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Date: 9/17/03 6:11PM
Subject: MidAmerican Procedures Re: T&E

It was requested to provide some information related to T&E issues along the MidAmerican portion of transmission lines in scope for license renewal for Quad Cities. The request was made for a copy of vegetation management practices for MidAmerican and for a copy of the training program (if one exists) that the contractor for vegetation management uses for identification of sensitive habitat (Wright Tree Service).

Attached you will find a copy of the technical specification that MidAmerican uses in the contract with their vegetation management contractor.

Below are some words from Mr. Puentes regarding the Indiana Bat.

As with our company, Wright Tree Service does not have a formal written policy or training program regarding either working in areas with threatened and endangered species or reporting a dead or injured specimen.
With regard to how we handled the Indiana bat habitat in our area, I do not remember how I was made aware of it. It may have been a court case I read about or it may have been in some of my industry literature.
In researching its impact on us, I found that it involved not removing dead or dying loose-barked trees near flowing water systems in a limited number of counties in our service area. That condition does not exist in the ROW corridor where either we or our contractor would be working.
It may impact the construction of new lines, however. In 2002 I consulted with MidAmerican Construction Services about potential problems with Indiana bat habitat involving the construction of a new transmission line in the Muscatine area. The line is not owned by us and MCS did not get the contract to build the line.

If you should have any further questions, please feel free to contact me at any time.

Bill

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FORESTRY SERVICES WORK TECHNICAL SPECIFICATIONS

A. GENERAL TERMS

1. DISPOSAL AND RESTORATION

a. Cleanup and Disposal

i. For regular maintenance pruning, all debris is removed. Mulch and wood may be left if requested by the customer.

ii. For regular maintenance removals, brush is chipped, the stump is cut as low as reasonable and wood is left in manageable lengths.

iii. Dead or dying trees are cut to a level so as to be safe from the electric facilities, leaving all debris for disposal by the owner.

iv. For customer/contractor requests for assistance, the trees are cut to a level so as to be safe from the electric facilities, leaving all debris.

v. For new construction pruning or removal, all debris is removed.

vi. For storm repairs, only enough work is done to enable repair of the electric facilities, leaving all debris for disposal by the owner.

b. For transmission ROW, the Contractor shall be responsible for the disposal of all cut wood and brush. All debris is to be disposed of in a proper manner off the ROW. The Contractor may, with written permission from the property owner, leave the wood or disperse wood chips from a chipper along the work area.

c. The restoration of all surfaces and repair of all property damage occurring in the execution of the Contract shall be considered a part of the work. Such work would include, but not be limited to, ruts, disturbed drainage ditches, broken drain tiles, cut fences, and disturbed fence posts. The Contractor shall complete all such repair and restoration work promptly after the completion of clearing work at each premise. Such work will be done at no charge to the Company.

2. HERBICIDE USE

a. All stumps shall be treated to prevent resprouting immediately following cutting.

b. Application of herbicides by foliar, basal or broadcast techniques may be used to eradicate undesirable vegetation less than six feet in height from right-of-ways and Company properties in lieu of manual or mechanical removal.

c. The Contractor shall select herbicides appropriate for the weather, terrain, and vegetation involved. The selected herbicides shall not damage any non-target vegetation or grasses.

d. The Contractor shall supply the Company with detailed information on all proposed herbicides. This information should include the formulation of any mixes, application rates, all product label information, and safety data sheets.

e. All herbicides shall be applied in accordance with existing laws and regulations. Any required record keeping shall be kept in a permanent record by the Contractor. Copies of same shall be forwarded to the Company as part of the weekly report.

3. CUSTOMER RELATIONS

a. While customer permission is not required for tree pruning for Company facilities, maintaining good relations with our customers is a top priority. It shall be the responsibility of the Contractor to operate in such fashion that good customer relations are established and maintained. Conflict with our customers is to be avoided at all times.

b. Should any customer approach Contractor crews, the Contractor shall attempt to courteously and conscientiously answer customer questions and concerns. If the Contractor is unable to satisfy the customer, the Contractor shall suspend operations on the customer's property, proceed to the next property, and immediately notify the Contract Administrator of the situation. A Company representative will respond to the customer and resolve the situation as quickly as possible. As soon as the situation is resolved, the Contract Administrator shall inform the Contractor of the course of action to pursue on the suspended portion of the work. The Contractor shall maintain a current written log of all non-routine customer contacts. The log shall contain, at minimum, the date of occurrence, customer name and address, the nature of the concern or question and the resolution, if any.

4. INSPECTION

The Company will review the completed work. Any deficiencies found will be noted and furnished to the Contractor for correction at the Contractor's expense.

5. STORM TROUBLE/EMERGENCY RESTORATION

a. The Contractor will be required to provide tree crews during times of storm trouble if tree work is needed. These crews will be required to have the proper tools, portable lights, rain gear, etc., to safely and productively perform their assigned duties. Since debris from storm related work is not hauled away, chippers will not be pulled or utilized and the Company will not incur any billing expense for them.

b. Fallen trees, broken limbs, etc. are cleared so electric service can be restored quickly and safely. Debris from this type of damage is the responsibility of the tree owner and no attempt is made to stack or cut debris into lengths.

c. Burning and arcing wires in trees are cleared in such a manner that electric service can be maintained. Debris in this case will be cleaned up in a timely manner.

d. Permission is not usually required during storm work. However, the work shall be done in such a manner so that public relations are not jeopardized.

e. Normally, all requests for crews are routed through the Contractor's designated Contact Person. This aids in dispatching the right size and type of crew quickly. Every effort shall be made by the Contractor to keep the proper crew makeup on each crew. As other crews are requested, the Contact Person shall coordinate the work effort. If the Contact Person cannot be reached, a Company supervisor will activate a crew or crews.

B. DISTRIBUTION PROCEDURES

1. REMOVALS

a. It is the Company's intent to remove, to the maximum extent possible, all trees that are a current or potential threat to our primary voltage lines (2400 volts and above). Final cuts shall be flush with the ground so as to form a smooth ground surface. Stumps shall be chemically treated to prevent regrowth.

b. Low growing brush that presents no threat to Company lines shall not be removed in the interest of conservation and wildlife habitat.

c. In addition to the removals described above, certain trees may be encountered that, while already meeting clearance standards due to age, health, disease, etc., present a potential danger to the Company lines. Such trees shall be designated as danger trees and shall be removed. However, removal of such trees shall require prior written approval of both the property owner and the Company.

d. All vines are to be removed from Company facilities. In addition, there is to be a 3-foot clear zone around the base of all poles to provide lineman access to climb the pole.

2. PRUNING

a. All trees and underbrush that are not removed, and which pose a present or potential threat to the lines, will be pruned in accordance with the following methods to achieve the indicated minimum clearances zones. When the Company gives notification to customers in the work area, permission of the property owner to prune such trees is not required.

b. Pruning Methods

i. Techniques consistent with the practices of natural lateral pruning methods shall be used. Pollarding and shearing are prohibited.

ii. All dead, rotting, or hazardous branches overhanging primary conductors, at any height, shall be removed.

iii. A minimum number of cuts shall be utilized to achieve required clearances.

iv. Water sprouts shall be completely removed.

v. Climbing irons or "hooks" shall not be used except in cases involving tree removal work.

c. Pruning Clearances

i. To achieve proper clearance, all limbs and branches that could grow into, fall onto, or otherwise come in contact with electric conductors are removed from the clearance zone. In applying the pruning methods described above, the boundaries of the clearance zones for primary voltages (2400 V through 69kV) are described below.

Type of Pruning	Clearance Zone	Distance from conductor
Over/Under	High	14'
Over/Under	Low	7'
Side Prune	High	10'
Side Prune	Low	5'

Clearances zones vary between tree species. Growth rate is the primary factor in determining clearance. Other factors include relative movement in wind, climbability and susceptibility to storm damage. Trees common to the service areas are categorized in the following table.

High Clearance	Low Clearance
Ailanthus	Ashes
River Birch	Basswood (linden)
Boxelder	Beech
Catalpa	White birch
Black cherry	Ginkgo
Kentucky coffeetree	Hickories
Elms	Honeylocust
Hackberry	Horsechestnut
Black locust	Norway maple
Silver maple	Red maple
Mulberry	Sugar maple
Poplars	Oaks
Sycamore	Sweetgum
Tuliptree	Black walnut
Willows	Arborvitae
Baldcypress	Hemlock
Douglas fir	Larch
Red pine	Scots pine
White pine	Eastern redcedar
Norway spruce	Blue spruce

	White spruce

ii. The clearance zone for secondary distribution lines (480 volts or less) for all tree species shall be 36 inches.

iii. Routine pruning of service drops/street light wires will only be performed during the maintenance cycles. Services are to be cleared using natural pruning techniques. Clearances are to be sufficient to allow the service to hang free and clear during normal conditions common to our climate. Trees or large branches are not to be removed without the permission of the Company supervisor in charge of tree work.

C. TRANSMISSION PROCEDURES

1. RIGHT-OF-WAY (ROW) WIDTHS

Generally, the right-of-way (ROW) for the 345kV transmission line is 100-200 feet. The ROW width for the 161kV line is 100 feet, 50 feet on either side of the centerline. Actual ROW widths for each specific line segment will be provided to the Contractor before work commences on that particular line segment.

2. WORK AREA DEFINITIONS

a. The "clear zone" is the area directly beneath and extending 20 feet to the outside of the transmission line conductors for the entire length of the line.

b. The "buffer zone" is the area of the Company's ROW that is outside the clear zone.

3. ACCESS TO WORK AREA

a. The Contractor shall confine its operation and travel within the ROW to as small an area as possible to minimize damages and disturbance of the ROW area.

b. Should the Contractor desire to secure access to the work area through private property, it shall make all necessary arrangements with the property owner.

c. Some of the work will be performed through agricultural land that may contain livestock. The Contractor shall be responsible for the security of the work area through these lands maintaining gates and fences that may be necessary to provide access and security through the life of the Contract.

4. RIGHT-OF-WAY CLEARING

a. All trees and shrubs are to be removed from the "clear zone" in rural areas. In

urban areas only species exceeding 20 feet in height are to be removed.

b. In the "buffer zone" all vegetation that is or will at maturity exceed 20 feet in height are to be removed

c. Trees off the ROW that pose a potential threat to the Company's facilities shall also be pruned or removed. Removal requires written permission of the property owner. All pruning shall be done according to the guidelines in Section 2 under Distribution Procedures.

d. All trees and shrubs that are removed shall be cut flush with the ground so as to form a smooth ground surface. Stumps shall be chemically treated to prevent regrowth.

5. EXCEPTIONS

In the performance of the work there may be instances where development, plantings or previous easement agreements within the ROW may preclude standard clearing specifications without further negotiations with the property owner. In such areas, the trees and/or shrubs will be pruned or removed as directed by the Contract Administrator.

D. WEED CONTROL PROCEDURES

The work to be performed is the weed control at electric substations, gas town border stations, and other MidAmerican Energy Company properties.

1. SPECIFICATION A - CHEMICAL APPLICATION: SPRING AND FALL

a. Provide spring and fall applications of pre-emergent chemicals. Spring application work must begin by March 30 and be completed by April 30. Fall application work must be completed between August 15 and September 15.

b. Any weeds appearing after the spring application shall be removed by the Contractor at no extra charge. Weeds 3-4 inches in height must be resprayed with an appropriate chemical. All other weeds, whether dead or alive, must be cut or pulled and removed from Company property by the Contractor if the previous application of chemicals fails to prevent weed growth.

c. Treated areas shall be tagged with a weatherproof marker indicating date of application.

d. All crushed rock is to be treated. Acreage to be treated is indicated for each location.

e. The work described shall be done at all locations indicating "Spec A" on the Locations/Requirements for Weed Control sheets provided by the Company.

2. SPECIFICATION B - GROUND STERILIZATION

a. Treat with ground-sterilizing chemical once annually. Application rate must be sufficient to keep the site vegetation-free throughout the growing season and to prevent vegetation growth on the fence lines.

b. Work must be completed between March 15 and April 30.

c. Treated areas shall be tagged with a weatherproof marker indicating date of application.

d. All sites must be revisited within 5-6 weeks following application. All emerging vegetation must be resprayed or removed by the Contractor at no extra charge. Vegetation 3-4 inches in height must be resprayed with an appropriate chemical. All other weeds, whether dead or alive, must be cut or pulled and removed from Company property by the Contractor if previous application of chemicals fails to prevent weed growth.

e. The Contractor will be solely liable for any damage to MidAmerican Energy Company properties or adjacent landowner properties caused by Contractor's work under this Contract.

f. Acreage to be treated at each site is indicated on the Locations/Requirements for Weed Control sheets. Area treated must include rock-covered areas inside and outside fence, rock-covered driveways, and any additional area described in comments column.

g. The work described shall be done at all locations indicating "Spec B" on the Locations/Requirements for Weed Control sheets provided by the Company.