

**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

for the

TRI-LAKES RELIABILITY PROJECT



February 17, 2006

ATTACHMENT FOR RESPONSE 6

**Copy of the July 20, 1988 Public Service Commission "Special Plan
Condition; PSC Case 27605"**

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held in the City of
Albany on May 10, 1988

COMMISSIONERS PRESENT:

Peter Bradford, Chairman
Harold A. Jerry, Jr.
Gail Garfield Schwartz
Eli M. Noam
James T. McFarland
Edward M. Kresky
Henry G. Williams

CASE 27605 - The Role of Herbicides in Managing Vegetation
on Electric Transmission Rights-of-Way: Plans for
Activity Within the Adirondack Park

ORDER APPROVING
ELECTRIC TRANSMISSION RIGHT-OF-WAY MANAGEMENT PLANS
WITHIN THE ADIRONDACK PARK WITH CONDITIONS

(Issued and Effective July 20, 1988)

By the Commission:

We have long been concerned about utility practices and procedures in controlling vegetation on their rights-of-way (R/W). In 1977, we embraced the broad-scale concept that herbicides are but one of several ways to control R/W vegetation;¹ in Opinion 80-15, we adopted a formal statement of policy on the role of herbicides in managing vegetation on electric transmission rights-of-way; observed that the only solid basis for ecologically and environmentally sound management is an inventory of R/W

¹ Case 27605 - The Role of Herbicides in Managing Vegetation on Electric Transmission Rights-of-Way, Opinion 80-15, Opinion and Order Adopting Statement of Policy, Order to Show Cause, and Notice of Proposed Rulemaking (issued April 18, 1980), Appendix A.

vegetation and other natural resources; and found that selective use of herbicides is legitimate.² Overall, that Opinion declared our basic goal:

The principal [R/W] management objective that we have endorsed is the growth of low-growing, relatively stable plant communities that are aesthetically appealing, beneficial to wildlife, compatible with system reliability requirements, and need relatively little maintenance over the life of the [R/W].³

It also evinced our fundamental approach to herbicide use, which was, and remains, to press for their target-specific use, based on compatible species identification.

All regulated utilities accordingly were required to develop long-range R/W management plans for their electric transmission systems and programs for their implementation.⁴ Under the authority provided by Public Service Law [PSL §§ 65(1) and 66(2)], we adopted suitable regulations to bring this about (16 NYCRR Part 84). The plans that are the subject of this Order were duly prepared and filed in accordance with those requirements.

On April 20, 1983 and March 30, 1988 we approved the long-range plans of New York State Electric & Gas Corporation (NYSEG) and Niagara Mohawk Power Corporation (NMPC), respectively,

² ibid., Appendix A, pp. 7, ff. and Case 27277

³ C. 27605, supra, Appendix A, pg. 4

⁴ C. 27605, supra, Opinion 80-40, Opinion & Order Adopting Regulations for Approval of Right-of-Way Aerial Spray Plans, Long-Range Management Plans, Annual Maintenance Programs, and Discussion of Herbicide Applicator Training Program and Voluntary Notification System (issued December 15, 1980). See pp. 4-6, 13, & Appendix A.

for management of their electric transmission R/W outside the Adirondack Park. We concluded however, that NYSEG's and NMPC's plans for R/W management within the park needed further assessment to ensure that they give careful consideration to the special character of the park's features and resources.

On April 20, 1983 we directed staff to prepare a Draft Programmatic Environmental Impact Statement (DPEIS) concerning such plans,⁵ which was completed in July 1984. On August 3, 1984, the DPEIS was issued for review and comment to approximately 85 concerned agencies, entities and citizens. Staff then prepared the Final PEI (FPEIS). Staff concluded that no major substantive deficiencies had been identified in the DPEIS. Minor, mainly technical, refinements were then made and the FPEIS was presented to us for approval and circulation. We issued the FPEIS for review and comment on July 11, 1985, to approximately the same 85 parties that had received the DPEIS.

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT & COMMENTS

The FPEIS examined effects of implementing NYSEG's and NMPC's R/W management plans on land use, protected and rare plants, vegetation, wildlife, significant wildlife, endangered, special concern and threatened species, soils, water quality, fisheries, wetlands, visual resources, and public health and safety. Economic effects were also analyzed.

⁵ C. 27605, supra, Order Determining Review Procedure for Electric Transmission System Right-of-Way Management Plans Within the Adirondack Park and Approving Certain Plans Outside the Park (issued April 20, 1983), page 4.

In addition to those filed by NMPC and NYSEG, three alternative vegetation management programs were evaluated. Alternative A--exclusively selective cutting by hand-held chain saw--was recommended by the Adirondack Park Agency (APA) during DPEIS scoping sessions. Alternative C--utility pays landowners to maintain R/W--was similarly recommended by the Department of Law (DOL). Alternative B was proffered by staff;* the rationale for this proposal was years of field experience and observations about the R/W management practices of the major electric utilities in New York State, and the consistency of those practices with our stated intent to assure that the NYSEG and NMPC plans "...gave careful consideration to the special character of the park's features and resources."⁶

Comments on the FPEIS were received from four individuals, NMPC, NYSEG, APA, DOL and the Adirondack Council (AC). While the individuals' comments are general in nature and praise the FPEIS for its comprehensiveness and depth, specific comments are offered on technical points. Most endorse Alternative B (Staff's recommendations for minimizing

* Alternative B has 7 essential features:

1. Tightening criteria for aerial spraying;
2. Confining stem-foliar spraying to higher density targets;
3. Making stem-foliar applications only under 10 mph wind speed, and with drift control additive;
4. Not using foliar spraying if target vegetation averages over 10 feet tall;
5. Scheduling foliar spraying along APA travel corridors to avoid "brown low" before Labor Day;
6. Including blackberries and raspberries in NMPC's desirable species list; and
7. Using NYSEG's stream buffer distances as the minimum set back.

⁶ Ibid., page 3.

environmental impacts) as the most logical and environmentally responsible management approach for the park.

Utility Comments

Both NYSEG and NMPC express concern over the Alternative B approach to R/W management. Each company states that the staff recommendations, if adopted, could seriously affect its operations. Particular concern is expressed over a proposed limitation on foliar and aerial spraying. The discretion that R/W managers would have over determining buffer zone widths, in response to site-specific conditions, is also contested; and NMPC adamantly opposes staff's recommendation that blackberry and raspberry be included as desirable R/W species within the park.

Each company states that, for the most part, it believes the FPEIS accurately reflects its existing R/W maintenance practices. Both declare, however, that imposing the further restrictions found in Alternative B would significantly increase R/W maintenance costs over those which would be experienced if the utilities' plans were adopted. Therefore, NYSEG and NMPC request that their plans be adopted without alteration, and that no provisions of Alternatives A, B or C be incorporated.

APA Comments

In its extensive comments, APA assumes that we will endorse staff's Alternative B, but does not concede the correctness of that choice. It asks that serious consideration be given to ordering adherence to Alternative A (hand-cutting) in the most sensitive parts of the R/W, especially near wetlands, streams or any open water, intermittent streams, public or private water

supplies and wildlife habitat, where the risk of harming non-target plants or animals and groundwater is high, and in visually sensitive areas.

Elsewhere on the R/W, APA asks that the seven measures constituting Alternative B be made much more precise; it asks too, that Alternative C (landowners maintain R/W) be given consideration--at least as an experiment.

More generally, and going beyond the focus of the PEIS, and indeed, of this proceeding, APA asserts that it is not logical to apply the FPEIS only to transmission facilities and not to distribution lines as well. APA also points to the lack of herbicide monitoring programs and herbicide residue research (in the state or in the Adirondack context) and asks that the utilities be ordered to monitor and document these chemicals' long-term and site-specific effects.

DOL's Comments

In the first of an extensive series of comments, DOL generally endorses Alternative B as preferable to the utilities' plans, but reiterates support for its own favorite, Alternative C. It also adds a new Alternative D, which was not put forth earlier nor assessed in the FPEIS. Alternative D encourages incremental phase-out of aerial and stem-foliar herbicide applications, substituting what DOL describes as:

...other equally effective vegetation control techniques, (i.e., basal and cut-and-stump spraying and handcutting, using local unemployed persons) and landowner involvement in R/W maintenance.

DOL also recommends that we require the utilities to provide funding to universities located within the Adirondack Park, for the collection of data and comparison of the effectiveness of all R/W maintenance techniques. DOL suggests that the data be analyzed annually so that its Alternative D management plan approach could be refined. The comments mention neither the technical capability of any universities within the park to handle such an assignment, nor the willingness or desire of these institutions to undertake such a research project.

In this vein, DOL proposes that other studies and monitoring activities be conducted by interested conservation groups located in the park. Specific types of wildlife surveys are recommended, to acquire data on the short and long-term effects on wildlife of each application technique used by the utilities. Soil and water tests, including groundwater, would be made, along with autopsies of dead animals found on R/W. DOL maintains that the utilities should be compelled, under PSL § 66(2), to fund such studies.

Further, DOL calls upon us to convene an Adirondack R/W Review Group composed of representatives of staff, APA, the Department of Environmental Conservation (DEC), the Department of Health (DOH), concerned private citizens and/or groups yet to be formed. DOL would have this group:

1. review and provide guidance to utilities on various R/W management techniques;
2. recommend further Commission initiatives;

3. review site-specific data derived from DOL's suggested monitoring plan;
4. supervise the demonstration of Alternative C activities, and oversee the implementation of DOL's Alternative D plan;
5. evaluate alternative chemicals (that the utilities would submit for review) that would better achieve vegetation management objectives; and
6. consider a plan, seemingly to be prepared by our staff, for acting upon the results of a review of the professional literature on allowable uses of picloram and 2,4-D--including how each chemical should be used for each specific application procedure.

In an effort to find justification for the utilities' presently-employed buffer zones (i.e., the no-chemical, set-back area alongside an aquatic or wetland resource), DOL urges that the utilities be ordered to provide relevant data. It says that such justification should include site-specific characteristics of slope, soil type, erodibility, wildlife and aquifers.

Expanding upon an APA comment, DOL recommends that we articulate a definite policy concerning distribution lines. Without qualification, it states that numerous complaints about visual and health concerns due to foliar spraying were received from private citizens in 1984.

Finally, DOL declares that pre-application notice requirements for herbicides need supplementing, to protect hikers, berry pickers, livestock and adjacent residents utilizing R/W. DOL recommends on-site or perimeter posting before aerial and stem-foliar applications, certified letters to underlying and adjacent landowners, and newspaper notices of the approximate spraying times and locations.

DISCUSSION

On the main issue--herbicide use--the FPEIS adequately demonstrates that, subject to certain additional mitigation measures, herbicides applied to transmission R/W vegetation will not cause quantifiably significant adverse impacts to the park. However, localized resources (such as wildlife habitat, desirable vegetation, wild berries, roadside screening and possibly water quality) may be adversely affected in a qualitative sense. To address these adverse possibilities, staff has recommended additional measures which can be imposed to further reduce or eliminate negative impacts without unreasonably increasing cost. Based on its review of the comments received on the FPEIS and re-examination of that document, staff generated some fine-tuning of the recommendations in Alternative B. These refinements are discussed below, as are some of APA's and DOL's recommendations.

REFINEMENTS TO ALTERNATIVE B

Aerial and Stem-Foliar Spraying

Most of the potential adverse environmental effects caused by R/W vegetation management can be avoided or minimized by eliminating aerial spraying and by controlling the conditions under which stem-foliar spraying is used.

1. Aerial Spraying

NYSEG has done no aerial spraying anywhere in the state since 1979; NMPC has not since 1982. NMPC had always argued that because some R/W in the park were inaccessible to ground-level techniques, aerial application in its plan was necessary. Time has told a different story; rather than argue about refining the use of aerial spraying, staff would join with APA and DOL and recommend its simple removal as a technique in the park. We agree and will direct that it be omitted from management techniques there.

2. Stem-Foliar Spraying

Both NMPC and NYSEG state that staff's recommendation to limit stem-foliar spraying to sites with trees averaging no more than 10 feet tall is too restrictive, for it would shorten the maintenance cycle and thereby increase costs. NMPC recommends that the height criterion be raised to 12-13 feet. NYSEG recommends 15 feet. Meanwhile, NMPC's revised plan of July 1986 shortens the maintenance cycle from eight to seven years.

Spraying trees above 10 feet high forces the applicator on the ground to spray higher than the target treetops. Doing so may violate the label directions for some herbicides used in

foliar spraying, which caution the applicator to "keep sprays no higher than brush tops"⁷ in order to minimize spray drift onto assumably non-target--and therefore compatible--vegetation; or other resources.

A second staff recommendation would increase the density of unwanted stems that can trigger foliar treatment in order to reduce off-target damage from foliar spraying. Staff focused on a criterion of both utilities: regardless of desirable density, foliar spraying is allowed when the undesirables are primarily root-suckering species. In the Adirondack Park, aspen is the most common root-suckering species. Staff presented references in the FPEIS showing that methods other than foliar spraying can control aspen. The utilities did not rebut this assertion with any factual information. Indeed, a 1984 report from the Empire State Electric Energy Research Corporation (ESEERCO) shows that summer basal treatment is more effective on aspen than is stem-foliar spraying. This limitation would not preclude foliar spraying of root-suckering species on sites with a high density of trees, or on sites with a moderate density of trees (proper targets) and light density of shrubs.

Other label precautions to lessen spray drift of stem-foliar applied herbicides concern wind speed and drift control additives. Staff recommends that stem-foliar spraying be limited to conditions with wind speeds under 10 miles per hour. NYSEG agrees that spraying should be limited to times when wind

⁷ "Brush" as used on herbicide labels, refers to target vegetation--generally trees on NYSEG and NMPC R/W.

velocity is "low" but would avoid a specific number as impractical, since applicators have no way of accurately determining wind speed on site. Despite this reservation, NYSEG's own practice is to limit aerial herbicide applications to situations when wind speed is under 6 mph. Therefore, it seems reasonable to order NYSEG and NMPC to define "low" wind velocities as 10 mph or less, and that stem-foliar applicators observe this limitation.

3. Spraying in Highway Travel Corridors

NMPC protests the prospective imposition of a recommendation to limit stem-foliar spraying along designated highway travel corridors, unless the herbicide selected or the timing of its application, will avoid "brown-out" until after Labor Day. The company says such imposition is unsupported in the FPEIS text, and is contrary to the conclusion that "implementation of the utilities' plans should not result in any significant adverse visual effects." That statement appears in the discussion of unavoidable adverse effects, whereas staff's recommendation addresses a problem which is known to exist and which can be avoided or mitigated.

Staff does agree with NMPC's suggestion that a third condition be added, beside the type of herbicide and timing of application. NMPC pointed out that a visual buffer, where a highway is crossed by a R/W, should help mitigate visual results of spraying. NMPC suggests 100 feet as the width of the buffer strip. Staff's recommendation and NMPC's addition are adopted.

4. Inventorizing of Rubus Species

NYSEG lists Rubus species (spp.) (i.e., blackberry, raspberry and brambles) as compatible shrubs and includes them when inventorizing R/W vegetation. In contrast, NMPC does not list them and excludes them from consideration when preparing treatment plans.

Staff recommended that Rubus spp. be identified in R/W vegetation inventories because of their value to wildlife and humans, and their influence in suppressing undesirable R/W vegetation. NMPC argues that in some locations, their nuisance value exceeds their worth to the R/W manager, and that they can inhibit R/W activities such as hiking, horseback riding, trail biking and hunting. Staff has received complaints about blackberries, however, only when they have been sprayed with herbicides. NMPC also states that considering Rubus spp. as desirable shrubs would raise the density of shrub cover during the R/W vegetation inventory stage, and thereby reduce the use of foliar spraying. Assertedly, this would drive up R/W maintenance costs.

Dr. Bramble⁸ comments that Rubus spp. are an important R/W plant, but a nuisance in maintenance work. His solution in Pennsylvania was to foliar spray under the wires to reduce Rubus spp. there and to basal spray near the R/W borders to encourage Rubus spp. there.

⁸ Professor Emeritus, and Forest Ecologist, Purdue University; Dr. Bramble commented on his own behalf.

Staff believes that Rubus spp. should not be treated any differently from other shrubs within the park, and NMPC has not shown the function of Rubus spp. in R/W vegetation management to be any different from other shrubs. Rubus spp. can be a nuisance to R/W workers and users. Therefore, to facilitate R/W travel and structure maintenance, NYSEG and NMPC will be allowed to control Rubus spp. in access roads and at structure sites. However, both utilities will be required to identify Rubus spp. separately or with other shrubs in their R/W inventories and to consider their density along with other shrubs as they affect the choice of management techniques in controlling R/W vegetation.

5. Buffer Zones

The width of herbicide-free set-back or buffer zones around water resources (e.g., streams, public/private water supplies, wetlands, etc.) were addressed by most commentators on either the DPEIS or the FPEIS.

DOL urges us to require the utilities to provide data that justify the buffer zones now in use.

APA recommends the use of larger buffer zones (width un-specified) or--at a minimum--those of Bonneville Power Administration, and the application of buffer zones to wetlands (as defined by Environmental Conservation Law Article 24), intermittent streams, public and private water supplies and special wildlife and plant habitats. As APA point out, 9 NYCRR Part 578 grants it jurisdiction over regulated freshwater wetlands in the Adirondack Park, wetlands which may impinge upon R/W. Special wildlife and plant habitats will also be recognized

in the site-by-site assessment of R/W resources to be undertaken by the utilities before a treatment is prescribed, as outlined in their plans.

Dr. Bramble recommends a buffer zone for herbicide applications of at least 50 feet on each side of streams and lakes; he also favors allowing the R/W manager discretionary authority to adjust the buffers to suit site-specific conditions.

DOH recommends a buffer zone with a minimum horizontal distance of 100 feet from any surface or groundwater source in use as a potable water supply, and marking of these locations on the utilities' R/W maps.

The AC recommends that buffer zone widths be increased beyond their present dimensions (no distance suggested) and alleges that buffer zones are laxly enforced and sometimes ignored by utilities and contractors.

Both utilities recommend that their individual buffer zone widths be retained, and that R/W managers continue to be allowed to vary them, based on field judgments.

None of the commentators presented any scientific (or other) data to support their recommendations on no-chemical buffer zones.

Staff's analysis of current literature on the mobility and degradation of triclopyr, 2,4-D and picloram in soils concluded that, under certain heavy rainfall conditions, herbicides applied on R/W can be found several hundred feet from the point of application. Indeed, chemical residues have been

detected in streams on the far side of buffer zones. However, those residues are of such low-level that they are considered harmless to non-target vegetation and aquatic organisms. They do not exceed the maximum allowable safe levels established by DOH for such chemicals in potable water.

The significance of these findings is that while no buffer zone can absolutely guarantee that herbicides will not be transported through it, buffers can function effectively to dilute the chemicals and allow the natural degradation process--as fostered by sunlight and soil microorganisms--to reduce residues to levels that are not considered harmful to a sensitive and valued resource such as water. Buffer zones will also prevent applicators from inadvertently spraying directly into waterbodies or wetlands.

To protect potable water supplies now in use, DOH's views should be accorded primacy; it is, after all, DOH's charge to protect human health, through protection of water supplies. As DOH recommends, a buffer zone will be established extending at least 100 feet horizontally from any surface or ground water source used as a potable water supply. This buffer zone should be maintained when herbicides are applied.

For other water resources, we endorse the minimum horizontal widths advocated by NYSEG, unless a permit containing a different distance is granted by APA:

Stem-foliar	50 feet
Basal	30 feet
Cut-and-stump	30 feet

Moreover, given the importance of effective buffer zones, the utilities are directed to submit amended plans describing the site characteristics that would cause R/W managers to expand these buffers.

Cost of Alternative B

NMPC commented that staff's estimate of a 3.9% cost increment of Alternative B over the utilities' plans "substantially understates" the actual cost increase, if implemented in its entirety. The FPEIS details how staff arrived at the cost, but NMPC offers neither its own cost estimate nor a reasoned critique of staff's calculation. NMPC's comment, therefore, is unconvincing.

Herbicide Monitoring and Research

Both APA and DOL would have us require the utilities to conduct extensive herbicide monitoring and research activities. APA suggests studies to test for herbicide residues in plants, soil, animals and water. Through ESEERCO, the utilities have recently completed Phase I of a research project on herbicide mobility and degradation on transmission R/W. However, Phase II (field study) is not being pursued by ESEERCO as vigorously as we ordered in Case 27319 (Order of October 31, 1984). Both NYSEG and NMPC have done limited studies, primarily of the persistence and mobility of herbicide residues in soil. NYSEG studied a transmission R/W in the Adirondacks; NMPC examined the nearby Volney-Marcy transmission line R/W.⁹ Unfortunately, these

⁹ Herbicides applied in both studies were triclopyr (GARLON), picloram and 2,4-D (TORDON 101).

studies do not directly address the efficacy of buffer zones near water resources.

Contamination of water supplies appears to be the effect of herbicide spraying most feared by the public. To gain more information on this matter, NYSEG and NMPC should initiate a study before January 1, 1989, approved by the Director of our Office of Energy Conservation & Environment, that will provide a factual background for analyzing buffer zone efficacy, in the park and elsewhere.

DOL's Adirondack R/W Review Group

DOL asks us to organize a R/W review group. Obviously, such a group could only be formed if the other agencies and parties agreed to do so. And, the increase in staff needed to organize and conduct meetings and collect data and the cost of the monitoring program could be great. We believe that the additional changes we are ordering in the plans are sufficient to provide the "extra measure of attention and respect" called for in this proceeding. The R/W review group is, therefore, not needed.

Herbicide Notification

DOL asks for more stringent herbicide notification through direct mail, R/W posting, and newspaper notices. In this context, we note that new regulations for notice of impending pesticide application are being considered by DEC, with promulgation likely later this year. Meanwhile, reasonable efforts should be made in this regard.

Distribution Lines

We specified at the outset that transmission R/W are the focus of this case and note again that distribution facilities are outside the scope of this proceeding. That said, we recognize the declaration (by APA & DOL) that the same techniques are often used on both transmission and distribution R/W. APA and DOL would have us proceed with policy guidelines for herbicide usage on distribution facilities. Spraying herbicides under distribution lines can cause some of the effects we are trying to prevent on transmission R/W. Therefore, we will direct staff to investigate this question further. In consultation with the interested parties to this proceeding, staff shall develop a work program (to study and report back with recommendations) whether, and to what extent, we should require the same practices for vegetation management to be applied to distribution R/W in the park as are used on transmission R/W. Accordingly, we will make no further requirements on distribution facilities management practices here.

Alternative D

Lastly, DOL asks our consideration of its new Alternative D, which would phase out aerial and stem-foliar spraying while increasing the use of more selective techniques (basal, cut & surface treat, and hand-cutting). Alternative D has merit. Our policy emphasis is to encourage cost-effective selective applications. Staff's recommendations to limit the site conditions justifying stem-foliar spraying will promote DOL's goal. To confirm that stem-foliar spraying is decreasing,

we will direct the utilities to report annually on the acreage in the park treated by each technique, chemical or otherwise.

The Commission Orders:

1. Niagara Mohawk Power Corporation and New York State Electric and Gas Corporation shall revise their system-wide Electric Transmission Right-of-Way Management Plans in accord with the following provisions, and shall submit the revised plans for approval by the Director of our Office of Energy Conservation and Environment before November 30, 1988:

- a. Herbicides shall not be applied by helicopter within the Adirondack Park.
- b. Stem-foliar spraying in the Adirondack Park shall be limited to sites with "dense" or "heavy" density of undesirable species, or to sites with "moderate" or "medium" density of undesirable species and accompanying densities of only "scattered" or "light" desirable species. Stem-Foliar spraying shall be limited to sites where undesirable species average less than 10 feet tall and be done only when wind speeds are less than 10 mph.
- c. Herbicides used within 100 feet of highway traffic corridors identified in the 1979 APA State Land Master Plan shall be selected, or their application timed, to avoid "brown out" until after Labor Day in any year.

- d. Rubus spp. (blackberry, raspberry, etc.) shall be included on the list of desirable species inventoried for R/W vegetation management purposes and regularly reported to staff when inventories are required.
- e. Herbicides shall not be used within a minimum horizontal distance of 100 feet of a potable water supply or regulated wetlands or protected waters. Buffer zones shall be maintained around other wetlands, perennial and intermittent streams, and waterbodies as follows:

<u>Herbicide Application Technique</u>	<u>Minimum Approach Distance</u>
Stem-foliar	50 feet
Basal	30 feet
Cut-and-stump	30 feet

- f. Reasonable efforts shall be made to inform persons who may be expected to enter areas treated with herbicides.

2. Niagara Mohawk Power Corporation and New York State Electric and Gas Corporation shall initiate a study during 1988 to determine the efficacy of herbicide buffer zones, in the park and elsewhere. The study shall conform to the following schedule and conditions:

- a. By December 30, 1988 the proposed Study Prospectus, Schedule for Progress, and Research Protocols, as well as the short list of proposed consultants, shall be submitted for approval to the Director of our Office of Energy Conservation and Environment.

b. Semi-annual Progress Reports shall be submitted to the Director of the Office of Energy Conservation and Environment, who may require review meetings to be held.

c. The final report shall not be accepted, and the consultant not released from its contractual obligations, without the Commission's approval.

3. Niagara Mohawk Power Corporation and New York State Electric and Gas Corporation shall report, to the Secretary, by March 31 of each year, the transmission R/W acreage within the Adirondack Park treated or maintained in the preceding year by each technique (using herbicides or not) for controlling undesirable vegetation.

4. This proceeding is continued.

By the Commission,

(SIGNED)

JOHN J. KELLIHER
Secretary

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

April 29, 1988

FILED-SESSION OF MAY 10 1988

TO: THE COMMISSION

FROM: TRANSMISSION FACILITIES SECTION, OEC&E

SUBJECT: CASE 27605 - The Role of Herbicides in Managing
Vegetation on Electric Transmission Rights-of-Way
Within the Adirondack Park

RECOMMENDING: Conditional approval of Electric Transmission
Right-of-Way Management Plans within the
Adirondack Park

* * *

This is to present, for Commission consideration and approval, the long-range plans¹ of New York State Electric & Gas Corporation (NYSEG) and Niagara Mohawk Power Corporation (NMPC) for management of their electric transmission rights-of-way (R/W) within the Adirondack Park. Those portions of the NYSEG and NMPC plans covering the park had been excepted when the Commission approved the long-range R/W management plan of NYSEG on April 20, 1983 and NMPC on March 30, 1988.

In the fall of 1982 the Commission began its approval process for the long-range plans of NYSEG and NMPC. However, action was withheld because the Department of Environmental Conservation (DEC), the Adirondack Park Agency (APA) and the Department of Law (DOL) contended that a State Environmental

¹ Prepared in accordance with the requirements of 16 NYCRR 84.2.

Quality Review Act (SEQRA) analysis of all plans that involved the Adirondack Park should be undertaken, i.e., those of NYSEG & NMPC. Those agencies argued that the use of herbicides, as contemplated in the plans, would cause substantial changes in existing transmission R/W, remove large quantities of vegetation, and affect significant habitat (including those of threatened and endangered plants and wildlife) and human health. The APA argued further that herbicides should not be used for R/W maintenance within the park.

On April 20, 1983, the Commission concluded that its approval of the long-range plans did not constitute the approval of actions within the meaning of SEQRA because the right-of-way management plans do not set forth procedures which would involve "substantial changes" to existing transmission facilities. The Commission noted that these management plans involved procedures that were comparable to routine preventive maintenance programs. It further determined that the procedures described in the system-wide plans would not substantially change the character of a given R/W. The Commission did note, however, that the Adirondack Park warranted "an extra measure of attention and respect" as evidenced by the legislative creation of the APA. It also determined that NYSEG's and NMPC's plans for transmission R/W management within the park needed to be carefully assessed "to ensure that the plans gave careful consideration to the special character of the park's features and resources." The Commission then declared that it would withhold approval of those

aspects of utility long-range plans that relate to the Adirondack Park until a programmatic environmental impact statement (PEIS) on these plans had been prepared by Staff.

Draft Programmatic Environmental Impact Statement
(DPEIS) Preparation & Content

Following scoping meetings held with agencies, parties and individuals in the fall of 1983, Staff completed in July 1984, a DPEIS for the plans of NYSEG and NMPC for management of their respective electric transmission facilities within the park.

On August 3, 1984, the DPEIS was issued for review and comment to approximately 85 concerned agencies, entities and citizens. Comments were due by September 20, 1984, and most were received before that deadline. The APA & DOL said that the press of other business pre-empted their time and attention, and asked for and were granted extensions of several weeks. Following several informal inquiries by Staff, it was evident that neither of these two agencies, which had been the primary instigators of undertaking the PEIS, were going to comment on the Draft. Staff thereupon proceeded with preparation of the Final PEIS (FPEIS).

After reviewing comments received from eight parties (see Appendix A) Staff concluded that no major substantive deficiencies had been identified in the DPEIS. Minor refinements were then made, mainly of a technical nature, and the FPEIS was presented to the Commission for approval and circulation. The

Commission approved issuance of the FPEIS as of July 11, 1985 and the document was sent to approximately the same 85 parties that had received the DPEIS a year earlier.

Final Programmatic Environmental Impact Statement

FPEIS Scope and Alternatives

The FPEIS examined effects of implementing NYSEG's and NMPC's R/W management plans on land use, protected and rare plants, vegetation, wildlife, significant wildlife, endangered and threatened species, species of special concern, soils, water quality, fisheries, wetlands, visual resources, and public health and safety. Economic effects were also analyzed.

In addition to those filed by NMPC and NYSEG, three alternative vegetation management programs were evaluated. Alternative A was recommended by the APA during DPEIS scoping sessions. Alternative C was similarly recommended by the DOL at that time. Staff's rationale for Alternative B was derived from many years of field experience and observations about the R/W management practices of the major electric utilities in New York State and their consistency with the Commission's stated intent "to assure that the NYSEG and NMPC plans gave careful consideration to the special character of the park's features and resources."²

² C. 27605 - Order Issued April 20, 1983.

A summary of Alternatives A, B and C (reproduced in selected part from the FPEIS, pp. 88 to 100) is given below, followed by a comparison of the alternatives to Commission R/W policy which is also reproduced from the FPEIS.

Alternative A (APA Recommendation)³

Selective cutting of individual target trees with chain saws is the most common non-chemical technique used in R/W management by NMPC and NYSEG. Mowing cannot be applied to an entire R/W as can selective cutting. The environmental assessment of implementing this alternative assumes undesirable vegetation is cut every five years and that slash is left where it drops--except in sensitive locations such as road crossings, residential areas, and visually-exposed sites....

Alternative B (Staff Recommendation)

Implementing the plans of both NYSEG and NMPC in the park will produce some qualitatively significant adverse environmental effects. Resources affected include wildlife habitat, desirable vegetation, wild berries, roadside scenery and possibly water quality. Additional measures could be taken to further reduce or eliminate these impacts without unreasonably increasing cost. The following recommendations involve changes in technique selection guidelines or additional environmental mitigation measures:

1. Not allowing NMPC to aerial spray any R/W with light to moderate densities of undesirable vegetation, nor the entire width of R/W, when the R/W is less than 75' wide and there is only a light-to-moderate density of undesirable vegetation, would further reduce the damage to desirable vegetation and wildlife habitat.
2. Limiting stem-foliar spraying to sites with high densities of undesirable species and moderate density sites with a light density of desirable species would reduce adverse effects on desirable plants and wildlife. Damage to shrubs and ground cover (Table 5) would be largely avoided by using stem-specific techniques (i.e., basal, cut-and-stump) wherever practical.

³ Material in parenthesis added in this reprinting.

3. Limiting stem-foliar spraying to periods when wind speed is less than 10 mph and using drift control additives would reduce damage to desirable vegetation and wildlife habitat.
4. Allowing foliar spraying only when the average height of the vegetation is less than 10 feet would also reduce overspraying and drift which can damage desirable vegetation and off-target resources. Restricting foliar spraying to sites averaging 10 feet or less would also be compatible with both NYSEG's and NMPC's vegetation inventory systems where 10-foot increments are used.
5. Allow foliar spraying of R/W adjacent to, and in parallel with designated highway travel corridors--identified in the State Land Master Plan (APA 1979)--only if the herbicide selected or the timing of application will avoid (until after Labor Day) the brown-out phenomenon, would minimize the visual impact relating to such phenomenon. This will require changes to the guidelines of both NYSEG and NMPC.
6. Significant amounts of wild berries and other desirable vegetation and wildlife habitat would be preserved if NMPC were required to include blackberry and raspberry in the inventory of desirable vegetation.
7. Adverse impacts on water quality would be minimized if NMPC were to adopt the buffer zone widths used by NYSEG. Neither utility should be allowed to reduce these distances in the field....

Alternative C (DOL Recommendation)⁴

Alternative C is a novel approach to R/W management which has been tried on a demonstration basis in West Virginia at the behest of Citizens for Environmental Protection (Kimmel, et al., 1981).

In this alternative landowners and other interested groups maintain the R/W in exchange for the utilities' avoided cost (\$150 - \$200 per acre treated in 1979-80). The rationale for this approach is to bolster rural employment, reduce the use of energy-intensive techniques, and minimize herbicide use.

⁴ Material in parenthesis added in this reprinting.

Techniques for this alternative are described in the DOE funded "Handbook for Manual Maintenance of Power Line Rights-of-Way" (Kimmel, et al. 1981). The prescribed methods include handcutting, basal, and cut-and-stump herbicide spraying. These are well within the capabilities of semi-skilled individuals and do not require large capital investment in heavy equipment and high volume sprayers.

The demonstration project conducted in West Virginia reports limited success with the approach (Wooley, 1981). Only eight locations on six R/W were managed. The crews were satisfied with the return for their labor, which suggests long term viability. Unfortunately, the project did not generate enough data from which reliable cost predictions could be made, nor could projections be attempted for any New York replication.

It has been suggested that this alternative would work in the job deficient Adirondack Park.⁵ At present there is not enough information to determine whether this is in fact the case. How much of the total park R/W can be maintained in this manner, how effective is this approach, what is the liability implication, how will this arrangement affect contractor costs for remaining (untreated) R/W, and what is the long term reliability of such arrangements, are critical questions which must be answered before the utilities could reasonably be expected to commit themselves to such a scheme. Those answers should logically be supplied by others....

Comparison Of Alternatives To Commission R/W Policy

Alternative A cannot accomplish the principal management policy endorsed by the PSC (and adopted by the utilities) of establishing low-growing, stable plant communities which are:

aesthetically appealing, beneficial to wildlife, compatible with system reliability requirements, and need relatively little maintenance over the life of the ROW.⁶

While hand-cut sites can be aesthetically appealing and benefit wildlife, they require more stringent, continuous maintenance. Hand-cutting increases undesirable tree

⁵ FPEIS has footnote citation to DOL letter to Robert Vessels (DPS Staff), January 10, 1984.

⁶ Opinion 80-15, Appendix A, p.4.

density, thus increasing the potential for system interruption. More frequent treatment is needed to crop these undesirables because they are not root-killed.

Alternative B would achieve results which are closer to the PSC policy objectives. Increased mitigation and increased reliance on selective techniques would avoid establishment and propagation of undesirables without heavy reliance on aerial and ground-foliar chemical treatments. Where chemicals are used, increased mitigation in the form of wider buffer zones would decrease the already low probability of adverse herbicide impacts.

Alternative C could, if widely instituted on R/W, come as close to achieving policy objectives as Alternative B, provided the individuals doing the work avoid cutting or spraying desirable vegetation. Manuals and training could be provided to these people, but the effectiveness of Alternative C in preserving desirable vegetation remains in question. In modified form, Alternative C is presently being applied, seemingly without cost to the utilities, wherever a user of adjacent or underlaying lands extends management of vegetation to include the R/W. It could be questioned whether the utility ought not to be more appreciative of such "free economic goods" as this. Unwitting R/W maintenance by a presumed ratepayer precludes a utility from incurring whatever charges might be called for to maintain the vegetation that would otherwise grow there.

In addition, there should be no confusion around the role of a utility in relation to sponsorship of an Alternative C program. The utility is not an Economic Development Agency (EDA), and while the Commission could conceivably direct a recalcitrant company to cooperate with an EDA that sponsored an Alternative C system, the role of the EDA is clearly much different from that of a regulated utility. The EDA would need to act somewhat as a combination contractor, employment agency, health and liability insurance supplier, trainer, and bond assurer for reliability - as well as arrange for call-backs in the event of outages or "missed" trouble spots. Were this done, any purported cost advantage might disappear since the EDA would not likely be able to attain the economics of scale realized by a utility or R/W contractors.

Final Programmatic Environmental Impact Statement
(FPEIS) Comments

Comments on the FPEIS were received from four individuals in various eastern states, as well as from NMPC, NYSEG, APA and DOL. All these comments are reproduced in Appendix A.

Summary of Citizen Comments

While the four citizen comments were general in nature and praised the FPEIS for its comprehensiveness and depth, specific comments were offered on technical points. Most individuals endorsed Alternative B as the most logical and environmentally responsible management approach for the park. No response to these four letters appears warranted. Suggestions about buffer zone widths from one citizen respondent, Dr. William Bramble, are incorporated in the discussion of that subject.

Summary of Electric Utility Comments

Both NYSEG and NMPC submitted comments on the FPEIS and expressed concern over Alternative B approach to R/W management. Each company felt that the Staff recommendations, if adopted, had the potential to seriously affect their respective operations. Particular concern was expressed over proposed limitation on foliar and aerial spraying under certain conditions. The discretion that R/W managers would have over determining buffer zone widths in response to site-specific conditions was also

contested; NMPC was quite adamant about Staff's recommendation to include blackberry and raspberry as desirable species within the park.

While both companies stated that, for the most part, they believed the FPEIS accurately reflected their existing R/W maintenance practices, they both stated their belief that imposition of the further restrictions found in Alternative B would significantly increase R/W maintenance costs over those which would be experienced if the utilities' plans were adopted. Therefore, the utilities requested that their plans be adopted by the Commission without alteration to incorporate provisions of Alternatives A, B or C.

Staff cannot recommend that the Commission approve the plans of NYSEG or NMPC, as submitted. To give meaning to the Commission's stated intention that:

"R/W management within the Adirondack Park needs to be carefully assessed to insure that it reflects due care for the Park's multifold features and protected resources"⁷

several modifications to the plans submitted by the two companies will be necessary before they can be recommended for approval. Translation of the quoted guiding phrase into action has resulted in the additional mitigation measures contained in the Alternative B approach to R/W management. However, Staff has weighed the FPEIS comments of NYSEG and NMPC regarding Alternative B and has modified some of those measures to

⁷ C. 27605 - Order Issued April 20, 1983 (page 3).

recognize several valid points that were raised by the utilities' and others' comments. Also, some of Staff's concerns have been addressed by NMPC in its revised 1986 plan and through revisions of their plan required by the Commission's Order of March 30, 1988, approving only activities outside the Adirondacks.

Summary of APA and DOL Comments

APA and DOL offered general and specific comments consistent with positions initially established by the two agencies in the fall of 1982 when they advocated a SEQRA analysis for the plans. Both agencies proffered comments on the FPEIS that would have been most appropriate and timely for the DPEIS-- to which they did not respond. No new factual information was provided. Generally, APA and DOL continue to oppose the use of herbicides in the park and advocate either an outright ban or a gradual phase-out in favor of non-chemical, labor-intensive R/W vegetation management techniques.

The recommendations of APA and DOL follow, while responses to specific APA comments on the FPEIS are found in Appendix B.

APA Recommendations

1. APA assumed that the Commission would endorse Staff's recommendation of Alternative B but does not concede the correctness of that choice. It asks that the Commission give serious consideration to ordering adherence to Alternative A (hand-cutting) in the most sensitive parts of the R/W, especially near wetlands, streams or any open water, intermittent streams,

public or private water supplies, wildlife habitats, where the risk of harming non-target plants, animals and groundwater is high, and in visually sensitive areas.

2. Elsewhere on the R/W, APA asks that the seven measures constituting Alternative B be made much more precise.

3. Thirdly, APA asks that Alternative C be given consideration at least as an experiment.

4. APA also asserts that it is not logical to apply the FPEIS only to transmission lines and not to distribution lines as well.

5. Finally, APA recommends that the Commission address the lack of herbicide monitoring programs and herbicide residue research in the state or in the Adirondack context and order the utilities to monitor and document their long-term and site-specific effects.

APA's general comments assumed that the Commission would endorse the Staff recommendation of Alternative B, although that agency "would not concede the correctness of that choice."⁸ APA's implied favorite was Alternative A, which it characterized as of "manifest environmental superiority".⁹ This was coupled with a request that the Commission give serious consideration to ordering the utilities to do handcutting without the use of herbicides, as described in Alternative A.

⁸ APA letter to Secretary Kelliher (July 31, 1985) p. 6.

⁹ Ibid, pg. 6.

DOL Recommendations

1. While the DOL generally endorsed Staff's choice of Alternative B as preferable to the plans proposed by the utilities, it reiterated support for its own favorite, Alternative C. It then added for Commission consideration, Alternative D. This new Alternative, which was not put forth earlier, nor assessed in the FPEIS, encourages incremental phase-out of aerial and stem-foliar herbicide applications, with substitution of what DOL describes "as other equally effective vegetation control techniques, (i.e., basal and cut-and-stump spraying and handcutting, using local unemployed persons) and landowner involvement in R/W maintenance". [On this point, Staff believes that it is important to note that no aerial herbicide application of utility R/W has been made anywhere in this state since 1982, in response to the Commission's Order of December 20, 1977, which required a detailed vegetation inventory of the targeted R/W to be filed as partial justification for approval to make the treatment.]

2. DOL also recommends that the Commission require the utilities to supply funding to be provided to universities located within the Adirondack Park to collect data and compare the effectiveness of all the R/W maintenance techniques. DOL's idea is that each consecutive year the data would be analyzed so that its Alternative D management plan approach could be refined. No mention was made of the technical capability of any

universities within the park to handle this type of assignment, nor of any willingness or desire of the institutions to accept such a research project.

3. DOL proposed other studies and monitoring activities to be conducted by interested conservation groups located in the park. Specific types of wildlife surveys were recommended to acquire data on short and long-term effects on wildlife of each application technique used by the utilities. Soil and water tests, including groundwater, would be done, along with pathological examinations of dead animals found in R/W areas to determine the impact of herbicides on wildlife. DOL maintains that the utilities should be compelled under the provision of PSL § 66 (2) to fund such studies.

4. DOL also calls upon the Commission to convene an Adirondack Right-of-Way Review Group composed of representatives of the PSC, APA, DEC, DOH and concerned private citizens and/or groups yet to be formed. This task group would:

- 1) review and provide guidance [to the utilities] on various R/W management techniques;
- 2) make recommendations to the PSC for further initiatives;
- 3) review site-specific data resulting from the suggested monitoring plan;
- 4) supervise the demonstration of Alternative C activities and oversee the implementation of DOL's Alternative D plan;

- 5) evaluate alternative chemicals that the utilities would submit for review that would better achieve the PSC objectives for vegetation management plans; and
- 6) review a submittal by PSC Staff, concerning the results of its review of literature on allowable uses of picloram and 2, 4-D, including how each chemical should be used for each specific application procedure.

5. DOL urges the Commission to order the utilities to provide data that justify the buffer zones in use. Such justification should include site-specific characteristics of slope, soil type, erodibility, wildlife and aquifers.

6. As does APA, DOL recommends that the Commission articulate a definite policy concerning distribution lines. It points out that, in 1984, numerous complaints about visual and health concerns due to foliar spraying were received by private citizens.

7. DOL views the notice requirements for herbicide application to need supplementation to protect hikers, berry pickers, livestock and adjacent residents utilizing R/W. DOL recommends posting before aerial and stem-foliar applications, sending certified letters to adjacent landowners, and newspaper notices telling the approximate times and locations of herbicide spraying.

FPEIS Conclusion, Comment Response and Outstanding Issues

Though the DPEIS and FPEIS demonstrated that implementation of the R/W management plans of NMPC and NYSEG in the park would not cause any quantifiably significant adverse environmental effects on the park as a whole, Staff's conclusion was that there would be qualitatively significant adverse effects but these effects would be limited to local areas.

APA and DOL continue to believe that implementation of the utilities' plans will cause significant adverse effects involving both the ecology and human resources of the park. APA favors a non-chemical approach to R/W management, while DOL favors a reduction in the use of aerial and stem-foliar applications. By contrast NYSEG and NMPC remain firm in their belief that their respective plans contain adequate safeguards to protect all of the valued resources of the park--or any other part of the state served by their companies. The citizen respondents appear to support the Staff conclusion that there would be only qualitatively significant local adverse effects.

Having completed the PEIS process mandated by the Commission in 1983, and having reviewed the comments of those who responded to the FPEIS findings, Staff concludes that the FPEIS has adequately addressed all of the major issues raised by APA, DOL and DEC in the fall of 1982 when they advocated preparation of a SEQRA analysis of the plans, especially as they would apply within the park.

On the main issue of herbicide use, Staff believes that the FPEIS adequately demonstrates that, subject to certain additional mitigation measures, herbicides applied to transmission R/W vegetation will not cause quantifiably significant adverse impacts to the park. However, localized resources (such as wildlife habitat, desirable vegetation, wild berries, roadside scenery and possibly water quality) may be adversely affected in a qualitative sense. Therefore, Staff has recommended additional measures that can be taken to further reduce or eliminate such impacts without unreasonably increasing cost.

Staff's review of the comments received on the FPEIS and its own re-examination of the document have generated some refinements of the recommendations contained in Staff's Alternative B. These measures are discussed below. The additional recommendations of APA and DOL are discussed after the following.

RECOMMENDED REFINEMENTS TO ALTERNATIVE B

Aerial and Stem-Foliar Spraying

Most of the potential adverse environmental effects caused by R/W vegetation management can be eliminated or minimized by eliminating the use of aerial spraying and by controlling the conditions under which stem-foliar spraying is used.

1. Aerial Spraying

Staff recommends that aerial spraying be banned in the park. NYSEG has not done any aerial spraying anywhere in the state since 1979 and NMPC has not aeriually sprayed since 1982. [Note also the bracketed comment to first paragraph on page 13.] NMPC had always argued that some R/W's in the park were inaccessible to ground techniques and therefore the aerial technique was necessary in its plan. Time has told a different story: rather than argue about refining the use of aerial spraying, Staff would join with APA and DOL and recommend its simple removal as a technique in the park.

2. Stem-Foliar Spraying

Both NMPC and NYSEG stated that Staff's recommendation to limit stem-foliar spraying to sites with trees averaging ten feet tall or less is too restrictive and would shorten the maintenance cycle, and thereby increase costs. NMPC recommends the height criterion be raised to 12-13 feet while NYSEG recommends 15 feet. Meanwhile, we note that NMPC's revised plan of July, 1986 shortens the maintenance cycle from eight to seven years.

In Staff's opinion, spraying trees above ten feet forces the applicator on the ground to spray higher than the target tree tops. Doing so may be in violation of the label directions for some herbicides used in foliar spraying, which caution the applicator to "keep sprays no higher than brush tops"¹⁰ in order to minimize spray drift.

¹⁰ "Brush" as used on herbicide labels, refers to the target vegetation--generally trees on NYSEG and NMPC R/W.

A second Staff recommendation, to reduce off-target damage from foliar spraying, has to do with a criterion of both utilities which allows foliar spraying regardless of desirable density when the undesirables are primarily root-suckering species. In the Adirondack Park, aspen is the most common root-suckering species. Staff presented references in the FPEIS showing that methods other than foliar spraying can control aspen. The utilities did not rebut this assertion with any factual information. In fact, a 1984 research report from the Empire State Electric Energy Research (ESEERCO) shows summer basal treatments to be more effective on aspen than stem-foliar spraying. This limitation still allows foliar spraying of root-suckering species on sites with a high density of trees or sites with a moderate density of trees and light density of shrubs.

Other label precautions to lessen spray drift of stem-foliar applied herbicides concern wind speed and drift control additives. Staff recommends that stem-foliar spraying be limited to conditions with wind speeds under ten miles per hour. NYSEG agrees that spraying should be limited to times when wind velocity is "low" but recommends against a specific wind velocity as impractical since applicators have no way of accurately determining wind velocity in the field.

Staff is somewhat surprised at NYSEG's statement since that utility has its own specific wind velocity limit for aerial herbicide applications: speeds under 6 mph. Therefore, Staff has no problem with recommending that NYSEG and NMPC be required to define "low" wind velocities as under 10 mph, so that stem-foliar applicators will be able to observe this limitation in the field.

NYSEG also expresses concern that Staff may be basing some of its recommendations for extra precautions on herbicide label information that is outdated, or on labels from products that are no longer formulated or marketed. Such is not the case. The labels were only a minor contribution to Staff's recommendations. More significant stimulus came from field observations and studies as well as scientific data. Moreover, needs for resource protection are overriding.

3. Spraying in Highway Travel Corridors

NMPC protests the prospective imposition of a recommendation to limit stem-foliar spraying along designated highway travel corridors unless the herbicide selected, or timing of the application will avoid "brown-out" until after Labor Day. The company says such imposition is unsupported in the FPEIS text, and is contrary to the conclusion that "implementation of the utilities' plans should not result in any significant adverse visual effects (p.87)." That statement appears in the discussion of unavoidable adverse effects, whereas Staff's recommendation addresses a problem which is known to exist and which can be avoided or mitigated, as discussed on pg. 92 of the FPEIS.

Staff agrees with NMPC that a third condition should be added to the two already stated which address the type of herbicide to be chosen and the timing of its application. Following NMPC's suggestion, a suitable buffer between a highway and a R/W should also

be recognized--to help mitigate visual evidence of spraying results. NMPC suggests 100 feet as the width of the buffer strip. Staff believes that will suffice, and recommends its adoption.

4. Inventorizing of Rubus Species

NYSEG lists Rubus spp. (i.e., blackberry, raspberry and brambles) as compatible shrubs and includes them when inventorizing R/W vegetation. NMPC, on the other hand, does not list them and excludes them from consideration.

Staff recommended that Rubus spp. be identified in R/W vegetation inventories because of their value to wildlife and humans, and their influence in suppressing undesirable R/W vegetation. NMPC argues that their nuisance value in some locations exceeds their worth to the R/W manager, and that they can inhibit R/W activities such as hiking, horseback riding, trail biking, hunting, etc. Staff has received complaints about blackberries only when they have been sprayed with herbicides. NMPC also states that considering Rubus spp. as desirable shrubs would raise the density of shrub cover during the R/W vegetation inventory stage, and thereby reduce the use of foliar spraying and assertedly drive up R/W maintenance costs.

Dr. Bramble¹¹ commented that Rubus spp. is an important R/W plant but a nuisance in maintenance work. His solution in Pennsylvania was to foliar spray under the wires to reduce Rubus spp. and to basal spray near the R/W borders to encourage Rubus spp.

¹¹ Professor Emeritus, and Forest Ecologist, Purdue University.

Staff believes that Rubus spp. should not be treated any differently from other shrubs within the park. NMPC has not shown the function of Rubus spp. in R/W vegetation management to be any different from other shrubs. We recognize that Rubus spp. can be a nuisance to R/W workers and users. Therefore, Staff recommends that NMPC be allowed to control Rubus spp. in access roads and at structure sites in order to facilitate R/W travel and structure maintenance. Nevertheless, we recommend that NMPC be required to identify Rubus spp. separately in its future R/W inventories and to consider their density along with other shrubs as they affect the choice of management techniques in controlling R/W vegetation.

5. Buffer Zones

Buffer zones and width of herbicide-free buffers around water resources (e.g., streams, public/private water supplies, wetlands, etc.) were addressed by most parties who commented on either the DPEIS or the FPEIS. Their positions are summarized below.

DOL urges the Commission to require the utilities to provide data that justify the buffer zones now in use.

APA recommends the use of larger buffer zones (which it did not quantify) or--at a minimum--those of Bonneville Power Administration (BPA), and that buffers be applied to wetlands (as defined by Environmental Conservation Law [ECL] Article 24), intermittent streams, public and private water supplies and special wildlife and plant habitats. APA appears to have overlooked the fact that the title of Table 12 in the FPEIS, which compared the buffer zones of the utilities and BPA, specifically lists wetlands, streams

and waterbodies as the resources to be protected. We further note, as APA reminded, that under 9 NYCRR Part 578, APA has jurisdiction over regulated freshwater wetlands which [may] impinge upon R/W. Special wildlife and plant habitats will also be recognized in the site-by-site assessment of R/W resources to be undertaken by the utilities before a treatment is prescribed, as outlined in their plans.

Dr. Bramble recommends a buffer zone for herbicide applications of at least 50 feet on each side of streams and lakes; he also favors allowing the R/W manager discretionary authority to adjust the buffers to suit site-specific conditions.

DOH recommends establishment of a buffer zone with a minimum horizontal distance of 100 feet from any surface or groundwater source in use as a potable water supply, and that the utilities mark these locations on their maps.

The Adirondack Council recommends that buffer zone widths be increased beyond their present dimensions and alleges that buffer zones are not strictly enforced and are sometimes ignored by the utilities and contractors. No additional widths were suggested, however.

Both utilities recommended that their individual buffer zone widths be retained unchanged, and that R/W managers continue to be allowed to change these widths based on field judgments.

None of the commentators presented any scientific (or other) data to support their recommendations.

It is clear from current literature on the mobility and degradation of triclopyr, 2,4-D and picloram in soils, that under certain heavy rainfall conditions, herbicides applied on R/W can penetrate buffer zones up to several hundred feet in width. As a result, chemical residues have been detected in streams on the far side of the buffer zones. However, those residues are at such low levels that they are considered harmless to non-target vegetation and aquatic organisms. Maximum allowable safe levels (established by DOH) for such chemicals, in potable water, have not been exceeded.

The significance of these findings is that while no buffer zone can absolutely guarantee that no herbicides will not be transported through it, buffers can function effectively to dilute and allow the natural degradation process--as fostered by sunlight and soil microorganisms--to function, whereby residues are reduced to levels that are not presently considered harmful to a sensitive and valued resource such as water. Buffer zones will also prevent applicators from inadvertently spraying directly into waterbodies or wetlands.

To protect potable water supplies presently in use, Staff believes that DOH's views should be accorded primacy; it is, after all, DOH's charge to protect human health, through protection of water supplies. Staff therefore recommends that the Commission adopt DOH's recommendation that a buffer zone of a minimum horizontal distance of 100 feet from any surface or ground water source in use as a potable water supply be established when herbicides are applied.

For other water resources, as stated in the FPEIS, Staff recommends the minimum widths advocated by NYSEG, except for herbicides specifically registered for use around water:

Aerial	100 feet ¹²
Stem-foliar	50 feet
Basal	30 feet
Cut-and-stump	30 feet

These distances are close to those practiced by both utilities. Recognizing the concerns of others, Staff recommends that the Commission direct both utilities to expand their respective herbicide mobility studies to investigate the efficacy of these buffers for Adirondack Park R/W, beginning in 1988. The utilities should also be required to submit amended plans describing the site characteristics which would cause R/W managers to increase these buffers.

Miscellaneous Issues

1. Cost of Alternative B

NMPC commented that Staff's 3.9% incremental costs of Alternative B over the utilities' plans "substantially understates" the actual cost increase, if implemented in its entirety. The FPEIS details how Staff arrived at the cost but NMPC has not offered its estimate of the cost increase, nor a reasoned critique of Staff's calculation. Therefore, NMPC's comment should be given little weight.

¹² This buffer zone would only be applied if the Commission rejected Staff's recommendation to ban aerial spraying in the park.

2. Herbicide Monitoring and Research

Both APA and DOL urge the Commission to require the utilities to conduct herbicide monitoring and research activities. APA suggests studies to test for herbicide residues in plants, soil, animals and water. Through ESEERCO, the utilities have recently completed Phase I of a research project on herbicide mobility and degradation on transmission R/W. However, Phase II (field study) is not being pursued vigorously by ESEERCO as ordered by the Commission. Both NYSEG and NMPC have done limited studies, primarily looking at the persistence and mobility of herbicide residues in soil. NYSEG studied a transmission R/W in the Adirondacks; and NMPC examined the nearby Volney-Marcy transmission line R/W.¹³ These studies do not directly address the efficacy of buffer zones near water resources. Contamination of water supplies appears to be the most feared impact of herbicide spraying, as perceived by the public. To fill this information void, Staff recommends that the Commission direct NYSEG and NMPC to initiate a study in 1988, approved by the Secretary, that will provide a factual background for analyzing buffer zone efficacy, in the park and elsewhere.

3. DOL's Adirondack R/W Review Group

Essentially, DOL is asking the Commission to organize the R/W review group. Obviously, such a group could only be formed if the other agencies and parties were agreeable to do so. The increase in Staff needed to organize and conduct meetings and collect data and the

¹³ Herbicides applied in both studies were triclopyr (GARLON), picloram and 2,4-D (TORDON 101).

cost of the monitoring program may be quite expensive. We believe that our recommendations are sufficient and provide the "extra measure of attention and respect" which the Commission called for in this proceeding.

4. Herbicide Notification

DOL asks for more stringent herbicide notification through direct mail, R/W posting, and newspaper notices. New rules and regulations for notice of impending pesticide application are currently being considered by DEC, with promulgation likely later this year, in response to the 1987 Lawn Care legislation. Therefore, Staff recommends that the Commission take no action on this topic at present, and that if stronger notice requirements are to be considered by the Commission, a factual basis be developed for their imposition by hearings open to all interested parties.

5. Distribution Lines

DOL recommended that the Commission proceed with policy guidelines for herbicide usage on distribution facilities since the same techniques are often used for both transmission and distribution R/W in the park. Staff supports this recommendation and will investigate this question further if the Commission so directs.

6. Alternative D

DOL also asked the Commission to consider a new Alternative D, which would phase out aerial and stem-foliar spraying while increasing the use of the more selective techniques (basal, cut & surface treat, and hand-cutting). Staff believes this recommendation has merit. Since aerial spraying is not likely to be used in the park

in the near future, policy emphasis should be placed on reducing non-selective applications. Staff's recommendations to limit the site conditions where stem-foliar spraying can be used will accomplish DOL's goal. To confirm that the stem-foliar spraying is decreasing, the Commission should direct the utilities to annually report on the acreage in the park treated by each technique.

Staff Recommendations

Staff recommends that the Commission approve the plans of NMPC and NYSEG as they pertain to the Adirondack Park, subject to the conditions described below. Further, both NMPC and NYSEG should be required to revise their long-range plans to incorporate these conditions and resubmit the revised plans to Secretary Kelliher by no later than July 31, 1988.

The recommended changes involve the technique selection guidelines of NYSEG¹⁴ and NMPC¹⁵ and additional environmental impact mitigation measures (described below). The overall goal is to reduce further the qualitatively significant adverse environmental effects of implementing the plans of the two companies, as described in the FPEIS, and as originally submitted for Commission approval. The changes manifest the extra attention and careful consideration sought in the Commission's April 20, 1983 Order and will accord with the conditions imposed in approving NMPC's plan outside the park.¹⁶

¹⁴ Shown in Appendix D of the FPEIS.

¹⁵ Shown in Appendix E of the FPEIS.

¹⁶ C. 27605. Order of March 30, 1988.

A. NMPC and NYSEG should be ordered to revise their plans in accordance with the following recommendations and to submit the revised plans for approval by the Secretary before July 31, 1988.

1. Aerial Spraying - The aerial application of herbicides by helicopter shall not be made in the Adirondack Park.
2. Stem-foliar Spraying - Stem-foliar spraying in the Adirondack Park shall be limited to sites with "dense" or "heavy" density of undesirable species, or to sites with "moderate" or "medium" density of undesirable species and accompanying densities of desirable species are only "scattered" or "light". Stem-foliar spraying shall be limited to sites where undesirable species average less than 10 feet tall and be done only when wind speeds are less than 10 mph.
3. Highway Corridors - Only herbicides or the timing of their application, which will avoid "brown-out" until after Labor Day shall be used with 100 feet of highway traffic corridors identified in the 1979 APA State Land Master Plan.
4. Desirable Species - Rubus spp. (blackberry, raspberry) shall be included on the list of desirable species inventoried for R/W vegetation management purposes and regularly reported to Staff when inventories are required.

5. Non-chemical Buffer Zones - Herbicides shall not be used within a minimum horizontal distance of 100 feet of a potable water supply or regulated wetland. Furthermore, the following buffer distances shall be used around other wetlands, perennial and intermittent streams and waterbodies:

<u>Herbicide Application Type</u>	<u>Minimum Buffer Zone Distance</u>
Stem-foliar	50 feet
Basal	30 feet
Cut-and-stump	30 feet

B. NMPC and NYSEG should be ordered to initiate a study during 1988 to determine the efficacy of herbicide buffer zones, in the park and elsewhere.

1. By September 15, 1988 the proposed Study Prospectus, Schedule for Progress and Research Protocols, as well as the short list of proposed consultants, shall be submitted for the Secretary's approval.
2. Semi-annual Progress Reports shall be submitted to Staff, and review meetings may be required at the Secretary's discretion.

C. NMPC and NYSEG should be ordered to report to the Secretary, by the end of each calendar year, the transmission R/W acreage (within the Adirondack Park) treated or maintained that year by each technique for controlling undesirable vegetation.

As a procedural courtesy and an educational aid, we further recommend that in addition to the Order, the Commission circulate this memorandum and its Appendices to all commenting parties.

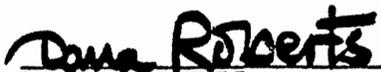
This memorandum has been reviewed with Steven Blow of Counsel's Office.

Respectfully submitted,



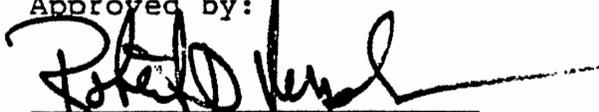
JAMES DE WAAL MALEFYT
Associate Aquatic and
Terrestrial Ecologist

Reviewed by:



DANA ROBERTS
Chief, Transmission Facilities
Planning and Certification Section

Approved by:



ROBERT D. VESSELS
Director

APPENDIX A

COMMENTS ON THE FINAL PEIS

William C. Bramble.....	A-1
Andrew C. Davis.....	A-2
Donald K. Marlowe.....	A-3
Mason Phelps.....	A-3
Adirondack Park Agency.....	A-4
NYS Department of Law.....	A-8
Niagara Mohawk Power Corporation.....	A-17
NYS Electric and Gas Corporation.....	A-21

September 7, 1985

200 Lindberg Ave.
W. Lafayette, IN 47906

John J. Kelliher, Secretary
New York Public Service Commission
3 Empire State Plaza
Albany, N.Y. 12223

Dear Mr. Kelliher:

I appreciate receiving a copy of the Final PEIS for treatment of transmission rights-of-way in the Adirondack Park. It certainly provides a complete analysis of the concerns involved.

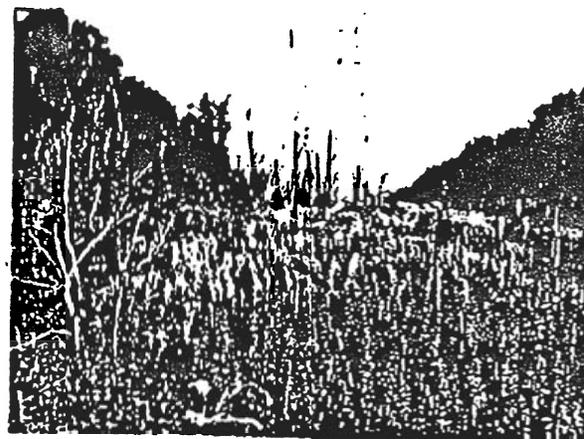
With a few important alterations, I believe that the utility guidelines will be adequate for vegetation management. Of course, the bottom line will be careful adherence to those guidelines, and good judgement in making management decisions. Plus careful but reasonable inspection of key areas.

Certainly, adequate buffer zones for streams and lakes will be important. We have used a handcut buffer zone, with no herbicides, of 50 feet on each side as minimum on Pennsylvania State Game-lands and find that to be adequate. However, in certain cases the actual zones have ended up as about 100 feet in width on each side of a trout stream to cover an important stream bottom bounded by steep slopes. It appears to be important to have some fluidity in the width of buffer zones to meet specific conditions, with 50 feet on each side as a minimum.

One further comment, on the question of blackberry as an undesirable or desirable right-of-way species. Blackberry is usually an important species on most established rights-of-way in New York and Pennsylvania. It is a desirable wildlife species, but is undesirable in dense thickets for transmission maintenance. We have therefore, devised an approach on a 180-foot right-of-way that eliminates blackberry from the wire zone, 70 feet-wide, under the wires while permitting it to remain on border zones, 60 feet-wide. The logistics were simple; a stem-foliage was used in the center wire zone and selective basal in the borders.

Sincerely,

W. C. Bramble
William C. Bramble
Forestry Consultant



Stream buffer zone
(dead line) treatment
to protect six-mile
Run. Zone is
66' on one side
of stream and 100'
on other side

ROW with wire
zone (W) in conifers,
logged forest,
and pine grass
after head-cut
herbicide treatment
Border zone (B)
in brushland after
selective application.

[Letter retyped because original failed to reproduce clearly, and discussed other topics entirely outside the content or coverage of the PEIS. Omissions indicated by " "]

Box 107-A Fall Clove Road
Delancey, New York 13752
(914) 676-1173

September 10, 1985

Mr. Dana Roberts
New York State
Dept. of Public Service
Transmission Section
#3 Empire State Plaza
Albany, New York 12223

Dear Mr. Roberts,

.
.
.

I'd like to offer a couple of comments on the P.E.I.S. for Adirondack R/W:

- 1.) I dislike the use of the terms "brush" and "brushlands", since these are ecologically non-descript terms. What most people call "brush" is usually a mixture of shrub and tree species, some species of which would, upon identification, probably be deemed desirable vegetation, whatever the land use might be;
- 2.) Niagara Mohawk's policy of discrimination against "brambles" (Rubus spp.) would seem to be a self-justifying reason to use broadscale herbicide treatments, rather than selective treatments, which require more intensive applicator training and 'legwork' during treatment;
- 3.) The root-stocks, as well as the seeds of Rubus spp., may remain dormant in the soil during prolonged periods of shading.

Sincerely,

Andrew C. Davis

- A2 -

[Original holographic letter would not reproduce evenly, and accordingly is retyped in its entirety.]

July 17, 1985

Department of Public Services
State of New York
ATTN: Dana Roberts
3 Empire State Plaza
Albany, N.Y. 12223

RE: PEI Statement (final) Adirondack Park

Dear Sir:

Please be advised that I am in receipt of furnished copy of referenced publication. Thank you.

From what I have reviewed of referenced publication, appears to be good footing to major matters of concern.

I will recommend through Tom Hall of Region 5, DEC, that an equal (not- less) of this publication (regulation) be utilized for like standards needed outside of the Adirondack Park, as is our property which is located at the outer N-E corner of the Park line, Malone and Belmont line area.

A lot of cost and hard work has gone into this effort and same should be utilized to the fullest by all means that can benefit from same. All responsible in this effort are to be commended for a job well done.

Very truly yours,


Donald R. Harlowe
R.D. # 1
Malone, N.Y. 12953

August 15, 1985

Dear Mr. Malafyt:

Thank you very much for sending me a copy of the Programmatic EIS for ROW Management in the Adirondack Park. We have found it to be very interesting and helpful.

I noted a mild discrepancy between Table 3 where the acres of ROW are listed as 5,855 and Table 14 where the number is 5,830.

I was interested to see that the cut-and-stump method used the least herbicide per acre (Table 4), avoided the most shrub and ground cover (Table 5), had the least adverse visual effect (Table 9) and cost the least (Table 14) of all the chemical treatments compared. In view of this why isn't cut-and-stump used in preference to all of the other chemical techniques?

If cut-and-stump were the only chemical technique used Table 14 would be shortened considerably and yield lower costs for the Utility Plan and Alternative B (see Table 14¹ included).

Another comparison which could be made would be to use the costs/year after the system has stabilized(?) (say in 1997), altho it really has not stabilized since the cut-and-stems/acre would presumably decrease below 1000 together with the cost/acre while the cut-and-trim stems/acre would presumably continue to increase beyond 3387 together with the cost/acre. If, however one assumes stability one could obtain Table 14¹ showing the costs/year from 1997 on.

Perhaps you will find this useful. I hope so.

I would appreciate it very much if you would tell me how I might obtain a copy of your reference ECI (1984) so that I might see the data which led to the equations used in Table 14.

Thank you very much and thank you again for sending the EIS.

Sincerely,

Mason Phelps
Star Route Box 308
Wendell, MA 01379

Table 14¹

Utility Plan	1981	1989	1997	Average cost/acre/year	Total Annual cost
5540A Cut-and-stump	\$168	146	113	17.79	98,557
290A Cut-and-trim	\$110	186	235	22.12	6,415
400A Disposal	\$105	105	105	13.12	5,248
					<u>110,220</u>
Alternative B					
5030A Cut-and-stump	\$168	146	113	17.79	89,484
800A Cut-and-trim	\$110	186	235	22.12	17,696
630A Disposal	\$105	105	105	13.12	8,266
					<u>115,446</u>

Table 14¹¹

Utility Plan				
5540A Cut-and-stump		\$113	14.13	78,253
290A Cut-and-trim		\$235	29.38	8,519
400A Disposal		\$105	13.13	5,258
				<u>92,030</u>
Alternative B				
5030A Cut-and-stump		\$113	14.13	71,074
800A Cut-and-trim		\$235	29.38	23,504
630A Disposal		\$105	13.13	8,272
				<u>102,850</u>



State of New York Executive Department
Adirondack Park Agency

Herman F. Cole, Jr.
Chairman

Thomas A. Masewitz
Executive Director

July 31, 1985

Mr. John J. Kelliher
Secretary
Public Service Commission
Three Empire State Plaza
Albany, NY 12223

Dear Secretary Kelliher:

Re: Case 27605
Comments on Final Programmatic EIS
Transmission Right-of-Way Management Plans of
New York State Electric and Gas Corporation and
Niagara Mohawk Power Corporation in the Adirondack Park

The Adirondack Park Agency staff very much appreciates the opportunity to comment on the above FPETS. We regret that, due to numerous executive and program staff changes at the time it was released, we were unable to comment on the draft.

At the outset, please convey our thanks to the Commission for instituting this proceeding in April 1983. The Commission's recognition at that time that the Adirondack Park warranted "an extra measure of attention and respect" is consistent with the high regard in which it has held the Park and the State Forest Preserve in the past.

¹ See, e.g., Case 70126, Power Authority of the State of New York, Marcy-South 345 kV Transmission Line, Order of January 30, 1985, mimeo at pp. 49-56; Case 26529, Power Authority of the State of New York, Massena-Marcy 765 kV Transmission Line, Order Remanding Proceedings, October 24, 1975; Order of June 21, 1977, mimeo at pp. 6-10; Case 27107 New York State Electric and Gas Corporation, Republic to Barton Brook 115 kV Transmission Facility, Order of June 8, 1978, mimeo at pp. 9-14.

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It bears repeating that in passing the Adirondack Park Agency Act the Legislature has declared that "optimum overall conservation, protection, preservation, development and use of the unique scenic, aesthetic, wildlife, recreational, open space, historic, ecological and natural resources of the Adirondack park" should be insured. (Executive Law, §801). It has also recognized "the major state interest" in the conservation, use and development of Park resources. (Id.)

SEQR's directive that agencies use "all practicable means" to realize its policies and goals, and "act and choose alternatives which, consistent with social, economic and other essential considerations, to the maximum extent practicable, minimize or avoid adverse environmental effects, including effects revealed in the environmental impact statement process" in our view reinforces the "essential considerations" set forth in §801 (ECL 8-0109[1]).

Finally, "protection of environmental values" and "minimizing the risk to human health and the environment" are an integral part of State energy policy, which binds all agencies (Energy Law, §§3-101[1]; 3-103; L. 1976, c. 819, §1).

In light of the foregoing, and assuming the Commission will endorse the staff recommendation of Alternative B, the Adirondack Park Agency staff respectfully asks that the Commission give serious consideration to ordering adherence to Alternative A in the most sensitive parts of rights-of-way, especially near wetlands, streams or any open water, intermittent streams, public or private water supplies, wildlife habitats, and in any other area where the risk of destruction of valuable non-target species of flora and fauna or of herbicides reaching groundwater is high. Alternative A should also be used in visually sensitive parts of rights-of-way. Elsewhere in the rights-of-way, we ask that the seven measures constituting Alternative B be made much more precise. We ask that Alternative C be given consideration at least as an experiment. We ask that the Commission consider the environmental non-logic of applying the conclusions of the FPEIS only to transmission lines, especially when it has, as the Preface implicitly recognizes (p. xii), legal authority to apply them to distribution lines as well (see Public Service Law, §§5[1][b],(d); 5[2]; 65[1]; 66[1],[2]). Finally, we ask that the Commission give serious consideration to addressing "the lack of herbicide monitoring programs and herbicide residue research in the state, or in an Adirondack context" (FPEIS Preface, p. xi) as a part of its action with respect to this FPEIS and in this entire case.

Our specific comments are as follows:

1. Page 7, carryover 1: The Adirondack Park Agency Act was enacted in 1971 (L. 1971, c. 706), not 1973; it was the Adirondack Park Land Use and Development Plan (defined in §802[29]) that was enacted in 1973 as part of amendments thereto (L. 1973, c. 348, §1). We don't know what is meant by the statement that the APA was thereby transformed into "a distinct and cohesive government entity," perhaps the Adirondack Park is meant.

The Agency, as you know, has certain environmental assessment and permitting powers with respect to new land use and development in the Park. If a "project" listed in §810 of our organic act requires a permit from the Agency, it may attach such conditions to its approval (including conditions with respect to the use of pesticides) as are within the proper exercise of the police power (§809[13]). Similar machinery is contained in Agency regulations implementing the Wild, Scenic and Recreational Rivers System Act (9 NYCRR Part 577). The Agency also exercises jurisdiction which allows the control of the use of pesticides in, or so as to run into, freshwater wetlands under regulations implementing the Freshwater Wetlands Act (9 NYCRR Part 578). It is unlikely, except in the case of wetlands on rights-of-way, that our own regulatory powers reach the use of herbicides as assessed in the FPEIS due to the last sentence in the definition of "major public utility use" contained in §802[33] of the APA Act (regulatory counterpart quoted on pp. 16-17 of FPEIS).
2. Pages 24-26: Picloram; 2,4-D; 2,4-DP; dicamba, triclopyr, ammonium sulfamate and fosamine ammonium are mentioned as examples of herbicides used in aerial foliar, stem-foliar, and basal application. We are enclosing photocopies of data on, inter alia, effects on non-target species, persistence, and toxicity from Primalta, Ecological Effects of Pesticides on Non-Target Species (Washington, U.S. Government Printing Office, 1971, pp. 87 [ammate]; 93, 96-100 [2,4-D]; 102 [dicamba]; 118-119 [picloram]; 121-123 [triclopyr]) and from Weed Science Society of America, Herbicide Handbook (Champaign, IL [Fifth Ed., 1983], pp. 22-25 [ammonium sulfamate]; 128-134 [2,4-D]; 151-156 [dicamba]; 253-258 [fosamine ammonium]; 378-382 [picloram]; 467-470 [triclopyr]).

3. Page 29, bottom ¶: Staff's observation of the "sloppy work practices" detailed, as well as of the "80 to 90% destruction of desirable cover" (which presumably means destruction of other resources as well) points out, as does the Preface (p. xi) the lack of monitoring of herbicide application. Obviously, the most environmentally sound right-of-way management program which could be put on paper can be made wholly meaningless by careless field technique. We urge the Commission to give attention to this, potentially the weakest link in the chain of protection measures under consideration.
4. Page 40, middle ¶: As the FPEIS recognizes, "[l]ittle is known...about the combined effects of herbicides." If those effects are synergistic, serious doubt is cast on the value of any FPEIS analysis based on the application of one herbicide with regard to sites where combinations are used.
5. Page 42, last ¶: Here the FPEIS recognizes that the cool soil, and waterlogged and anaerobic conditions prevalent in the Adirondacks will slow down degradation rates of herbicides such as triclopyr and picloram, but states that the extent such soils act as "herbicide sinks" is unknown. Again we say, if the essential information (like synergism, like monitoring data) is unknown, is the Park being accorded the "extra measure of attention and respect" the Commission has stated it warrants?
6. Pages 42-43: The FPEIS suggests that the soil concentration of picloram ("probably the most persistent herbicide described in the right-of-way management plans" [Emphasis added]) may be reduced and its movement slowed by adsorption. Is not adsorption affected by the fact picloram salt formations are water soluble, thus not readily adsorbed? The FPEIS does recognize picloram (like dicamba) as mobile, citing here a study showing movement through 30- to 40-foot buffer zones. (See also p. 50, last paragraph, characterizing picloram as "among the more mobile herbicides.") Is not picloram currently undergoing the EPA reregistration process?
7. Table 7, page 44; page 47: Another great unknown, which should be added to those already mentioned, is the extent to which herbicides will reach, and contaminate, groundwater. Groundwater appears not to have been taken into account in Table 7. The FPEIS cites a Massachusetts study showing lateral movement of picloram "above fragipans and bedrock with possible contamination of nearby streams..."
8. Page 48, ¶4: No question whether this paragraph isn't overstated, as to the best of our knowledge EPA very much continues to study routes of herbicide movement.
9. Page 49: Soil erosion is characterized as "probably the major route of herbicide movement," and leaching is recognized as a cause of movement to non-target areas "especially when the water table is close to the surface." Both routes are pertinent to our case for "tightening" the seven parts of Alternative B through, among others, use of larger buffer zones. See comment 18, infra.
10. Page 50, ¶3: Toxicity is related to streamflow here, but nowhere in the FPEIS is there suggested any measurement of site sensitivity based on flow. Are utilities ever required to measure it? Moreover, there is no justification presented for the last sentence.
11. Page 53: Impacts on non-target flora and fauna are not discussed, merely resulting concentrations. Only two herbicides are discussed. The statement that 2,4-D is generally applied with other herbicides should be read with the earlier statement that the synergistic effects of herbicides applied in combination is unknown.
12. Table 10, Page 72: Dicamba, triclopyr and fosamine ammonium are not dealt with (see comment 2, supra). See the enclosures for more detailed data on persistence and translocation.
13. Page 75, last ¶; Page 76, carryover ¶: In the Adirondacks, "unexpected heavy rain" is more a normal than abnormal circumstance. Amdon 101, Garlon 4, and Tordon 101R labels all forbid application where surface water from treated areas can run off into streams. We will not repeat, but will refer to comment 3, supra, to point out the likely unrealistic expectations implicit herein with respect to the diligence of the applicator.
14. Page 76, first full ¶: We seriously question the wording here. We believe there are no available long-term studies for most of the herbicides, and of course many of those used are new.

15. Page 78, first full ¶: What does NMPC consider a "short-lived" herbicide? Picloram can have a half-life of up to thirteen months. When and how does NMPC decide to designate a non-chemical buffer zone?
16. Page 82, Table 12, p. 83: It is readily apparent the very concept of buffer zones is based on inadequate data. In addition to the recognition here that how their widths were established "is not stated in the plans and otherwise are poorly understood," and that "[t]here is no definitive information indicating whether the different buffer zones... are adequate to protect water resources or comply with Federal and State regulations," Table 12 vividly shows BPA's buffers to be in marked contrast to NMPC's and NYSEG's. See also p. 122 ("At the present time, the DPS has no resources committed to verify whether or not the lack of buffer zones or presence of different buffer zones prevents herbicide applications from contaminating water resources. Conversely, none of the utilities, to our knowledge, have any information proving that the different buffer zones are adequate to prevent surface or groundwater contamination."). Finally, we suggest the Table 12 buffers also apply to wetlands (as defined in ECL Article 24), intermittent streams, public and private water supplies, and identified wildlife and plant habitats. Other considerations for increasing buffers might include slopes, the presence of soils with low organic matter or leachable, disturbed, or shallow soils, high water table, soil erodability, and persistence of the herbicide and its adsorption and leaching capacity.
17. Pages 88-92: We don't need to repeat the manifest environmental superiority of Alternative A. Clearly Alternative A complies with ECL 8-0109(1), unless some "social, economic or other essential consideration" prevents its being chosen.
18. Pages 92-96: Assuming the Commission will endorse the staff recommendation -- and not conceding the correctness of that choice -- our concern is for its vagueness. What are "light" or "moderate" densities of undesirable vegetation (Item 1)? For that matter, what is "undesirable" vegetation? The same criticism is leveled at Item 2, with the additional comment that the phrase "wherever practical" is wholly devoid of meaning. Does "avoid" (Item 5) mean "not allow to occur," or something less than that? Comment 16, *supra*, points out that the FPEIS acknowledges the total lack of data with respect to the adequacy of buffer zones. Why should not the Bonneville Power Administration buffers be adopted, at the very minimum?

19. Pages 96-98: Alternative C, in our view, merits Commission endorsement, at least on an experimental basis. Even conceding the lack of data on economic viability (and transferability to the Adirondacks), it is apparent that Alternative C is as environmentally benign as Alternative A, requires no large capital investment, and produced "satisfied" crews, at least in West Virginia. It strikes us that it offers at least the promise of a remarkably apt way to deal with adjoining landowners who object to herbicide use. They could be offered the option of maintaining right-of-way for avoided cost, if they could put together, in concert with others of a similar view, a proposal to maintain a reasonable length. Perhaps they would also be induced to sign a negligence release. Why should "others" "logically" supply the answers admittedly lacking (p. 97)? Why is it not more in the tradition of the Commission to design at least an experiment in cooperation and consultation with the utilities, and with appropriate publicity so the public is aware and will come forward, to seek those answers?
20. Page 112: We believe that Mr. Erman's conclusion -- that on a per kilowatt hour basis, the cost increase resulting from the substitution of manual cutting for herbicidal techniques is "miniscule" -- is valid. The Malefyte-Macks analysis provided per acre vegetative management cost information for manual and other techniques. These cost factors, when combined with financial statistics reported by DPS, provided an adequate basis for Mr. Erman's conclusion.

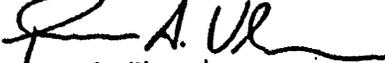
In closing, and as stated at the outset, we see no logical legal or environmental distinction between the environmental impacts of managing the rights-of-way of transmission lines 34 kV and above and those of managing the rights-of-way of distribution lines. We urge the Commission to consider applying the action it takes with respect to the FPEIS to distribution lines.

Finally, while the conclusions they draw may differ, we believe all concerned will agree on the serious lack of data with respect to long-term monitoring of the effects of herbicide use, on rights-of-way in the Adirondacks and elsewhere (see Preface, p. xi). The Public Service Commission of New York State has an admirable record of environmental concern in the area of herbicides, beginning with Opinion 80-15 and continuing through the present proceeding. If there is one common theme to it all, it is that herbicides be used on a site-specific basis, and only after careful inventory and analysis of the situation which must be addressed, and of the means to be employed. It would be a reasonable and moderate analytic extension of that history to ask those who seek to use the herbicides to monitor and document their long-term and their site-specific effects. We urge the Commission to so require.

Mr. John J. Kelliher
July 30, 1985
Page 8

Thank you for the opportunity to comment.

Sincerely,



Thomas A. Ulasewicz
Executive Director

TAU:kdt

Enclosures

cc: Agency Members and Designees



STATE OF NEW YORK
DEPARTMENT OF LAW
ALBANY, NY 12224

ROBERT ABRAHAM
Attorney General

JAMES A. SEVENEY
Assistant Attorney General in Charge
Environmental Protection Bureau

VAL E. WASHINGTON
Deputy Bureau Chief
Environmental Protection Bureau

Telephone: (518) 474-2432

August 12, 1985

Mr. William Barnes
Deputy Secretary
Public Service Commission
Empire State Plaza
Agency Building 3
Albany, New York 12223

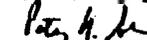
Re: Revisions to EPB Comments on PEIS on R/W Management

Dear Mr. Barnes:

In our haste to meet the August 9, 1985 deadline you required for our submission of comments on the NYS PSC PEIS on Transmission Right-of-Way Management Plans in the Adirondack Park, we neglected to include our conclusion page and make corrections of some typographical and format items. I have enclosed a corrected version and copies thereof to replace the copy provided you on August 9. I have also enclosed a copy of the Malafyt and Macks paper on which we relied in case your staff may not have a copy of it.

Thank you again for the opportunity to address these issues.

Sincerely yours,


PETER H. SKINNER P.E.
Director, Scientific Staff

Encl.

- AC -

COMMENTS
TO THE NEW YORK STATE DEPARTMENT OF
PUBLIC SERVICE

BY ROBERT ABRAMS
ATTORNEY GENERAL OF THE STATE OF NEW YORK

On The
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT
Transmission Right-of-Way Management Plans
In the Adirondack Park

August 9, 1985
(Corrected Version)

PETER SPINNER, P.E.
DAVID WOOLEY
Assistant Attorney General
RICHARD KUPFERMAN
LIZA TREMBLY

Comments to NYSPSC R/W Maintenance
PEIS for Adirondack Park

Introduction

The Environmental Protection Bureau of the New York State Attorney General's Office appreciates the opportunity to comment on the Final Programmatic Environmental Impact Statement ("PEIS") on the transmission right of way maintenance plans in the Adirondack Park.

In these comments we present a number of general proposals which could ensure continued improvement in methods of right of way maintenance. In addition to the general policy proposals, we also submit for your consideration a new plan, Alternative D, which encourages incremental reduction of broadcast herbicide application, substitution of other equally effective vegetative control techniques and landowner involvement in R/W maintenance. We believe that our approach will reduce the potential for adverse environmental effects of pesticide drift and over-application which results from aerial and stem-foliar application techniques.

We are in agreement with many of the opinions stated by the PSC in the PEIS and commend the PSC for its fine record of leadership in the regulation of right of way maintenance practices. We request that the Commission review our proposal and use its authority under Public Service Law Article 4, § 66(2) and Article 4 § 66(10) to initiate the proposed modifications suggested herein.¹

1. Subsection (2) grants the Commission the power to:

" . . . investigate the methods employed
by such persons, corporations . . .

Formation of the Adirondack Right of Way
Review Group ("AR/WRG")

We propose that the PSC convene a task group composed of representatives from the Public Service Commission, Adirondack Park Agency, Department of Environmental Conservation, Department of Health and concerned private citizens and/or groups be formed. This group would review and provide guidance on various R/W management techniques, make recommendations to the PSC for further initiatives, and review site specific data resulting from the suggested monitoring plan. In addition, this group would supervise the demonstration of Alternative C activities and generally oversee the implementation of our plan Alternative D set forth below.

Utility R/W Management Plan Supervision

The PSC staff proposes that the utility project manager choose "special management areas" using his own discretion. On page three of the PEIS it states:

"These [R/W] maintenance activities, are presently left to the managerial province of each utility and are not subject to PSC approval."

We disagree with this approach and it is our view that until experience is garnered with Alternative D, AR/WRG and the utility project manager should work together to designate "sensitive

(Footnote 1 Cont.)

distributing or supplying gas or electricity . . . have the power to order such reasonable improvements as will be preserve the public interest, preserve the public health . . ." (Emphasis added.)

environment" zones. Final determination and enforcement of the special considerations required for the maintenance of these zones should reside with the PSC, based on the advice and consent of the review group. Utilities would target land to be treated in 1986 and AR/WRG would then inspect the area and propose changes in the maintenance classifications as needed. This process would then be repeated annually until the remainder of the land in the Park is classified.

Coverage of Distribution Lines

The preface of the PEIS discusses the fact that "the Commission has not yet adopted any policy statements or rules regarding the environmental impacts of distribution R/W maintenance" (emphasis added). It also states, however, that "measures that may be taken to prevent adverse impacts from the use of herbicides on transmission R/W could be applied to distribution R/W management, should the Commission consider it necessary to do so".

We believe that there should be definite policy guidance articulated by the PSC concerning distribution lines under 34 KV. The Attorney General received numerous complaints about visual impacts and health concerns due to this stem foliar distribution line applications in 1984. It is likely these complaints will recur after spraying unless specific guidelines are set forth and implemented by the utilities.

Notice Requirements

It is our view that current notice requirements prior to or after herbicide application need to be supplemented to protect

hikers, berry pickers, livestock owners and adjacent landowners utilizing R/Ws.

16 NYCRR § 84.2(d) states that:

"The management plan should describe landowner or land-user notification procedures and restrictions concerning company R/W management plans and practices."

Environmental Conservation Law § 33-0905 states that:

"Every certified applicator shall, prior to the application of a pesticide within or on the premises of a dwelling, supply the occupants therein with a written copy of the information, including any warnings, contained on the label of the pesticide to be applied."

We propose that the PSC go beyond this statutory mandate for notice only to landowners whose property is to be sprayed. We would like the PSC to protect all people in the affected area by requiring that notice be posted before aerial and stem foliar application. Certified letters containing the approximate times and locations of herbicide spraying should also be sent to adjacent landowners along all R/Ws that are to undergo treatment. Additionally, the utilities should be required to publish notices in area newspapers.

Implementation of a Monitoring Plan

As noted in the PEIS in the preface, there is a "lack of herbicide monitoring programs and herbicide residue research in the State, or in the Adirondack context". We propose that utilities, in consultation with AR/WRG, implement herbicide monitoring programs. AR/WRG should determine the locations and protocols for the monitoring and other study activities.

Article 4 § 66(10) makes clear that the PSC has the authority to require utility corporations to submit to fill informative gaps. Utilities should be compelled under the provisions of Public Service Law Article 4, § 66(2) to fund such studies to be performed by non-affiliated or economically disinterested facilities such as the staffs in the New York State University System. Studies and monitoring activities could also be conducted in part by interested conservation groups located in the Park. For example, we have been informed that the High Peaks Chapter of the Audubon Society has expressed an interest in doing some of this work for a nominal fee (personal conversation with Dr. Peter Cook of Saratoga County, New York).

We recommend that specific types of wildlife surveys be performed on R/W maintained land by herbicide methods and cut-trim techniques. Comparative data could then be acquired for each of the application techniques to determine the long and short term effects on wildlife. It is suggested that the following data be collected.

- a. Plant specimens to ascertain existence of chemical residues.
- b. Soil tests at various depths and especially to track herbicide run off transport.
- c. Water tests to detect possible contamination by herbicides in ground water.
- d. Animal studies - pathological examinations of dead animals found in R/W areas - to determine impact of herbicides on wildlife.

Impact Assessment of Herbicides

As stated on page 40 of the PEIS, "little is known, however, about the combined effects of herbicides". Until study data

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quantifying unknowns such as synergism, additive effects and antagonism are available, application restrictions on herbicide mixtures should be considered.

Also, we request that consideration be given to adopting an approach which would require the utilities to submit to the AR/WRG for their evaluation alternative chemicals that could be used that would better achieve the PSC objectives for vegetative management plans.

In addition, we request that the Commission staff thoroughly review the scientific literature on the allowable uses and application procedures for the chemical Tordon, 2,4-D, and Picloram (i.e., Tordon). We have submitted a reference list [affixed] that should also be considered in that reassessment process. PSC should submit their review to AR/WRG concerning each herbicide and how they should be used for each specific application procedure.

We justify this request on two grounds: (1) as stated on page 43 of the PEIS, one of these chemicals, picloram, is very persistent in both soil and water; and (2) we have reviewed the scientific literature dealing with the carcinogenic effects of picloram and we are not satisfied that widespread use of picloram is safe.

For example, on February 8, 1982, Dr. Ruth Shear compiled a study for the National Cancer Institute dealing with the adverse effects of picloram, 2,4-D on the human population. She concluded that humans exposed to picloram after hand or aerial

spraying, or through contaminated drinking water, showed detrimental physical symptoms and deterioration of mental facilities. Also, poisonings from 2,4-D have been documented among forestry workers caught in the drift of aerial spray and among people drinking from a contaminated spring.

"2,4-D has been shown to cause point mutations in animal cells, chromosome damage in human lymphocytes, as well as in mouse bone marrow cells. DNA damage which mimics the effect of ionizing radiation, and stimulation of cell division in non-dividing muscle cells. The primary use of testing for ability to cause mutations or DNA damage at present is a pre-screen for likely carcinogens. Mutation in germ cells can result in a loss of fertility, early death of the embryo, malformation and malfunction which may lead to death in the fetal or neonatal period, and hereditary diseases which limit physical or mental function."

This excerpt from Dr. Shearer's study, along with other documented research, describes a wide range of deleterious effects on people and on the environment.

Buffer Zones

On page 122, item #37 under "Responses to New York State Electric and Gas Corporation", states that "presently the DPS has no resources committed to verify whether or not the lack of buffer zones prevents herbicide applications from contaminating water resources". Also, there is a wide range of values suggested for the width of buffer zones as stated in this section by DOH, Nova Scotia Power Corporation and BDA. It is apparent from these statements, and the recommendations on page 123 in the PEIS, that there is a need for site and application specific guidelines when determining buffer zone parameters.

We urge the Commission to require under PSC Article 4, § 66(10) the utilities to provide data that justify the buffer zones in use. Furthermore, we feel it is essential to consider the specific characteristics of each site, including but not limited to: slope, type of soil, erodibility (which is indicative of the potential for run off), presence of wildlife and existence of aquifers.

Alternative C

We would like the Commission, the PSC staff and AR/WRG to further consider the Alternative C methodology which would place increased reliance on landowner participation and the development of small scale local crews that utilize cut and trim techniques. We believe implementation of this management method would reduce costs, fuel use, and exposure risks, and would aid the local economy.²

On pages 96-97, the PEIS discusses the PSC staff evaluation of Alternative C and refers to the Wooley report conducted in West Virginia. PSC staff states that this "project did not generate enough data which reliable cost predictions could be made". We agree but believe such data can and should be generated through implementation of pilot studies on Adirondack Park R/Ws and subsequent AR/WRG assessment.

The West Virginia demonstration project employed a three-man crew which cleared 4.27 miles of transmission line right-of-way

2. David R. Wooley, Report of Alternative Methods of Power Line Right-of-Way Maintenance (1981).

and paid \$150 per acre for the 36 acres they managed. At \$150 per acre, the crew earned \$17.10 per man hour for this section. Calculated instead at \$10 per worker-hour, the crew averaged \$118.60 an acre or a saving of \$31.40 an acre, as compared to the cost of the Appalachian Power Company's ("APCO") spraying program. We have no reason to believe that these statistics would not also apply to our Alternative C situations in New York State. Utilities, in consultation with the AR/WRG, could set up demonstration projects within the park for the purpose of studying and encouraging this alternative.

We have compared the costs found in "A Summary Of Herbicide Use For Vegetation Management On Electric Transmission R/W By The Investor-owned Electric Utilities Of New York State From 1978 to 1982" by Malofyt and Macks with those of the West Virginia study. In 1981, the cut and trim method employed by New York State utilities was priced at \$283/acre. In the West Virginia demonstration project Alternative C cost \$150/acre, roughly one half of the changes by New York utilities. The encouragement of landowner or small scale, locally based commercial crews could therefore reduce herbicide use, reduce maintenance costs and enhance the local economy.

Alternative D

We ask the Commission to consider one alternative in addition to those described in the PEIS.

We suggest the utilities adopt a five-year R/W management plan which reduces reliance on herbicide based vegetative

management technologies (especially broadcast). The plan could be initiated in 1986 and be reviewed annually with a report in 1990. The objectives of this plan are:

- 1) reduction of the reliance on broadcast herbicide applications;
- 2) maximization of employment opportunities, within the Adirondack Park;
- 3) encouragement of low growing stable plant communities, natural buffers compatible with sensitive areas (wetlands, streams, open water, water supplies, wildlife habitation, any other area where there is a high indication of probable destruction of significant non-target species of flora and fauna or of infiltration into groundwater);
- 4) management of the R/W in harmony with multiple use practices; specifically, industrial, residential, agricultural and wildlife uses.

To meet these objectives, we feel it is essential to incrementally phase out the stem-foliar (broadcast) application method which is currently the most widely used method of application. The plan calls for expanded use of basal and cut-and-stump applications and manual non-herbicide techniques. This plan was developed recognizing the following observations about the stem-foliar method.

- PEIS page 29 states: "examination of particular sites revealed 80% to 90% destruction of desirable cover" because of sloppy work practices.
- Our view is that stem-foliar techniques are most likely to result in overapplication due to the temptation of applicators to spray longer distances than recommended in order to save effort and time.
- Page 35 of the PEIS states "stem foliar spraying has the potential for producing the greatest impact on wildlife of all the management techniques".
- Page 42 of the PEIS infers that stem foliar application creates ideal seed bed for taller growing trees. Again, this is contrary to good R/W management objectives.

- Basal treatments are selective in application and therefore minimizes non-target kills and amount of herbicide used.
- Basal treatments do not present potential drift problems associated with both aerial and stem foliar techniques.
- PEIS page 31 states, in reference to basal techniques, that "this method best preserves ground cover".

We recommend that the PSC require the utilities to supply funding to be provided to universities located within the Adirondack Park to collect data and compare the effectiveness of all the R/W maintenance techniques. Each consecutive year the data will be analyzed and the Alternative D management plan could be refined. Considerations should include: environmental impacts, economic costs and impacts, effectiveness of vegetation control, local labor impacts, etc.

Tables A and B are based on the information found on Table 14, "Costs of R/W management program in the Adirondacks", contained on pages 101 and 102 of the PEIS. In general we endorse the staff plan as preferable to the one proposed by the utilities because it substantially reduces the acreage to be treated by stem-foliar application. Recognizing the utilities experience in this area, however, we determined the 1986 base case as a compromise between the proposed acreage percentage values of the utility plan and Alternative B, the staff modified utility plan.

TABLE A

AMOUNTS OF PROPOSED ACREAGE TO BE TREATED BY
THE VARIOUS VEGETATIVE MANAGEMENT TECHNIQUES
FOR THE FISCAL YEAR 1986.

<u>Vegetation Control</u>	<u>Utility</u>	<u>Staff Modification</u>	<u>AG Base-case for 1986</u>
aerial-foliar	7%	3%	4%
stem-foliar	50%	18%	34%
cut and stump	25%	32%	29%
Basal	13%	33%	24%
cut-and-trim	5%	14%	9%

We see no reason to change the relative reliance on aerial and cut-and-trim methods under consideration by the PSC throughout the duration of our five year plan since the acreage involved is not great. The public will be more fully protected if, prior to herbicide application by aerial and stem-foliar methods, on-foot land reconnoitering is done to ensure avoidance of running and standing water bodies.

Table B, herein depicts an alternative R/W vegetation management plan which we feel is achievable and best harmonizes the objectives we support. Beginning in 1986 where the base percentages are established, the stem-foliar technique makes up 34% of total treated acreage. The reliance on this method will be phased out incrementally over a 3 year period by about 11% per year. Substitution of an equal quantity of basal application and cut and stump techniques make up the difference in acreage.

Implementation of Alternative C activities require willing landowners and small work crews made up of local persons contracting with the utility. An example of the success of this

approach in New York State has already been demonstrated by a group of concerned landowners on a R/W outside Cambridge, New York. The availability of willing landowners can be augmented by the utility sending out certified letters explaining the landowner management and compensation option. Assemblage of small non-landowner work crews can be facilitated through state and federal employment training and referral programs. Based on these approaches, we believe that by 1989 approximately 10 percent of the R/W needing treatment annually (75-100 acres), can be managed in this way.

AR/WRG could also develop incentives that would further encourage utility contractors to use non-herbicide vegetation management techniques to make up for the lack of landowner participation. The percentages assigned for Alternative C represent our best estimate of willing landowner availability. Reliance on this R/W maintenance method can be increased annually to the extent feasible, perhaps in excess of our projections. A summary of percentages associated with our proposed Alternative D is depicted in Table B.

	<u>ALTERNATIVE D</u> <u>TABLE B (acreage percentages)</u>				
	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
aerial foliar	4%	4%	4%	4%	Report Due
stem-foliar	34%	23%	12%	0%	Report Due
Basal	29%	33%	36%	38%	Report Due
cut-and-stump	24%	29%	34%	39%	Report Due
cut-and-trim	9%	9%	9%	9%	Report Due
Alternative C	0%	2%	5%	10%	Report Due

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CONCLUSIONS

We appreciate the opportunity to transmit our concerns about the PEIS on "Transmission Right-of-Way Management Plans for the Adirondack Park" published by New York State Department of Public Service. We believe that our proposed R/W maintenance plan set forth in Alternative D represents an affordable and feasible program to reduce reliance on herbicide application techniques we feel present the greatest risk of avoidable adverse impacts. We also propose formation of a task group, AR/WRG, which will oversee implementation of any maintenance program adopted by the PSC and the utilities and will provide a valuable professional and local perspective. Finally, we recommend a series of studies to assure that R/W maintenance activities afford the best protection to the environment while stimulating local employment.

Although our Alternative D proposes phase-out of most of the herbicide application methods we find objectionable, 81% of the acreage managed under our proposed program will still be based at least in part on application of herbicides. Our proposal assumes that such applications will not pose significant risk to humans or faunal and floral resources in the Park. In order to assure that this assumption is defensible, we recommend that the PSC work with APA staff to undertake site and chemical specific analyses to determine whether the basal and cut-and-stump methods are safe.

Reference List

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July 31, 1985

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U.S. Environmental Protection Agency "Risk Assessment on 2,4,5-T" (July, 1981).

Hon. John J. Kelliher
Secretary
New York State Department of
Public Service
Three Empire State Plaza
Albany, New York 12223

Re: CASE 27605 - The Role of Herbicides in
Managing Vegetation on Electric
Transmission Rights-of-Way

Dear Secretary Kelliher:

Niagara Mohawk Power Corporation is pleased to render comments on the Final Programmatic Environmental Impact Statement for Transmission Right-of-Way Management Plans in the Adirondack Park (FPEIS).

Niagara Mohawk is an investor-owned utility serving an area of 24,000 square miles and a population of 3,500,000 people in Central and Upstate New York. Electrical service is provided to approximately 1,350,000 customers, including residential, commercial and industrial, in 37 counties and 669 cities, towns and villages.

Electric service is provided to Niagara Mohawk's customers via 124,000 circuit miles of transmission and distribution lines. Niagara Mohawk's transmission system is approximately 8,737 miles in length. Approximately 74,700 acres of land are within the transmission right-of-way boundaries with an estimated 37,900 brush acres.

Niagara Mohawk's transmission system includes significant portions of the Adirondack Park. The operation and maintenance of Niagara Mohawk's transmission rights-of-way obviously entails vegetative management in the Adirondack Park. Consequently, the FPEIS published by the Commission Staff is of interest to Niagara Mohawk.

Niagara Mohawk's comments on the FPEIS are attached.

Respectfully submitted,

Michael W. Murphy

Michael W. Murphy
System Attorney

MWH:jmf
Attachments

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 27605 - The Role of Herbicides
in Managing Vegetation on Electric
Transmission Rights-of-Way

On July 11, 1985 the Public Service Commission issued a Notice of Completion of a Final Programmatic Environmental Impact Statement (FPEIS) with respect to the approvals of the plans of New York State Electric and Gas Corporation and Niagara Mohawk Power Corporation for the management of electric transmission facilities rights-of-way within the Adirondack Park. The FPEIS discusses several methods of maintaining rights-of-way within the Adirondack Park to prevent growth of undesirable plant species under the transmission lines, which growth would interfere with the operation and maintenance of the transmission facilities of Niagara Mohawk and New York State Electric and Gas Corporation within the Adirondack Park. Most of the data presented in the FPEIS accurately assess the impacts of the current practices of Niagara Mohawk and available alternatives. These comments on the FPEIS dispute certain technical facts as asserted in the FPEIS. In addition, our comments disagree with certain Commission Staff recommendations which have been advanced, for the first time, in the FPEIS.

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COMMENTS

1. Reference: Pages 92 and 93 of the FPEIS, Staff Recommendation #1

This Staff Recommendation would prohibit aerial spraying of the entire width of any right-of-way less than 75 feet wide on which there is only a light to moderate density of undesirable vegetation.

Two problems exist with this recommendation. At a minimum the recommendation is overly broad since it absolutely prohibits aerial spraying on specified right-of-way without regard to the accessibility of the right-of-way for other forms of vegetative management. The nuance to be appreciated here is the fact that the absolute prohibition of aerial spraying on rights-of-way less than 75 feet in width will ultimately mean that access roads will have to be constructed over the entire length of such rights-of-way. Construction costs will be incurred as will incremental maintenance costs.

The second point to be made relates to the fact that all 75 feet wide rights-of-way have continual side encroachments from edge or danger trees. Currently, aerial spraying is an available tool in managing these side encroachments. The area treated in these instances is markedly less than 75 feet. This situation is not addressed in Staff's Recommendation #1. It would seem incongruous to continue to allow aerial spraying of rights-of-way side encroachments while prohibiting aerial spraying on the right-of-way proper. As aerial spraying represents a great cost savings

2/ It must be noted that access roads have the potential, dependent upon terrain, presence of wetlands, necessity for stream crossings and other sensitivities, for causing substantial adverse environmental impacts.

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over the hand cutting of danger trees and vegetation on the rights-of-way, aerial spraying should not be prohibited for 75-foot wide or less rights-of-way.

2. Reference: Page 94 of the FPEIS, Staff Recommendation #4

Staff Recommendation #4 proposes to prohibit foliar spraying when the average height of the vegetation is greater than 10 feet. A 10-foot height restriction is too restrictive a criterion. Niagara Mohawk recommends that the criterion be modified so that the height criterion is 12-13 feet in height. Were the 10-foot criterion to be employed in lieu of the 12-13-foot criterion recommended by Niagara Mohawk, the expected result would be that the normal eight-year cyclical maintenance cycle would, over time, have to be reduced so as to become more frequent. Right-of-way maintenance costs would then be increased over current costs in the effort to treat right-of-way via the foliar spray method before that method becomes prohibited by the vegetation reaching a height above the criterion for foliar spraying.

3. Reference: Page 94 of the FPEIS, Staff Recommendation #5

Staff Recommendation #5 would impose certain restrictions on foliar spraying of right-of-way "adjacent to, and in parallel with designated highway travel corridors." Initially, it is observed that Staff has concluded, on page 87 of the FPEIS, that "[i]mplementation of the utilities' plans should not result in any significant adverse visual effects." Staff Recommendation #5

appears inconsistent with the aforementioned Staff conclusion. Staff, having concluded that the utilities' plans do not create any significant adverse visual effects, should not be allowed to offer a remedy six pages later in the FPEIS (page 93) to a problem that does not exist.

Apart from this, Staff Recommendation #5 is vague. Many lines are parallel to or adjacent to highway corridors. Some objective criteria should be set forth if Staff's recommendation is to be adopted. "Adjacent to, and in parallel with designated highway travel corridors" should be augmented. Niagara Mohawk recommends a two-pronged approach. First, the right-of-way has to be visible from the highway travel corridor. Secondly, some set distance, e.g. 100 feet, should be set forth as an additional objective criterion to be employed. If the right-of-way and highway corridor are less than 100 feet apart, the prohibition in Staff Recommendation #5 might be applicable.

4. Reference: Page 94 of the FPEIS, Staff Recommendation #6

Staff encourages the classification of blackberry and raspberry as desirable species in Staff Recommendation #6. Niagara Mohawk opposes such a classification. Blackberry and raspberry, because of the hazard and nuisance of their thorns, are not desirable in many right-of-way locations. As anyone who has attempted to escape unscathed and unscratched from a blackberry or raspberry patch will attest, working in or near these bushes is problematical. Generally, the nuisance value of blackberry and raspberry exceeds its worth to the right-of-way manager.

There are two additional reasons why blackberry and raspberry should not be classified as desirable species. First, contrary to Staff's representation on page 95 of the FPEIS, retention of blackberry and raspberry as desirable species on a right-of-way will, over time, significantly reduce right-of-way access for recreational users of the right-of-way because of the nuisance or physical discomfort aspect of those species. Diminished access would be expected for activities such as hiking, horseback riding, trail biking, hunting, etc. Access for purposes of inspecting utility plant would likewise be impeded for the same reasons that recreational access of the right-of-way would be impeded.

The last reason why blackberry and raspberry should not be listed as desirable species relates to the characteristics of those species, i.e. these root suckering species can readily invade a right-of-way. Not only would access become difficult for the right-of-way manager and recreational user; more importantly, classification of blackberry and raspberry as desirable species would, de facto, significantly and substantially reduce the instances where foliar spraying could be employed, thus driving up the costs of right-of-way maintenance over time. This nuance has not been factored into the cost assessment of Staff's recommendation. Thus, the cost comparisons set forth on page 104 of the FPEIS significantly understate the real cost increase that will be experienced by the right-of-way manager were Staff's recommendations to be adopted.

5. Reference: Page 94 of the FPEIS, Staff Recommendation #7

Staff has not shown and documented any adverse impact on water in the entire FPEIS and yet Staff Recommendation #7 recommends increased buffer zones to minimize adverse impacts on water quality. Staff's recommendation also seeks to remove all field judgments from the prerogative of the right-of-way manager. Niagara Mohawk maintains that field judgment is the most accurate means of control. Accordingly, Niagara Mohawk seeks to retain the buffer zones reported on Table 12, page 83 of the FPEIS.

6. Reference: Pages 98 and 104 of the FPEIS

The critique of Alternative B set forth on page 98 of the FPEIS should also state that Alternative B will significantly increase utility costs over the utilities' plan. Were data available from ESEERCO studies in the Adirondacks and on the Volney-Marcy line test plots, Niagara Mohawk is confident that its representations herein with regard to the significantly greater cost of Alternative B versus the utilities' plan would be further documented. Unfortunately, the comment period for the FPEIS does not allow time to further address and document this aspect of the FPEIS.

7. Reference: Page 104 of the FPEIS

Because of the comments rendered herein, Niagara Mohawk believes that Staff's quotation of a 3.9% incremental cost for Alternative B over the utilities' plans substantially understates

NYSEG

the actual cost increase that will occur if Alternative B is implemented in its entirety. For that reason, Staff's Alternative B recommendation should only be implemented to the extent that they are consistent with these comments.

CONCLUSION

Niagara Mohawk believes that, with the exceptions noted, the FPEIS reasonably accurately reflects the practices of Niagara Mohawk and the impacts of its right-of-way management in the Adirondacks. For all intents and purposes, the FPEIS indicates that the use of chemicals on the right-of-way has no significant adverse environmental impact and it is improbable that adverse environmental impacts will occur in the future. Under such circumstances, the right-of-way management procedures and techniques currently employed by Niagara Mohawk should be endorsed as is and unaltered by the recommendations made by Commission Staff in the FPEIS.

August 27, 1985

Honorable John J. Kelliher
Secretary
State of New York Department of
Public Service
Three Empire State Plaza
Albany, NY 12223

Re: Case 27605 - The Role of Herbicides in Managing
Vegetation on Electric Transmission Rights-of-way

Dear Mr. Kelliher:

On July 11, 1985, the Public Service Commission issued a Notice of Completion of its Final Programmatic Environmental Impact Statement for Transmission Right-of-Way Management Plans in the Adirondack Park. Although Commission Staff had worked on this final document for over 10 months, the affected parties were allowed only 20 days to submit comments, a time span which contained, without allowance for mail delivery time, only fourteen regular work days. Because it was not possible for us properly to prepare comments within this time, we, jointly with Niagara Mohawk, requested an extension of time to submit comments. Unfortunately, this extension was not granted.

The Public Service Commission's approach to right-of-way maintenance in the Adirondack Park has the potential to seriously affect New York State Electric & Gas Corporation. We have, therefore, carefully reviewed the Commission's Programmatic Environmental Impact Statement, and have prepared brief comments thereon. While the official time for comments may have passed, we believe that the Commission will benefit from reviewing NYSEG's comments on the Environmental Impact Statement. We have, therefore, enclosed 25 copies of these comments. We request that you distribute them

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An Equal Opportunity Employer

Page Two
Honorable John J. Kelliher
August 27, 1985

to the appropriate Commission personnel for their consideration.

Thank you for your consideration.

Very truly yours,

Robert Malecki
Robert Malecki

RH/cdt
Enclosure

cc: J. Draghi
R. Gosse
M. Murphy

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

-----X
: Case 27605 - The Role Herbicides in :
: Managing Vegetation on Electric :
: Transmission Rights-of-way :
:-----X

COMMENTS OF NEW YORK STATE ELECTRIC & GAS
CORPORATION ON FINAL PROGRAMATIC ENVIRONMENTAL
IMPACT STATEMENT ON TRANSMISSION RIGHT-OF-WAY
MANAGEMENT PLANS IN THE ADIRONDACK PARK

1. FPEIS p. 93 - Staff Recommendation No. 2

Staff would limit stem-foliar spraying to sites with high densities of undesirable species and to moderate density sites with a light density of desirable species. This recommendation does not consider situations where incompatible species are comprised primarily of root suckering species, which are not adequately controlled by the basal and cut and stump methods proposed by Staff. NYSEG's plan specifically states that the stem-foliar method would be utilized when incompatibles are comprised primarily of root suckering species. Staff's recommendation should be revised to include this condition.

2. FPEIS p. 93 - Staff Recommendation No. 3

Staff recommends that stem-foliar spraying be limited to periods when wind speed is less than 10 miles per hour. NYSEG agrees that such spraying should be limited to times when wind velocity is low, but the recommendation of a specific maximum velocity is impractical because applicators have no way

of accurately determining wind velocity in the field. The DEC does not require such a limitation, nor do the product labels for any of the products commonly used require such a limitation for high volume leaf-stem treatments.

3. FPEIS p. 94 - Staff Recommendation No. 4

Staff recommends that foliar spraying be allowed only when the average height of vegetation is less than 10 feet. NYSEG knows of no literature or evidence indicating that allowing foliar spraying when the average height of vegetation is greater than 10 feet would increase damage to desirable vegetation. NYSEG believes that the 10-foot height is too restrictive and recommends that foliar spraying be allowed where the average height of vegetation is less than 15 feet. Were the 10-foot limitation to be adopted, NYSEG's normal maintenance cycle would have to be shortened so that the foliar spray method could be utilized before vegetation reached the height above which foliar spraying would be prohibited. Right-of-way maintenance costs would obviously be increased.

4. FPEIS p. 94 - Staff Recommendation No. 7

Staff's recommendation that NYSEG not be allowed to reduce the width of buffer zones would deprive the right-of-way manager of the right to make decisions based on an intimate knowledge of field conditions. Such knowledge is the best basis for determining the appropriate width of buffer zones. Staff has not documented any adverse impact on water quality in the

FPEIS. Absent such documentation, decisions in this area should be left to the prudent judgment of the right-of-way manager.

5. FPEIS p. 98 - Comparison of Alternatives

The discussion of alternative B in the comparison of alternatives should state that alternative B will significantly increase right-of-way maintenance costs over the costs that would be experienced were the utilities' plan adopted.

6. FPEIS p. 121 - Staff's responses to NYSEG

In response to NYSEG's comment 36, Staff indicates that the recommended 10 mile per hour limitation for stem-foliar spraying was arrived at in part from reading the herbicide labels from which Staff quotes. Staff refers, however, to labels which in many cases are no longer current. Amdon 101 is no longer formulated or marketed. Staff's quotation from the Garlon 3A label comes from an outdated label. The information quoted does not apply to high volume leaf-stem treatment, but to low volume boom applications. The current Garlon 3A precautions for high volume leaf-stem treatment provide:

To minimize spray drift, do not use pressure exceeding 50 PSI at the spray nozzle and keep sprays no higher than brush tops. Nalco-Trol thickening agent or equivalent may be used to reduce spray drift.

The quote on Tordon 101 is also not from a current label. The current label makes no reference to maximum wind velocity for high volume leaf-stem treatments. Of the 11 labels included in

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the PEIS, 8 of them are no longer current.

Respectfully submitted,

Dated: August 27, 1985

New York State Electric & Gas
Corporation

By: Robert Malacki
Robert Malacki
Supervisor - Environmental
Operations

APPENDIX B

Staff Responses to Specific Comments on FPEIS
submitted by the Adirondack Park Agency (APA)

APA Specific Comments and Responses:

1. Page 7, carryover paragraph: The Adirondack Park Agency Act was enacted in 1971 (L. 1971, c. 706), not 1973; it was the Adirondack Park Land Use and Development Plan (defined in §802[29] that was enacted in 1973 as part of amendments thereto (L. 1973, c. 348, §1).

Response: So noted.

- 1a. We don't know what is meant by the statement that the APA was thereby transformed into "a distinct and cohesive government entity," perhaps the Adirondack Park is meant.

Response: As used in the text, this expression represents the opinion of the authors as applied to the creation of the new Park Agency; it did not exist previously, except perhaps as a temporary study commission.

- 1b. The Agency, as you know, has certain environmental assessment and permitting powers with respect to new land use and development in the Park. If a "project" listed in §810 of our organic act requires a permit from the Agency, it may attach such conditions to its approval (including conditions with respect to the use of pesticides) as are within the proper exercise of the police power (§809[13]). Similar machinery is contained in Agency regulations implementing the Wild, Scenic and Recreational Rivers System Act (9 NYCRR Part 577). The Agency also exercises jurisdiction which allows the control of the use of pesticides in, or so as to run into, freshwater wetlands under regulations implementing the Freshwater Wetlands Act (9 NYCRR Part 578). It is unlikely, except in the case of wetlands on rights-of-way, that our own regulatory powers reach the use of herbicides as assessed in the FPEIS due to the last sentence in the definition of "major public utility use" contained in §802(33) of the APA Act (regulatory counterpart quoted on pp. 16-17 of FPEIS).

Response: No response needed.

2. Pages 24-26: Picloram; 2,4-D; 2,4-DP; dicamba, triclopyr, ammonium sulfamate and fosamine ammonium are mentioned as examples of herbicides used in aerial foliar, stem-foliar, and basal application. We are enclosing photocopies of data on, inter alia, effects on non-target species, persistence, and toxicity from Primental, Ecological Effects of Pesticides on Non-Target Species (Washington, U.S. Government Printing Office, 1971, pp. 87

[ammate]; 93, 96-100 [2,4-D]; 102 [dicamba]; 118-119 [picloram]; 121-123 [triclopyr]) and from Weed Science Society of America, Herbicide Handbook (Champaign, IL [Fifth Ed., 1983], pp. 22-25 [ammonium sulfamate]; 128-134 [2,4-D]; 151-156 [dicamba]; 253-258 [fosamine ammonium]; 378-382 [picloram]; 467-470 [triclopyr]).

Response: This information was used by Staff as background material in preparing the PEIS.

3. Page 29, bottom paragraph: Staff's observation of the "sloppy work practices" detailed, as well as of the "80 to 90% destruction of desirable cover" (which presumably means destruction of other resources as well) points out, as does the Preface (p. xi) the lack of monitoring of herbicide application. Obviously, the most environmentally sound right-of-way management program which could be put on paper can be made wholly meaningless by careless field technique. We urge the Commission to give attention to this, potentially the weakest link in the chain of protection measures under consideration.

Response: Staff's observations, as stated on Page 29 of the FPEIS, pertained only to several foliar-sprayed sites on Niagara Mohawk R/W and are therefore not indicative of all NMPC spraying. Staff agrees with APA's conclusion and continues to request sufficient personnel to adequately monitor in-field spraying programs.

4. Page 40, middle paragraph: As the FPEIS recognizes, "[l]ittle is known...about the combined effects of herbicides." If those effects are synergistic, serious doubt is cast on the value of any FPEIS analysis based on the application of one herbicide with regard to sites where combinations are used.

Response: This statement concerns the low toxicity of applied herbicides to wildlife. Although little literature on this subject was available, it is not a significant problem. Staff is not aware of any documented wildlife deaths due directly to R/W applied herbicides.

5. Page 42, last paragraph: Here the FPEIS recognizes that the cool soil, and waterlogged and anaerobic conditions prevalent in the Adirondacks will slow down degradation rates of herbicides such as triclopyr and picloram, but states that the extent such soils act as "herbicide sinks" is unknown. Again we say, if the essential information (like synergism, like monitoring data) is unknown, is the Park being accorded the "extra measure of attention and respect" the Commission has stated it warrants?

Response: Although certain herbicides may take longer to degrade in the Adirondack climate, Staff believes that they would be undetectable by the next herbicide treatment (every 5 to 8 years). The recent herbicide residue study by NYSEG (1986) in the Adirondack Park is, in part, evidence of "extra attention."

6. Pages 42-43: The FPEIS suggests that the soil concentration of picloram ("probably the most persistent herbicide described in the right-of-way management plans" [Emphasis added]) may be reduced and its movement slowed by adsorption. Is not adsorption affected by the fact picloram salt formations are water soluble, thus not readily adsorbed? The FPEIS does recognize picloram (like dicamba) as mobile, citing here a study showing movement through 30- to 40-foot buffer zones. (See also p. 50, last paragraph, characterizing picloram as "among the more mobile herbicides.") Is not picloram currently undergoing the EPA reregistration process?

Response: The solubility of the salts in water would probably mean that picloram would be relatively more mobile. Thus, there could be a movement downward to interior sites where adsorption to soil particles would take place, usually, in the upper one-foot layer of soils, but at a slower rate than at the surface (McCall 1978). However, the amount of picloram adsorbed was shown to increase with time. Helling (1971) showed that

picloram is less mobile than dicamba, about the same as 2, 4-D but more mobile than propachlor. Meikle, et al, (1974) found that the availability of indigenous or native soil microorganisms that can survive on less rapidly available soil organic matter are chiefly responsible for the degradation of picloram. Classical columnar laboratory leaching experiments have shown that picloram has the potential to move readily in sandy soil but field experiments show that picloram does not move extensively (Helling 1971) and residues are generally confined to the upper one-foot layer of soils.

The FPEIS reference on Pg. 43, para. 1 to the Mazerolle experiments on Nova Scotia R/W (reported in 1980) should be qualified. Only one detectable residue of picloram was found, unexpectedly, in a water sample (0.94 ppb, detection limit in water, 0.5 ppb) following application of TORDON 10K pellets. These pellets, if not properly placed, can be physically transported off-site by erosion during intense rainstorms. For that and other reasons, TORDON pellets were removed from the market by DOW Chemical Company in 1986. Most importantly, in terms of buffer zone effectiveness, except for the one water sample mentioned above, all herbicide residues (TORDON 101 and 10K pellets) were confined to the buffer zones established to protect the

streams. Further, three years after treatment, very little picloram was left in the soil, and most of that was found in the top 15 cm (6 inches) of soil.

At page 73, 2nd paragraph, the FPEIS states that picloram is being retested by EPA. As a result of its re-registration process, EPA required that picloram product labels be revised in 1987. Revisions for R/W products include a revised environmental hazard section, addition of endangered species restrictions, and the addition of an irrigation prohibition statement.

7. Table 7, page 44; page 47: Another great unknown, which should be added to those already mentioned, is the extent to which herbicides will reach, and contaminate, groundwater. Groundwater appears not to have been taken into account in Table 7. The FPEIS cites a Massachusetts study showing lateral movement of picloram "above fragipans and bedrock with possible contamination of nearby streams...."

Response: Staff agrees that relatively little is known about herbicide\groundwater contamination rates. It is Staff's understanding that part of the ESEERCO Long-term Herbicide Residue Research Program will be to investigate this question (see FPEIS page 83). Absent information leading to a clear conclusion on the perceived problem, Staff believes that the proposed buffer zones are prudent. Though groundwater is not

mentioned in Table 7, the FPEIS deals with the potential for groundwater contamination by herbicides applied on R/W as a major concern in several locations, such as on page 47 and in the discussions of soils and water quality. As many of the studies cited in the report have shown, it is hardly axiomatic that herbicides applied on a R/W will reach groundwater, and if so that they will contaminate it, given its ubiquitous nature, even though APA states this to be fact. For recent data on the fate of herbicides of most concern to the APA, the detailed conclusion of Deubert's 1982 study (shown in Appendix C hereto) should be consulted.

Staff's review of current literature and research results suggests that herbicide residues may indeed reach groundwater--but only in a minority of cases, and at nearly insignificant levels. By far, the majority of herbicide residues would remain and decompose in R/W soils and vegetation, away from water resources. The residues which may reach surface and groundwaters are not expected to be at levels which are ecologically significant or are to be considered a public health hazard. Nevertheless, more studies are needed to fill the information void concerning the efficacy of buffer zones. Staff will recommend that NYSEG and NMPC continue their herbicide mobility studies on

transmission R/W within the park for the specific purpose of providing a more scientific basis for buffer zone widths.

8. Page 48, paragraph 4: We question whether this paragraph isn't overstated, as to the best of our knowledge EPA very much continues to study routes of herbicide movement.

Response: It was Staff's intent to identify the major routes in which herbicides can move from the application site toward water. We agree that how different herbicides move under different field conditions continues to be studied by EPA and others.

9. Page 49: Soil erosion is characterized as "probably the major route of herbicide movement," and leaching is recognized as a cause of movement to non-target areas "especially when the water table is close to the surface." Both routes are pertinent to our case for "tightening" the seven parts of Alternative B through, among others, use of larger buffer zones. See comment 18, infra.

Response: Staff concurs and agrees that attention should be focused on appropriate buffer zones and potable water supplies. Both are discussed in more detail in Staff's memorandum to the PSC.

10. Page 50, paragraph 3: Toxicity is related to streamflow here, but nowhere in the FPEIS is there suggested any measurement of site sensitivity based on flow. Are utilities ever required to measure it? Moreover, there is no justification presented for the last sentence.

Response: No need is seen for measuring stream flow or requiring the utilities to measure it, since the presence of the stream will automatically dictate the establishment of a buffer zone beside the stream to minimize the

possibility of herbicides entering it. Dilution of an herbicide which may enter a stream is the only logical physical consequence of such an action.

11. Page 53: Impacts on non-target flora and fauna are not discussed, merely resulting concentrations. Only two herbicides are discussed. The statement that 2,4-D is generally applied with other herbicides should be read with the earlier statement that the synergistic effects of herbicides applied in combination is unknown.

Response: Herbicide impacts on non-target flora and fauna were discussed in preceding FPEIS sections and were therefore not repeated in the section dealing with wetlands. The herbicides most commonly used by NYSEG and NMPC are included in those discussions, even though the text refers only to dicamba and 2,4-D in the Wetlands section (FPEIS, p. 53). Staff has commented on APA's reference to synergistic effects of herbicides applied in combination elsewhere (see Response 4). We note also APA's exercise of jurisdiction in the control and use of pesticides relative to freshwater wetlands under regulations implementing the Freshwater Wetlands Act (9 NYCRR Part 58), and that such authority affects the use of herbicides in wetlands on R/W, except for Article VII projects.

12. Table 10, Page 72: Dicamba, triclopyr and fosamine ammonium are not dealt with (see comment 2, supra). See the enclosures for more detailed data on persistence and translocation.

Response: As stated on FPEIS, p.73, Table 10 was included to illustrate the Hazard Assessment Summaries for some herbicides; those chosen are merely those commonly used by the utilities in the past. They are also those over which APA has expressed the most concern. The characteristics and behavior of dicamba, triclopyr, etc. are discussed extensively in various parts of the text.

13. Page 75, last paragraph; Page 76, carryover paragraph: In the Adirondacks, "unexpected heavy rain" is more a normal than abnormal circumstance. Amdon 101, Garlon 4, and Tordon 101R labels all forbid application where surface water from treated areas can run off into streams. We will not repeat, but will refer to comment 3, supra, to point out the likely unrealistic expectations implicit herein with respect to the diligence of the applicator.

Response: Staff's reading of these herbicide labels leads to a slightly different conclusion. The labels caution the applicator not to allow runoff or spray to contaminate any body of water used for irrigation or domestic purposes (i.e., drinking). The intended target of this language is waters used for domestic purposes and not every stream.

14. Page 76, first full paragraph: We seriously question the wording here. We believe there are no available long-term studies for most of the herbicides, and of course many of those used are new.

Response: The authors stand by the FPEIS statement on Page 76. Long-term studies are not needed in order to determine herbicide concentration levels in different components of the environment or in humans. These can be

determined periodically by sampling. Many short-term studies have shown that herbicide concentrations decrease and therefore long-term studies are not needed.

15. Page 78, first full paragraph: What does NMPC consider a "short-lived" herbicide? Picloram can have a half-life of up to thirteen months. When and how does NMPC decide to designate a non-chemical buffer zone?

Response: NMPC does not identify "short-lived" herbicides in its plan. It is Staff's understanding that NMPC uses Roundup and Rodeo as "short-lived" herbicides as opposed to a "long-lived" herbicide such as picloram. "No herbicide treatment" areas are discussed on pages 54 and 55 of NMPC's plan.

16. Page 82; Table 12, p. 83: It is readily apparent the very concept of buffer zones is based on inadequate data. In addition to the recognition here that how their widths were established "is not stated in the plans and otherwise are poorly understood," and that "[t]here is no definitive information indicating whether the different buffer zones...are adequate to protect water resources or comply with Federal and State regulations," Table 12 vividly shows BPA's buffers to be in marked contrast to NMPC's and NYSEG's. See also p. 122 ("At the present time, the DPS has no resources committed to verify whether or not the lack of buffer zones or presence of different buffer zones prevents herbicide applications from contaminating water resources. Conversely, none of the utilities, to our knowledge, have any information proving that the different buffer zones are adequate to prevent surface or groundwater contamination."). Finally, we suggest the Table 12 buffers also apply to wetlands (as defined in ECL Article 24), intermittent streams, public and private water supplies, and identified wildlife and plant habitats. Other considerations for increasing buffers might include slopes, the presence of soils with low organic matter or leachable, disturbed, or shallow soils, high water table, soil erodability, and persistence of the herbicide and its adsorption and leaching capacity.

Response: Staff has recommended to the PSC that it require NMPC and NYSEG to study the adequacy of buffer zone width. We note that Table 12 addresses wetlands. We have also recommended that the utilities respond to the PSC on how other site conditions such as slope and soil affect buffer zone widths. APA should note that the buffer zone of NYSEG is equal to or more conservative than BPA.

17. Pages 88-92: We don't need to repeat the manifest environmental superiority of Alternative A. Clearly Alternative A complies with ECL 8-0109(1), unless some "social, economic or other essential consideration" prevents its being chosen.

Response: Staff does not agree that any "manifest environmental superiority" of Alternative A has been demonstrated, but recognize that such is the APA position. Economically, Alternative A is probably more costly and would not produce stable, low-growing plant communities.

18. Pages 92-96: Assuming the Commission will endorse the staff recommendation -- and not conceding the correctness of that choice -- our concern is for its vagueness. What are "light" or "moderate" densities of undesirable vegetation (Item 1)? For that matter, what is "undesirable" vegetation? The same criticism is levelled at Item 2, with the additional comment that the phrase "wherever practical" is wholly devoid of meaning. Does "avoid" (Item 5) mean "not allow to occur," or something less than that? Comment 16, supra, points out that the FPEIS acknowledges the total lack of data with respect to the adequacy of buffer zones. Why should not the Bonneville Power Administration buffers be adopted, at the very minimum?

Response: The terms "light" and "moderate densities" and

"undesirable vegetation" are defined in the long-range plans of NYSEG and NMPC. BPA's buffer zones were used for comparative purposes. Staff, in fact, is recommending wider buffer zones in some cases than those of BPA. See also last sentence of Response to Comment 1b.

19. Pages 96-98: Alternative C, in our view, merits Commission endorsement, at least on an experimental basis. Even conceding the lack of data on economic viability (and transferability to the Adirondacks), it is apparent that Alternative C is as environmentally benign as Alternative A, requires no large capital investment, and produced "satisfied" crews, at least in West Virginia. It strikes us that it offers at least the promise of a remarkably apt way to deal with adjoining landowners who object to herbicide use. They could be offered the option of maintaining right-of-way for avoided cost, if they could put together, in concert with others of a similar view, a proposal to maintain a reasonable length. Perhaps they would also be induced to sign a negligence release. Why should "others" "logically" supply the answers admittedly lacking (p. 97)? Why is it not more in the tradition of the Commission to design at least an experiment in cooperation and consultation with the utilities, and with appropriate publicity so the public is aware and will come forward, to seek those answers?

Response: In addition to the reasons for rejecting Alternate C given in the FPEIS, there are these considerations: Many of NMPC's R/W in the park are owned in fee and therefore the concept would not apply universally. On the remaining easement-owned R/W, interested landowners would have to have the will and the skills necessary to do the maintenance work. If herbicides were to be applied, training, and perhaps certification of the applicators, all on an ad hoc basis, would be required, to say nothing of

supervision.

There are serious questions of any legal basis for the Commission to "design" or require any such socio-economic experiments in conjunction with utility plant maintenance. There are also serious liability questions with this proposal, these questions have grown even greater in recent years as liability insurance rates for the utility industry and chemical producers have soared.

In summary, APA has added nothing not previously known about this concept which would provide a basis for changing the recommendation that it not be endorsed for regular or experimental use in the park. This does not, however, preclude arrangements that local citizens may make with either utility for R/W maintenance, or actions those citizens may take without contacting the utility.

20. Page 112: We believe that Mr. Erman's conclusion -- that on a per kilowatt hour basis, the cost increase resulting from the substitution of manual cutting for herbicidal techniques is "miniscule" -- is valid. The Malefyte-Macks analysis provided per acre vegetative management cost information for manual and other techniques. These cost factors, when combined with financial statistics reported by DPS, provided an adequate basis for Mr. Erman's conclusion.

Response: This is a simple difference of opinion, with the utilities claiming that figures contained in the Malefyte-Macks analysis were grossly understated for manual clearing.

Staff's analysis of the four sections in the APA report by Mr. Erman, dated February 8, 1984 is as follows:

1. The \$230,843 increase, in terms of cost/kilowatt-hour is miniscule.

One could argue that substituting manual cutting costs for herbicidal treatment costs across 38.8 billion kilowatt hours would increase the per kilowatt-hour cost a very small amount. The increase which APA calculated is \$.000006/kw-hr. On the other hand, all the components of a kw-hr cost are miniscule. This comparison is without merit if there is no need to increase the cost of electricity.

2. Eliminating the use of herbicides would raise monthly residential customer costs three-tenths of a cent (\$.003476).

Staff cannot quarrel with this calculation using the assumed increase cost of \$230,843 per year. Again, Staff believes this figure is low and would continue to rise over time as R/W tree densities continued to increase, as they will. Also, if APA is concerned about herbicide applications in the Adirondack Park, this cost increase should no doubt be borne by customers in the park, since outsiders have little contact with APA as a rate-raising factor. As an in-park only

surcharge, the monthly bill increase would probably be noticeable as there is probably more transmission R/W acreage per utility customer in the park than outside it. And, in-park incomes may well be lower than statewide averages; this would make the increased costs more felt. Beyond that, in-park bills may thus easily be greater, as a percentage of income, than elsewhere since the park averages longer and colder winters which usually translates to a longer heating season.

3. The residential consumer's monthly bill increase would remain minimal if manual cutting costs were substantially higher.

The APA report assumed that if hand-cutting costs went as high as \$500 per acre, the monthly increase to a residential consumer statewide would be only 3 cents (\$.031684) per month or a little over 40 cents per year. This probably approximates what the actual average long-term cost for hand-cutting and disposal of cut stems per acre would be. As an Adirondack Park surcharge, the 40 cents per year would increase to very perceptible levels.

Again, by itself, this cost increase is probably minimal, but who can guarantee that this would be the only increase to the rate-payer? Taken together with other cost increases and

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likely greater loss of service makes it
significant to consumers.

APPENDIX C

Excerpt from Report by Karl H. Deubert
University of Mass. Cranberry Experiment Station
East Wareham, MA 19 March 1985

6. Conclusions (pgs.48-52).....C1 - C4

6. CONCLUSIONS

1. In regard to persistence and movement of triclopyr, 2,4-D and picloram in soil under field conditions, the results of this study are in agreement with results in the literature. NORRIS (1981b) summarized the presently available knowledge: "The initial level in the forest floor obviously varies with the density of vegetation...Rainfall appears to be the major mechanism by which herbicide on vegetation is transferred to forest floor...Leaching of chemicals through the soil profile is a process of major concern to the general public but it is least likely to occur in forest environments...Intensive leaching may move chemicals a few centimeters to 1 meter (about 3 ft) in depth...Most forest chemicals do not persist long enough for significant leaching to occur."

2. Most movement of soil residues of triclopyr, 2,4-D, and picloram takes place in the top 0-10 in. layer.

3. Chances that measurable amounts of picloram, the most mobile of the three chemicals studied, may reach a depth of more than 4-5 ft given the application rates used in this study (2 gal/A concentrate or 1 lb/A, 100% assumed runoff, 50% retention by vegetation) are remote. Some residues might be detectable at more than 5 ft if larger quantities than the ones studied are used. This conclusion is in agreement with the statement that "at low rates of application picloram rarely moves downward beyond the top 30 cm (approx. 12 in.), especially in semi-arid regions, whereas at higher rates of application, picloram can readily move down to 100 cm

(approx. 40 in.) in the soil profile even in a relatively dry area" (NATIONAL RESEARCH COUNCIL OF CANADA). After reviewing available information, DE WAAL MALEFYTE et al. (1984) concluded that the probability of contamination of groundwater via leaching is remote.

4. Based on initial soil residues resulting from 2 gal/A concentrate sprayed on shrubs and herbaceous vegetation, assuming 100% runoff from the trees to be treated, and 50% retention by shrubs and herbaceous vegetation, the half-life of triclopyr was between 4 and 8 weeks, and that of 2,4-D less than 2 weeks. The half-life of picloram increases proportionally with the concentration and the time elapsed between application and sampling. Laboratory experiments resulted in faster rates of disappearance than those observed in the field.

5. Field and laboratory data showed that triclopyr moved less than 2,4-D, and 2,4-D less than picloram, although the differences were small. Where initial soil residues suggested application rates of 2 gal/A concentrate, the highest residues of 2,4-D and picloram were found in the top 10 in. soil layer, and in one case in the 10-15 in. layer.

6. Leaching tests verified the observation that degradation contributed more to the disappearance of the three chemicals than did leaching.

7. Density of the foliage of non-target vegetation affected the amounts of chemicals reaching the ground. Mean retention of herbicide was 53-80%, extremes were 28.6-93%.

8. Retention of spray solution during application varied

according to the type of vegetation. Herbaceous vegetation retained more herbicide than shrubs.

9. Amounts of residues removed from shrubs and herbaceous vegetation varies according to weather conditions and time elapsed between application and rainfall. Amounts of washed off foliar residues were generally smaller than the initial soil residues.

10. Evapotranspiration (STRAHLER, 1972) probably contributed to the low rate of movement of chemicals in the field (HARRIS, 1969; LETEY and ODDSON, 1972).

11. Uneven distribution of spray solution during application due to the use of hand held nozzles did not allow accurate determination of initial concentrations. Consequently, accurate determination of the persistence of herbicides in the foliage was not possible.

12. Careful application in the field is essential. Although it is improbable that small overdosages will result in contamination of groundwater, the effect on non-target species will be conspicuous (Figures 14, 15, 29).

13. A graph is supplies (Figure 49) to help estimate approximately quantities of Garlon 3A and Tordon 101 based on initial soil residues in the top 5 in. layer shortly after spraying. The graph can also be used to predict initial soil residues in the 0-5 in. layer based on tree density and quantities of herbicide used.

14. If one week after spraying 2,4-D soil residues in the 0-5 in. layer are less than 0.4-0.5 ppm, and picloram soil residues in the

same layer are less than 0.3-0.4 ppm, it is probably that less than 2 gal/A Tordon 101 were used.

15. Approximately 2-3 weeks after application the differences in residue levels due to different initial quantities seem to disappear in the 0-5 and the 5-10 in. layer.

16. The rate of breakdown of 2,4-D and picloram should be expected to be faster in soils with small silt and clay fractions. Conversely, larger silt and clay fractions should be associated with slow breakdown rates.

Source:

STUDIES ON THE FATE OF GARLON 3A AND TORDON 101
USED IN SELECTIVE FOLIAR APPLICATION IN THE
MAINTENANCE OF UTILITY RIGHTS-OF-WAY

Excerpt from Report submitted to Northeast Utilities,
New England Electric, Boston Edison Company, E.U.A. Service
Corporation, and Commonwealth Electric Company by Karl H.
Deubert, University of Massachusetts Cranberry Experiment
Station East Wareham, MA 02538 on March 19, 1985.