

December 20, 2013

**VIA CERTIFIED MAIL WITH RETURN RECEIPT**

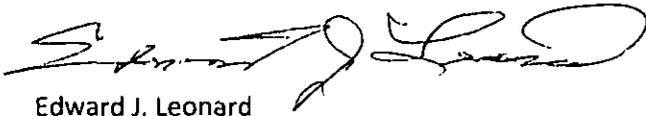
Secretary of the Pennsylvania Public Utility Commission  
P O Box 3265  
Harrisburg, Pennsylvania 17105-3265

**RE: Edward J. Leonard v. PPL Electric Utilities Corporation  
Docket No. C-2013-2359971**

Dear Madam Secretary:

Enclosed is provided a Revised formal Complaint in the above. Only paragraph #4 & #5 have been revised. The new paragraphs replace the old respective paragraphs in their entirety.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward J. Leonard", written over a horizontal line.

Edward J. Leonard

Enclosures: Original Complaint, and revised Complaint including attachments.

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4. Reason for Complaint. Problems: (1<sup>st</sup> Amended Version)

Original portion of amended Complaint:

A few days after returning to the United States and removing a PP&L door-handle notice for trimming, several trees on my property were extensively trimmed. At the time I was not home. Upon returning home I was shocked by the extent of butchering of my trees, especially two 75 year old, 50-60 foot high Norway Spruces. I called the name and number next to the PPL logo on the door handle to complain. I later learned that this person was not a PPL employee, but a relatively junior liaison person working for the Contractor hired by PPL to trim trees. Soon, I received a call from a supervisor with the contractor, working nearby, and he came over. He was unwilling or unable to provide me verbal or written guidelines that were applied to trimming my trees. I requested, the written guidelines and two days later received a document that included paragraphs for "the desired maximum clearances on the PPL system:", which was later clarified to me as the guidelines for which trees could be trimmed, but not how much the trees should be trimmed. However, one statement in the guidelines stated that "every effort shall be made to prune trees to ensure that they will not grow back into the primary conductors within the given cycle...." This last sentence seemed reasonable to me, as it seems to imply that fast growing trees and slow growing trees need not all be cut back the same amount. I never received those detailed guidelines and at one point was told by a more senior supervisor from the contractor that those specific guidelines used were "proprietary" to the contractor. This raised several more questions in my mind, one of which I asked: specifically what is so "proprietary" about how fast different species of trees grow, such as my Norway Spruces, which I believed had been cut back excessively. Indeed, my observations of my property and that of others seemed to indicate that little distinction or adjustment is made in the amount to trim based on how fast that particular type of tree grows, even though the Supervisor seemed to say that the so called "proprietary" guidelines that he would not provide to me, did indeed reflect the vastly different growth rate of different types of trees.

Eventually I permitted PP&L to completely remove two other trees, one smaller faster growing tree, and one tree directly under the power line, but I tried to ensure that the much older and larger trees would not be damaged further in the future, at least not more than was necessary: "to ensure that they will not grow back into the primary conductors within the given cycle". The PP&L forester wrote me an email that was too vague to ensure this, and did not clearly reflect what I believed was necessary to prevent future unnecessary damage to the existing large, old Norway Spruce trees. Therefore, I wrote a reply

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email that "clarified" what I thought was necessary to protect the existing trees, to the extent practical, but I received no reply or acknowledgement of my reply email.

**Amendment #1 – Additional Reasons Related to the Foundation of the Complaint.**

During the prior trimming cycle, approximately 4 or 5 years ago, PPL also similarly excessively trimmed a White Birch Tree on the Complainant's property. One of three main vertical trunks of the Birch tree was completely removed about 8 feet above the ground, where it joined the other three main substantially vertical trunks, with all of its associated branches and other foliage. The trunk of this tree is located *entirely on private property, over 12 feet from the nearest power wire, approximately 21 feet from the curb of the street and over 33 feet from the centerline of the street, which places it approximately 8 feet past the public right of way for the road in front of the house. During this most recent cycle, the White Birch did not appear to need any trimming at all, and was not trimmed. This is not surprising, since very few branches have begun to fill in the area where the foliage was massively and excessively pruned during the prior trimming cycle. While this tree was excessively trimmed, it was the first time that such extreme trimming had been done on the property, and the tree did not appear as unaesthetic (ugly) as the two other trees butchered this cycle. Complainant defines "butchered" as a trimming that is unaesthetic and excessive (i.e., and excessive is defined as unnecessarily to keep branches from growing back into the power lines during the cycle). This means that 3 trees have been excessively trimmed and at least two "butchered". Complainant also expected that this White Birch would fill back in over a reasonable number of years, unlike the two Norway Spruces.*

Upon the butchering (i.e., very unaesthetic and excessive) of the two Norway Spruces this cycle, at least one of which is located substantially all on private property, and the other is located partly on private property and partly within an easement for the street, and after the excessive pruning of the White Birch tree in the prior cycle, located completely on private property outside of the right of way of the road, 8 feet past the easement for the road and 12 feet from the nearest power line, and after a growing trend that Complainant has noticed around Bethlehem, that seems to involve more excessive and ugly pruning than was done in earlier decades, on many other properties, it seemed clear that there was probably one or more systematic trimming problems, not only an isolated problem on one property.

PPL seems to advocate in writing a **reasonable goal**: "Every effort shall be made to prune trees, to ensure that they *will not grow back into the primary conductors within the given cycle...*" (emphasis added). But *in practice*, the pruning techniques that PPL emphasizes advocate the (1) unnecessary *removal of all branches growing toward the power lines, and (2) the imposition of unnecessary constraints on shortening branches that unnecessarily convert shortening options into de facto branch removal rules in very many situations. In many cases*, these rules eventually tend to eliminate all branches and foliage on the side of trees facing the wires alongside and between the wires and to 15' above the upper wire, resulting in **unadvertised actual results**, and even an unadvertised goal, that are predictably vastly excessive to what is needed to keep branches away from the wires between trimmings, to maintain power reliability and safety. Therefore these pruning "rules", or "standards" or "guidelines" or "practices" are **unreasonable**, even if the rules applied would be "widely accepted" practice because they are purportedly ANSI, or because utilities and some associates like them because they save the utility money. Also, even if a procedure that is consistent with some selected subset of rules in ANSI would dispositively constitute a "widely accepted" procedure, **which it does not**, PPL's procedures **also deviate in some significant ways from ANSI**. Details of the many unreasonable components contributing to the problem, follow in this Complaint form paragraph #4.

The techniques and rules *contributing to this excessive pruning (more than necessary to keep branches from growing into the wires within the 4 year pruning cycle)* can be described in terms of mainly **three main topical areas**. In order of magnitude and importance, they are the following:

1. First and most dramatically, PPL's widespread use and emphasis on the **Directional Pruning (DP)** technique, a term not defined nor even mentioned in the ANSI standard, yet which is the one technique that PPL mentions in its vegetation management plan filed with the PUC for 52. Pa. Code S 57.198(n)(1). DP can be characterized as an amalgamation of trimming rules, including a core rule to **remove "branches growing toward power lines"** and to prevent future grow back of any foliage in the direction of wires, virtually guaranteeing excessive pruning, even to the extent of **stripping all branches on the side of a tree facing the wires**, at least from the lower wire to 15' above the upper wire. These guidelines or rules focus on removing entire branches growing *toward* the conductors, and even those branches that have lateral branches growing *toward* the conductors. Also in its guidelines, *PPL authorizes use of these DP-related recommendations "within the right of way corridor"* (PPL pruning guideline paragraph 3.2.1). This "corridor" is a self-authorized claimed right of

way within "up to" (based on growth rates) 15 feet from single phase wires (up to 25' for multiphase), even when there is no documented easement or other written and signed contract for *the interest in real property*, nor written evidence of any "*meeting of the minds*" with property owners regarding such a "corridor" for the community distribution grid (rather than for the 240volt house line, around which PPL does not trim). This would give PPL an interest in real property rights that it unilaterally claims for itself using such a "corridor" of up to 15' (or 25' for multiphase wires) on private property. This PPL self-authorization for the use of DP contained in PPL's guideline (paragraph 3.2.1) is for essentially all trees with trunks located within the entire area where PPL performs pruning (i.e., the entire claimed corridor up to 15' or 25' from the wires), contrary to ANSI recommendations, that recommend similar rules only for trees "directly under" the wires.

- a. The rules stated in PPL's guideline paragraph 3.2.1, for "Directional Pruning", are very similar to some rules stated in paragraph 5.9.2.1.3 of the ANSI A300 Standard Part 1, included as an optional alternative to removing an entire tree located directly under power lines. But one innocuous and **major difference** is that, in the ANSI document these alternative rules like PPL's Directional Pruning are recommended for trees "**directly under**" the power lines, for the extremely difficult and limited circumstance where ANSI recommendations also permit removal of entire trees. PPL has **significantly expanded the much more limited area recommended in the ANSI standard** for these pruning rules, generally closely associated with DP and **labeled as "Directional Pruning" in PPL's pruning guideline** paragraph 3.2.1. PPL's expanded permitted area includes essentially the entire area being trimmed, **within the entire PPL self-authorized pruning "corridor"**, up to 15' from the wires, not only when the tree is "directly under" the wires as recommended in the ANSI standard paragraph. Furthermore, assume for the sake of argument that the two sentences in PPL's guideline paragraph 3.2.1, entitled "Directional Pruning" describe the key elements of DP (not far from the truth based on other sources, even though DP is not defined in ANSI documents deemed "relevant" by PPL), then "*entire branches and/or branches that have laterals growing towards the conductor(s) should be removed.*" This phrase is substantially contained in ANSI A300 Part 1 paragraph 5.9.2.1.3, and this phrase is ANSI and

therefore a “widely accepted” technique *for the circumstances for which it is recommended in ANSI!*

- i. But PPL’s guideline (paragraph 3.2.1) does not recommend this phrase or rule just for the very narrow and difficult circumstances recommended in ANSI (paragraph 5.9.2.1.3), for “trees directly under and growing into...” wires, but for significantly more widely self-approved application throughout PPL’s self-authorized pruning “corridor”, up to 15’ wide for single phased conductors and 25’ for multiphase wires. The only ANSI recommended alternative in these difficult circumstances, for trees directly under wires, is removal of the entire tree! This tree removal recommendation option illustrates how difficult and extreme the remedies are for the circumstances for which the technique is recommended by ANSI.
- ii. This phrase or rule, that PPL associates with “Directional Pruning” in its guideline, is not recommended in ANSI in the very much broader and less difficult circumstances (everywhere in the pruning “corridor”) for which it is recommended in the PPL guideline as “Directional Pruning”, and therefore ***PPL cannot fairly claim that: “PPL Electric uses one set of guidelines. Those guidelines are the ANSI A300 standard”*** as it has claimed (in Interrogatory Set II Q/A #3a), nor can PPL claim that DP (at least as described by PPL) is recommended in the ANSI standard for the greatly expanded use or circumstances contained in PPL’s guideline, which refers to the DP technique by name, nor can PPL claim that “All distribution trimming is conducted pursuant to ANSI standards”, ***nor can PPL fairly claim that PPL’s practices are “widely accepted” because they are ANSI*** (Interrogatory Set II Q/A #18e).
- iii. This expanded circumstance permitted by PPL’s pruning guideline for Directional Pruning, contained in paragraph 3.2.1, for beyond the circumstances of a tree “directly under” wires, is also described in ANSI paragraph 5.9.2.1.3 for “directly under” wires. PPL’s DP also applies to trees within PPL’s pruning corridor, including “next to” or beside the power lines, for PPL’s paragraph 3.2.1 (DP). ANSI recommendations for “next to” power

lines are addressed in ANSI paragraph 5.9.2.1.4, rather than 5.9.2.1.3. ANSI rules for trees “next to” wires (5.9.2.1.4) differ from ANSI rules for trees “directly under” the wires (5.9.2.1.3) and PPL rules for DP (3.2.1), in some several significant ways (i.e., that are ***not ANSI*** for PPL’s DP paragraph 3.2.1):

1. For example, ANSI paragraph 5.9.2.1.4 for trees “next to” power lines ***does not contain a recommendation***, contained in PPL’s guideline paragraph 3.2.1 (describing Directional Pruning which is most similar to ANSI paragraph 5.9.2.1.3 for trees directly under wires), for “removing branches that have laterals growing into” the facilities/wires, like is in ANSI paragraph 5.9.2.1.3 only for trees “directly under” power lines.
2. Also for example, ANSI paragraph 5.9.2.1.4 for trees “next to” the power lines ***contains the additional recommendation*** not contained in ANSI 5.9.2.1.3 for trees directly under power lines, and not contained in PPL paragraph 3.2.1, which is the option to prune “by reducing branches to laterals” (***shortening branches*** to lateral branches). Also, there is ***no ANSI requirement here*** to shorten branches at junctions with branches that are at least ***1/3<sup>rd</sup> the size*** of the branch being cut, which is a generally applied additional ***one-size-fits-all threshold constraint imposed by PPL in PPL guideline paragraph 3.1*** to all branch shortening, and which can ***unnecessarily*** turn shortening rules into ***de facto branch removal*** rules for many trees (like for the Norway Spruce). In fact the single sentence in PPL guideline paragraph 3.1, mandated for ***“all trees”*** that: ***“All pruning cuts should be made back to lateral branches at least one-third the diameter of the limb being removed or to the branch bark collar”***, converts ANSI branch shortening options for many species into de facto branch removal options, and clearly mandates and emphasizes PPL’s desire for removal of branches as also emphasized in its descriptions in paragraphs on Directional

Pruning and Side Pruning. This PPL 1/3<sup>rd</sup> rule is predicated on a one-size-fits-all rule of thumb threshold regarding some opinions on “apical dominance”, and what it takes to preclude grow-back in branches cut, and rerouting it, which is not valid for Norway Spruces and many other species. *It is sufficient for the worse case tree species, and therefore not surprisingly excessive for many others.* PPL repeatedly applies rules adequate to address the most extreme and difficult situations, unnecessarily, to other tree species (like Norway Spruces, Blue Spruces) and situations (like DP when not “directly under” power lines).

- b. DP rules are generally focused on removing whole branches that are “growing **toward** facilities and otherwise would have to be *repeatedly pruned*” (i.e., expected to *regrow toward* the power lines). Because most branches on trees tend to grow roughly radially outward from a hypothetical vertical line through the center of the tree, DP’s rules intrinsically lead to excessive pruning, and more outrageously, *lead to removal of most or all of the branches and even tree trunks on the side of the tree facing the wires*. These branches may have taken decades to grow and on some trees will never grow back. In contrast, PPL’s claimed goal, as stated in paragraph “3.2 Acceptable Pruning methods” in PPL’s pruning guidelines, and a **more reasonable goal** than the goal for DP, is “to prune trees, to ensure that **branches will not grow back into the primary conductors within the given cycle....**” (emphasis added), implicitly ultimately to achieve power reliability and safety goals. PPL’s emphasized technique (DP) has an *unadvertised actual goal* of trying to eliminate as much future pruning as possible on branches that have been pruned, by removing “entire branches that have laterals” (branches) “growing toward” the conductors if they are expected to ever again (rather than during the cycle) grow *toward* the conductors (rather than into conductors), and by making “all cuts ... back to lateral branches that grow away from the conductors”. The unadvertised goal of DP, if applied, which is not PPL’s stated objective in the PPL pruning guideline, can and often does result in removing all branches on the side of a tree toward the power lines. This typically represents very *excessive pruning* compared to PPL’s

*stated goal*: to trim enough to keep branches from growing back *into* (i.e., from reaching) the wires during the (4 year) pruning cycle, which is a far more modest and reasonable goal, at least in part because *most branches on the side of the tree facing the wires grow toward the wires*. Crown Reduction is the recommended approach in the ANSI A300 standard, whereas Directional Pruning cannot be found in the ANSI A300 guideline provided by PPL, although elements of it are included in ANSI, which PPL exploits to misleadingly claim that DP is ANSI standard, and therefore widely accepted because it is ANSI. In fact, while DP is an amalgamation of rules including selected ANSI recommendations, and although there are overlapping elements of DP & ANSI recommended CR, Crown Reduction is explicitly *recommended in ANSI, is more flexible, and is more broadly accepted, by virtue of CR's explicit recommendation in the ANSI A300 standard*. But DP includes a more destructive subset of recommendations, is more widely applied by PPL than is recommended in the ANSI standard, and excludes some optional recommendations in the ANSI standard, that have the net effect of producing massively excessive pruning, which is not necessary to keep branches from growing back to the power lines during the pruning cycle.

- c. PPL also claims that what it calls Side Pruning (SP), is a "type" of DP, although PPL does not place SP as a subparagraph to PPL's Directional Pruning paragraph (3.2.1), but as a peer level paragraph. In paragraph "3.2.3 Side Pruning" of PPL's pruning guideline, the PPL guideline states that SP is "to be utilized when a tree grows beside the conductors." This potentially significantly overlaps the coverage area in PPL guideline paragraph 3.2.1 Directional Pruning (i.e., within PPL's self-authorized "corridor" up to 15' or 25' from the wires). It also stretches the branch removal practice at least to the "edge" of the corridor when the trunk of the tree is "at the edge" of the corridor but the branches grow into the self-authorized "corridor" of up to 15', depending on *growth rates*, when next to single phase conductors. This is not included in PPL's guideline paragraph 3.2.1 for DP, for branches with trunks that are not rooted inside the "corridor". This SP extension is based on the PPL guideline statement: "When the parent stem of a tree is at the edge of the right of way, limbs protruding into the right of way should be removed at the branch bark collar." It is

not yet absolutely clear if PPL *officially authorizes cutting beyond the maximum 15' or 25' pruning "corridor"*, when the tree trunk is rooted *beyond the corridor* and the branches grow into the corridor. However, answers to interrogatories suggest that some sort of pruning is permitted in this situation, including even removing entire branches past 15' (or 25' for multiphase), all the way to the tree trunk, regardless of how many decades these might have taken to grow (i.e., neither the age nor the length of the branch itself is a consideration). Also, in practice, ***PPL even has removed many entire branches to tree trunks to a point beyond PPL's self-authorized "right-of-way corridor", all the way to the trunk of trees located outside of the authorized "pruning corridor", including on the property primarily discussed herein. Also, under current rules, PPL might soon (next cycle?) start removing branches to the trunk on a third Norway Spruce on the property, located roughly 28 feet from the power line, representing over 50 years of growth, as soon as the particular set of brain synapses of an authorized "decision maker" concludes that those branches might grow to the wires during the next cycle. The emphasis on branch removal in this paragraph on SP, is at least similar to DP rules, and again can result in unnecessary removal of decades of branch growth and no grow back thereafter. Some parts of the SP pruning rules are also options within ANSI paragraph 5.9.2.1.4, which is applicable to trimming "trees growing next to" wires. But ANSI subdivides trimming rules into those for trees under the wires (5.9.2.1.3 previously addressed) and trees located next to the wires (5.9.2.1.4), without the overlap in PPL's guidelines. There are also significant differences between the PPL guidelines description for SP, and the ANSI Crown Reduction subparagraph related to pruning "next to" wires. So there is some overlap between ANSI and PPL guidelines for pruning next to the wires, but also some important ANSI recommendations omitted in the PPL guideline provided. PPL "General" rules also impose additional constraints on pruning that convert any shortening options into de facto branch removal options, at least for the Norway Spruce and similarly structured species. Generally the ANSI options omitted, as well as the different options included in the PPL guideline, are those options that could result in less destruction to foliage.***

- i. **Shortening branches is permitted by the ANSI standard** paragraph (5.9.2.1.4), but only branch removal is mentioned in the PPL Side Pruning guideline (paragraph 3.2.3). Again, emphasis on entire branch removal can result in unnecessary removal of foliage that took decades to grow, and will not grow back thereafter.
- ii. **PPL also applies a frequently excessively large one-size-fits-all “general” threshold rule** (PPL guideline paragraph 3.1) to all branches to be shortened: “All pruning cuts should be made **back to lateral branches at least one-third the diameter of the limb being removed**, or to the branch collar on the parent stem” (i.e., entire branch removal. PPL’s blanket rule for all pruning cuts to be at branches at least 1/3<sup>rd</sup> the size of the branch being cut, regardless of species including the Norway Spruce, is again a monstrous expansion of ANSI rules to prune at “lateral branches” to deflect growth from the branch being pruned using apical dominance traits. PPL’s general (1/3<sup>rd</sup>) rule also ignores other counterbalancing ANSI rules regarding foliage retention on branches and trees. But in ANSI 5.9.2.1.4 and elsewhere the recommendation is only to cut at lateral branches, rather than only at relatively big lateral branches (1/3<sup>rd</sup> the size of the branch being pruned), or rather than only at lateral branches growing in a direction away from the wires. This more flexible ANSI recommendation recognizes that deflection of growth, on a Norway Spruce and many other trees, often does not require this PPL 1/3<sup>rd</sup> threshold. In fact, it is difficult to find lateral branches off the main branch of a Norway Spruce that meet this PPL 1/3<sup>rd</sup> size criteria, because the Norway Spruce has hundreds or even thousands of little branches down the main branch, and these hundreds or thousands of smaller branches assume the growth. DP also emphasizes pruning at branches currently growing in a direction away from the wires, even when shortening. So branches that took 30 or 40 years to grow close enough to the wires to be of any concern, must be entirely removed, rather than shortened, because there is no point in the branch where that branch is not growing toward the wires This is most branches on most trees and virtually

every major branch on the side of the tree facing the wires, especially for Norway Spruce trees, for other conifers and for other trees with excurrent structures, because trees like these and the overwhelming majority of other trees, tend to grow radially outward from a hypothetical vertical line through the center of the tree, and therefore most branches grow "toward" the wires on the side of the tree facing the wires!

- iii. Also, PPL's Directional Pruning paragraph (3.2.1) can be used where trees are alongside or beside the wires, and the DP rules, including that "entire branches and/or branches that have lateral branches growing towards the conductor(s) should be removed", can be used to supersede the Side Pruning rules, for trees with trunks beside the wires, including and shortening option associated with ANSI paragraph 5.9.2.1.4 for trees next to the wires. ***This DP overlap can be used to preclude any associated branch shortening option*** in ANSI paragraph 5.9.2.1.4, even if this ANSI shortening option would be included in PPL's paragraph 3.2.3 on Side Pruning, which does not and would not exist for Directional Pruning or for ANSI paragraph 5.9.2.1.3 rules for trees directly under power lines, and which PPL permits and includes in 3.2.1 and permits to be used in the broader circumstances for trees next to power lines as well as under them.

2. Second, ***guidelines for estimating growth rates*** of the branches of different species of tree, and their associated growth over a 4 year pruning cycle, and associated training and testing of knowledge of decision makers on growth rate estimating at least by species, is ***grossly inadequate*** to ensure sufficient *but not excessive (i.e., unnecessary)* pruning. PPL's widespread use of DP (beyond directly under wires), indicates little or no priority given to avoiding excess pruning, therefore, a simple and cheap (for PPL) solution to avoid insufficient pruning when one is not concerned with excessive pruning, is to drastically err on the side of excess pruning, to ensure pruning is not insufficient. Any audits designed to ensure sufficient pruning will never raise this issue, and audits which permit the significantly expanded use of rules similar to PPL's DP rules, clearly are not very concerned about excessive pruning rather than *sufficient pruning*. The variation on complainant's property

alone has ranged from roughly 0 to 3 inches per year to 3 feet per year, depending mostly on the species of the tree. This impacts trimming in several important ways:

- a. Estimating whether each branch is close enough to the power lines that it even needs to be pruned at all, if not correct, can result in pruning branches that don't need pruning (excessive pruning) or not pruning branches that do need it (risky pruning). PPL claims that such guidelines would be too complex, and therefore are left up to "qualified" persons to "consider growth", but without detailed growth guidance from PPL. PPL also claims that Asplundh only uses PPL guidelines, no Asplundh guidelines. PPL then claims that it relies on Asplundh to train on growth (that PPL claims is too complex to even for PPL to merely establish estimating guidelines). PPL training does not rely upon Asplundh to train on how to identify tree species, providing this training itself, rather than trust Asplundh's "qualified" persons to know the identifying characteristics of trees, and rather than trust Asplundh training on identifying characteristics, for which PPL claims it relies on for related training on growth, and for allegedly "qualified" Asplundh personnel, for these same species that PPL must train them on itself to even recognizing the species at all. Clearly, whatever training on growth is done, if any, it is not important enough for PPL to even set guidelines, or test outside personnel trusted to estimate growth.
- b. Estimating how much each branch will grow back toward the wires after cutting that branch, determines the minimum setback or keep-back distance "necessary" to keep the branch from growing back *into* the wires during the next 4 year cycle, after it is pruned. Directional Pruning can often result in this being substantially exceeded. The same problem with so called "qualified" personnel applies here to b as applied immediately above in a, except that here the growth rate is a post cutting rather than a precutting growth rate.
- c. Also, the self-authorized "corridor" with boundaries of up to 15' for single phase and up to 25' for multiphase lines, allegedly depends on the estimated amount of growth over a cycle (the "up to" part – presumably related to some sort of *growth rate estimate for the fastest growing tree* – estimating that PPL claims is too complex, and would not be useful), and therefore on growth rates of tree branches,

according to interrogatory responses. This implies maximum expected 5 year cycle growth rates of 3 feet per year (or 4 year rates of 3.75 feet per year). Again, estimates of growth rates are essential, even if only to determine where PPL's self-authorized pruning corridor ends, between 0 and 15 feet, based on PPL's own rules. Branches on some species often don't ever grow again once cut (e.g., Norway Spruce), which confirms Complainant's observations for a growth range of 0 inches to at least 3 feet per year, the range experienced and observed by Complainant on different species of trees on the property most directly at issue here. This is a range factor of substantially more than 1000%. Yet PPL has produced *no* estimating guidelines for growth, claims it is too complex to provide estimating guidelines, and claims that guidelines would not improve results. PPL apparently believes that it is better to allow "qualified" subcontractor personnel, with each ones unique set of synopsis and mental abilities, to individually estimate growth rates of the species that PPL must train them to recognize, without PPL guidelines or training on growth rates, even though PPL feels a need to provide training to these "qualified" personnel on even identifying the different species involved (since PPL trains these subcontractors on these identification characteristics), but not on growth rates estimating for each of these species. Furthermore, PPL uses a maximum tree branch growth-dependent number of up to 15' for single phase power lines, and a different tree branch growth-dependent number, of up to 25', when based on different power lines (multiphase).

3. Some other rules; that when ***too broadly applied, and without adequate counterbalancing*** with other factors, such as ANSI recommendations limiting foliage loss on a branch (ANSI Part I paragraph 5.5.4), and species characteristics, also result in vastly unnecessary application of these rules and related unnecessary pruning, and therefore:
  - a. Excessive pruning often occurs at branches when using PPL's general rule (PPL guideline paragraph 3.1) that focuses on and emphasizes a ***one-size-fits-all*** threshold rule of thumb for lateral branches of a ***threshold of at least 1/3<sup>rd</sup>*** of the size of the branch being pruned, regardless of tree species, to achieve some theoretical level of apical dominance adequate for the more extreme cases (and

*unnecessarily excessive* for many others like the Norway Spruce), without regard to the species of the tree and associated theoretical levels of apical dominance characteristics, when much less is often needed to sufficiently affect apical dominance to deflect growth from the branch being pruned. The degree of deflected growth in branches growing in other directions into which growth is deflected, is *not really currently known in advance by the decision makers, who PPL* feels it must train in even recognizing the species, and which in many species can result in de facto branch removal rule for the branch being cut, including Norway Spruce trees. When not balanced by other important considerations, this can and often does result in unnecessary excessive foliage loss, especially for trees like the Norway Spruce (which has spoke-like almost horizontal main branches off of the vertical trunk, with many small branches and clusters of small branches originating all around the main branch, growing slightly in many directions and then generally hanging down vertically around the main branch), for other conifers, and for other trees with excurrent structures, and when many ANSI standard recommendations permit and even recommend more flexible size limits based on tree species characteristics;

- b. Excessive pruning often occurs at branches when using a rule that focuses on and emphasizes pruning at branches *growing in a direction going away from wires*, which again often produces massive unnecessary loss of foliage (more than the *counterbalancing recommendation of the ANSI 25% limit on the removal of the foliage on a branch before it is pruned*), in circumstances where the lateral branch is not growing directly at or nearly directly at wires, and might even be growing almost parallel or only slightly toward wires, and where the tree species may be slow growing, or where the pruning point is already far beyond a distance that threatens grow-back during the cycle, either or both of which would therefore take many decades and many cycles for remaining branches to grow into wires;
- c. Excessive pruning often occurs when pruning at *fewer; but larger branches*, when application of this rule will result in substantially more foliage loss (and more than 25% of the foliage on a branch before it is pruned), merely to achieve fewer cuts, ***without adequate consideration of several other counterbalancing significant***

*goals*, such as structural compromise due to unbalance branch weight load and related torque applied to trunks, or retention of healthy amounts of foliage (e.g., at least 75% retained, per ANSI Part I paragraph 5.5.4, on each branch pruned once beyond the necessary setback or keep back distance for the branch for the cycle). The ultimate *unbalanced* application of this rule could also result in removal of even every trunk of the tree that has branches growing toward the wires (similar to what happened to a white birch on the property during the prior pruning cycle).

Additional details regarding systemic problems and issues:

PPL's pruning guideline (paragraph 3.2) states that: "Every effort shall be made to prune trees, to ensure that they **will not grow back into the primary conductors within the given cycle ...**" Complainant believes that this is a reasonable and appropriate goal to achieve reliability and safety of the power distribution grid. PPL might wish that it would be permitted to do this by removing all trees within 25' of the power lines, as permitted under one ANSI option for trees "directly under" power lines (but not beside power lines), but that would be *more than "necessary"* to keep trees alongside power lines and their branches from growing back into the power lines during a pruning cycle, and therefore would be excessive, and even substantially more excessive than using PPL's recommended Directional Pruning for such circumstances. PPL's use of DP is indeed less destructive than removing entire trees, and is therefore less likely to produce as much outrage in the community as entire tree removal. But DP achieves a similar objective of removing the need to trim that tree in the future, and the expansion of tree removal to trees not "directly under" wires would be similar to material expansion of the recommendation in ANSI for trimming "directly under" wires, like PPL has done in its guideline for some DP-like branch removal rules for trees not "directly under" wires.

Any trimming beyond the amount *necessary* to keep branches from growing back into the power lines, could be deemed "excessive" pruning, including pruning branches that do not need to be pruned at all. To achieve *sufficient but not excessive* pruning, the pruning of branches on the trees can be analyzed in terms of at least the following three main analytical stages:

- (1) Determine if branches are close enough to wires that they need any pruning at all, because they are reasonably likely to grow *into* the power lines during the 4 year pruning cycle. If a branch is trimmed when it is not close enough to the wires to pose a risk that it will grow into the power line *during the pruning cycle*, then it has been *excessively trimmed*. Therefore, this decision must be properly made to avoid both insufficient as well as *excessive*, or unnecessary, pruning. PPL provided essentially no estimating guidance for growth, and no testing of decision makers that need to determine growth for a cycle. Estimating growth of branches over the pruning cycle is necessary to determine if branches will grow back *into wires during the cycle*. (Perhaps, for example, the estimated annual growth rate x 4 year cycle = estimated or approximated growth over the cycle). If decisions to trim tree branches is not limited based on the growth rates of the specific types of trees and branches, then PPL's 15' maximum pruning distance restriction, for trimming next to single phase conductors, becomes the only pruning limit guidance provided by PPL. But according to PPL this "up to 15 feet" maximum permitted pruning distance depends on tree growth rates, and implicitly is *based on the expected fastest growing tree branches*, which is over 3 feet per year ( $15'/4\text{yr}=3.75'/\text{yr}$ ). For most trees *this would be excessive*, or unnecessary pruning, since most tree branches do *not* grow nearly 3 feet per year.
- (2) Determine the distance from the wire that a trimmed branch must be (the set back or keep back distant) from the wire, at least, to ensure that each post-trimmed branch will not grow back into the power lines during the trimming cycle (4 years), as is the stated goal in PPL's pruning guideline, and which complainant agrees is a reasonable objective. Again more than this growth amount over the cycle is unnecessary and excessive.
- (3) Identify additional amounts, if any, related to choosing the exact point to cut the branch. This decision needs to balance desirable but not necessarily essential factors, especially when these factors vary by species, and the fact that these factors are *not essential* for keeping branches from growing back *into the power line within the cycle*, and therefore also not necessary for maintaining reliability and safety of the power grid. These factors include, or should include, such items as emphasizing retaining foliage/greenery (e.g., ANSI A300 Part 1 paragraph 5.5.4 on retaining greenery on branches), and emphasizing or ***giving priority to branch shortening over branch removal***, since removal of entire branches is not related to cycle growth distance but to branch length, which could have taken many decades to grow, and therefore is *intrinsically*

*biased toward excessive pruning*. Several of the potentially non-essential rules of this type that have very significant potential to contribute to excess pruning in most or many species include the following:

- a. Shortening branches only at large lateral branches for the pruning point, at the one-size-fits-all relative size threshold of  $1/3^{\text{rd}}$  of the size of the branch being trimmed, as recommended as a general rule in PPL pruning guideline paragraph 3.1, is not *needed for all species to deflect growth* from three's pruned branch (using apical dominance traits), and which can unnecessarily result in a de facto branch removal rule (e.g., for Norway Spruce);
- b. Shortening only at branches growing in a direction away from the power lines, is a rule associated with trees directly under power lines and associated with DP, and should be counterbalanced by the ANSI recommendation not to remove more than 25% of foliage on any given branch during a pruning cycle;
- c. Use of DP where not needed and not recommended by ANSI (e.g., for trees not directly under power lines), is often very excessive, especially rules leading to stripping branches *on the side of trees facing wires, as rules described by PPL in its guideline paragraph 3.2.1 for DP*.
- d. Use of other techniques that emphasize branch removal techniques should be given a lower priority or discouraged, where shortening would be adequate to keep branches from growing into the wires, such as PPL's "side pruning" rules similar to DP.
- e. Pruning at fewer larger branches should be counterbalanced with other factors, such as when this results in pruning significantly more foliage than needed to keep branches from growing into the wires during the cycle, especially if this results in removal of more than 25% of the foliage on a branch that needs to be trimmed less than that for more essential reasons, like keeping branches from growing into wires.
- f. Removing parent branches that have lateral branches that are growing toward wires is a rule related to trimming trees directly under the wires and one of the core DP rules, which unnecessarily destroys the parent stem branch that might not even be growing in a *direction toward the wires, and this rule should be limited to the circumstances recommended in the ANSI standard, to trees growing "directly under" power lines*.

- g. Application of any rule that results in removing a branch or shortening a branch such that more than 25% of the foliage on the branch is removed should be discouraged or deemphasized, in favor of giving priority to preventing excess foliage removal, where the pruning is not needed to keep the branch from growing into wires during the pruning cycle (4 years south of the Blue Ridge 5 years north).

Some additional details on the systemic problems associated with determining these three trimming stages or segments include at least the following:

1) Directional Pruning is a very major contributor to excessive pruning.

- a) "Directional Pruning" (DP) is not recommended or even mentioned by ANSI as a pruning technique, although some rules are also ANSI recommendations at least for some areas where PPL's rules apply. In contract Crown Reduction (CR) is explicitly recommended in ANSI A300 Part 1 paragraph "3.9.2 Utility Crown Reduction Pruning". It is clear that the DP method is an *amalgamated creation* derived in part from some elements of the ANSI standard, including *some* of the elements of some subparagraphs within the more flexible ANSI 5.9.2 Utility Crown Reduction Pruning method recommendation. In actuality, **DP and CR are different pruning methods, with a number of overlapping common elements**, with CR being a more broad based and more broadly accepted method directly and explicitly recommended by ANSI, while Directional Pruning is merely an amalgamation of detailed recommendation "based on" bits and pieces of the ANSI standard, and DP is a set of pruning rules that are excessively (unnecessarily) destructive to trees (i.e., excessive pruning=unnecessary to keep branches from growing back into wires during the 4 year pruning cycle). PPL's pruning guidelines reflect this "peer" level relationship, by listing DP in subparagraph "3.2.1 Directional Pruning" within paragraph 3.2 Pruning methods, as well as peer level subparagraph "3.2.2 Crown Reduction". And CR remains the recommended pruning method in ANSI (5.9.2), rather than DP, in spite of DP being created in major part from optional recommendations within the ANSI standard. But PPL goes further by restricting use of ANSI recommended CR to situations where using DP is "not feasible", which includes areas where ANSI recommends CR and branch shortening techniques, rather than DP or rules that are similar to those for DP, with emphasis on branch removal. The collection of rules that make up DP restricts options that are available in CR, in such a way as to promote

excessive pruning, great for reducing power company pruning costs, but at the cost of structural compromise, excess foliage loss, and aesthetically-challenged (ugly) private property and neighborhood landscapes, without offering any compensation to the property owners for PPL's contribution to reduced property values. The major shortcoming to PPL's recommended use of DP is that the parts of the ANSI standard that are chosen and emphasized by PPL for DP, and even expanded with respect to their recommended circumstances for applicability for those particular rules, involve extensive branch removal even where not needed, and the parts left out or deemphasized and constrained are branch shortening (reduction) recommendations or options. Deemphasizing shortening (reduction) reduces the option to cut off parts of branches that would permit cutting closer to the "necessary" setback distance, needed to merely keep the branch from growing back into the power line, rather than back to any point where it is growing toward the wires, which is virtually any point on the side of the tree facing the power line, since branches generally tend to grow outward from center of trees, and therefore toward wires on that side of the tree. This is what happened to one of four vertical trunks on a white birch tree on the property (non-excurrent, V structure, deciduous tree) during the prior pruning cycle. The entire mostly vertical trunk and all its branches that were on the side of the wires, was removed at a point 8 feet above the ground, 10 feet horizontally from the wires and 8 feet horizontally from the easement for the roadway.

- b) PPL's unadvertised *actual goal is to avoid pruning branches every cycle, or as close to never again as possible*, as reflected in pruning rules for Directional Pruning, which PPL claims is the pruning method that it uses. There is no surprise there. The goals of DP closely conform to such an objective. If PPL can be permitted to use techniques that permit this, then PPL can save money. But this *comes at the expense of widespread excessive pruning, excess foliage loss, structural compromise of trees and the reduction of the aesthetic quality of private properties and communities, with the associated destruction property values*. PPL tries to defend DP, claiming that DP is ANSI and therefore industry standard, and therefore "widely accepted", even though *Crown Reduction rather than DP is recommended in the ANSI A300 standard (A300 Part 1 paragraph 5.9.2)*. PPL claims DP is "a term of art that refers to all types of pruning done to direct branches away from a particular object". But DP is a much more specific method than that generalization. Its core characteristics include a *specific* set of rules believed by its advocates to help achieve redirection of growth, and *even more so, to remove and eliminate entire branches*

growing toward power lines, and to try to preclude regrowth toward the lines, even when those branches that are removed might represent decades of growth and could be shortened, and do not need to be completely removed to keep those branches from growing back into the wires during a 4 year pruning cycle. Unnecessary removals of branches or parts of branches constitute “excessive” pruning. The purpose of DP is also to try to keep the entire branch from ever again growing back, thereby perhaps obviating the need for any future pruning of that branch, rather than merely keeping the branch from growing back “into” the power line (emphasis added) “within the given cycle” (4 years), as professed by PPL in its pruning guideline paragraph “3.2 Acceptable Pruning Methods”. Removing entire branches, and in such a manner that they perhaps won’t grow back or need future trimming, can result in the removal of branches representing many decades of growth, and preclude all future growth, vastly “excessive” trimming, compared to what is “necessary” to keep the branches from growing back into wires during the 4 year pruning cycle. Even more significantly, recommendations to remove those branches growing toward the power lines, essentially authorizes **removal of all of the branches on the one side of the tree facing the power lines** (between the lower wire and up to 15’ above the upper wire), in part because branches on virtually all trees grow somewhat radially outward from an imaginary vertical centerline of the tree. Several of these PPL guidelines related to DP are very different from the *ANSI recommended Crown Reduction* recommendations, the use of which PPL’s guidelines very narrowly limits, including permitting use of CR only where Directional Pruning is not feasible, and in contrast by expanding the use of DP-like ANSI rules when the tree is not “directly under” the wires. These distinguishing *characteristic objectives and rules of Directional Pruning; and closely related PPL practices, are at the heart of the problem of excess pruning*, on Complainant’s property and in the broader community. Furthermore, PPL’s own training material identifies at least 3 perceived significant *disadvantages of Directional Pruning*:

- i) Excess Foliage Loss
  - ii) Structural Compromise
  - iii) Aesthetics
- c) Some overlapping rules recommended in the ANSI standard, are recommended for more limited use than applied by PPL in its guidelines. For example, ANSI recommends some rules similar to DP rules (e.g., ANSI 5.9.2.1.3), but recommends it only for use when the tree is directly under

power lines, but PPL authorizes use of these rules (DP) very much more widely (3.2.1), throughout the PPL self-authorized pruning corridor, up to 15' to 25', not only when the tree is directly under the power lines.

- d) Some rules recommended by ANSI (e.g., A300 Part 1 paragraph 5.9.2), like the flexible and more widely accepted Crown Reduction recommendations for utility pruning, are severely restricted by PPL's pruning guidelines (e.g., 3.2.2 Crown Reduction – only where DP is “not feasible”).
- e) Some rules recommended in ANSI (5.9.2.1.4) are selectively emphasized in PPL guidelines (3.2.3 Side Pruning) that are the more excessively destructive rules, while less destructive rules are omitted or deemphasized, like branch shortening to “lateral branches”, but not necessarily lateral branches that meet PPL's one-size-fits-all threshold of 1/3<sup>rd</sup> the size of the branch being cut.
- f) There are several rules applied generally to pruning, that intrinsically and unnecessarily extend how far beyond the necessary pruning point, for the cycle, the actual cut is made *for most or many species*. These include:
  - i) The PPL guideline recommendation that when shortening branches it be done at a branch that is 1/3<sup>rd</sup> the size of the branch being pruned, even when the particular species does not require a branch of this size to facilitate apical dominance based deflection of growth from the cut branch into a lateral branch that will not grow into the wires within the pruning cycle.
  - ii) PPL's recommendation that branches being shortened, be cut back to a branch growing in a direction *away* from the power line (more than even not “toward” wires, including removing those growing parallel), is not necessary to keep the branch from growing into the wires during the cycle, or even perhaps very many cycles, and eventually can result in the stripping of all branches on the side of a tree facing the power line, and even slightly past, should be eliminated and counterbalanced by giving priority other ANSI recommendations such as to retain at least 75% of foliage (to not remove more than 25%) per branch per pruning cycle.
  - iii) Removing branches generally, rather than shortening, and especially when removing branches because they have lateral branches growing toward the power line, except perhaps when trees are located “*directly under*” power lines, or for those *few species* that are prone to extensive watersprouts and extremely rapid grow back.

- 2) With respect to the first item in the analytical stages above, regarding growth and the decision of whether to trim at all, PPL appears to give inadequate attention to estimating growth rates of the different tree species, which on complainant's property alone has ranged between essentially 0 inches and 3 feet per year, depending overwhelmingly on the nature of the *species* of tree and whether the branch had been previously cut. Training and testing of decision makers on methods of *estimating growth is also significantly deficient, and virtually non-existent by PPL (other than the general guidance to individuals merely to consider growth)*. A reasonable growth rate estimate is needed to determine the first the above three analytical stages, estimating if pruning is required at all. Pruning branches that do not need to be pruned is unnecessary, and therefore, excessive pruning. Even when applying Directional Pruning techniques, that might remove all branches on the side of a tree facing the wires, one needs to determine, first, if the tree should be pruned at all. A tree that grows 6 inches per year would take at least 30 years to grow to the wires if it began at a stem (e.g., trunk) that is at the maximum pruning distance self-authorized by PPL, for single phase conductors of 15 feet. *Pruning a branch growing 6 inches per year and that ended 10 feet away from wires, would clearly be excessive.*
- 3) The second analytic stage of the above list of three, implies estimating the minimum amount that the end of the branch *needs* to be kept back or setback from wires, to keep it from growing back *into* the power line *within a trimming cycle*, or how much setback distance is *necessary* to keep it from growing back to the wires within 4 years. Estimating this distance also requires knowing some estimate of growth rates, but the growth rate after cutting can be different, and in the case of a Norway Spruce, the growth rate of a pruned branch is most typically *zero*. Inadequate attention to estimating these first two items can result in unnecessarily excessive estimates of growth, and excessive trimming to meet the minimum keep back or setback distance. On Complainant's property alone, grow-back rates have ranged from 0 inches (i.e., none for Norway Spruces ) to 3 feet per year for different species. A major goal should be to minimize any *unnecessary (i.e., excessive)* cutting beyond the truly necessary amount to accommodate 4 years of growth of each branch to be trimmed. In other words estimates of branch growth are needed that are both sufficient and not excessive. "Directional Pruning" does not give much, if any, consideration to the grow-back rate and distance, since its objective it to remove "entire branches" that are "growing toward" the wires in the first place, and to remove them back to a branch growing away from the wires, which on most

trees would involve removing branches over the entire front side of the tree next to the wires, from the lower wire to 15' above the upper wire. This overwhelmingly results in *unnecessary* and therefore *excessive* pruning. PPL's "Side Pruning" (SP), which PPL claims is a "type" of DP, is similarly prone to substantially excessive pruning, because of its emphasis on branch removal.

- 4) Then, after the setback or grow-back estimated distance is determined, the distance that the branch needs to be kept back from wires to ensure that it will not grow back into the wires within the cycle, one must determine precisely where the branch should be cut beyond this minimum distance.

Techniques emphasizing branch removal like "*Directional Pruning*", can again result in the vastly *excessive (i.e. unnecessary) removal of branches that may have taken many decades to grow*, and might not grow back at all. The emphasis in the current PPL guidelines on branch removal, plus constraints on shortening, effectively limit the use of less destructive shortening of branches and retention of beneficial greenery or foliage on the branch (per ANSI A300 paragraph 5.5.4). These constraints, rules or guidelines associated with "*Directional Pruning*" and closely related methods include the following:

- a) PPL's guideline emphasizing a preference to remove branches at a branch *growing away* from the wires (e.g., removing branches even only *growing parallel* to wires) even when a tree is *not "directly under"* wires (i.e., removing virtually all branches on the side of the tree next to the wires between the lower wire and 15' above the upper wire), and that otherwise might be expected to require repeated pruning (i.e., to prevent pruning each cycle, or *ever again* and anywhere on the branch rather than at the point where needed to be cut to keep it from growing into the wires during the cycle), which might require pruning even to the *other side of the tree from the wires* (first branch *past parallel*), and might require removal of branches like those hanging down (i.e., weeping style) and growing directly at the ground but parallel to the wires. But it often at least involves pruning back to a branch growing roughly parallel to the wires, since most branches tend to grow out roughly radially from trees, or have lateral branches that do so. A typical *result of applying this rule is to strip all branches on the one side of the tree toward the power line* from the lower wire to above the upper wire, with massive loss of greenery for a very long time, or even for the life of the tree, and *without consideration of the potentially counterbalancing ANSI recommendations*, like to not excessively prune foliage on trees and on branches. Furthermore, PPL also does not appear to train or test its decision makers in *species-dependent* grow-back properties, species dependent apical

dominance properties and species-dependent growth rates. For example, in the case of a Norway Spruce, any significant sized branch that is cut, almost anywhere except right near the tip, is *not likely to grow back* or sprout at that cut, and therefore branch removal is not necessary for this species for the purpose of keeping the branch from growing back to the wires, not only within the cycle but probably *forever*. It also has vertical (i.e., weeping style) branches growing toward the ground and that are parallel to the wires. Also, imposing the growing away rule on those species with branches that don't grow back once receiving a shortening cut, like a Norway Spruce, is simply unnecessarily destructive of foliage, unnecessarily compromising of the tree's structure, and ignorant with respect to obvious aesthetic considerations related to stripping all branches and related greenery off of one side of a tree.

- b) Minimizing the number of cuts by removing whole branches at fewer but larger branches growing toward the power lines, rather than multiple spawned smaller branches, can again result in decades of growth being unnecessarily removed, since larger diameter branches tend to be closer to the main trunk than the ends of its spawned smaller branches, which normally would be closer to the setback distance, which is by definition the distance sufficient to keep branches from growing back to the wires. Again, in order to cut fewer but larger branches the cut point is pushed ever further back (e.g., more excessively) from the point needed to keep the branch from growing back into the power line in the cycle. Taken to the extreme, this could result in a cut that removes of the main trunk of the tree. Instead, this should at least be counterbalanced by other factors like foliage retention.
- c) Pruning by shortening a branch to a lateral branch, regardless of tree species, that is *at least 33% (1/3<sup>rd</sup>)* of the size of the branch pruned, not just to a any lateral branch, in order to promote more likely apical dominance to deflect growth in the direction of a branch PPL's contractor selects, can also result in entire branches or major portions of branches with decades of growth being unnecessarily removed for many species. In addition, if the preference in "a" above is considered when contemplating shortening at a 1/3<sup>rd</sup> or larger lateral branch, the guidance to trim branches back to a lateral branch "growing away" from the wires, will preclude shortening. This again is likely to result in removal of all branches and even trunks on the side of the tree facing the wires. The concern with apical dominance is appropriate not so much to promote growth of the lateral branch, but to deflect growth from the branch cut so that it does not grow back or resprout. Again, this is *not* a problem with Norway Spruces, and is dependent

on the tree species, but PPL does not train on this issue by tree species, but instead applies PPL's one-size-fits-all threshold (1/3<sup>rd</sup> relative size rule).

- 5) There is inadequate concrete, uniform guidance, training, testing and PPL on-site supervision and control of the subcontractor foremen decision makers by PPL, who PPL authorizes and gives wide discretion to make on-site decisions on PPL's behalf, even when trimming on private property. Indeed, PPL does not test subcontractor personnel at all, but relies on its subcontractor to "provide qualified personnel", subjecting property owners to the luck of the draw on the subcontractor "decision maker" with wide discretion. These shortcomings include but are not limited to:
  - a) Sufficient and reasonable guidelines to estimate or approximate growth rates for different trees of different species to establish the trimming necessary to prevent grow-back into wires within the 4 year cycle, including species with branches unlikely to grow at all once cut, and then to pick and cut at a pruning point that is not excessively far beyond this necessary grow-back distance.
  - b) Realistic detailed guidelines regarding apical dominance by species, to replace PPL's one-size-fits-all threshold of 1/3<sup>rd</sup> of the size of the branch being cut, which by virtue of meeting the needs of the most extreme species, is excessive for other species, like the Norway Spruce.
  - c) Proving a decision maker's ability to understand and follow the pruning guidelines themselves, such as through qualification testing or testing after training.
  - d) Generally, there is *no* PPL person on site to supervise subcontractor "decision makers" who are given wide discretion, despite inadequate PPL guidance and *no* testing by PPL.
- 6) Training and testing of decision makers is grossly inadequate at least with respect to estimating growth of trees, both before and after pruning the various trees, and appropriate rules reflecting the growth characteristics of trees with adjustments to general rules to reflect this.
- 7) There are virtually no distinctions in PPL's guidelines between pruning on purely private property, rather than on public lands, public rights of way like roadways, or on explicit easements on private property, versus purely private property (without explicit easement agreements). PPL self-authorizes a "corridor" of up to 15' for single phase distribution circuits and up to 25' for multiphase distribution wires, that PPL calls a "right of way". This claimed interest in real property is dubious at

best and unlikely to be the result of a true "meeting of the minds" with private property owners. Certainly there is no meeting of the minds with the property owner for this real property at issue. There also appears to be little or no information routinely given to foremen decision makers on which trees and branches are on public property or easements versus purely private property, even though PPL's guidelines explicitly reference right of ways. Since PPL claims that the PUC has little or no jurisdiction to make distinctions related to rights of way, Complainant suggests the PUC issues judgments and rules without reference to any rights of way, that ensures protection **as if all property is private property**, at least once at or beyond the minimum setback or keep back distance necessary to keep branches from growing back into the wires during the cycle, consistent with reasonable growth rate estimates of the species in the circumstances.

- 8) Inadequate disclosure of methods and procedures and property owners' rights, makes it practically impossible for property owners to determine if PPL has exceeded or abused its authority, except through the discovery process related to a monstrously impractical reactive litigious process that *most individual property owners cannot practically use or afford, and that often addresses problems property by property and tree species by species, a grossly inefficient and impractical method of primary regulation for systemic problems.* Even the Vegetation Management (VM) plan submitted to the PUC is so limited as to be almost worthless to provide meaningful proactive review by the PUC. By default, PPL's authority to do whatever it wants unless explicitly stopped by the PUC, combined with inadequate information and comment from the public and PUC, given this dearth of information, is sorely inadequate. ***Inadequate disclosure of PPL's VM practices and inadequate opportunities for regular informed public comment on VM,*** such as for PPL's biannual VM plans and related detailed rules and pruning guidelines, make it very difficult for property owners, communities, and perhaps even the PA PUC itself, to be able to proactively and effectively reign in PPL's current virtually unilateral establishment of its VM rules. Public ignorance is not bliss, except perhaps for PPL.
- 9) Last but not least, PPL's has submitted a plan to the PUC for 2014 & 2015, dated October 2012, Vegetation Management Program Description, Process. PPL admits that this plan does not represent a significant change from prior practices, and that it does not currently know of any significant planned changes for the future. In it, PPL touts the claim that: "PPL Electric uses a widely accepted

tree maintenance practice known as directional pruning, which removes only the branches growing toward the power lines.” This is a materially misleading statement, because:

- a) First, the claim that DP is “widely accepted” based on the claim that it is ANSI, is dubious at best and arguably misleading, at least with respect to widespread use, rather than only for those specific situations where trees are growing “directly under” power lines. The far more widely accepted ANSI A300 standard recommends “Crown Reduction” (CR) for utility pruning, and does not mention “Directional Pruning” (DP). For the specific narrow circumstance of trees “directly under” power lines, ANSI does recommend pruning similar to some basic DP rules, as an alternative to entire tree removal, but PPL guidelines highlight these rules for authorized use for pruning virtually everywhere within its claimed “corridor”. What’s next from an unchecked PPL? If PPL is permitted to excessively expand DP-like ANSI rules from areas “directly under” wires, to everywhere within PPL’s self-authorized “corridor” bounded based on tree branch growth rates, without any guidelines for such growth rates, it is a very small step for PPL to expand the use of the ANSI *entire tree removal* option for trees directly under wires, to a similar self-authorized “corridor”, and without any meaningful notice to property owners! In answers in interrogatories PPL was asked for its basis of claiming that DP was widely accepted, and PPL claimed that it was because of the ANSI standard, which is widely accepted (Answer to Interrogatory Set 2, Q#18e). But only elements or components of DP are optional recommendations in the ANSI standard, and not all elements or rules involved in the DP method.
- b) Second, *parts* of DP are included in the ANSI standard, and even the parts of DP that are not in the ANSI standard do not violate any of the ANSI *mandatory* requirements. Not following any of the many ANSI optional “recommendations” that make up the bulk of the ANSI standard, do not constitute violating the ANSI standard. This is true even with respect to PPL’s very substantial restriction on the ANSI recommendation to use Crown Reduction for Utility Pruning. In PPL’s list of “Acceptable Pruning Methods” PPL explicitly narrowly restricts the use of the ANSI Crown Reduction recommendation for utility pruning, stating: “Crown Reduction This technique is to be utilized when a tree is located under the conductors and directional pruning is not feasible” (PPL pruning guideline paragraph 3.2.2). Most of the ANSI standard is composed of non-mandatory optional “recommendations”, rather than “mandatory requirements” including CR. Therefore claiming DP “follows” or is “consistent with” or is “based on” the ANSI standard sounds good,

but really *is not saying much at all*, although such references to “widely accepted” standards like ANSI, can leave a misleadingly positive impression and acceptance with many readers.

**In conclusion**, for every 100% of excess trimming beyond the minimum “necessary” setback distance to keep branches from growing back to the power lines during the four year pruning cycle, PPL will save the pruning costs associated with one pruning cycle for those branches. 100% excessive pruning means skipping one extra cycle for the branch, 200% means skipping two extra cycles (i.e., skipping 8 extra years & not pruning those branches for 12 years), and so on. In this instance alone PPL has pruned some branches as much as 375% of what was necessary, 275% excessive, obviating the need for 2 or perhaps 3 trimming cycles on those branches (e.g., Norway Spruce, Tree#1:  $7\frac{1}{2}' / (4\text{yr} \times \frac{1}{2}\text{ feet/yr.}) = 7.5/2 = 3.75$ ). But the grow-back growth rate for any significant Norway Spruce branch cut off is essentially zero (0) rather than the  $\frac{1}{4}$  to  $\frac{1}{2}$  foot/year precutting growth rate. They do not grow back or re-sprout, like some species are prone to do. Because of this, virtually any setback distance is more than needed, and the excessive amount becomes very large (division by zero is infinity). Any remaining uncut branches might still need to be trimmed in the future ( $1/2'$  per yr,  $2'$  per cycle).

Similarly, a second Norway Spruce was trimmed all the way back to its vertical trunk near the upper wire, approximately 7 feet, which is 350% of what was needed and 250% excessive ( $7'/2' = 3.50$ ). A third tree, which is a White Birch that was very excessively trimmed during the prior pruning cycle involving removing one of four main trunks and all associated foliage, now more than 4 years ago, has grown back very little and did not need to be trimmed this cycle, and was not trimmed at all this cycle making it excessively pruned by at least 100% during the prior cycle. It also looks like it will need little or no pruning next cycle, given the amount and the rate of grow back, making it perhaps 200% or more excessively trimmed.

Given PPL's practices, it is only a matter of time until the above trees, and other trees on the property and elsewhere in the community, are excessively trimmed or outright butchered irreparably.

Clearly, it is in PPL's economic interest to use, as widely as they can get away with, methods and personnel that maximize cutbacks, even though these produce "excessive" pruning, including widespread use of rules such as those associated with methods that PPL refers to in its guideline as the following:

- 1) PPL's guideline method paragraph 3.2.1 "Directional Pruning" (DP), has some similar rules to ANSI paragraph 5.9.2.1.3 for trees "directly under" power lines, but PPL's guidelines materially expand the use of DP beyond the limited circumstances recommended in the ANSI standard, increasing the potential magnitude of excess pruning and branch destruction. PPL's description for DP highlights branch removal, and also does not mention any option for branch shortening, and even if shortening would be an option, it would be further drastically unnecessarily restricted by PPL's "General" rules.
- 2) PPL's guideline method paragraph 3.2.3 "Side Pruning"(SP), which PPL also claims is a type of "Directional Pruning" has some similar rules to ANSI paragraph 5.9.2.1.4, but PPL's guideline description is more limited than the options recommended in ANSI for pruning trees "next to" power lines, most notably with respect to shortening branches rather than removing entire branches, again contributing to excessive pruning and branch destruction. Also even if any shortening was possible and permitted for SP, it would be further unnecessarily drastically restricted by PPL's General rules.
- 3) PPL's guideline paragraph 3.1 "General", imposes a pruning rule that massively limits *all* shortening of branches everywhere, including for any Side Pruning, to only where they are cut at lateral branches that are at least 1/3<sup>rd</sup> the size of the branch that is being cut, ostensibly due to considerations of apical dominance, but this one-size-fits-all rule that is sufficient for the worse case apical dominance species, is excessive for many other species including for Norway Spruce trees and others. This again goes beyond the recommendations in ANSI in a manner that promotes excessive pruning and branch destruction.
- 4) PPL's guideline paragraph 3.2.2 entitled "Crown Reduction" severely restricts the use of this preferred ANSI-recommended pruning method, to where DP (and SP as a type of DP) cannot be used, essentially relegating this highly flexible and potentially much less destructive ANSI recommended method, to a substantially irrelevant and mostly invalid approach for PPL pruning, except to the extent that some of the CR techniques are incorporated into DP and SP, and not further restricted by PPL's "General" guidelines.

These PPL DP and SP techniques, and other rules in the PPL pruning guidelines like the “General” rules, promote excessive pruning through a set of *non-ANSI* guidelines that emphasize widespread branch removals, and minimize use of branch shortening alternatives. *PPL’s guidelines and practices intrinsically make it almost impossible to trim branches only to the point needed to prevent grow-back into the wires within the pruning cycle.* This is not surprising, because the goal of directional pruning is to minimize or avoid entirely any future pruning, rather than to only prune branches so that they do not grow back into the power lines within the 4 year pruning cycle (5 years north of the Blue Ridge).

Who pays the price for this “excess” pruning? Property owners like the Complainant and communities pay, through unnecessary removal of foliage, structural compromise of trees, and aesthetically degraded landscaping for private properties and communities, many decades in development, with associated reduced property values of private property and neighborhoods. It appears that the PA PUC has not previously used its substantial authority to proactively, broadly reign in PPL’s recent past and planned future Vegetation Management practices, on behalf of *all* property owners (or at a bare minimum at least for those with conifers, and other trees with excurrent structures, which are some of the most adversely affected tree species). The result has been that property owners have been, and continue to be, on the losing-end of PPL’s Vegetation Management practices. It is time to remedy this situation, in order to prevent more irreparable damage to decades-old landscaping vegetation. In addition, property owners need a mechanism to ensure that they can supervise work done by personnel who are inadequately trained and tested on critical items, like estimating growth of tree branches, before and after trimming. A door hanger notice placed a couple of weeks before pruning, is grossly inadequate notice, especially for absent landlords, and the absence of authority to immediately stop cutting to prevent irreversible damage are intolerable risks, especially given the shortcomings of training and testing of decision makers, who are given wide discretion in cutting trees, even leading to stripping all branches on one side of a tree between the lower wire and 15’ above the upper wire. Of concern in the near future, are several trees on the property, and many other trees in the community.

It is very clear that the claimed “100%” audits performed by PPL personnel, ensure the interests of PPL to make sure that at least *sufficient* is done, not the interests of property owners to ensure that only *necessary*, not excessive, pruning is not done, i.e., to prevent more trimming than is necessary to keep branches from growing back into the power lines during the pruning cycle. This is evident from the

objective of Directional Pruning advocated by PPL, which generally removes entire branches growing toward the wires, even if this means that decades of growth are removed and no foliage is likely to grow thereafter, intrinsically vastly excessive and unnecessary trimming, with few exceptions. Supervision by property owners, and the authority to stop trimming work on one's property, could help mitigate this situation where trees are subject to irreversible, irreparable, and irreplaceable damage, resulting from excessive pruning of species, especially those that do not readily grow back.

The primary pruning methods used and emphasized by PPL, including Directional Pruning and Side pruning, pose a massive **current and future risk of excessive pruning** to landscaping foliage on Complainant's private property, **massively more than is needed** to ensure that branches do not grow into the power lines within the pruning cycle, and **therefore not reasonable**. They impose excessive foliage loss, structural compromise, unaesthetic vistas, and other disadvantages on private property owners and communities, to save PPL money by attempting to eliminate or significantly reduce pruning again, once done.

ANSI versus PPL's Guidelines

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Selected Key Pruning Rules, Their Applicability and Differences

APPLICABILITY (circumstances)	PPL GUIDELINES	ANSI	PA PUBLIC UTILITY COMMISSION SECRETARY'S BUREAU
DIRECTLY UNDER WIRES	3.2.1 "Directional Pruning" (DP)	5.9.2 "Utility Crown Reduction Pruning" (CR) 5.9.2.1.3 (no title) "Trees ...under and growing into facility/utility spaces should be removed or ..."	
ANSI: "Trees directly under..."			
PPL: "Technique to be utilized when a tree is directly under the conductor or..."	"Entire branches ... should be removed". "Branches that have laterals growing towards the conductor(s) should be removed."	"pruning... done by removing entire branches... "or by removing branches that have laterals growing into (or once pruned will grow into) the facility/utility space."	
NEXT TO WIRES		5.9.2 "Utility Crown Reduction Pruning" (CR)	
PPL: "Technique to be utilized when a tree is ... or located within the right of way corridor."	3.2.1 "Directional Pruning" (DP) "Entire branches ... should be removed". "Branches that have laterals growing towards the conductor(s) should be removed." (NO mention of shortening option for PPL's DP description)	5.9.2.1.3 not applicable for next to wires – only for directly under 5.9.2.1.3 not applicable for next to wires -only for directly under 5.9.2.1.4 "should be pruned by removing entire branches" or ... 5.9.2.1.3 not applicable for next to wires -only for directly under 5.9.2.1.4 No Rule. like removing br.with laterals (for next to wire) 5.9.2.1.4 "should be pruned by reducing branches to laterals" (i.e., ANSI shortening recommendation) or ... &just "to laterals" not laterals 1/3 <sup>rd</sup> size of branch cut	
ANSI: "Trees growing next to ... and into or toward facility...."			
PPL: "to be utilized when a tree grows beside the conductors." PPL: "When the parent stem of a tree is at the edge of the right of way..."	3.2.3 "Side Pruning" (SP) "limbs protruding into the right of way should be removed at the branch bark collar on the main stem." (NO mention of shortening option for PPL's SP description)	5.9.2.1.4 "should be pruned by removing entire branches" or ... 5.9.2.1.4 "should be pruned by reducing branches to laterals" (i.e., ANSI shortening recommendation) or ... &just "to laterals" not laterals 1/3 <sup>rd</sup> size of branch cut	
ANSI: "Trees growing next to... ... and into or toward facility...."			
	"Any exceptions to the above methods of pruning will only be performed at the discretion of and with the approval of the appropriate company representative."		

## 3.0 Tree Pruning

## 5.9 Utility pruning

### 3.1 General

All trees will be pruned by the guidelines detailed in the most current revision of the American National Standard for Tree Care Operations-Tree, Shrub and Other Woody Plant Maintenance - Standard Practices (ANSI A300). All pruning cuts should be made back to lateral branches at least one-third the diameter of the limb being removed or to the branch collar at the parent stem.

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### 3.2 Acceptable Pruning Methods

Every effort shall be made to prune trees, to ensure that they will not grow back into the primary conductors within the given cycle, by the following acceptable methods:

#### 5.9.2 Utility crown reduction pruning

##### 5.9.2.1 Urban/residential environment

#### 3.2.1 Directional Pruning

This is the preferred pruning technique to be utilized when a tree is located directly under the conductor or located within the right of way corridor. In order to achieve necessary tree-to-conductor clearances, entire branches and/or branches that have laterals growing towards the conductor(s) should be removed. All cuts should be made back to lateral branches that grow away from the conductor(s). When required to preserve vertical clearance above the conductors, side branches should be pruned back to laterals growing away from the conductors.

5.9.2.1.3 Trees directly under and growing into facility/utility spaces should be removed or pruned. Such pruning should be done by removing entire branches or by removing branches that have laterals growing into (or once pruned, will grow into) the facility/utility space.

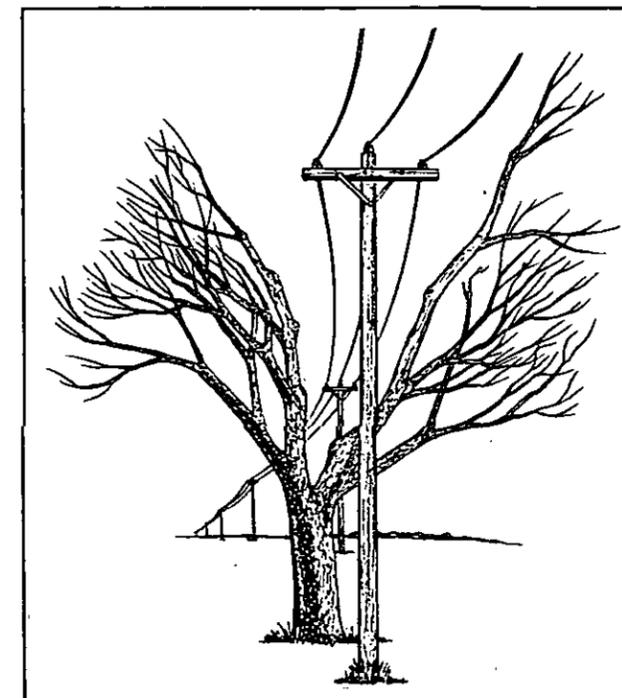
#### Directional Pruning

Directional pruning is accomplished by pruning unwanted branches back to lateral branches or parent stems that are growing away from the facility (Figure 9). These lateral branches should be of sufficient size to become dominant, thus discouraging the growth of sprouts. This method is often referred to as *drop-crotching*, or *natural pruning*. Directional pruning is most effective when natural tree characteristics such as size, shape, and expected growth rate are taken into consideration. It also is important to understand the effect of other factors, such as apical dominance, on expected tree response to pruning.

#### 3.2.2 Crown Reduction

This technique is to be utilized when a tree is located under the conductors and directional pruning is not feasible. In this situation, all top branches must be pruned back to lower the crown of the tree and achieve the necessary tree-to-conductor clearance. When feasible, entire branches that have sprouts from old topping cuts growing into the lines should be removed.

Apical dominance is the suppression of lateral buds (located along the sides of branches) by terminal buds (found at branch tips). When terminal buds are removed, apical dominance is reduced. The tree increasingly sprouts from lateral buds as a result, which is why trees respond with vigorous sprout growth when they are severely headed or rounded over. Directional pruning conserves as many terminal buds as possible, leading to less vigorous sprouting from lateral buds.



#### 3.2.3 Side Pruning

To be utilized when a tree grows beside the conductors. When the parent stem of a tree is at the edge of the right-of-way, limbs protruding into the right-of-way should be removed at the branch bark collar on the main stem.

Any exceptions to the above methods of pruning will only be performed at the discretion of and with the approval of the appropriate company representative.

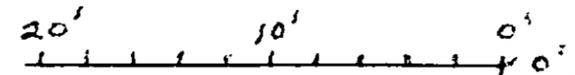
5.9.2.1.4 Trees growing next to, and into or toward facility/utility spaces should be pruned by reducing branches to laterals (5.3.3) to direct growth away from the utility space or by removing entire branches. Branches that, when cut, will produce watersprouts that would grow into facilities and/or utility space should be removed.

5.9.2.1.5 Branches should be cut to laterals or the parent branch and not at a pre-established clearing limit. If clearance limits are established, pruning cuts should be made at laterals or parent branches outside the specified clearance zone.

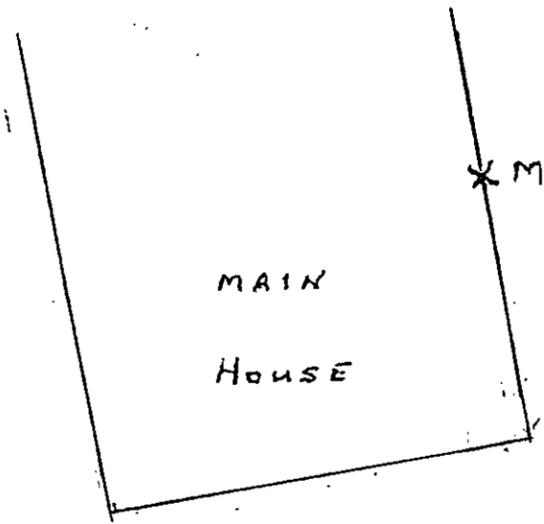
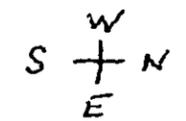
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Scale



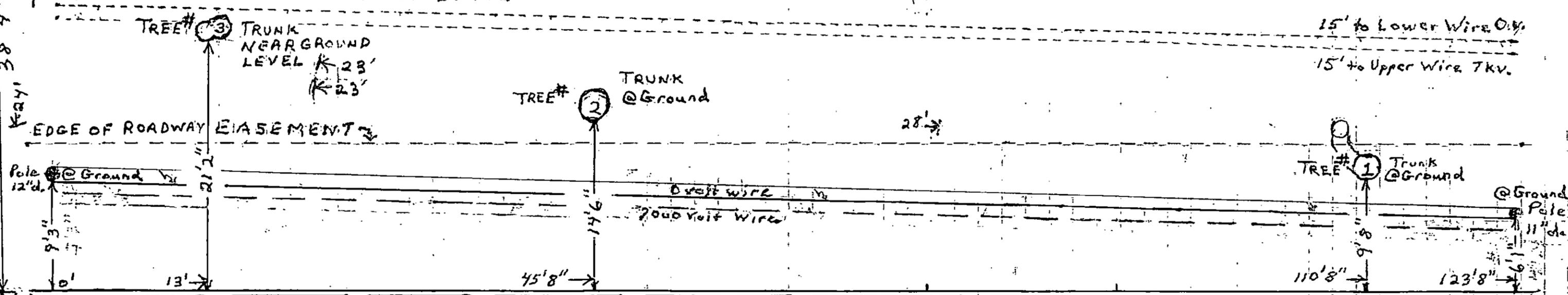
TREE # 6  
NEAR GROUND LEVEL

up to 15' "CORRIDOR" ROW CLAIMED BY APL

TREE # 3  
TRUNK NEAR GROUND LEVEL  
K 23'  
K 23'

TREE # 2  
TRUNK @ Ground

TREE # 1  
Trunk @ Ground



38' 4"  
KEY  
EDGE OF ROADWAY EASEMENT  
Pole 12" d.  
9' 3"  
10'  
13'  
CURBING  
Paved Road  
WELL STREET  
CENTER LINE

Note: Power Poles LEAN toward street 3/4" per vertical foot.

PAVED ROAD  
← SOUTH NORTH →

Exhibit #33 Property Layout Including Wires & Key Trees

**EXHIBIT #34- DESCRIPTIONS OF TREES BY TREE NUMBER**

(Including Tree Reference numbers.)

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**Trees of primary concern** located on the 736 Weil Street property, with main trunks within 15 feet of a hypothetical vertical plane that bisects the power poles and power lines, are the following four trees:

**Tree#1** is a large (Norway) Spruce tree approximately 50 feet high, located behind mailboxes north of the northern side of the house, approximately 21 feet north of the house and with the face of the bark at ground level on the side of the trunk facing the power lines 2 ½ feet west of (perpendicular to) a hypothetical vertical plane. The power pole is approximately one foot wide. The lower wire is the 0 volt "grounded neutral" wire and is on the side of the power pole facing the road away from the trees. The upper wire is the 7,200 volt (hot) wire and is on the top of the pole on the side toward the tree and away from the street. The power poles lean toward the street approximately 1.5 inches for each 24 inches of vertical height. Therefore, the lower power line (0v) is approximately 1 ½ foot (1 ½ ') closer to the street than the base of the power pole toward the tree, and the upper wire (7kv) is approximately two feet (2') closer to the street (further away from the tree) than the base of the pole at ground level because of the leaning pole. On the side of the tree where the hot wire is mounted, this is 2' closer to the street (further away from the tree) than the ground reference point of the pole on the side toward the tree (which is a reference point and vertical reference plane for purposes of discussions). At the upper portion of the tree, where virtually all of the trimming occurred, between the height of the

lower power line and 15' above the height of the upper power line, the main vertical trunk bends away from the power lines to where the front surface of this vertical tree trunk is about 5 ½ feet away from this vertical reference plane through the bases of the power poles at ground level on the side of the pole toward the tree. This bend can be seen in Exhibits #7 & #12. The bend places the upper trunk and point to where branches were stripped at approximately 7 ½ feet ( $2 + 5 \frac{1}{2} = 7 \frac{1}{2}$ ') away from the upper power line, and 5½' tree-side of the vertical reference plane passing through the tree side of the power poles at ground level. Most of these branches on the side of the trunk next to the power lines are cut back up to the bark of the main vertical trunk, removing virtually all green foliage from a large vertical portion of the tree on the side of the tree facing the power lines, and placing an asymmetrical load and stress on the vertical trunk of the tree with virtually no branches on only one side, and creating an ugly eyesore. There are a number of long branches roughly parallel to the power lines, some of which bend and protrude approximately a foot toward the wires, that have had their branches along the side toward the power line cut off, but the long branches almost parallel to the power lines remain. Finally the longest branch, which is estimated to be substantially more than 50 years old, is 22 feet long ( $22/50=0.44$  feet/year) for an approximate growth rate of ½ foot per year for the longest branch. A frontal view photo taken in March 2013, immediately after trimming, is attached as Exhibit#1. A bottom view photo taken in July 2013 is attached as Exhibit#4, and this shows a different perspective on the stripped branches, and perhaps a better view than Exhibit #1 for that purpose.

Other photographs of Tree #1 are Exhibit #25 which is a Panorama of Tree #1, #2, #3, and #6, and Exhibit #26 which is a closer perspective on Tree #1 and #2, both taken in September 2013.

**Tree#2** is a large (Norway) Spruce tree approximately 50-60 feet high, located 26 feet south of the southern side of house, and with the bark on the side of the main trunk facing the power poles, 5 feet west of the vertical reference plane passing through a line connecting the bases of the power poles at ground level on the side of the power pole facing the tree (away from the street). The longest branches are substantially more than 50 years old, and the longest branch on the north side is 28' long, while the two longest branches on the south side of the tree are both 23' ( $28/50=0.56$  feet/year,  $23/50=0.46$  feet/year) for an approximate growth rate of  $\frac{1}{2}$ ' per year for the longest branches. This tree was not "butchered" as badly as Tree #1, and trimming distance varies, with the most trimming occurring near the 7kv hot wire. Next to the lower power lines the horizontal branches are trimmed to a length of approximately 3 feet from the vertical tree trunk at around the level of the lower wire and to the bark of the tree trunk near the upper wire. Above the upper wire the trimming gradually moves out toward the street and closer to the vertical reference plan. This leaves approximately 2 feet clearance to the vertical reference plane passing through the tree-side base of the power poles for the lower (grounded 0v) wire, and approximately 5 feet to the vertical reference plane from the face of the trunk bark on the tree near the upper (hot) wire. Adjusting for the 1.5/24 lean of the power pole and the positioning of the wires on the pole, the clearance between the trim point at the bark face of the tree and the wire is 7 feet near the upper (hot) wire and

approximately 3 ½ feet for the lower (0v grounded) wire. There is only a portion of the trimming that goes back to the trunk. While the trimming is still excessive and unaesthetic, it is substantially less extensive, less extreme, and not as ugly as for Tree #1. A side view photo taken in March 2013, immediately after trimming, is attached as Exhibit #2. Additional photographs of Tree#2, taken in August and September of 2013 are Exhibit #13 View to the Southwest from Weil Street, Exhibit #14 Interior lower main branches view, Exhibit #18 Interior close up of main branches, Exhibit #19 Typical Uncut Norway Spruce Branches, Exhibit #23 Main branch and lateral branches close-up, and Exhibit #24 Front (wires side) close up view. Exhibit #25 is a Panorama of Tree #1, #2, #3, and #6, and Exhibit #26 is a closer perspective on Tree #1 and #2 both taken in September 2013.

**Tree#3** is a White Birch tree approximately 40-50 feet high, 57 feet south of the south side of the house, with the front bark of the trunk facing the wires 11 feet west of the vertical reference plane at ground level to the tree-side of the power poles at ground level. A side view photo taken in July 2013 is attached as Exhibit#5, includes a view of the cut to remove a main trunk done during trimming in the prior pruning cycle, approximately 4-5 years ago, roughly 8 feet above the ground at a point where the trunk was growing almost vertically. As can be seen, little has grown back to date, after more than 4 years, and pruning was not required during this latest pruning cycle. Exhibit #27 shows the cut from another angle taken in September 2013. This prior cycle trimming removed one of four nearly vertical trunks, removing this trunk on the side of the tree facing the power lines, and all of the branches and foliage, more than a quarter of the foliage on this sunny

side of the tree. Finally, Exhibit #25 shows Trees #1, #2, #3, and #6 together taken in September 2013.

**Tree#4** is a Pine tree approximately 20 feet high, located 43 feet north of the north side of the house and 5½ feet west of vertical plane of the PPL power poles and lines.

**Other trees on the property of possible concern**, due to *branches that may extend into the area 15 feet away* from the vertical plane of the power lines and poles, are the following six trees:

**Tree#5** is a (Colorado Blue) Spruce tree north of house near the corner of Weil Street and Elinore Street, approximately 25 feet tall, with main trunk located 72 feet north of the north side of the house and 17 feet west of PPL power lines, with horizontal branches extending within 15 feet of the plane of the power poles and lines

**Tree#6** is a (Norway) Spruce tree approximately 50-60 feet high, south of the south side of the house, located 80 feet south of the house and with the bark of the trunk at ground level on the side of the tree facing the wires 27 feet from the vertical reference plane intersecting the line connecting the tree side of the power poles at ground level. The longest branch on this tree extends 24 feet toward the power lines from the tree side bark on the trunk of the tree, which is approximately 4 ½ feet from the lower wire after accounting for the tilt of the pole. This longest branch is more than 50 years old ( $24/50=.48$  feet/year) for a growth rate of approximately ½ foot per year for this longest

branch. A photograph taken in August 2013 is depicted in Exhibit #15 View looking toward the south, and Exhibit #25 shows Trees #1, #2, #3, and #6 taken in September 2013.

**Tree#7** is a (Norway) Spruce approximately 10 feet high, located 29 feet north of the north side of the house and 18 feet west of the PPL power lines. (with growth expected to place horizontal branches with 15 feet of the plane of the power lines.

**Tree#8** is a Maple tree approximately 30 feet high, north of the north side of the house, with the trunk at ground level located 22 feet north of the house and 33 feet west of the PPL power lines.

**Tree#9** is another deciduous tree approximately 30 feet high, north of the north side of the house, with the trunk at ground level located 50 feet north of the house and 36 feet west of the PPL power lines and with branches within 15 feet of the plane of the power lines.

**Tree#9b** is an Oak tree with trunk at ground level approximately 40 feet high, 23 feet south of the south side of the house; 42 feet west of the center of a hypothetical plane aligned with the PPL power poles and power lines.

**Other trees on other properties** of interest for reference in the general area of Weil Street or Salisbury Township:

**Tree#10 & 11** two evergreens at 750 Weil & Ritter Streets corner (next to 736 Weil Street) approximately 30-35 feet tall and approximately 3 ½ and 4 ½ feet respectively perpendicular from the centerline of the power lines. This is shown in Exhibit #

**Tree#12 & 13** two evergreens at 762 Weil Street (next to 750), approximately 30-35 feet tall, with central trunks located approximately 2-3 and 3-4 feet respectively from the centerline of the power line. This is shown in Exhibit #

**Tree #14** One “typical” Norway Spruce next to 731 Weil Street, totally untrimmed and approximately 40 feet high. Exhibit #11 illustrates the “ideal” characteristic shape and structure of the main branches, with thin lateral branches hanging mostly vertically down off of these main branches. Other Exhibits showing some “typical” or “ideal” branches of a Norway Spruce are of branches below the level of the lowest power line and on the opposite or back side of Tree #2 from the power line. These “typical” branches are shown in Exhibits #19 and Exhibit #23 which show a more close-up and detailed photo of the typical characteristics of Norway Spruce Branches than Exhibit #11. ( Exhibit #11, #19 and #23 were all taken in August 2013)

**Tree #15** One Norway Spruce at 1701 Broadway, just around the corner from Weil Street with main branches stripped on all greenery and leaving branches that look like denuded

poles, not removed at the trunk. Exhibit #16 depicts this tree from the corner property at Weil Street and Broadway. Exhibit #17 depicts a close-up bottom view of this tree.

**Tree #16** One spruce tree at 621 Emmaus avenue that has branches stripped off back to the trunk of the tree, which is approximately 5 feet from the closest power wire to the front of the trunk of the tree. Exhibit #20 depicts this tree and was taken in August of 2013.

**Tree #17** One pine tree at 435 Emmaus Avenue that has branches stripped off back to the trunk of the tree, which is approximately 13 feet from the closest wire to the front of the trunk of the tree. Exhibit #21 depicts this tree and was taken in August of 2013.

**Tree #18** One evergreen at 425 Emmaus Ave with branches *not* cut back to the trunk of the tree, retaining substantial greenery (foliage) on the side of the wires, and with its trunk roughly the same distance from the nearest power wire as Tree #17. Exhibit #22 depicts Tree #18 and was taken in August 2013.

5. Requested Remedies (1<sup>st</sup> Amended Version):

Complainant's most important objective is **to prevent future excessive, unnecessary pruning, and irreparable damage**, especially to big old trees. To achieve Complainant's reasonable goal, the remedies that the Complainant is seeking are the remedies that follow, from among many alternative remedies. However, **any remedy that can reasonably be expected to fix, and actually does fix, the problem of excessive pruning**, would be acceptable to the Complainant.

Long Term Systemic Remedies to Systemic Problems.

1. All property owners, should be given an **informed choice** between PPL's current approach that attempts to **minimize the need for repeated pruning** of branches and trees, and a new **alternative that minimizes any excess pruning** beyond what is necessary to keep branches from growing back into the wires during the pruning cycle (4-5 years), the latter of which PPL lists as a goal in PPL's pruning guideline paragraph 3.2. After at least being **informed of the key goals, characteristics and pruning rules** associated with each of the alternatives, one possible solution might be to permit property owners to choose to "opt in" to PPL's current widespread use of "Directional Pruning" (DP), and PPL's "Side Pruning" (SP). PPL claims that it used PPL's "Side Pruning" method to trim the 2 Norway Spruce Trees, and also says that it used "both" Directional Pruning (3.2.1) and Side Pruning" (3.2.3 on those trees, "because side pruning is a subset of directional pruning." PPL currently highlights DP and SP, in the PPL pruning guideline, and it highlights only DP in PPL's biennial Vegetation Management (VM) plan, that PPL submits to the PUC under 52.Pa. Code S 57.198(n)(1). PPL explained that although only DP is mentioned in the plan submitted to the PUC, SP is implicitly included because SP is a type or subset of DP. Instead of ordering PPL to provide the above opt-in option for the use of DP, the **PUC could also ban the use of PPL's DP and PPL's SP outright**, except perhaps for trees directly under power lines, and perhaps a very few other exceptions such as for specific species, explicitly affirmatively approved by the PUC. This general PUC ban or reduced applicability of DP, and SP, might reduce or eliminate any issues related to Jurisdictional questions related to private versus public property, and reduce record keeping for property choices. PPL currently permits use of the rules that PPL describes for DP for use virtually everywhere "located within" a self-authorized pruning "corridor" of up to 15' from the wires for single phase distribution conductors (or 25' for multiphase), rather than *only where ANSI recommends the use of similar rules – i.e., rather than*

only for trees located “directly under” the power lines (ANSI A300 Part 1 paragraph 5.9.2.1.3). If the PUC does not ban the use of DP more generally (with the limited exceptions), then property owners should be *proactively notified*, at the address to which tax bills are sent for rental properties, and at the property address, of the available choice to “opt in”, as well as regarding the advantages and disadvantages of PPL’s DP and SP, versus other accepted approaches, and the fact that ANSI recommends similar rules to these PPL rules, but only for trees “directly under” the wires. The notice of disadvantages should include especially the fact that DP has an intrinsic bias toward excessive pruning, compared to some ANSI Crown Reduction alternatives that could focus primarily on shortening branches to a point that keeps branches from growing back into the power lines within the pruning cycle (4 years south of the Blue Ridge and 5 years north of it) e.g., pruning to the first lateral branch beyond the estimated 4 year grow back or setback distance from wires.

- a. There are a few specific, exceptional circumstances where it could be advantageous to retain some limited use of some form of DP, even if a property owner wants to generally preclude it. These limited situations should be specifically submitted to the PUC for approval. The two most notable exceptions are when the tree is “directly under” the power lines, and perhaps also for *those few tree species with prolifically sprouting and very fast growing* branches that are near and growing directly at the wires.
- b. Alternatively to providing property owners with a well-informed opt-in option for DP, (second choice) would be to provide a well-informed “opt out” option for DP, and *informational public notice that PPL’s standard method authorizes the use of DP*, virtually everywhere pruning occurs, in contrast to some similar ANSI recommendations for trees, that much more narrowly restrict similar trimming rules.
- c. All property owners should at least be *given the informed choice*, proactively be *given notice* of their choice, and have major known *advantages and disadvantages disclosed, without demand*, for the choices. Before making their choice, property owners should be informed that DP saves PPL some pruning costs, but that this *method is likely to result is substantially more removal of tree foliage than is necessary to keep foliage from growing back to power lines between cycles (excess foliage loss)*, and in structural compromise of trees, and in aesthetically-challenged private properties and neighborhoods. In fact, property owners ***should be informed that the purpose, and***

*substantial results, of PPL's current DP-focused pruning practices are not merely to keep branches from growing back into the power lines during the pruning cycle, but to keep them from ever growing back toward the power lines, to the extent that that is possible. Property owners should be able to elect to prohibit Directional Pruning and its emphasis on removing branches growing toward power lines, on their properties, and instead have the choice to mandate the use of ANSI Crown Reduction and give a priority or preference for branch shortening, to trim branches back only to a point that is "necessary" to keep the branches from growing back into the conductors during the 4 or 5 year pruning cycle; plus to the nearest branch of any kind, any size, and any direction. A well informed public is more likely to prompt evolution of PPL pruning practices to a better balance, between the interests of PPL and its stockholders, and the interests of private property owners and their communities, than the current level of public ignorance due to stonewalling to keep the public in the dark about specifically what will be done on and to their private property, some of which can cause irreparable unnecessary destruction to their properties and communities.*

- d. Implicitly, opting-in to the DP choice implies opting out of another *alternative* pruning method. This alternative should ensure *minimizing any excess pruning* (i.e., not needed merely to ensure that tree branches *do not grow back into the wires within the pruning cycle*), and should reflect the other recommendations included in this document, including restrictions on the rules currently in use (e.g., for DP, PPL's definition of Side Pruning, and general rules like PPL's 1/3<sup>rd</sup> one size fits all threshold for cutting branches) that tend to produce excess pruning. These include eliminating the PPL *general* rule, applicable to *all species* of trees, stated in PPL guideline paragraph 3.1, that: "All pruning cuts should be made back to *lateral branches at least one-third the diameter of the limb being removed* or to the branch bark collar." The alternative to DP might be based on a more traditional or legacy approach, like using the *ANSI Crown Reduction* utility pruning method, the use of which PPL currently severely restricts in favor of PPL's choice of the DP method. The new alternative would give priority or *emphasis to shortening branches* back to the first lateral branch encountered (e.g., rather than to lateral branches larger than PPL's "general" rule for *all-species* - 1/3<sup>rd</sup> the diameter of the branch being pruned), to keep the branches from growing back into the wires during the

pruning cycle, or any other method that PPL develops to minimize excess or unnecessary pruning, preferably consistent with ANSI, as defined by the objective to only trim to a point that ensures no grow back into wires during the pruning cycle. This could be done by an **order directing PPL to develop the alternative approach to DP, that minimizes excess pruning** beyond what is needed merely to keep branches from growing back into wires during the pruning cycle, and then conducting a *PUC review* of the alternative once proposed. This might also be ***accomplished by the PUC by simply rejecting PPL's VM plans*** until PPL meets criteria reflecting minimizing excess pruning, many of which are included in the suggested remedies in this complaint. PPL's biennial plan for 2016 and 2017 should cover the next pruning cycle (2013+4=2017) for the property. Some important **ANSI-consistent rules for this "alternative"**, described in more detail later herein, and not necessarily intended to apply to trees directly under wires and for those very few species prone to extensive watersprouts or very rapid grow back, are likely to include, most notably, giving priority to:

- i. *branch shortening ("reduction") over removal, and*
- ii. *retention of at least 75% of foliage on a branch during a pruning cycle, unless more must be removed to meet to the minimum setback or keep back distance to keep branches from growing into wires during the pruning cycle, over all other shortening related rules, including but not limited to:*
  1. *over PPL's general rule for all species regarding its 1/3<sup>rd</sup> relative branch size (apical dominance related) pruning point rule; and*
  2. *over the rules that mandate to cut branches at a point as far away as needed to reach branches growing in a direction away from the wires, and to prevent grow back anytime or ever, rather than growing "into" wires "during the cycle" rules.*

2. If PPL cannot or will not distinguish between public right of ways and exclusively private property, for example where PPL has self-authorized a 15' to 25' "corridor" without even a meeting of the minds with the real property owner regarding this interest in real property rights, as apparently has been the case here. If PPL will not provide tree pruning teams with the mechanisms to distinguish valid real property pruning boundaries reflected in a written and

signed “meeting of the minds” on real property rights, then PPL should be made to apply standards for private property to all trimming, including the following trimming guideline changes intended to require mostly *only absolutely necessary trimming* on private property:

a. ***New pruning guidelines*** (e.g., for the “alternative”), at least for private property, should ensure that *only the minimum “necessary” trimming is performed, to ensure power reliability and safety, by merely ensuring that branches on trees “will not grow back into the primary conductors within the given cycle”* (i.e., 4 years in this area - 5 years north of the Blue Ridge), not that the branches will *never* grow back. Note that this goal is fundamentally at odds with the intent of Directional Pruning (DP), which is to *remove and eliminate entire branches growing toward power lines, to avoid subsequent pruning, even when those branches might represent decades of growth, and even though, and even especially because, after removal the branch likely will not ever grow back toward or grow foliage again.* Hence, ***Directional Pruning should be banned from general use, or provided as an opt-in option*** for private property owners, although perhaps *permitted in some exceptional cases*, such as for species with exceptionally fast grow-back rates or certain species growing “*directly under*” power lines. Crown Reduction, recommended in the ANSI A300 standard for utility pruning (ANSI paragraph 5.9.2), is more broadly flexible and suited as the foundation for the following recommendations. As such, DP would need to be prioritized below CR, and used only in selected instances explicitly approved by the PUC where DP can be shown to be better than CR, such as in the case of those few species of trees that sprout and grow back very rapidly, and some trees growing “*directly under*” the power lines.

- i. The minimum amount “*necessary*” to be pruned depends first and mostly on the ***estimated growth of the tree branches near wires*** over the four year trimming cycle. Anything beyond this amount is “*not necessary*”, although *some* limited additional trimming might be *desirable* to optimize a combination of other factors, like cutting at the next junction between branches, while trying not to trim more than 25% of the greenery or foliage on each branch to be trimmed (i.e., retain at least 75%), per ANSI A300 Part 1 paragraph 5.5.4.

1. The next junction between branches is also rarely the next junction with a branch that is at least  $1/3^{\text{rd}}$  of the size of the branch to be cut. This rule is not in the ANSI rules for Crown Reduction, but is mentioned in Directional Pruning descriptions. This PPL general rule in the PPL guideline (paragraph 3.1) does not depend on the species of tree. Therefore, if this size is sufficient for the case of the worst case species, it is excessive for the best case species! Furthermore, for some species the minimum size requirement can even result in an unnecessary de facto branch removal rule, one that is not an important threshold to keep the cut branch from growing back during the cycle using apical dominance properties (the alleged rationale for use of this one-size-fits-all threshold) for many species, like conifers such as the Norway Spruce. This one-size fits all General *rule ( $1/3^{\text{rd}}$  relative size) in PPL's guideline (paragraph 3.1) is applicable to all branches on all species, and **should be banned and replaced by a species depended guideline** for apical dominance and growth control purposes, **at least for the most common species** in the area, such as for Norway Spruces and Blue Spruces to name just two. Virtually any *one size fits all approach that meets the needs of the worst case species, is intrinsically excessive for the best case or average species*. Also the importance of the possibility of any grow back should be considered, for example for branches that generally do not grow back from the cut point after being cut, like Norway Spruce branches once they are cut. Furthermore, **counterbalancing factors** should also be considered, like placing increased importance and emphasis on retaining 75% of branch foliage, and especially, when this PPL  $1/3^{\text{rd}}$  relative branch size rule amounts to converting a branch shortening emphasis into a de facto branch removal rule (removing all and retaining 0% of foliage), unnecessarily for some or many species.*
2. Another rule associated with DP that should be banned, except when a tree is "directly under" power lines, is the rule in PPL guideline

paragraph 3.2.1 (DP), which PPL permits anywhere in the self-authorized 15' potential trimming "corridor" that *"entire branches or entire branches that have laterals growing toward the conductors should be removed."* ANSI recommends a rule similar to this rule, but only for trees "directly under" the power lines.

3. Similarly, the guideline that encourages reducing the number of branches cut by cutting at bigger parent branches further back toward the main trunk (and even more excessively further away from the minimum necessary setback distance), should also be given a priority lower than the ANSI 75% minimum greenery or foliage retention rule for a branch, and other practices like giving priority to branch shortening (close to the amount needed and not excessive).
  4. The next junction with another branch might also be with a branch that is parallel or almost parallel to wires, and is almost certain to never pose a risk of growing "into" the wires, or at least not for many decades. Deflection of growth into these branches that are "parallel" but not "growing away" (and not growing "toward" either), is a borderline or threshold case that again should be considered on a species by species basis. This applies to the hundreds or thousands of small "weeping" type lateral branches hanging down and very slowly growing directly at the earth on a Norway Spruce. These can and do absorb deflected growth without ever posing a threat to the wires. They therefore would satisfy the purpose of pruning at "lateral branches", rather than needing relatively big lateral branches as required by PPL's General 1/3<sup>rd</sup> relative size rule, which is also a rule associated with "Directional Pruning", but *not included in the ANSI paragraph 5.9.2 Utility Crown Reduction pruning definition and description.*
- ii. Generally, beyond the expected setback distance from wires needed for expected growth, to keep the branches from growing back into the wires during the pruning cycle, ***priority should be given to branch shortening techniques,***

*rather than maintaining the current preference or priority given to “directional pruning” (except if the tree is directly under the power lines, or if property owners elect to opt-in to more destructive DP trimming rules) or similar techniques that emphasize mostly full branch removal pruning, especially when trimming species that are “conifers” like the Norway Spruce and Blue Spruce. This preferred branch shortening approach would also give preference or priority to maintaining greenery or foliage when shortening a branch per ANSI, over general rules applicable to every species like trimming only at a junction with another branch that is at least the one-size-fits-all ratio of one-third (33%) of the size of branch being pruned, regardless of the reality of the species properties with respect to apical dominance. In the case of conifers like the Norway Spruce, PPL’s 1/3<sup>rd</sup> relative size rule unnecessarily eliminates thousands of potential smaller lateral branch junctures, and likely more than 90% of such potential branch-shortening trimming points, merely to channel or direct growth using apical dominance to where PPL wants to direct it, even when already past the point where pruning is necessary to keep a branch from growing back to the wires, and even though growth is redirected into multiple clustered smaller branches without a single big (1/3<sup>rd</sup>) lateral branch.*

- b. When determining which branches need to be trimmed, and especially, when determining how much, or *at what specific branch intersection*, these branches should be trimmed to keep them from growing back to the power lines, PPL’s guidelines should better consider the estimated growth of the tree species under the circumstances, rather than relying almost entirely upon the particular set of brain synapsis of each and every different decision maker, who PPL apparently feels it must train even in *identifying* tree species, but not in their respective growth rates, none of whom PPL tests on anything! Reasonably consistent growth rate estimates ultimately would help produce an estimate of total growth over the trimming cycle, and that would help provide an estimate of the setback distance “necessary” to keep each branch from *growing back to the power lines during the cycle*. Furthermore, when trying to determine a specific intersection of branches or cut point, at or beyond each true and

correct minimum distance necessary to keep the branch from growing back, plus perhaps some *limited* additional amount, if any, "desired" to select a specific cut point:

- i. Objective and practical mechanisms should be provided to minimize excessive trimming errors, including uniform guidelines to help estimate tree *growth by species, species-dependent* apical dominance information, and other factors, training, tools, and knowledge testing of those deciding how much to trim, including testing on *uniform* guidelines to help estimate growth rates and the appropriate amount of branch *shortening* necessary to keep wires from growing back to the wires.
- ii. Again, when determining the cut point, PPL's general rule requiring a uniform  $1/3^{\text{rd}}$  minimum lateral branch size rule for cut points, should be abolished and replaced with a guideline that considers *at least each species being trimmed at least for common species in the area*, and also at least and especially for trees with excurrent structures like conifers such as Norway Spruces (e.g., ~0% for Norway Spruce), since this  $1/3^{\text{rd}}$  relative size rule can also frequently result in an unnecessary de facto branch removal rule and unnecessarily stripping off of decades of growth of branches, and unnecessarily stripping large branches back to the vertical trunk of the tree, merely for the purpose of redirecting growth, and using a single universal relative size rule to promote apical dominance for each and every species, including sufficient for even the more adversely extreme species, and even when already past the minimum setback distance needed to prevent grow back during the cycle. This rule eliminates thousands of possible pruning points at smaller lateral branches (e.g., often well over 90% of the branches on a Norway Spruce). If not outright abolished, or adjusted for each species, its use should at least be limited to where it does not result in trimming more than 25% of a branch's greenery or foliage, or alternatively perhaps 25% beyond the minimum setback distance, again especially for branches on conifers such as the Norway Spruce.
- iii. Rules or guidelines that push cut points further and further back past the minimum distance necessary for branch setback, to keep the branch from growing back in the cycle, like emphasizing cutting at branches that are growing

away from power lines, or like emphasizing cutting at a single bigger parent branch further back rather than cutting multiple branches that it spawned that are closer to but still beyond the minimum setback distance necessary, should generally be reduced in priority vis-a-vis a priority to shorten branches and trim no more than the 25% maximum foliage removal recommendation in the ANSI standard for branches per pruning cycle.

- iv. There are other rules that also could be applied, that are less consistent with ANSI optional "recommendations" (should), but that do not violate any "mandatory requirements" (shall) in the ANSI standard, and which might be simpler or *more practical to implement*, like simply not permitting any trimming more than 25% further than the minimum distance required to keep the branch from growing back to the power line. Within that 25% one could seek a cutting point such as a lateral branch junction point.
3. Rather than providing ***notice of pruning*** a couple weeks in advance only by "door-hanger", all private property owners including those who might often or ***usually be away from a property, such as landlords or frequent travelers***, should have as an option the right to be notified by PPL ***by email or voice mail, and at least two months in advance***, regarding when pruning is expected. This will afford private property owners an option to schedule their own presence at the pruning. This right should be disclosed to them in advance as a matter of routine. Once notified, any date changes should also be provided to these people either by email or voice mail, or through an up to date web site. Also a method to estimate and inform a time range within the day of pruning on during that day, perhaps also by updating a web page. Significant changes in dates (e.g., more than a day or two) should ensure that a two month notice is again given.
  4. To permit property owners to ***anticipate possible problems*** that could result in ***irreparable damage to their trees*** on their private property, to permit property owners to plan plantings of landscaping trees, or to provide a basis to analyze perceived damage done, PPL should maintain a ***public web address with their detailed vegetation management guidelines***, standards, practices, specifications and rules, especially, but not limited to, those that have been submitted to the PUC for explicit or implicit approval, before they take effect, to permit an ***informed public comment process***, and while they are in effect. (Perhaps an option would be to inform property

owners that it is available on simple request, and provide it to those who want it, including any ongoing updates.) These would include most of the very detailed material that the Complainant was only able to obtain through this highly burdensome and impractically costly, discovery process. *Most of these items are necessary for Property owners to understand what will be done or is being done or has been done to their property during vegetation management pruning. They include objectives, rules, and likely results, aesthetically and otherwise, including results involving "excess" or unnecessary branch removal involved with Directional Pruning techniques, especially with conifers and other trees with excurrent forms or strong central leaders, pruning to branches growing away from power lines, pruning to branches 1/3<sup>rd</sup> the size of branches being cut.*

5. Because of the expense of this "reactive" formal complaint process, and therefore its limited practical availability for most property owners, proactive review of PPL Vegetation Management plans and practices is essential. PPL has more of an incentive to work with the PUC in a proactive process, than with individual property owners in a reactive (and adversarial) process, many of whom cannot afford a process as expensive as this reactive formal complaint process, and arguably likely a property by property, and tree species by species, reactive process. Also, as previously detailed, the PUC should instruct PPL to develop an alternative to the widespread use of the Directional Pruning technique, including conifers and beyond. Specifically, an alternative that prunes sufficiently to keep branches from growing back within a pruning cycle, ***but not excessively***, should be developed as an alternative to DP as the primary method to be used, and then proactively reviewed by the PUC. ***More disclosure of PPL's VM practices and more opportunities for regular informed public comment on VM***, such as on PPL's biannual VM plans and related detailed rules and pruning guidelines, is needed to make it easier for property owners, for communities, and perhaps even for the PA PUC, to be able to proactively and more effectively influence the proactive PUC review process, to balance property owners interests, and to reign in PPL's current, virtually unilateral establishment of its VM rules.
6. Until the preceding long term remedies are successfully implemented, and until Complainant has agreed in writing that they have been adequately implemented, also provide the following short term remedies for Complainant.

## Short Term Interim Solutions:

Short term solutions consist of mostly the original request:

- 1) To prevent future irreparable damage to irreplaceable trees (too large to replace), (1) ensure that the Complainant is notified of trimming date and time (by email or voice mail, with affirmative acknowledgment) at least two months in advance, and (2) is afforded the opportunity to be present during the trimming by appointment. To minimize possible disputes at the time of trimming the trees on the property, agreed in advance upon the amount of trimming for each tree. ***If an unresolvable dispute arises about the trimming at the time of trimming, trimming shall be postponed.*** In the case of the Norway Spruces on the property, trimming should not be done at all unless branches are within 6" max, per year, or 2 feet per 4 year cycle, plus roughly 6 inches to reach a lateral branch (2 ½' total), give or take a few inches. Also, branches trimmed should not be cut back again, unless they have sprouted (never seen to have happened a cut cross-sections for any of the 4 Norway Spruces on the property), and are within 2' from the vertical plane containing the power lines. Whenever trimmed, they should be trimmed back to the next lateral branch, this does not mean the next lateral branch that is a growing away from the power lines nor that is a minimum one-third (33%) relative branch size cutting point rule for lateral branches when shortening, which for conifers like the Norway Spruce also results in a de facto entire branch removal technique. After pruning of a significant Norway Spruce branch, it will virtually never grow back at all, a zero growth rate, making virtually no setback distance required, zero, although lateral branches might grow, most of which are pointed at the ground, parallel to the vertical plane of the power lines.
- 2) To resolve the disposition of one of the two remaining butchered 75 year old Norway Spruces, a decision on further cutting or possible removal of this most seriously butchered large old tree will be postponed for approximately 2 years, to determine if the tree will survive & perhaps recover somewhat from the unnecessarily excessive trimming. If the property owner decides that the tree should be removed (i.e., if it looks like it is dying), any time within the next 2 years, PPL Electric Utilities (PPL) will remove it at PPL's expense by appointment, so that the property owner can be present while the removal work is performed. Complainant does not want to remove it now, in spite of the unaesthetic appearance, because it is not yet clear if the tree will die.

- 3) To permit informed planting of replacement or other future trees, and supervision of future trimming of remaining existing trees PP&L will provide the written guidelines that include the growth rates by type of tree, and other factors, which should be used when trimming trees by PPL or its contractors, for each of the types of trees currently the property the property to be pruned.
- 4) At least in the short term, the PUC needs to establish a proactive review of these species-dependent rules that PPL establishes or recommends, for such factors as growth rates before and after cutting, species-dependent apical dominance characteristics, other guidelines (i.e., beyond for the Norway Spruce species), and for the opt-in and out-out DP-replacement and other choices herein requested. In the longer term, only changes would need to be reviewed by the PUC. *Individual citizens should not be responsible for expensive and time consuming reactive processes, **property by property and tree species by species**, in order to reign in a regulated power distribution company.* But as a temporary measure until adequate **systemic solutions** are accomplished for the systemic problems, it at least would be a tolerable and hopeful outcome.
- 5) Complainant also requests and encourages referral of the non-proprietary (not subject to non-disclosure agreement) portions of this proceeding, including this formal Complaint, to the PUC organizational unit responsible for **proactive** regulation of PPL, for longer term ongoing review of PPL VM practices. If nothing else, perhaps this will keep PPL from again materially expanding ANSI practices (e.g., in A300 Part 1 paragraph 5.9.2.1.3) like perhaps expanding the valid circumstances for *removing entire trees* that are “directly under” power lines, to removing them everywhere within a PPL self-authorized “corridor” up to 25 feet next to wires, similar to what PPL has done for its description of Directional Pruning (similar to A300 part 1 paragraph 5.9.2.1.3), apparently without the PUC reigning them in - yet.

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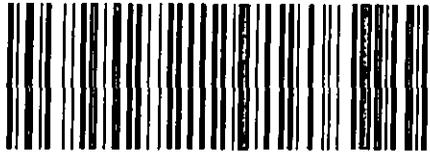
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