

Attachment B

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

CROWN CASTLE FIBER LLC,

Complainant,

v.

COMMONWEALTH EDISON COMPANY,

Respondent.

Proceeding Number 19-169

Bureau ID Number EB-19-MD-004

REPLY DECLARATION OF NELSON BINGEL

I, NELSON BINGEL, declare as follows:

1. I serve as President of Nelson Research LLC (“Nelson Research”), with a mailing address 207 Marcie Court, Senoia, Georgia 30276.

2. I have served as President of Nelson Research for over 2 years. In this role, I perform consulting, subject matter expert, and expert witness services related to overhead electrical and telecommunications lines. I specifically consult and testify on matters related to structure strength and loading, loss of strength from wood decay or steel deterioration, inspection and restoration of wood poles, and clearances.

3. Since 2016 I have served as Chairman for the National Electrical Safety Code (“NESC”), which establishes the safety requirements for construction and maintenance of overhead and underground lines. Before becoming Chairman, I was a member of the NESC’s Strength & Loading subcommittee since 1989 and was chairman of that subcommittee from

2010 to 2016. In addition to my work with Nelson Research and the NESC, I am Chairman of the Accredited Standards Committee O5, which publishes new wood pole and crossarm manufacturing specifications and strengths.

4. My curriculum vitae was attached to my initial Declaration as Exhibit 1.

5. I make this Declaration in support of Crown Castle's Pole Attachment Complaint in the above-captioned case and in reply to the Answer of ComEd filed on July 22, 2019 in this proceeding.

6. I know the following of my own personal knowledge, and if called as a witness in this action, I could and would testify competently to these facts under oath.

A. ComEd's attack on my reference to the 2017 edition of the NESC is meritless

7. The ComEd Summary includes the following statement starting at the bottom of page iii: "Mr. Bingel's Declaration in turn is based on his analysis of the wrong edition of the NESC which contains different language than the one in effect in Illinois."

8. This point was raised by Mr. Arn and Mr. D'Hooge in their Declarations and appears several times in the main body of the ComEd document. Yes, it did slip my mind that Illinois is the only state on the mainland that has not updated to a more current edition of the NESC (not the 2007, 2012, or 2017). Nonetheless, the intentions of Rule 214.A.4 and 5 are the same in both the 2002 and 2017 editions. Notice that the 2017 edition of Rule 214.A.4 was not included in the ComEd comparison. Here is the full comparison of both editions:

2002 Edition

214. Inspection and Tests of Lines and Equipment

A. When in Service

.....

4. Record of Defects

Any defects affecting compliance with this code revealed by inspection or tests, if not promptly corrected, shall be recorded; such records shall be maintained until the defects are corrected.

2017 Edition

214. Inspection and tests of lines and equipment

A. When in service

.....

4. Inspection records

Any *conditions or* defects affecting compliance with this Code revealed by inspection or tests, if not promptly corrected, shall be recorded; such records shall be maintained until the *conditions or* defects are corrected.

9. The language in Rule 214.A.4 is identical in both editions except for the addition of “conditions or” which does not change the intent of the rule. The intent is that all conditions or defects that affect compliance with the code, are to be recorded and those records maintained until the defects are corrected. The intent is that all defects need to be corrected.

10. Specifically, wood pole code compliance is spelled out in Table 261-1A of the 2002 NESC which addresses strength requirements for structures. Footnote 2 states:

“Wood poles and reinforced concrete structures shall be replaced or rehabilitated when deterioration reduces the structure strength to 2/3 of that required when installed.”

11. The word “shall be” and “when” call for planned restoration or replacement with a sense of urgency that is clearer than Rule 214.A.4. The ComEd Technical Bulletin TB-17-083 includes the time frames for restoring and replacing red-tag poles:

Non-Priority Restorable	Within a set time after the load calculation
Non-Priority Replacement	Within a set time after the load calculation
Priority Restorable	In the current inspection year
Priority Replacement	In the next calendar year after inspection

12. However, ComEd’s statement that Non-Priority poles are scheduled for restoration or replacement “within a set timeframe” does not provide any insight into the

reasonableness of the practice or the sense of urgency. Indeed, it does not state what the “set timeframe” is.

13. Priority Replacement poles are defined as having 0% - 33% remaining strength. This raises the question as to whether it is good practice for a pole that has lost 70%, 80% or more of original strength to be scheduled for restoration later that inspection year or for replacement in the following year. In my opinion, which is based on my experience and familiarity with the industry, it is not reasonable for a pole that has lost 80% or more of its original strength to wait a year or more before being replaced.

14. ComEd claims to promptly correct any pole conditions that could reasonably be expected to endanger life or property. But ComEd does not identify the criteria that change a pole from a Priority-Red-Tag to a pole needing prompt resolution of non-compliance. In my experience, a pole with 20% remaining strength might be considered having a potential for endangering life or property.

15. In summary, Rule 214.A.4 is virtually identical in the 2002 and 2017 editions. The rules call for maintaining records of defects until the defects are corrected. Inherent, especially in the case of reduced wood pole strength, is the requirement that they will be corrected in a timely manner.

16. Similarly, Footnote 2 of Table 261-1A in the 2002 edition and Table 261-1 in the 2017 edition has the identical following statement in both codes:

“Wood poles and reinforced concrete structures shall be replaced or rehabilitated when deterioration reduces the structure strength to 2/3 of that required when installed.”

17. Both editions of the NESC call for the same priority of remediation for poles that have a remaining strength below code requirements.

2002 Edition

214. Inspection and Tests of Lines and Equipment

A. When in Service

.....

5. Remedying Defects

Lines and equipment with recorded defects that could reasonably be expected to endanger life or property shall be promptly repaired, disconnected, or isolated.

2017 Edition

214. Inspection and tests of lines and equipment

A. When in service

.....

5. Corrections

a. Lines and equipment with recorded *conditions or* defects that would reasonably be expected to endanger *human* life or property shall be promptly *corrected*, disconnected, or isolated.

b. Other conditions or defects shall be designated for correction.

18. The 2002 Rule 214.A.5 is slightly modified in 2017 by adding “conditions or”, putting “human” in front of life and using the word “corrected” instead of repaired. The intent of this rule in both editions is the same and the changes in language were only to provide more clarity.

19. The 2017 Rule 214.A.5.b is an additional rule compared to the 2002 NESC. However, stating that “Other conditions or defects shall be designated for correction” was simply added for clarity. It aligns with 214.A.4 which states that defects shall be recorded, and those records shall be maintained until the non-compliance is corrected. In both cases, the expectation and requirement is that even defects not reasonably expected to endanger human life or property need to be corrected. Does ComEd suggest that they are not required by the 2002 edition of the NESC to designate issues of non-compliance for correction? On some level, ComEd’s arguments seem to make that suggestion.

20. Mr. Arns' Declaration states in paragraph 5:

“Poles exhibiting this deterioration or any other defect in the course of inspection are recorded, and such records of defects are maintained until the defects are corrected, in accordance with NESC Rule 214.A.4 in effect in Illinois.”

21. This supports that the additional Rule 214.a.5.b in the 2017 NESC is not a new requirement in addition to the requirements in the 2002 edition. Maintaining the records of defects until they are corrected implies that the defects will be designated for correction. Otherwise, ComEd would be saying that they are not required by the 2002 edition of the NESC to designate issues of non-compliance for correction.

B. ComEd mischaracterizes my testimony regarding the categorization of ComEd's Priority-Red Tagged poles

22. The top of page iv in the Summary states: “Making matters worse, his opinion (and Crown Castle's Complaint) is based on the incorrect factual assumption that the red-tagged 'Priority' poles are classified as such by ComEd are poles that belong in the category of presenting a 'danger to life or property' under the NESC and so must be fixed 'promptly.' As a result, the opinions expressed in his Declaration are misdirected and uninformed, as are the arguments of Crown Castle which rely on them.”

23. ComEd's assertion mischaracterizes my testimony. My Declaration states in paragraph 23:

“It is my understanding that ComEd has not provided an explanation of the criteria to differentiate “non-priority” from “priority” red tagged poles. Neither has there been an explanation of how it is determined whether a pole is a restorable candidate or needs replacement.”

24. Therefore, I did not make any assumption about whether ComEd red-tagged Priority Poles are classified as belonging in the category of presenting a “danger to life or

property”. Rather, my declaration is making clear that in fact ComEd had not been forthcoming with details, and inherent in my declaration was a request for the remaining strength details.

25. I concur with ComEd that there is no single criteria to define Priority-Reject poles. That is why paragraph 13 of my Declaration states the following:

“Priority” red-tagged poles are identified during the inspection process based on the remaining strength threshold below which the pole owner designates a red tagged pole to be classified as a “priority”. The purpose of this designation is to initiate mitigation of severely weakened poles in shorter time frames than non-priority red tagged poles. Standard industry practice is to restore or replace “priority” poles within time frames such as 30, 90 or 180 days. The varying length of time reflects the fact that utilities may have varying standards for when a red tagged pole becomes “priority.” For example, a 180-day standard may be appropriate where the utility designates a pole as priority when it has a higher level of strength remaining, compared to a utility that may not designate as priority until the pole has very little strength remaining and requires nearly immediate, emergency replacement.”

26. Without knowing the criteria that ComEd used for Priority-Reject poles, there was no assumption about whether those poles would be classified as presenting a “danger to life or property”. Any reference about time-frames to replace “Priority-Reject” poles was based on practices followed by a majority of utility companies.

27. Now we know the ComEd classification for Priority-Reject poles have a remaining strength that ranges from 0% - 33% as explained on page 36 of the “Commonwealth Edison Company’s Answer to the Pole Attachment Complaint for Denial of Access of Crown Castle Fiber, LLC, dated July 22, 2019. According to ComEd’s Technical Bulletin that summarizes the pole tagging process, Priority Restorable poles are supposedly restored in the current inspection year and Priority Replacement poles are scheduled for replacement the “next calendar year after inspection”.

28. ComEd also now asserts in the Answer to ¶¶ 34 and 35, that there is a group of poles that are not classified as “priority” rejects but that are found to pose an “immediate safety

hazard.” ComEd asserts that it immediately corrects poles that are “expected to endanger life or property.” (Answer at 40, ¶ 35.) However, ComEd also asserts that its “priority” poles are “not such poles that must ‘promptly’ be ‘repaired, disconnected, or isolated.’” (Answer at 40, ¶ 35.) This appears to mean that there is a category of poles that is not a “priority reject” but are in fact an imminent threat to life so as to finally require replacement by ComEd. Yet, within ComEd’s “priority” group are poles that have lost as much as 80% or 90% or more of their original strength.

29. In my opinion, it is not a reasonable or safe practice to wait a full year before replacing of a pole that has lost 80% or 90% of its original strength.

C. ComEd’s Attack on my qualifications Are Meritless

30. In the Answer, in the middle of page iv of the Summary, ComEd asserts: “The Commission should disregard Mr. Bingel’s opinion (and those of Crown Castle) for another reason: Mr. Bingel has never been responsible for running a major metropolitan utility. Questions of reasonableness or appropriateness are best left to those who are responsible not only for poles but for the remainder of the utility’s urban infrastructure including cables, manholes, vaults, wires, and conduits, all of which demand resources to support an evolving grid of the future.”

31. There is no basis for ComEd’s attack on my credentials. I have spent over 30 years focused on utility wood pole asset management. My duties included researching, testing and developing better ways to inspect, maintain and restore wood poles. I was granted 3 U.S. Patents for improved restoration systems and one U.S. Patent for a new inspection method. I managed the development of supplemental preservatives that help control decay and extend the useful life of wood poles. I also created a tool that models the present decay conditions of a

wood pole plant based on various decay data. Then both the cost and resulting decay conditions of the plant can be projected through future maintenance cycles for different inspection and maintenance programs.

32. In addition, I am well known for my activity and leadership on important code bodies such as:

National Electrical Safety Code (NESC)

The safety standards for overhead lines

Chairman since 2016

Member of Strength & Loading Subcommittee from 1990-2016

Chairman of the Strength & Loading Subcommittee from 2009-2016

American Standards Committee O5 (ASC O5)

Publish standards for manufacturing wood poles and cross arms

Chairman since 2006

Member since 1990

American Society of Civil Engineers (ASCE)

Publish structural standards for many industries

Coauthor: Recommended Practice for the Design and Use of Wood Pole Structures
No. 141

Published in 2019; Wrote the pole maintenance chapter; edited the entire manual

American Wood Protection Association (AWPA)

Publish standards for the original & supplemental preservative treatment of wood poles

Member since 1988

Institute of Electrical and Electronics Engineers (IEEE)

Publish many standards for the electric and telecom industry including the NESC

Member since 1998

Vice-Chairman of Overhead Lines Working Group on the NESC

33. I have been a frequent presenter at utility structure conferences since the late 1980's. Conference presentations and papers and magazine articles are listed in the attached CV. To highlight one example, EUCI is an organization that sponsors national seminars and symposiums for the utility industry. This is the third year for the Wood Pole Strength & Loading Symposium where I provide the instruction for two days.

34. During my career at Osmose Utilities Services, Inc., I visited utility companies hundreds of times to help optimize wood pole maintenance programs within existing financial and regulatory restraints. The assertion that my exposure to the industry provided an incomplete picture because I only dealt with Osmose customers is totally unfounded. Firstly, Osmose is the largest provider of pole inspection, maintenance and restoration so exposure to existing customers provided a very broad view. Secondly, I was often working with utility companies that were not Osmose customers which provided an even broader view of industry practices. Customers and non-customers included IOU's, municipals and cooperatives.

35. The ComEd statement above suggests that a generalist who is familiar with many additional aspects of a utility company's infrastructure is in a better position to determine best practices for wood poles. My 30 years of focus on the wood pole asset provides a better foundation for the asset management than a generalist.

D. There are standard industry practices regarding when red tag poles should be restored or replaced.

36. ComEd also attacks my assertion that its apparent practices for red tag pole replacement are inconsistent with standard industry practice. ComEd's arguments misconstrue my testimony and also what constitutes a standard industry practice. For example, in paragraphs 8, 9, 10 and 21 of Mr. D'Hooze's Declaration, he misunderstood that when I used the term "standard industry practice" I was not suggesting there was a published standard related to my comment. I am aware there is no "published standard" addressing timeframes for mitigating defective poles. I would have identified the standard if I was referring to one. However, published timeframes are not necessary for me to identify the standard industry practice based on my extensive experience.

37. The time frames within my declaration are based on high-level awareness of how a majority of utility companies handle red-tag poles; in other words, I am aware of what are common or typical practices in the industry. As I explained in my initial Declaration, if a company incorporates pole restoration, most often non-priority red-tag poles are restored during the same year as the inspection or the following year. Priority red-tag poles are processed in different time frames depending on the pole owner's specifications but are virtually always handled in a shorter time frame.

38. Mr. D'Hooge also asserted in his paragraph 10 that my exposure to typical or common industry practices may be an incomplete picture because I was limited to working with Osmose customers. This is totally unfounded. Firstly, Osmose is the largest provider of pole inspection, maintenance and restoration so exposure to existing customers provided a very broad view. Secondly, I was often working with utility companies that were not Osmose customers which provided an even broader view of industry practices. My customers and non-customers included IOU's, municipals and cooperatives nationwide.

E. ComEd's reliance on "preservative" treatments misstates the treatments' import.

39. The Declarations of Mr. Arns (paragraph 10), Mr. D'Hooge (paragraph 11), and Mr. Tyschenko (paragraph 6) assert that non-priority red-tag poles receive preservative treatment immediately during the inspection process and note that it extends the useful life of a pole.

40. The application of preservative treatment does extend the useful life of a pole by helping to control the decay process. However, a red tagged pole is already below code strength requirements. The treatment does not restore strength. It helps to prevent additional decay

deterioration. The statement by Mr. Arns and Mr. D’Hooge make it sound like ComEd does not need to do any further remediation after treating the pole. But strength has not been restored; the pole is still a red-tag reject in need of remediation.

41. Paragraph 11 of Mr. Arns Declaration goes on to say:

“Following this treatment, " non-priority " poles are scheduled for remediation whenever any entity (including ComEd) wants to upgrade facilities, add additional facilities to the pole, or subsequent inspection adjusts priority.

This process makes sense because if the structure is currently in serviceable condition, then treating it with a product will control further decay and maximize its useful life without adding further stress.”

42. Similarly, paragraph 7 of Mr. Tyschenko’s Declaration states:

“Once “non-priority” poles are discovered and immediately treated, ComEd does not allow anyone, (including ComEd itself) to install additional facilities to that pole without first replacing it or reinforcing it.

43. Again, these statements suggest that ComEd thinks that it is not obligated to replace or repair non-priority red tag poles. However, a Non-Priority Red Tag pole, even though treated, is not considered a serviceable pole. A serviceable pole either has no decay or has an amount of decay that has not reduced the strength below the 68% as specified in Table 261-1A of the 2002 NESC. Waiting for an attachment request to remediate the pole is not the intent of the NESC.

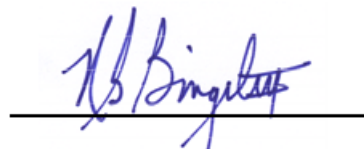
44. It is common for joint use attachment requests to include a load analysis to validate that the additional attachment will ***not overload the pole***. However, the issue with red-tagged poles is that the strength of the pole has been reduced; most often due to decay. In my experience, the pole owner is responsible to maintain the bending capacity of wood poles outside

of the joint use process. The pole owner restores or replaces poles that have a remaining strength that is below NESC requirements.

F. ComEd uses a load assessment of Non-Priority Red Tag poles as a prioritization mechanism.

45. Paragraph 5 of Mr. Tyschenko's Declaration addressed a question that was unclear to me when writing my first Declaration. He explained that the load analysis is performed on Non-Priority Red Tag poles the week following the inspection when the pole is being inspected on a 10-year cycle. However, he also clarified that the load analysis is an estimate of the load, not the exact load, but is useful for further classification of the poles. Both of these points were also confirmed in ComEd's Second Set of Responses to Crown Castle in Interrogatory No. 3. Since this process was not clear while I was writing my first Declaration, I explained multiple ways that a load estimate could be applied and used the term "actual load" to draw a comparison to assuming the pole is fully loaded. I did not intend to encourage ComEd to use the load estimate to determine whether a Non-Priority Red Tag pole could still accommodate an additional attachment and indicated that by stating that the process "is not widely used in the industry." I agree with using the estimate to prioritize remediation of Non-Priority Red Tag poles.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.



Nelson G. Bingel, III

Dated: August 2, 2019