

**Board Staff Interrogatories on Intervenor
Evidence**

**Application by the
Canadian Distributed Antenna
Systems Coalition**

EB-2011-0120

September 12, 2011

Interrogatories to Canadian Electricity Association (CEA) - Intervenor Evidence

Ref: Industry Report – Section 9 – Outdoor DAS: Different from other Utility Pole attachments –

Wireless and Additional Safety Concerns: “Since wireless attachments usually involve placing facilities above the power area of the pole, special attention must be given to safety because such facilities could fall over onto power lines in high wind conditions or in heavy wet snow conditions resulting in power outages. While National Grid allows wireless attachments, it has comprehensive safety standards and requirements for such attachments and reserves the right to refuse to put wireless attachments on its poles or increase the height of poles to accommodate wireless attachments.”

Wireless requires more careful analysis: “Installing wireless antennas on pole tops above energized electric facilities raises a host of safety, reliability and engineering concerns and requires much more careful analysis than placing wireline attachments in the designated communications space. Pole top attachments require workers to pass through and work above energized lines. During installation and afterward, the antennas and other equipment could fall onto energized electric facilities.”

1. When DAS antennas mounted on distribution poles protrude into the space allocated for power lines, is the clearance between live wires and grounded (earthed) objects mounted on the pole reduced?
2. If the answer to Question 1 is yes, does the reduced space between live conductors and grounded (earthed) objects mounted on the pole significantly increase safety hazard for power line workers during live-line work?
3. Do DAS antennas, when mounted on the side of a power distribution pole, significantly hinder the free movement of raised work platforms (buckets on a bucket truck) around live conductors?
4. If the answer to Question 3 is yes, does mounting of DAS antennas on the

side of a distribution pole have an impact on worker productivity?

5. Is CEA or LCC aware of any specific instance in which wireless attachments have fallen onto power lines resulting in power outages? If so, please provide any details available (i.e., utility, type of attachment, year of occurrence, nature, duration and remediation of consequences/outage).
6. Is CEA or LCC aware of any specific instance in which wireless attachments have fallen onto energized electric facilities? If so, please provide any details available (i.e., utility, type of attachment, year of occurrence, description of event and remediation).
7. Please respond to the following:
 - (a) Please provide a copy of National Grid's standards and requirements for wireless attachments and a copy of that utility's standards and requirements, if any, for wireline attachments.
 - (b) Please indicate whether such standards and requirements require the approval of a regulator, and if so, whether they have received such approval.
 - (c) Please provide the charges or charge structure applicable for wireless attachments to National Grid poles.
 - (d) Is the acceptance of wireless attachments compulsory (under legislation or regulation) or a voluntary policy for National Grid? If compulsory, please provide excerpts and references to the legislation, regulation, regulatory order or other instrument that makes it compulsory.
 - (e) Is CEA or LCC aware whether there are instances of wireless equipment being installed in National Grid's service territory on structures other than National Grid's poles?
 - (f) Please provide the names of any other utilities of which CEA or LCC is aware that have developed standards and requirements for wireless attachments, and the charges or charge structures that apply to wireless and wireline attachments. If known, please indicate whether legislation or regulation in that jurisdiction makes it compulsory for the utility to accept wireless attachments to its poles.

Ref: Industry Report – Section 9 – Outdoor DAS: Different from other Utility Pole attachments -

Distributed Antennas and environmental concerns: “Distributed antenna companies sometimes find themselves delayed in obtaining permits to use municipal rights-of-way because they seek to place their not-so-attractive antennas with unknown radio frequency emissions in close proximity to residences and the general public. Such routine municipal reviews and permitting processes render any imposed utility make-ready schedules meaningless in the context of wireless attachments.”

8. If DAS antennas are mounted at a lower height on a distribution pole, will they result in higher electromagnetic radiation levels on sidewalks? Is there a standard for a minimum mounting height of DAS antennas that must be met to ensure safe electromagnetic radiations exposure in public places?

Ref: LCC Report, page 33: “Wireless providers and network builders have multiple attachment alternatives when designing wireless networks, including those relying primarily upon ODAS. Manufacturers are aware of, and build to, the need for substantial flexibility in placing today's wireless hardware. Buildings, street furniture, stand-alone poles and other aesthetically designed apparatus exist, and are currently in use, to support ODAS and other wireless hardware.”

9. Please respond to the following:

- (a) Is the author of this report familiar with the Toronto locations in which the Applicant proposes to install its outdoor wireless attachments?
- (b) If yes, please provide a specific comment as to whether the Toronto environment would offer suitable locations on buildings, street furniture, stand-alone poles or other apparatus for the proposed wireless attachments.

Ref: City of Toronto Telecommunication Tower and Antenna Protocol, via internet link provided in THESL Notice of Motion/Vol1, page 31, line3

10. To your knowledge, are the types of wireless attachments proposed by

CANDAS subject to Industry Canada's requirement for public consultation?
Would the siting of the attachments on an electric utility pole affect the
application of this requirement?

Interrogatories to THESL – Intervenor Evidence

Vol 1/ Notice of Motion

Ref: THESL Motion, page 9: “Wireless Attachments can be and are placed in a variety of siting locations, including on the roofs or sides of commercial, residential and industrial buildings; on street furniture; on water towers, on traffic lights; on stand-alone communications towers; and on other elevated structures.”

1. Has THESL independently examined or discussed with CANDAS the siting alternatives available for any specifically requested THESL or THESI pole or poles? If so, has this examination or discussion supported the existence or non-existence of suitable siting alternatives?

City of Toronto Telecommunication Tower and Antenna Protocol, internet link provided in Vol1/Notice of Motion, page 31, line3

Ref: City of Toronto Telecommunication Tower and Antenna Protocol, Section 11

2. To your knowledge, are the types of wireless attachments proposed by CANDAS subject to Industry Canada’s requirement for public consultation? Would the siting of the attachments on an electric utility pole affect the application of this requirement?

Ref: City of Toronto Telecommunication Tower and Antenna Protocol, Section 2(h), internet link provided in THESL Notice of Motion, page 31, line3: “Telecommunication Antenna - means the components, either individually or in combination, needed to operate a wireless communication network for the purpose of radio telecommunications, including but not limited to: cell sites; transmitters; receivers; signaling and control equipment; and an equipment shelter containing electronic equipment and which is not staffed on a permanent basis and only requires periodic maintenance but does not include a telecommunication tower.”

3. To THESL's knowledge, does this definition cover the equipment that CANDAS is proposing should be attached to electric utility poles? If so, in THESL's view, have CANDAS members complied with the requirements of this Protocol?

Ref: City of Toronto Telecommunication Tower and Antenna Protocol, Section 3(a): "determine emission levels in compliance with Safety Code Six"

4. (a) What emissions are addressed by Safety Code Six?
(b) In THESL's view, do the wireless attachments proposed by CANDAS result in any issue of compliance with Safety Code Six?

Ref: City of Toronto Telecommunication Tower and Antenna Protocol, Section 4 C (a) Siting: "A telecommunication antenna mounted on a high-rise building or structure such as an existing telecommunication tower, hydro transmission tower, utility pole or water tower, is to be explored by the proponent before any proposal is made for the construction of a new telecommunication tower."

5. Has THESL consulted with the City of Toronto in determining whether wireless attachments should be accepted on its poles? If so, what effect does this consultation have on THESL's position in this matter?

Ref: Section 3 (a): "A preliminary consultation meeting between the proponent and the District Planning Consultant and/or City Planning Staff and Toronto Building Division staff is required for all telecommunication tower and telecommunication antenna proposals not exempted from consultation by Industry Canada, before a Telecommunication Tower Review Application and/or Building Permit application is submitted. The purpose of this meeting is to: determine if a Building Permit is required; determine emission levels in compliance with Safety Code Six and if applicable, explore preferred site locations and siting, design & co-location considerations in accordance with this protocol. For telecommunication tower and telecommunication antenna proposals exempted from

consultation by Industry Canada, the proponents are requested to provide information to the City on: the nature of the proposal; the location of the proposal; and the emission levels of the proposal in compliance with Safety Code Six.”

6. To THESL’s knowledge, were these requirements met by CANDAS, in case of each proposal involving attachment of CANDAS’ antennas to THESL poles?

Ref: Section 3D: Design and Landscaping: “All efforts will be made to decrease the size and visibility of all telecommunication antennas and telecommunication towers, so that they will blend in with the surroundings.”

7. To THESL’s knowledge, are CANDAS applications for mounting of its antennas on THESL poles compliant with this guideline, particularly when they are alleged to increase the level of clutter on poles?

Vol1/Exh1: Affidavit of Michael Starkey

Ref: Attachment MTS-12, page 4

8. Please clarify whether the amounts of \$1,654.00 per calendar year per pole and \$3,307.00 per calendar year per pole are intended by the witness to illustrate market rates for use of poles for wireless attachments in Chicago, or to indicate the availability of alternative sites, or for some other purpose.
9. Please provide any information available as to how the pole charges referenced in question 8, above, were determined.
10. If available, please provide for the City of Chicago, the total number of wireless attachments, the number of wireless attachments mounted on Department of Transportation poles, and the number of wireless attachments mounted on the poles of the electric utility.

Vol1/Exh 2: Affidavit of Adonis Yatchew

Ref: Section C.2., page 15: “Utility poles are not an essential facility for CANDAS. Perhaps the best evidence to support this conclusion is that Public Mobile was able to roll out its service in Toronto with minimal reliance on THESL poles for its wireless attachments.”

11. How many total DAS antennas were installed by Public Mobile when it rolled out its service in Toronto?
12. How many DAS antennas were installed by Public Mobile on THESL poles?
13. Please describe the alternate facilities to which DAS antennas were attached during roll out of service by Public Mobile.

Ref: Section C.4., pages 18 and 19

14. Please clarify whether to your knowledge Crown Castle or American Tower, or any company offering similar services with respect to wireless antenna siting services is operating anywhere in Ontario.

Affidavit of Mary Byrne

Ref: Section 29 - “In addition to this, THESL has historically charged prospective telecom attachers a \$95 application charge to recover its costs of processing those applications.”

15. Has THESL historically applied the charge of \$95 uniformly to both wireline and wireless attachment applications?
16. Please provide any recent cost analysis supporting the application charge of \$95.
17. Are the costs to process a wireless attachment consistently different from the costs to process a wireline attachment? If so, how do they differ?

Ref: Section 36 – “Although the wireless pole attachments are like individual “mini systems”, from THESL’s experience, all wireless attachments also have a “wired” component as they require power supplies involving low-voltage electrical connections and also need to be connected to communications cables.”

18. Please indicate what alternative sites are, to your knowledge, available that would provide the same degree of access to the required power supply and communication cables for wireless equipment attached to THESL’s poles?

Ref: Section 38 - “From THESL’s experience, there is no standard wireless communications attachment – the mini systems are not uniform in nature. Rather, wireless attachments are variable in size and configuration. Further, when mounted on distribution poles, wireless attachments typically occupy a much greater portion of pole space than wireline attachments.”

19. Please indicate quantitatively (provide a range, if needed) how much more pole space does a typical wireless attachments require on a pole in relation to a wireline attachment?

Ref: Section 39 – “THESL’s experience is also that wireless communications typically do not fall within the communications space appropriate for NDAs on THESL poles. Wireless attachments use up space on THESL poles well beyond the communications space provided for by the CCTA decision.”

20. Please provide information to demonstrate what percentage of all wireless attachments that have been made to date, fall beyond the communications space provided as defined in the CCTA decision.

21. Please confirm whether any existing wireline attachments fall beyond the communications space as defined in the CCTA decision.

Ref: Section 43: “Another concern THESL has is regarding the variability of wireless attachment configuration (including that the equipment often does not fit within the communications space) and the quantity of equipment that must be attached to any given THESL Pole. This means that wireless attachments tend to require more frequent and onerous make-ready work as compared with wireline attachments. Depending on the composition of the distribution equipment (and possibly other NDAs) on any given THESL pole, accommodating a wireless attachment may require creating additional space on a pole by moving around existing equipment, or in some cases, replacing the pole altogether.”

22. Please indicate if the full actual cost of “make-ready” work, including the engineering and project management costs are recovered by THESL from the applicant before such attachments are approved/allowed?

23. If the answer to Question 2 is yes, and the costs related to “make-ready” work are being fully recovered, why is this of concern to THESL?

24. If the answer to Question 2 is no, please indicate why the costs related to “make-ready” work are not fully recovered from applicants by THESL?

Ref: Section 44: “Once a wireless attachment is in place on a THESL Pole, the size and quantity of equipment may make it very difficult if not impossible for THESL workers to climb THESL Poles safely.”

25. During a normal day’s operations, of the poles on which work is performed, what percentage are climbed by workers and what percentage are worked from the bucket trucks?

26. Do the wireless attachments also impact worker safety when they are working from a bucket truck? Please elaborate.

Ref: Section 45 “Such “pole clutter” may also increase wear and tear on THESL Poles, which accelerates THESL Pole deterioration. THESL Poles were not designed or installed with bearing the additional load of wireless attachments in mind. Pole attachments, if designed or installed incorrectly,

can overload or damage a pole. Further, to the extent that wireless attachers may require holes to be drilled through THESL Poles to mount wireless communications attachments below the distribution zone, this could incrementally weaken those THESL Poles.”

27. Has THESL undertaken any studies to determine the reduction in anticipated service life of a pole due to installation of wireless attachments? If so, please provide the reports resulting from those studies.

28. In your opinion, by what duration would the life expectancy of a typical pole be reduced with installation of wireless attachments and additional pole drilling requirements?

Ref: Section 46: “Further, THESL’s experience is that wireless companies prefer to have their attachment antennas mounted on THESL Pole tops. However, installing wireless antennas on pole tops above energized electric facilities, creates a number of additional safety and operational concerns, including: a. pole top attachments require workers to pass through energized lines to work on those attachments, posing a safety risk to those workers operating on THESL Poles

29. How many antennas have been installed on THESL pole tops with the pole line carrying medium voltage (MV) circuits?

30. In the case of such installations, is the construction work done by THESL’s staff or by a contractor working on behalf of the communications company?

31. Is this type of work carried out on energized lines using live line work methods or on de-energized lines?

Ref: Section 55: “As discussed above, wireless attachments take up a significant amount of space on THESL Poles, and a larger amount of space in comparison to other NDAs. As a result, where a wireless attachment mini-system is attached to a THESL Pole, THESL’s ability to use that pole for its own distribution needs and/or non-distribution projects is importantly curtailed.”

32. If, hypothetically, wireless antennas are allowed to be installed on THESL distribution poles, what percentage of such poles would need to be replaced by THESL during the next 15 years to make room for THESL's own needs?