped with strobe lights, bird kills were “virtually eliminated.” Ogden, L.J.E. 1996. Collision course: the hazards of lighted structures and windows to migrating birds. World Wildlife Fund Canada and the Fatal Light Awareness Program, Toronto, Canada, p. 29.

EVERY STUDY. Some U.S. television towers were equipped with white strobe lights (e.g., L-865) instead of solid red (L-810) and flashing red (L-864) for the first time in 1973. Although 11 of the one-night kills reported in the literature occurred since 1973, none was at a tower with only strobe lights. Avery, M., P.F. Springer, and J.F. Cassel. 1976 (cited above) and see reports reviewed in the Woodlot Report filed with the FCC.

VERHEIJEN RESEARCH. The use of strobe lights has been recommended by a series of researchers investigating this topic. Verheijen, who wrote the classic review on the attraction of animals to light, concludes that, “Success has been achieved in the protection of nocturnal migrant birds through interrupting the trapping stimulus situation by replacing the stationary warning lights on tall obstacles by lights of strobe or flashing type.” Verheijen, F.J. 1958. The mechanisms of the trapping effect of artificial light sources upon animals. *Archives Nééerlandaises de Zoologie* 13:1—107. Verheijen, F.J. 1985. Photopollution: artificial light optic spatial control systems fail to cope with. Incidents, causations, remedies. *Experimental Biology* 44:1—18.

[mhtml:mid://00000189/](#)**JONES AND FRANCIS STUDY.** Other authors similarly conclude that strobe lights with a complete break between flashes would reduce bird mortality at tall structures. Jones, J., and C.M. Francis. 2003. The effects of light characteristics on avian mortality at lighthouses. *Journal of Avian Biology* 34:328—333.

TAYLOR RESEARCH. Dr. W. Taylor, Professor Emeritus of Biology at Central Florida University, reports drastic reduction of bird mortality when lighting of a tower in Orlando, Florida was changed from solid red and flashing red lights to white strobe lights (pers. comm.). The tower was the site of large bird kills, and Professor Taylor and colleagues had collected

more than 10,000 birds over the years and reported these kills in the literature. In 1974, the ~1,000-foot guyed tower blew down, and was replaced with a taller guyed tower with white strobe lights. Following the replacement, bird mortality was reduced drastically and no mass kills (i.e., >100 birds) were ever again reported at the site. Taylor, W.K., and B.H. Anderson. 1973. Nocturnal migrants killed at a south central Florida TV tower, autumn 1969-1971. *Wilson Bulletin* 85:42—51. Taylor, W.K., and B.H. Anderson. 1974. Nocturnal migrants killed at a south central Florida TV tower, autumn 1972. *Florida Field Naturalist* 2:40—43.

BRODERICK STUDY. An average of 2,300 birds per year were killed over a 10-year period at lighted smokestacks near Kingston, Ontario. After the lights were changed to white strobes, the bird kills ended. Broderick, B. 1995. Light waves: why be concerned about light pollution? *Royal Astronomical Society of Canada Bulletin* 5(3):6.

POST DATA. Dr. Will Post, Curator of Birds at the Charleston Museum in SC noted that two television towers near Awendaw, South Carolina at which he and others collected dead bird carcasses had substantial bird kills during the 1980s when they had red incandescent lighting. The towers were changed to white strobe lights in about 1990 and few dead birds have been found since. Personal Communication (e-mail) from W. Post to G. Winegrad, 9/23/2003.

LAND PROTECTION PARTNERS REPORT. Dr. Travis Longcore, Catherine Rich, and Dr. Gauthreaux authored a Report filed with the FCC concerning the NOI concluding: "Reducing the attraction of birds to towers is a critical factor in minimizing bird deaths at towers. Without attraction, birds may still encounter and be killed in collisions with towers that are sited in migratory pathways, but the sum of the available scientific evidence indicates that mortality would be greatly reduced by using only strobe lights at towers. The evidence above supports the U.S. Fish and Wildlife Service tower siting guidelines.... The combination of solid red and flashing red lights (L-810 with incandescent L-864) attracts and disorients birds, which accumulate around towers, collide with each other, the tower, guy wires, and the ground, die of exhaustion, or deplete their fat reserves...." All reports indicate that replacement of solid lights with white strobe lights (and no other lights) reduces bird kills." Longcore, T., Rich, C., and Gauthreaux, S. 2005. Scientific Basis to establish Policy Regulating Communication Towers to Protect Migratory Birds. WT Docket No. 03-187.

FAA MEMO ON WHITE STROBE PREFERENCE TO PROTECT BIRDS. The Federal Aviation Administration (FAA) established a preference for the use of white strobe lights to protect birds. In an April 6, 2004 Memorandum from the FAA Program Director for Air Traffic Airspace Management to Regional Air Traffic Division Managers, the FAA states that: "The American Bird Conservancy has requested that the Federal Aviation Administration (FAA) standardize existing requirements for lighting systems on tall structures to minimize mortality to migratory birds. Specifically, the American Bird Conservancy, based on guidelines developed by the U.S. Fish and Wildlife Service, requests that the FAA reduce the issuance of aeronautical determinations recommending red lights at night and that white strobe lights be recommended for nighttime conspicuity....Therefore, in consideration of the agreement between the FAA and the American Bird Conservancy, please advise your staff that 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. Please refer to

Chapter 6, Medium Intensity Flashing White Obstruction Light Systems, AC 70/7460-1K for specific guidance." Memorandum from Sabra W. Kaulia, FAA Program Director for Air Traffic Airspace Management to Regional Air Traffic Division Managers dated April 6, 2004.

U.S. FISH AND WILDLIFE SERVICE SUPPORTS STROBE LIGHTS. Lighting is also strongly implicated in avian mortality under the U.S. FWS Tower Siting Guidelines, that provide:

A2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (*e.g.*, use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit....

5. If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied." U.S. Fish and Wildlife Service Guidance Document on the Siting, Construction, Operation and Decommissioning of Communications Towers issued September 14, 2000.

On November 20, 2000, the U.S. FWS Director wrote to the FCC Chairman, attaching the Guidelines and urging the Chairman to "...make the interim guidelines available to all applicants requesting Federal communication licenses, in order to distribute the information more widely among the....industries." The Director noted that the Guidelines represent "the best measures available for avoiding fatal bird collisions" and "While there is a considerable body of research available on bird strikes at towers and the measures which can be taken to avoid them, this knowledge is not widely known outside the academic community....We believe that widespread use of these guidelines will significantly reduce the loss of migratory birds at towers."

USING WHITE STROBE LIGHTS OR, IF NOT POSSIBLE, RED STROBE LIGHTS, WILL GREATLY REDUCE AVIAN MORTALITY AT COMMUNICATION TOWERS

**BUILDING TOWERS WITHOUT GUY WIRES WHERE POSSIBLE
WILL GREATLY REDUCE AVIAN MORTALITY AT TOWERS
DOCUMENTATION OF GUY WIRES SIGNIFICANTLY INCREASING
AVIAN MORTALITY**

Large bird kills almost always involve towers that have guy wires and solid state red lights (L-810s). Observational studies of birds in the vicinity of towers document that birds are much more likely to collide with the guy wires than with the tower itself. Towers under 500 feet AGL can readily be constructed without guy wires. The Michigan study by Dr. Joelle Gehring cited below found bird mortality 10X higher at guyed towers. One of the Michigan State Police towers in the study is 475 feet AGL and unguyed, clearly indicating that companies can and do construct such communication towers without guy wires. Our position is simply: if an antenna cannot be co-located, keep the tower under 200 feet; if the tower must exceed 200 feet, keep the tower unguyed where possible and lit only by medium intensity white or red strobes. These measures would greatly reduce avian mortality and all research, including Dr. Gehring's, confirms this.

MICHIGAN STUDY. Dr. Joelle Gehring's ongoing study in Michigan provides strong evidence of increased mortality caused by guyed towers compared to unguyed towers of the same height and lighting regime. The Gehring study includes 12 guyed and 9 unguyed communications towers 380 feet to 480 feet tall. During spring and fall 20-day survey periods in 2004, **guyed towers killed close to ten times more birds than guyless towers.** This same ratio was found even after adjusting for scavenger removal and search efficiency. Dr. Gehring estimates that 90% of mortality at guyed towers results from collisions from guy wires, based on the location of the birds, which is consistent with the ten-fold increase in mortality. **Gehring, J. 2004. Avian collision study plan for the Michigan Public Safety Communications System (MPSCS): Spring 2004 summary. Central Michigan University, Mount Pleasant. Gehring, J. 2004. Avian collision study plan for the Michigan Public Safety Communications System (MPSCS): Fall 2004 summary. Central Michigan University, Mount Pleasant.**

BREWER, ELLIS, AVERY, SPRINGER, CASSEL AND FISHER STUDIES. Studies document that birds in the area surrounding guyed towers are much more likely to collide with the guy wires than the tower. Brewer, R., and J.A. Ellis. 1958. An analysis of migrating birds killed at a television tower in east-central Illinois, September 1955–May 1957. *Auk* 75:400–414. Avery, M., P.F. Springer, and J.F. Cassel. 1976. The effects of a tall tower on nocturnal bird migration--a portable ceilometer study. *Auk* 93:281–291. Fisher, H.I. 1966. Midway's deadly antennae. *Audubon Magazine* 68(4):220–223.

KRUSE STUDY. In a study of bird mortality at transmission towers in Wisconsin, a high correlation was found between the locations of dead birds and guy wires, implicating collisions with guy wires as the cause of death. Kruse, K. 1996. A study of the effects of transmission towers on migrating birds. M.S. thesis (Environmental Science and Policy), University of Wisconsin, Green Bay.

ERICKSON DATA. Wally Erickson, a researcher with West, Inc., reported that based on computer models, for a bird with a one-foot wing span, the likelihood of collision with a 105 m high

communications tower having 1.25 miles of guy wires is three times as great as the likelihood of colliding with a 65-m rotor diameter, 92 m maximum height wind turbine....empirical data from a wind energy project in Wyoming corroborated the higher per structure collision risk for a guyed structure compared to a wind turbine for songbirds." The computer modeled wind turbine was unguyed as are all wind turbines except for a few small, older turbines. Erickson, W., *Bird Fatality and Risk at New Generation Wind Projects* (West, Inc.) 2004, in the Proceedings of the Wind Energy and Birds/Bats Workshop: Understanding and Resolving Bird and Bat Impacts, Washington, D.C. May 18-19, 2004. Prepared by RESOLVE, Inc., Washington, D.C., Susan Savitt Schwartz, ed. September 2004. Go to: www.abcbirds.org/policy/webb_proceedings.pdf, page 31.

FOOTE CREEK RIM WIND ENERGY FACILITY STUDY. A study at the Wyoming wind energy project at Foote Creek Rim documented that the avian mortality at a guyed meteorological tower annually was approximately three times higher than the mortality per turbine at the operating turbines. Young, David P., et al., *Foote Creek Rim Final Bird and Bat Mortality Report: Avian and Bat Mortality Associated with the Initial Phase of the Foote Creek Rim Wind Power Project*, Carbon County, Wyoming. November 1998--June 2002. Final Report. January 10, 2003. West, Inc., (2003).

NICHOLSON STUDY. Other recent U.S. studies indicate that bird mortality at wind turbine projects varies from less than one bird/turbine/year to as high as 7.5 birds/per turbine/year. The latter fatality rate was at Buffalo Mountain, TN in 2003, where three unguyed wind turbines are in use, each with a 154' diameter, 3-blade rotor mounted on a 213' tall tubular steel tower. A guyed unlit 197' meteorological (met) tower constructed for the Buffalo Mountain wind plant had a mortality rate of 8.1 birds/year, greater than the average fatality rate for the three wind turbines. Mortality was monitored from October 2000, when construction was completed, through September 2003. Charles P. Nicholson, PhD., Tennessee Valley Authority, 400 West Summit Hill Drive, WT 8C, Knoxville, TN 37902-1499, personal communication, March 26, 2004. cpnicholson@tva.gov.

LAND PROTECTION PARTNERS REPORT. Dr. Travis Longcore, Catherine Rich, and Dr. Sidney Gauthreaux authored a Report filed with the FCC concerning the NOI concluding: "**Most towers from which large bird kills have been reported have had guy wires. Observational studies of birds in the vicinity of towers show that birds are much more likely to collide with the guy wires than with the tower itself. [Dr. Gehring's Michigan study is cited here]....It would be difficult to imagine more compelling results. Higher mortality from guyed towers would be expected because of the circling behavior exhibited by migrants under the influence of lights on towers. Furthermore, a study of bird mortality at transmission towers in Wisconsin found a high correlation between the locations of dead birds and guy wires, implicating collisions with guy wires as the cause of death. The hazard of guy wires to migrating birds has also been investigated by those working with wind power producers. Research on wind turbines, which are unguyed, and nearby guyed structures confirms the increased risk of guyed structures. For example, in one study, the average number of birds killed at a guyed meteorological tower was approximately three times higher than the nearby per turbine mortality. The turbines, of a similar height, are unguyed.**"

"This evidence, and the lack of records of mass bird kills at guyless towers in the reviewed literature, is sufficient for reasonable scientific minds to conclude that guy wires greatly increase mortality at towers. The evidence cited above documents the scientific merit of the

U.S. Fish and Wildlife Service tower siting guidelines on the use of guy wires:

2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit.

7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower footprint. However, a larger tower footprint is preferable to the use of guy wires in

The FCC could significantly reduce avian mortality at communications towers by allowing construction only of guyless towers unless applicants document that such construction is not feasible.” Longcore, T., Rich, C., and Gauthreaux, S. 2005. Scientific Basis to establish Policy Regulating Communication Towers to Protect Migratory Birds. WT Docket No. 03-187.

U.S. FISH AND WILDLIFE SERVICE SUPPORTS UNGUYED TOWERS. Guy wires are also strongly implicated in avian mortality under the U.S. FWS Tower Siting Guidelines, cited above. The U.S. FWS recommends that towers be constructed so as to avoid guy wires where possible. **On November 20, 2000, the U.S. FWS Director wrote to the FCC Chairman, attaching the Guidelines and urging the Chairman to “...make the interim guidelines available to all applicants requesting Federal communication licenses, in order to distribute the information more widely among the....industries.”** The Director noted that the Guidelines represent “the best measures available for avoiding fatal bird collisions” and “While there is a considerable body of research available on bird strikes at towers and the measures which can be taken to avoid them, this knowledge is not widely known outside the academic community....We believe that widespread use of these guidelines will significantly reduce the loss of migratory birds at towers.” U.S. Fish and Wildlife Service Guidance Document on the Siting, Construction, Operation and Decommissioning of Communications Towers issued September 14, 2000.

UNGUYED WIND TURBINES KILL FAR FEWER BIRDS THAN GUYED TOWERS. Wind turbines kill less birds than guyed communication towers adjacent to them and there have been no cases of mass avian mortality events at wind turbine farms, even those with many individual wind turbines. This is because wind turbines are unguyed, are not all lit, and the lit turbines employ only red strobe lights (L-864s) with pulse rates of 24 per minute. For example, the Mountaineer Wind energy project in WV has 44 turbines and only 12 are lit, all 12 with red strobes. Of course, height is a factor but the lack of guy wires and proper lighting have kept avian mortality quite low. W. P. Erickson et al, Avian Collisions with Wind Turbines: A Summary of Existing Studies, West, Inc., NWCC, (August 2001). Go to: http://www.nationalwind.org/pubs/avian_collisions.pdf.

THE FCC COULD SIGNIFICANTLY REDUCE AVIAN MORTALITY AT COMMUNICATIONS TOWERS BY ALLOWING CONSTRUCTION ONLY OF UNGUYED TOWERS UNLESS APPLICANTS DOCUMENT THAT SUCH

CONSTRUCTION IS NOT FEASIBLE