

**BEFORE THE**  
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

<b>IN RE: APPLICATION OF TRANS-ALLEGHENY</b>	<b>:</b>	
<b>INTERSTATE LINE COMPANY FOR</b>	<b>:</b>	
<b>(I) A CERTIFICATE OF PUBLIC CONVENIENCE</b>	<b>:</b>	
<b>TO OFFER, RENDER, FURNISH AND/OR</b>	<b>:</b>	
<b>SUPPLY TRANSMISSION SERVICE IN THE</b>	<b>:</b>	
<b>COMMONWEALTH OF PENNSYLVANIA;</b>	<b>:</b>	
<b>(II) AUTHORIZATION AND CERTIFICATION</b>	<b>:</b>	
<b>TO LOCATE, CONSTRUCT, OPERATE AND</b>	<b>:</b>	<b>Docket Nos. A-110172</b>
<b>MAINTAIN CERTAIN HIGH VOLTAGE ELECTRIC</b>	<b>:</b>	<b>A-110172F0002</b>
<b>TRANSMISSION LINES AND RELATED ELECTRIC</b>	<b>:</b>	<b>A-110172F0003</b>
<b>SUBSTATION FACILITIES; (III) AUTHORITY</b>	<b>:</b>	<b>A-110172F0004</b>
<b>TO EXERCISE THE POWER OF EMINENT</b>	<b>:</b>	<b>G-000721229</b>
<b>DOMAIN FOR THE CONSTRUCTION AND</b>	<b>:</b>	
<b>INSTALLATION OF AERIAL ELECTRIC</b>	<b>:</b>	
<b>TRANSMISSION FACILITIES ALONG THE</b>	<b>:</b>	
<b>PROPOSED TRANSMISSION LINE ROUTES</b>	<b>:</b>	
<b>IN PENNSYLVANIA; (IV) APPROVAL OF AN</b>	<b>:</b>	
<b>EXEMPTION FROM MUNICIPAL ZONING</b>	<b>:</b>	
<b>REGULATION WITH RESPECT TO THE</b>	<b>:</b>	
<b>CONSTRUCTION OF BUILDINGS; AND</b>	<b>:</b>	
<b>(V) APPROVAL OF CERTAIN RELATED</b>	<b>:</b>	
<b>AFFILIATED INTEREST ARRANGEMENTS</b>	<b>:</b>	

**REBUTTAL TESTIMONY OF**  
**KEVIN T. MCLOUGHLIN**

**Re: Vegetation Management Practices and The Use of Herbicides**

**December 10, 2007**

REBUTTAL TESTIMONY OF KEVIN T. MCLOUGHLIN

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Kevin T. McLoughlin. My business address is 520 Business Park  
3 Circle, Stoughton, Wisconsin 53589.

4

5 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

6 A. I am employed by Environmental Consultants, Inc. ("ECI") as a Senior  
7 Consultant. ECI is a consulting firm engaged in a broad spectrum of activities  
8 in environmentally-related science.

9

10 Q. HAVE YOU PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THIS  
11 PROCEEDING ON BEHALF OF THE TRANS-ALLEGHENY  
12 INTERSTATE LINE COMPANY ("TrAILCo")?

13 A. No, I have not.

14

15 Q. PLEASE DESCRIBE YOUR CURRENT RESPONSIBILITIES AND  
16 PROFESSIONAL EXPERIENCE.

17 A. As a Senior Consultant, my practice primarily focuses on electric transmission  
18 rights-of-way ("ROW") vegetation management issues and strategy.

1 EDUCATION AND EXPERIENCE

2 Q. PLEASE SUMMARIZE YOUR EDUCATION.

3 A. I earned a B.S. in Natural Resource Management from the State University of  
4 New York (“SUNY”) College of Environmental Science and Forestry at  
5 Syracuse in 1971. My education also includes an M.S. in Environmental  
6 Management from the SUNY College of Environmental Science and Forestry  
7 in 1975.

8

9 Q. PLEASE SUMMARIZE YOUR PREVIOUS PROFESSIONAL  
10 EXPERIENCE.

11 A. Prior to joining ECI, I served as a System Forester with the New York Power  
12 Authority (“NYPA”), where I was responsible for vegetation management  
13 along 1,500 miles of 765, 345, 230, and 115 kilovolt (“kV”) electric  
14 transmission ROW, comprising approximately 20,000 acres. I developed  
15 comprehensive ROW vegetation management plans and instituted a  
16 geographic information system (“GIS”) application for vegetation  
17 management. In 2004, the NYPA was awarded the EPA’s Pesticide  
18 Environmental Stewardship Award for its ROW Vegetation Management  
19 Program. In previous roles at the NYPA, I served as an environmental  
20 engineer with oversight of the environmental-related aspects of routing, ROW  
21 preparation, facility construction, clean-up, restoration and mitigation for  
22 various transmission line projects (i.e., 765kV, 345kV and 230kV) under the  
23 jurisdiction of the New York Public Service Commission and the Federal

1 Energy Regulatory Commission. For approximately 19 years beginning in  
2 1979, I was the Research Project Manager with the Empire State Electric  
3 Energy Research Corporation (“ESEERCO”), where I managed over 20 ROW  
4 management research projects while also concurrently under an assignment to  
5 the New York Power Pool (“NYPP”). During this time period, I was the  
6 Administrator – Land Use and Industrial Waste Management Programs on  
7 behalf of the NYPP. In this capacity, I was responsible for regulatory affairs  
8 concerning a range of transmission-related environmental issues, including  
9 wetlands, endangered species, pesticides, herbicides & wood preservatives,  
10 non-point sources of pollution, and all aspects of integrated ROW vegetation  
11 management (“IVM”).

12  
13 Q. PLEASE OUTLINE YOUR SCIENTIFIC RESEARCH EXPERIENCE  
14 CONCERNING VEGETATION MANAGEMENT INVOLVING THE USE  
15 OF HERBICIDES.

16 A. During my employment with ESEERCO, we conceived and funded a number  
17 of ROW vegetation management research studies that involved the use of  
18 herbicides. I was specifically responsible for overseeing the engagement with  
19 each of the consulting groups who conducted these studies. TrAILCo Rebuttal  
20 Exhibit KTM-1 lists the nine different studies that were prepared under my  
21 supervision while employed by ESEERCO.

1 Q. HAVE YOU PRESENTED OR PUBLISHED THE RESULTS OF YOUR  
2 OWN RESEARCH OR OTHER WORK IN THIS AND OTHER AREAS?

3 A. Yes. I have published or presented four scientific papers on this and related  
4 subjects, which are listed on TrAILCo Rebuttal Exhibit KTM-1.  
5

6 Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

7 A. Yes. I am a member of the International Society of Arboriculture and the  
8 Utility Arborist Association. I am also a member of the Society of American  
9 Foresters and the American Forestry Association. In 2004, I chaired the  
10 Environmental Concerns in Rights-of-Way Management 8<sup>th</sup> International  
11 Symposium.  
12

13 Q. HAVE YOU PREVIOUSLY APPEARED AS A WITNESS BEFORE ANY  
14 OTHER REGULATORY AGENCIES?

15 A. Yes. I have testified in various regulatory and legal proceedings on behalf of  
16 member systems of the NYPP and/or ESEERCO, as well as for transmission  
17 project applications for the NYPA.  
18

19 Q. WILL THE USE OF VARIOUS TERMS IN YOUR REBUTTAL  
20 TESTIMONY BE CONSISTENT WITH THE DEFINITIONS ASSIGNED TO  
21 THOSE TERMS IN THE TABLE OF NOMENCLATURE ATTACHED TO  
22 TRAILCO WITNESS FLITMAN'S DIRECT TESTIMONY AS TRAILCO  
23 EXHIBIT DEF-1?

1 A. Yes. In addition, I may define other specific terms in my rebuttal testimony, as  
2 necessary.

3  
4 Q. PLEASE DESCRIBE THE TOPIC AND PURPOSE FOR YOUR  
5 REBUTTAL TESTIMONY.

6 A. The topics of my rebuttal testimony are vegetation management along  
7 transmission line ROW, in general, and the TrAIL project, in particular. In my  
8 rebuttal testimony I will also explain why the selective use of herbicides to  
9 control and manage vegetation is environmentally compatible and effective.  
10 The purpose of my rebuttal testimony is to respond to the direct testimonies of  
11 the Office of Trial Staff (“OTS”) witness Gary L. Yocca and the Pennsylvania  
12 Office of Consumer Advocate (“OCA”) witness Peter J. Lanzalotta. My  
13 rebuttal testimony will also respond to various concerns raised or allegations  
14 that were made during the public input hearings in Pennsylvania regarding the  
15 use of herbicides along the proposed TrAIL ROW.

16  
17 Q. YOU UTILIZED THE TERM “INTEGRATED ROW VEGETATION  
18 MANAGEMENT” OR “IVM” IN YOUR TESTIMONY, ABOVE. WOULD  
19 YOU BRIEFLY DESCRIBE AN IVM PROGRAM?

20 A. Yes. IVM programs are actually a subset of the more widely known and  
21 practiced, particularly in agriculture, IPM or integrated pest management. IPM  
22 is the sustainable approach to managing pests by combining biological,  
23 cultural, physical, and chemical tools in a way that minimizes economic,

1 health, and environmental risks. IVM takes this basic framework further by  
2 defining it as a system of managing plant communities in which managers set  
3 objectives, identify compatible and incompatible vegetation, consider action  
4 thresholds, and evaluate, select and implement the most appropriate control  
5 method or methods to achieve set objectives. The choice of control method or  
6 methods is based on their environmental impact and anticipated effectiveness,  
7 along with site characteristics, security, economics, current land use and other  
8 factors. The key elements in the application of an IVM program for high  
9 voltage power line ROW are the twin interconnected objectives of selecting  
10 one set of plants (e.g., tall growing trees) to be discouraged, i.e., selectively  
11 removed, while concurrently encouraging the growth and development of all  
12 the other low growing compatible vegetation (e.g., shrubs, forbs and grasses)  
13 that are incapable of reaching heights that would interfere with the overhead  
14 conductors. One of the important components of the IVM process is the  
15 selective use of herbicides to curtail the growth of undesirable tall growing  
16 species while preserving, to the extent practical, the lower growing vegetation  
17 on the ROW to act as a biological deterrent to the future re-establishment of  
18 trees. Hence, the attentive implementation of a cost-effective IVM program on  
19 high voltage power line ROW meets the objectives of safe and reliable  
20 transmission of electric energy in an environmentally compatible manner.

1 Q. PLEASE DESCRIBE THE KEY COMPONENTS OF AN IVM PROGRAM.

2 A. After a forested landscape is initially cleared, the natural vegetation type that  
3 will ultimately re-occupy the site and dominate the area will be once again tall  
4 growing trees. When the cleared area is an electric utility ROW, these  
5 resurgent trees can grow too close to the overhead high voltage electric  
6 conductors. When this occurs, there is the potential for an electrical discharge  
7 from the electric line through the air to the tree and then to the ground. This is  
8 known as a "flash-over" or "line to ground fault." The result of a line to  
9 ground fault is a line outage, i.e., an instantaneous break in electric service, and  
10 a potentially very dangerous situation on the ground in the immediate vicinity  
11 of the high voltage discharge. As a matter of public safety and system  
12 reliability, therefore, utility ROW vegetation managers have a continuing need  
13 to preclude the establishment and subsequent growth of those tree species that  
14 are capable of growing into or even close to the electrical lines. Utilities  
15 ensure that tall growing species do not interfere with electric lines by  
16 committing to a long-term IVM program. The principle components of such a  
17 plan are: (1) understanding pest and ecosystem dynamics; (2) setting  
18 management objectives and tolerance levels; (3) compiling treatment options;  
19 (4) accounting for economic and ecological effects of treatments; (5) site-  
20 specific implementation of treatments; and (6) adaptive management, research  
21 and monitoring.

1 Q. WHY ARE HERBICIDES AN IMPORTANT COMPONENT OF AN IVM?

2 A. The appropriate and selective use of herbicides avoids some significant  
3 disadvantages that flow from the removal of trees and vegetation by  
4 mechanical means. Mechanical methods (e.g., mowing or hand cutting with a  
5 chain saw) of tree removal, alone, will physically clear the ROW of tree stems  
6 temporarily. These mechanical methods, however, allow trees to  
7 physiologically respond by regenerating quickly from the energy reserves  
8 contained in their undisturbed root systems. This tree regrowth occurs through  
9 such mechanisms as "stump sprouting" and/or in some species "root  
10 suckering." This regenerative capacity is characteristic of virtually all  
11 hardwood trees, e.g., maple, beech, birch, aspen, oak, ash, cherry, etc., and is  
12 particularly pronounced in the juvenile or sapling stage of tree maturation  
13 resulting in the eventual production of many more stems than were originally  
14 cut. By drawing upon the food reserves in their undisturbed root systems and  
15 through a series of complex compensatory physiological plant responses, the  
16 resurgent growth from the remaining portions of the tree (i.e., stump and/or  
17 roots) is actually enhanced when a tree stem is severed. It is through the  
18 production within the plant of naturally occurring stimulatory substances,  
19 together with the loss of growth inhibitors (caused by the removal of the above  
20 ground growth centers), which then exert their influence on the remaining  
21 vegetative structure to promote excessive new tree growth. These new, more  
22 numerous stems, growing much faster than when left uncut, (e.g., five to ten

1 feet or more the first year after cutting) makes subsequent tree removal from  
2 the ROW more frequent, laborious, hazardous and costly.

3

4 Q. WHAT ARE THE ADVANTAGES OF UTILIZING HERBICIDES WHERE  
5 APPROPRIATE?

6 A. The selective application of herbicides to only the tall growing target tree  
7 species can, in most instances, eliminate the resurgent tree growth problem  
8 because the herbicide when properly deposited on the target species will be  
9 translocated throughout the tree (including the root system) and will arrest all  
10 future growth and development, i.e., killing the entire target plant and not just  
11 temporarily removing the above ground portion. Just as importantly,  
12 selectively applying herbicides to the targeted tall-growing species allows the  
13 retention of nearly all the desirable low-growing vegetation that will naturally  
14 occur on the ROW. The elimination of the tall-growing trees from the ROW  
15 will also further encourage the establishment and foster the additional growth  
16 and development of all the indigenous low-growing woody shrubs, herbs (e.g.,  
17 forbs and grasses), ferns, etc., by removing the trees that would otherwise  
18 begin to directly compete with and eventually "crowd out" the low-growing  
19 species over time. With effective and minimally disruptive tree removal, these  
20 lower growing desirable plant species will expand their presence into the ROW  
21 areas formerly occupied by trees and produce a thick dense plant cover that  
22 will discourage the invasion of new tree seedlings and/or the future growth of  
23 any remaining tree seedlings. These desirable low-growing plant communities

1 act as the “biological control” in this IPM/IVM scenario by thwarting future  
2 tree growth through their collective competition for the available site resources  
3 (i.e., sunlight, water, and nutrients) as well as through their sheer physical  
4 presence and overwhelming numbers.

5

6 Q. IN ADDITION TO THE BENEFITS OF REDUCING THE NEED FOR  
7 FUTURE APPLICATIONS OF HERBICIDES OR MECHANICAL  
8 METHODS, ARE THERE ANY OTHER INDIRECT BENEFITS OF A  
9 SELECTIVE USE OF HERBICIDES?

10 A. Yes. There may even be some indirect biochemical interactions, called  
11 allelopathy, occurring among various plants that result in a chemical  
12 competition of sorts between certain lower growing desirable ROW species  
13 and some of the undesirable tall growing tree species. Allelopathy has been  
14 defined as the influence of one plant on another via the production of natural  
15 growth inhibitors. Currently there exists only a limited understanding of this  
16 ability of plants to produce and release phytotoxic substances that can then be  
17 translocated to other plants and used to curtail certain critical physiological  
18 plant functions such as growth and reproduction. These naturally occurring  
19 "herbicides" offer yet another potential beneficial aspect of the biological  
20 controls in assisting the ROW vegetation manager to curb the spread of the  
21 undesirable tall growing trees.

1 Q. ARE THERE SPECIFIC BENEFITS TO UTILIZING HERBICIDES FOR  
2 SELECTED VEGETATION MANAGEMENT AND CONTROL?

3 A. Yes. In addition to their immediate benefits to the utility of reducing the  
4 undesirable tree population, the low-growing plant communities that are  
5 encouraged by the use of herbicides on competing vegetation offer an  
6 assemblage of plant species that provide diverse and productive habitat  
7 conditions for a wide variety of wildlife, e.g., birds, reptiles, amphibians,  
8 insects, and mammals. Managed ROW creates habitats that provide wildlife  
9 food and cover values that are remarkably different, and often times  
10 surpassing, those of the neighboring forest. Also, this juxtaposition of two  
11 different, but complementary plant communities (one perpetually kept in a  
12 low-growing condition and the other usually a forest) produces what is known  
13 as the "edge effect." This effect enhances wildlife profusion, i.e., abundance  
14 and diversity, in the boundary area transition zone (ecotone) between these two  
15 distinct habitat types. Some of the new and more numerous wildlife species  
16 attracted to these enhanced ROW created habitats provide yet another  
17 beneficial function of further reducing tree establishment and growth through  
18 their collective herbivory, e.g., browsing by deer and rabbits on young trees,  
19 girdling of tree seedlings by voles, and tree seed predation by mice. The  
20 establishment, fostering and preservation of these low growing plant  
21 communities on the ROW also serve to reduce, over time, the amount of work  
22 required and cost incurred by the utility to maintain the ROW (i.e., reduction in  
23 the number of tree stems to treat) each treatment cycle while coincidentally

1           diminishing the amount of herbicide necessary for adequate coverage of the  
2           reduced numbers of target species. As a professional vegetation control  
3           project manager, it was my experience that the owners of property under and  
4           along transmission ROW also saw significant advantages to these reductions in  
5           the occurrences and durations of the utility's maintenance activities along  
6           those ROW.

7  
8       Q.    IS THE USE OF HERBICIDES FOR VEGETATION MANAGEMENT  
9           SAFE FOR LANDOWNERS AND FARM ANIMALS WITHIN OR  
10          ADJACENT TO A TRANSMISSION LINE ROW, AND FOR THE  
11          GENERAL PUBLIC?

12     A.    Yes. First, the use of all pesticides (including herbicides) by Allegheny Power  
13           and/or TrAILCo is subject to regulation under the Federal Insecticide,  
14           Fungicide, and Rodenticide Act ("FIFRA"), which is administered by the U.S.  
15           Environmental Protection Agency ("EPA"), and various state statutes.  
16           Pursuant to FIFRA regulations, no herbicide may be marketed, distributed,  
17           sold or advertised until the EPA registers it. After many years of product  
18           development, advanced toxicology studies and extensive field testing, the  
19           pesticide manufacturers submit to the EPA thousands of pages of research data  
20           that are compiled into a registration application. From this voluminous  
21           registration package, the manufacturer, in cooperation with the EPA, develops  
22           a proposed product label that identifies the pest or pests that the product will be  
23           effective in controlling and provides complete instructions for the correct use,

1 handling, and disposal of the product as well as other precautionary  
2 information required by FIFRA. As stated by the EPA: “[b]y their nature,  
3 many pesticides may pose some risk to humans, animals, or the environment  
4 because they are designed to kill or otherwise adversely affect living  
5 organisms. At the same time, pesticides are often useful because of their  
6 ability to control disease-causing organisms, insects, weeds, or other pests.  
7 The pesticide label is your guide to using pesticides safely and effectively. It  
8 contains pertinent information that you should read and understand before you  
9 use a pesticide product.” The EPA-approved pesticide label becomes, in  
10 effect, the law concerning the application and use of that substance and when it  
11 is followed astutely with additional precautionary measures taken as needed,  
12 risks from the use of herbicides in an IVM program are significantly  
13 minimized. Moreover, in an IVM program, the specific choice of treatment  
14 method (including the exact selection of herbicide mix rates) can take into  
15 account and accommodate specific land uses on and adjacent to the targeted  
16 ROW. Hence, the ROW treatment method selected can be modified to  
17 accommodate the concerns of the underlying fee owners, adjacent landowners  
18 and other third-party users of the ROW. The type of application selected can  
19 be quite minimally intrusive, e.g., hand cut and stump treatment, whereby the  
20 tall growing trees are individually physically cut down by a chain saw operator  
21 and, immediately after the severing of the stem occurs, a small deposit of a  
22 herbicide is placed by a hand held applicator along just the outside perimeter of  
23 the cut stem, i.e., covering the cambium layer, containing the xylem and

1 phloem, the plants water and nutrient transfer vessels. Such a timely and  
2 focused spot application minimizes any chance for exposure to both the  
3 general public and others living closer to the ROW.

4  
5 Yet, another technique commonly used by utilities to further reduce any risk  
6 and/or potential for exposure is to require prior notification of the underlying  
7 fee owners or those adjacent to the ROW in advance of scheduled ROW  
8 vegetation management work operations. Also, buffer zones between certain  
9 sensitive land uses (e.g., organic farms) and environmental features (e.g.,  
10 streams and other water bodies) can also be employed to further reduce any  
11 potential for inadvertent exposure.

12  
13 Q. IS THE APPLICATION OF HERBICIDES VIA AERIAL SPRAYING  
14 CONSIDERED AN IVM TREATMENT TECHNIQUE?

15 A. Yes, under certain circumstances and in specific ROW areas with the  
16 appropriate choice of selective herbicides, the aerial application of herbicides  
17 via helicopter is an accepted ROW vegetation management tool for the  
18 implementation of an IVM program. One example where aerial spraying can  
19 play a positive role in the inauguration of an IVM program on a newly cleared  
20 ROW, is as a reclamation method. Here the initial aerial spraying can quickly  
21 promote the conversion of the ROW from a crowded tree-filled thicket (i.e.,  
22 many thousands of stems per acre) to a ROW condition with a much lower  
23 density of tree stems (i.e., a few hundreds per acre) and an abundance of

1 grasses. After initially clearing forested areas during ROW preparation, the  
2 resurgence of new tree growth, (propagating both from the former trees as  
3 stump sprouts or in some cases root suckers as well as from the residual soil  
4 bank and from airborne seeds of pioneer tree species coming in from the  
5 surrounding forest area) can sometimes result in the newly created ROW  
6 becoming virtually completely filled with trees, e.g., often more than 10,000  
7 stems per acre. In such ROW situations, the desirable lower-growing species  
8 are quickly crowded out by the fast growing trees and only a few grasses are  
9 usually able to continue to grow under the thickening canopy cover of tree  
10 saplings. A ROW reclamation type program is required in these situations,  
11 whereby the entire undesirable tree stems need to be treated and/or removed at  
12 once in order to give the ROW another chance at naturally developing lower-  
13 growing plant communities. Under these circumstances, aerial or ground  
14 broadcast treatments with herbicides targeted for specific species must often be  
15 done to control those sections of ROW covered entirely by the target tree  
16 species. When selective herbicides are used, i.e., those that do not overtly  
17 harm grasses, sedges, and other monocots such as orchids, the targeted trees  
18 are effectively controlled and the remaining grasses are able to flourish and  
19 other species of plants are able to propagate (seed) into the now more open  
20 ROW.

1 Q ARE THERE OTHER CIRCUMSTANCES IN WHICH AERIAL  
2 APPLICATIONS OF HERBICIDES ARE AN EFFECTIVE TECHNIQUE IN  
3 IVM?

4 A. Yes. For example, another type of ROW situation that is appropriate for aerial  
5 spraying is where sections of ROW are so remote and in such rough terrain  
6 that ground access is very limited. In these nearly inaccessible ROW locations  
7 aerial spraying may also serve the purpose of reducing the target tree numbers  
8 so that the area becomes more amenable to selective treatment applications  
9 with hand held equipment such as cutting with follow-up stump treatment.  
10

11 Q. IN YOUR EXPERT OPINION, DOES ALLEGHENY POWER'S CURRENT  
12 VEGETATION MANAGEMENT PRACTICE FOR ELECTRIC  
13 TRANSMISSION LINES REPRESENT A VALID APPROACH TO IVM?

14 A. Yes. After reviewing its standards and practices for vegetation management  
15 and meeting with relevant Forestry personnel, Allegheny Power, in my  
16 opinion, conducts its overall electric transmission ROW vegetation  
17 management activities under an effective IVM approach.  
18

19 Q. WILL TRAILCO UTILIZE AN IVM APPROACH FOR VEGETATION  
20 CONTROL ALONG THE PROPOSED TRAIL ROW?

21 A. Yes. It is my understanding that TrAILCo will adopt and carry out all current  
22 or future Allegheny Power practices and standards for vegetation management  
23 along the TrAIL ROW.

1 Q. WOULD YOU SUMMARIZE THE CONCERNS RAISED BY WITNESSES  
2 AT THE PUBLIC INPUT HEARINGS REGARDING THE USE OF  
3 HERBICIDES FOR VEGETATION CONTROL AND MANAGEMENT  
4 ALONG THE PREFERRED TRAIL ROW?

5 A. Yes. The concerns raised during the public input hearings included, among  
6 other things, the perceived toxicity of herbicides, where and by what means  
7 TrAILCo might apply herbicides along the preferred TrAIL route, whether  
8 herbicides would be applied around water sources, residences, or on pasture or  
9 croplands, and how often herbicides would be applied.

10

11 Q. EARLIER IN YOUR TESTIMONY, YOU DESCRIBED THE  
12 REGULATION AND TESTING OF HERBICIDES AND ALSO  
13 EXPLAINED WHY THE APPROPRIATE USE OF HERBICIDES IS SAFE  
14 FOR LANDOWNERS, FARM ANIMALS AND THE GENERAL PUBLIC.  
15 WOULD YOU BRIEFLY EXPAND ON THAT ANSWER AND ADDRESS  
16 THE CONCERNS THAT WERE EXPRESSED AT THE PUBLIC INPUT  
17 HEARINGS REGARDING THE PERCEIVED TOXICITY OF THESE  
18 SUBSTANCES?

19 A. As I described in my rebuttal testimony above, all herbicides that are available  
20 to the public and to licensed commercial and industrial applicators such as  
21 Allegheny Power and TrAILCo have been rigorously researched and tested  
22 prior to being made available for public and commercial use. The  
23 manufacturers' labels, which also provide the required framework for safely

1 applying the herbicides, are derived from the rigorous research and testing  
2 upon which regulatory approvals are based. One of the EPA's fundamental  
3 testing standards and conditions for approval of an herbicide is that a labeled  
4 use must be demonstrated in laboratory testing to result in exposures too small  
5 to have any measurable effect on test animals. These standards are also  
6 substantially conservative. In approving a labeled usage, regulators typically  
7 require a one hundred- to several hundred-fold safety margin. For example, if  
8 the least measurable effect in the most sensitive test subject species is "x," then  
9 regulators will typically register the herbicide as having acceptable exposure  
10 amounts of 100 to perhaps 1,000 times less than the least measurable test  
11 amount. Careful application procedures, as practiced by Allegheny Power and  
12 TrAILCo and which include the significant dilution of selected herbicides  
13 before their applications, consistent with manufacturers' labels and  
14 instructions, will further minimize the potential for members of the public and  
15 farm animals to be exposed to these approved herbicides.

16  
17 Q. CAN DIFFERENT TYPES OF HERBICIDES BE MIXED FOR A SINGLE  
18 APPLICATION AND, IF SO, DOES THIS RESULT IN A MIXTURE WITH  
19 INCREASED TOXICITY?

20 A. As I testified above, among the advantages of herbicides is the ability to target  
21 specific unwanted species with substances designed for those species, and  
22 where two or more unwanted types of vegetation are present on a ROW  
23 segment, it is economical and less intrusive to combine the necessary

1 substances. Again, any combinations would be done only where allowed and  
2 according to the instructions of the manufacturers' label. It is my  
3 understanding that manufacturer research and testing of various combinations  
4 of the limited group of herbicides currently utilized by Allegheny Power show  
5 no decrease in the margins of safety from toxic exposure that are already built  
6 in to the underlying approvals and registered usages and application  
7 requirements for each of these herbicides.

8

9 Q. WOULD YOU PLEASE EXPLAIN HOW ALLEGHENY  
10 POWER/TRAILCO'S GUIDELINES AND PRACTICES FOR APPLYING  
11 HERBICIDES WILL ENSURE THAT THESE SUBSTANCES ARE USED  
12 SAFELY?

13 A. Allegheny Power's guidelines and practices for applying herbicides are  
14 extensive. These guidelines not only strictly limit where herbicides are to be  
15 utilized, but also under what weather and other conditions herbicides will be  
16 applied. In addition to the buffer zones around ponds, lakes, and flowing water  
17 as I discussed above, buffer zones are also provided for all known sources for  
18 domestic or commercial water wells. Buffer zones are required for residences,  
19 barns, gardens and farm crops, and a variety of ornamental and cultivated trees.  
20 Herbicides are not applied to pasture land or land under cultivation. Moreover,  
21 TrAILCo will also work with landowners or other affected third-parties to  
22 ensure that additional specific buffer zones are established where the owners of

1 property under the ROW have specific concerns. TrAILCo will also attempt to  
2 accommodate specific requests that herbicides not be utilized over a property.

3

4 Q. PLEASE DESCRIBE THE SPECIFIC GUIDELINES FOR AERIAL  
5 APPLICATIONS.

6 A. The aerial application of herbicides, which appeared to be of most concern to  
7 witnesses at the public input hearings, are performed under a strict and  
8 comprehensive set of specifications, terms, and conditions which must be  
9 followed by the applying contractor. First, aerial applications may not take  
10 place along ROW segments that traverse through more heavily developed  
11 areas. Next, the specifications I just referenced include, among other things,  
12 minimum helicopter crew sizes, a pre-spray flight with Allegheny Power  
13 personnel over each line scheduled for aerial spraying, a defined set of  
14 approved helicopter types that may be used, and the use of only an approved  
15 set of spraying equipment.

16

17 Q. WHAT STEPS ARE TAKEN TO ENSURE THAT HERBICIDES APPLIED  
18 AERIALLY DO NOT AFFECT PEOPLE, ANIMALS, OR PLANTS  
19 OUTSIDE OF THE TARGETED ROW?

20 A. Allegheny Power's guidelines for when, where, and how herbicides are to be  
21 applied ensure that herbicides reach the ground only where they are directed.  
22 Herbicides are not applied when wind conditions exceed five miles per hour.  
23 ROW corridors are not sprayed under any conditions at locations where ground

1 clearances are 150 feet or more below the conductors (typically where the line  
2 would cross over a ravine or gully). Helicopters are required to maintain a  
3 steady ground speed during operations – approximately twenty five miles per  
4 hour – so as to allow the released herbicides to fall to the ground without being  
5 unduly dispersed by the downdraft of helicopter blades. In addition to these  
6 application specifications, substances such as drift control agents are often  
7 mixed with the herbicide to further ensure that the herbicides fall directly on  
8 the targeted ROW segments in droplet sizes that are designed to maximize  
9 effectiveness and control.

10

11 Q. DOES THE APPLICATION OF HERBICIDES POSE A RISK TO  
12 GROUNDWATER SOURCES ALONG THE PREFERRED TRAIL ROW?

13 A. No. First, the application of herbicides in the diluted forms required and in  
14 accordance with the strict conditions (regarding location and application  
15 methods) followed by Allegheny Power, will protect groundwater sources.  
16 Moreover, since ROW terrain in Western Pennsylvania is typically quite dense  
17 in groundcover, very nearly all of any application of herbicides will fall on the  
18 targeted vegetation rather than falling through to any bare ground. Allegheny  
19 Power's application guideline also limit the use of herbicides in bare ground  
20 areas to those within its substations and power stations and only selected areas  
21 along a transmission ROW where there is no risk of the inadvertent movement  
22 of the herbicide away from the targeted terrain. Finally, the types of soil  
23 present in most of the Allegheny Power service areas are not highly permeable,

1           which would limit the passage through the soil of any diluted herbicides that  
2           might actually reach the ground.

3

4    Q.    IN GENERAL TERMS, HOW OFTEN ARE HERBICIDES APPLIED TO A  
5           TARGETED SEGMENT OF TRANSMISSION ROW?

6    A.    It is important to note that, contrary to some of the comments made at the  
7           public input hearings, herbicides are not applied to any one ROW segment on a  
8           regularly-occurring basis. Following the initial preparation of the ROW for a  
9           new electric transmission line, which will be performed by mechanical means,  
10          the time between any initial and subsequent applications of herbicides, whether  
11          aerially or by hand, will be measured in years and will increase in time as the  
12          re-growth of tall trees is discouraged or substantially reduced by the  
13          encouragement of the lower growing woody shrubs and other herbaceous  
14          vegetation I described above. Again, this is one of the most significant  
15          advantages of the appropriate and selected use of herbicides: it can actually  
16          result in the decreased need for herbicide applications and other methods of  
17          vegetation management over the long term by encouraging the growth of more  
18          desirable vegetation to naturally control unwanted trees. This minimal number  
19          of applications, e.g., a treatment cycle of once every four to five years or  
20          longer over a several year period, serves to further minimize the intrusion and  
21          any risk to landowners, farm animals and the general public.

1 Q. YOU JUST INDICATED THAT A PROPERTY OWNER ALONG THE  
2 ROW CAN ASK FOR SPECIFIC BUFFER ZONES BEYOND THOSE  
3 PROVIDED FOR IN THE GUIDELINES. ARE THERE OTHER AVENUES  
4 AVAILABLE TO A PROPERTY OWNER WHO HAS CONCERNS ABOUT  
5 VEGETATION CONTROL PRACTICES?

6 A. Yes. Allegheny Power currently permits, and TrAILCo will likewise,  
7 transmission ROW property owners to carry out vegetation control on their  
8 property according to the terms and conditions of a Landowner Maintenance  
9 Agreement (“LMA”). Under the LMA, the landowner conducts ROW  
10 vegetation management according to an agreed set of specifications for which  
11 TrAILCo reimburses the landowner based upon the cost TrAILCo would have  
12 incurred if TrAILCo had performed the same work using herbicides.

13

14 Q. TURNING YOUR ATTENTION TO THE PARTIES’ DIRECT  
15 TESTIMONIES, WOULD YOU PLEASE ADDRESS THE DISCUSSION OF  
16 VEGETATION MAINTENANCE IN OTS WITNESS YOCCA’S DIRECT  
17 TESTIMONY?

18 A. Yes. Although he makes no specific criticisms of, or recommendations  
19 concerning, TrAILCo’s planned vegetation control activities, Mr. Yocca  
20 characterized the testimony from the public input hearings as indicating that  
21 subsequent vegetation maintenance could have an adverse affect on domestic  
22 animals and natural water supplies used for livestock and crops. He also  
23 characterized citizens’ concerns that herbicide applications could adversely

1 affect domestic water supplies and, if carried out near residences, could  
2 adversely affect human health. It is precisely these kinds of concerns, by both  
3 the public and Allegheny Power, to which its comprehensive standards and  
4 guidelines for selectively applying herbicides along carefully selected  
5 segments of its existing transmission rights-of-way are intended to respond.  
6 TrAILCo's practices will be no less cautious. It is those concerns that are the  
7 fundamental bases for the buffer zones around standing and running water and  
8 any identified water supplies for domestic, commercial, or agricultural use.  
9 The detailed specifications and guidelines I have described above as to when,  
10 where, and under what weather and other conditions TrAILCo will apply  
11 herbicides, whether by air or hand, fully respond to the concerns expressed at  
12 the public input hearings.

13  
14 Q. OCA WITNESS LANZALOTTA PROPOSES THAT THE ALLEGHENY  
15 POWER/TRAILCO POLICIES FOR THE AERIAL APPLICATION  
16 SHOULD BE CONSIDERED ABSOLUTELY MANDATORY FOR USE  
17 ALONG THE PREFERRED TRAIL ROW IN PENNSYLVANIA. IS THIS  
18 PROPOSAL NECESSARY IN YOUR VIEW?

19 A. No, I do not believe it will further the public's or landowner's interests to  
20 include a rigid mandatory policy for aerial herbicide applications along the  
21 TrAIL ROW. Again, I have fully described the prudent Allegheny Power  
22 standards for the aerial and hand application of herbicides, all of which  
23 TrAILCo will adopt. No party has provided any indication that TrAILCo will

1 not continue to carefully and appropriately utilize herbicides for vegetation  
2 control in an IVM program. Nor has there been any indication that prior  
3 Allegheny Power vegetation management practices or specific activities have  
4 been improper or placed landowners or the general public at risk. It would be  
5 far more effective to continue to allow TrAILCo the discretion and flexibility  
6 to manage and carry out vegetation management along the TrAIL route,  
7 including the flexibility to adopt new technologies and practices as they  
8 become available.

9  
10 Q. OCA WITNESS LANZALOTTA ALSO RECOMMENDS THAT TRAILCO  
11 BE PERMITTED TO UTILIZE AERIAL APPLICATIONS OF HERBICIDES  
12 ONLY ALONG PORTIONS OF THE TRAIL ROW WHERE GROUND  
13 ACCESS IS LIMITED BY TERRAIN CONTOURS OR IS OTHERWISE  
14 UNACCEPTABLY UNSAFE. SHOULD THIS RECOMMENDATION BE  
15 ADOPTED?

16 A. No, this recommendation would significantly and unnecessarily limit  
17 TrAILCo's already cautious and prudent use of aerial applications. Although  
18 the ROW areas to which Mr. Lanzalotta would limit the aerial applications of  
19 herbicides are the types of terrain and conditions that are particularly amenable  
20 to aerial spraying, his recommendation would prohibit TrAILCo from utilizing  
21 aerial spraying from other types of ROW way terrains and areas for which such  
22 applications continue to be safe and appropriate, given TrAILCo's standards  
23 and guidelines for doing so.

1 Q. PLEASE ADDRESS MR. LANZALOTTA'S RECOMMENDATION THAT  
2 TRAILCO'S PENALTY POINT ASSESSMENT SYSTEM FOR BUFFER  
3 ZONE VIOLATIONS BY CONTRACT HELICOPTER PILOTS WHO  
4 CONDUCT AERIAL APPLICATION OPERATIONS SHOULD BE  
5 AMENDED.

6 A. Mr. Lanzalotta recommends that the penalty point assessment system be  
7 modified to reflect a reduced tolerance by TrAILCo for buffer zone violations  
8 by contract pilots conducting spraying operations. Again, I believe this  
9 recommendation is unnecessary and would represent an intrusion into  
10 TrAILCo's discretion to manage its day-to-day operations. Mr. Lanzalotta did  
11 not allege or provide any other indication that contract vendor pilots have been  
12 violating buffer zones during applications. It is my understanding from  
13 Allegheny Power forestry personnel that there have been very few instances  
14 where penalty points have ever been assessed against a contract pilot for a  
15 spraying infraction within a buffer zone. Rather, as a result of caution on their  
16 part, it has been Allegheny Power's experience that contract pilots will leave  
17 buffer zones in excess of the areas outlined. As with the prior two OCA  
18 recommendations, this recommendation need not be adopted.

19

20 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

21 A. Yes. However, I reserve the right to file such additional testimony as may  
22 necessary or appropriate.

## **ESEERCO ROW HERBICIDES REPORTS**

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ESEERCO Research Report EP83-15, *Long-Term Right-of-Way Effectiveness*, prepared by Environmental Consultants, Inc., Southampton, PA, October 1985.

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ESEERCO Research Report EP89-44, *Determination of the Effectiveness of Herbicide Buffer Zones in Protecting Water Quality on New York State Powerline Rights-Of-Way*, prepared by Environmental Consultants, Inc., Southampton, PA, August 1991.

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- McLoughlin, K.T. 1997, *Application of integrated pest management to electric utility rights-of-way vegetation management in New York State*, p. 118-126. In J.R. William, J.W. Goodrich-Mahoney, J.R. Wisniewski, and J. Wisniewski (eds.). Proceedings of the 6<sup>th</sup> International Symposium on Environmental Concerns in Rights-of-Way Management, February 24-26, 1997, New Orleans, Louisiana. Elsevier Science Ltd., New York.
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- McLoughlin, K.T. 2002, *Endangered and Threatened Species and ROW Vegetation Management*, pp. 319-326. In J.W. Goodrich-Mahoney, D.F. Mutrie, C.A. Guild (eds.). Proceedings of the 7<sup>th</sup> International Symposium on Environmental Concerns in Rights-of-Way Management, September 9-13, 2000, Calgary, Alberta, Canada. Elsevier Science Ltd., New York.
- Ballard, B.D., McLoughlin, K.T., and Nowak, C.A. 2007, *New Diagrams and Applications for the Wire Zone-Border Zone Approach to Vegetation Management on Electric Transmission Line Rights-of-Way*. *Arboriculture & Urban Forestry*, 2007, 33(6):435-439.