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OCT 17 2017

PUBLIC SERVICE  
COMMISSION

October 16, 2017

Ms. Gwen R. Pinson  
Executive Director  
Kentucky Public Service Commission  
P. O. Box 615  
Frankfort, KY 40602-0615

**Re: ADMINISTRATIVE CASE NO. 2006-00494  
AN INVESTIGATION OF THE RELIABILITY MEASURES OF KENTUCKY'S  
JURISDICTIONAL ELECTRIC DISTRIBUTION UTILITIES AND CERTAIN  
RELIABILITY MAINTENANCE PRACTICES**

Dear Ms. Pinson:

Enclosed is Inter-County Energy Cooperative's Vegetation Management Plan revised August 1, 2017 pursuant to Public Service Commission Case No. 2006-00494 dated October 26, 2007.

If you have further questions or comments, please direct those to David Phelps, Vice President-Operations, 859-936-7818, [davidp@intercountyenergy.net](mailto:davidp@intercountyenergy.net).

Sincerely,

A handwritten signature in blue ink that reads "James L. Jacobus".

James L. Jacobus  
President/CEO

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COMMISSION

# INTER-COUNTY ENERGY

# VEGETATION MANAGEMENT

# PLAN

January 1, 2015  
Revised 8/1/17

As part of Inter-County Energy's efforts to provide reliable electric service, right-of-way maintenance and clearing is a necessary function of the operation's department. There are a large number of trees within Inter-County Energy's service territory boundaries. Land owners and public agencies have an interest in these trees and of the trees' appearance in their communities. Trees are the property of land owners. Members convey the right of access to said property to repair and service its lines for distribution of electric energy when they apply for membership. Maintaining a vegetation free corridor for the distribution of electricity is a necessary requirement to provide quality service to its members. In keeping distribution lines clear of vegetation, safe working conditions are maintained for Inter-County Energy employees, the public risk of electrical contact is reduced, and reliability of electric service is improved. This vegetation management plan outlines maintenance practices and time tables to be used by Inter-County Energy and its contractors.

Inter-County Energy consumers are served from 14 distribution substations operated and maintained by East Kentucky Power Cooperation. Inter-County RUS 2016 year end form 7 indicates a total of 3934 circuit miles including services, overhead primary, and underground primary conductor.

Inter-County Energy currently utilized contract line clearing crews that include various combinations of manpower and equipment. The current plan, based upon a board approved budget, allocates the majority of the annual clearing to be performed on a per circuit basis with smaller allocations given to time and material ("Hot Spot") clearing and three months of spray treating.

This revision is intended to improve our current practices and to make improvements in our efficiencies with cycle cutting and improve our tracking and reporting procedures. We are striving to maintain a six-year cycle in which each circuit will be cleared in its entirety beginning at the substation and working to the ends.

Line clearing standard practices will be as follows:

1. The right of way contractor shall begin at the substation with crews comprised of various combinations of manpower and equipment deemed necessary to complete that circuit in its entirety.
2. Focus must be maintained on dedicating crews to completing the cycle clearing in a timely matter and those crews shall not be used for any other reason unless approved by the VP of Engineering and Operations or the CEO.
3. Additional crews shall be dedicated to clearing trouble spots, new construction, work plan items, or other clearing requirements on a time and material basis. These crews, when available, can be used for the cycle clearing.

4. The Inter County energy crew leader, with the help of the contractor, shall determine and schedule the needed number of spray crews in the summer for spraying that right of way that has had one (1) complete growing cycle since its last clearing.
5. The contractor, with occasional help from the crew leader, shall strive to maintain a two week consumer notification and information for entry onto the consumer's property.
6. Door hangers shall be utilized to ensure proper notification to those consumers that were unable to be met by the crew leader and/or construction superintendent.
7. All right of way shall be cleared to conform to RUS standard M1.30G, ground to sky with the exception of yard trees and special arrangements determined by the crew leader.
8. All right of way must be trimmed or cut to maintain a minimum of 10' from phase to vegetation with no exception.
9. Service conductors are not to be included in the clearing unless there is a potential danger to property or the public.
10. The Crew Leader shall coordinate the proposed clearing schedule with the System Engineer to incorporate any circuit whose SAIDI and SAIFI numbers are higher than average as a result of tree outages.
11. The Crew Leader shall also coordinate the proposed clearing schedule with the service men to ensure that certain areas that may have had faster vegetation growth are considered in the overall plan.
12. The Crew leader along with the contractor shall provide weekly reporting of the miles of single phase and multiphase clearing as well as identifying trouble spots with consumers and/or yard trees. All clearing shall be clearly identified on maps provided by engineering showing which sections of line were cleared each week.

The following is the recommended cycle schedule beginning in year 2018. This schedule is to be closely monitored and adjusted as required by the Crew Leader to ensure the six-year cycle is maintained while also taking care of consumer requests, work plan, and new construction right of way issues.

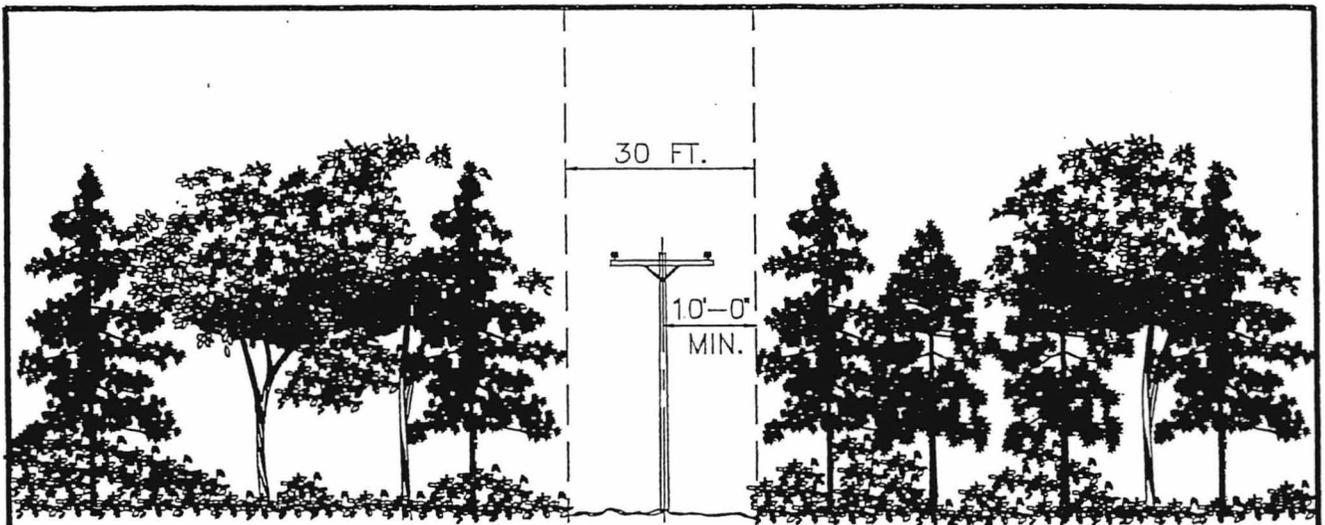
Substation	Circuit	Multi-phase miles	Single Phase miles	Total Miles	# of Customers	Cycle
Sulphur Creek	Raywick	25.35	149.14	174.49	1400	1
Sulphur Creek	Howardstown	10.26	43.35	53.61	329	1
Sulphur Creek	New Hope	4.08	25.72	29.8	259	1
Peyton Store	Jacktown	13.6	126.58	140.18	1183	1
Perryville	Battlefield	12.04	52.59	64.63	429	2
Perryville	Gravel Switch	20.66	112.28	132.94	1006	2
Ballard	Paradise Camp	4.06	17.94	22	541	2
Ballard	Wells Landing	3.75	19.96	23.71	517	2
Ballard	Toddsville	6.77	15.22	21.99	352	2
Toddsville	WDKY	9	38.62	47.62	572	2
Toddsville	Bourne	7.96	39.16	47.12	519	2
H.T. Adams	Harrodsburg	12.92	26.74	39.66	610	2
H.T. Adams	Dixville	11.98	52.45	64.43	701	3
Perryville	Harrodsburg	14.66	43.63	58.29	474	3
Perryville	Mitchelsburg	15.26	69.26	84.52	920	3
Lebanon	Danville	17.41	132	149.41	1289	3
Lebanon	Lebanon	26.61	117.35	143.96	1865	3
Loretto	Makers Mark	14.58	51.29	65.87	625	4
Loretto	Lebanon	11.79	35.93	47.72	507	4
Loretto	Spencer Hamilton	2.45	9.29	11.74	106	4
Marion Ind.	KY HWY 208	3.16	6.7	9.86	107	4
Marion Ind.	TBMK	0.69	0	0.69	3	4
Marion Ind.	Industrial	1.47	0.23	1.7	10	4
Shelby City	Hustonville	12.38	46.71	59.09	1247	4
Shelby City	Alum Springs	19.19	60.92	80.11	1226	4
Shelby City	Old 127	2.65	25.1	27.75	217	4
Shelby City	Stanford	16.41	49.13	65.54	742	4
Peytons Store	Little South	5.45	40.41	45.86	253	4
Peytons Store	Hustonville	25.44	108.27	133.71	1113	5
Lancaster	Lexington Rd	20.2	68.07	88.27	902	5
Lancaster	Buckeye	14.45	95.67	110.12	756	5
Lancaster	Conns Lane	2.12	3.47	5.59	80	5
Lancaster	Old HWY 52	2.33	1.68	4.01	23	5
Garrard	Gilbert	5.98	27.42	33.4	398	5
Garrard	Paint Lick	11.84	67.61	79.45	690	5

<b>Gooch</b>	Crab Orchard	17.51	75.14	92.65	890	5
<b>Gooch</b>	Fairgrounds	13.5	48.67	62.17	994	6
<b>Gooch</b>	Lancaster	11.04	35.28	46.32	887	6
<b>Gooch</b>	Danville	8.98	26.95	35.93	681	6
<b>Gooch</b>	Preachersville	21.05	102.68	123.73	1237	6
<b>Highland</b>	Ottenham	14.27	78.53	92.8	957	6
<b>Highland</b>	Waynesburg	6.61	28.49	35.1	567	6
<b>Highland</b>	Green River	12.58	121	133.58	1292	6

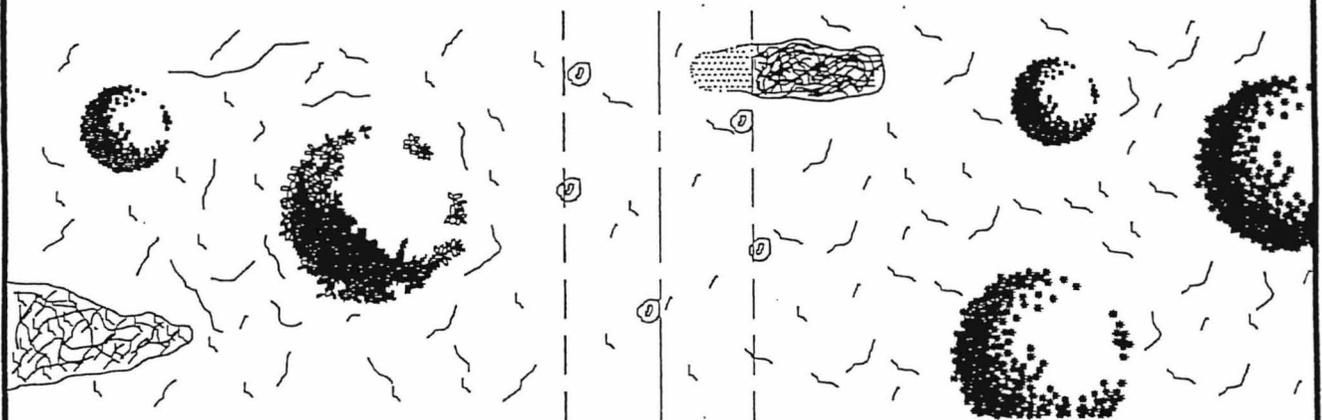
	<b>* Multi-phase miles</b>	<b>*Single Phase miles</b>	<b>*Total Miles</b>	<b>Customers</b>
Cycle 1	53.29	344.79	398.08	3171
Cycle 2	77.16	322.51	399.67	4546
Cycle 3	85.92	414.69	500.61	5249
Cycle 4	90.22	325.71	415.93	5043
Cycle 5	99.87	447.33	547.2	4852
Cycle 6	88.03	441.6	529.63	6615
<b>Grand Total</b>	<b>494.49</b>	<b>2296.63</b>	<b>2791.12</b>	<b>29476</b>

\* Miles represent only primary conductor and does not include secondary conductors.

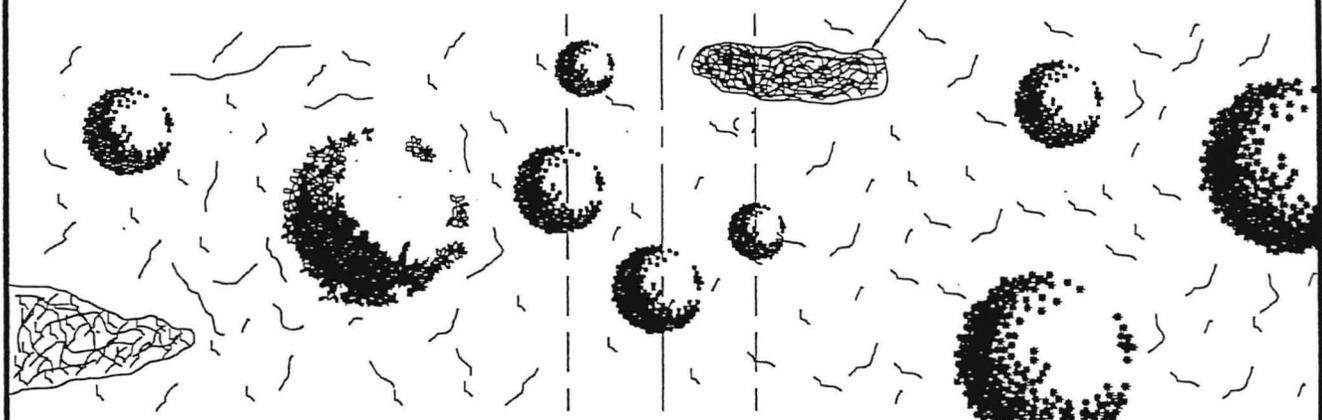
This revision of Inter County Energy's vegetation management system is a result of years of experience within the cooperative and input from like cooperatives around the state. This program shall be reviewed annually to ensure the six-year cycle will be met and system reliability is maintained.



ELEVATION



AFTER CLEARING



BEFORE CLEARING

NOTE:  
 Change suffix of drawing number to designate clearing width. (e.g. M1.30G specifies 30 foot wide clearing).

RIGHT-OF-WAY CLEARING GUIDE

DEC 1998

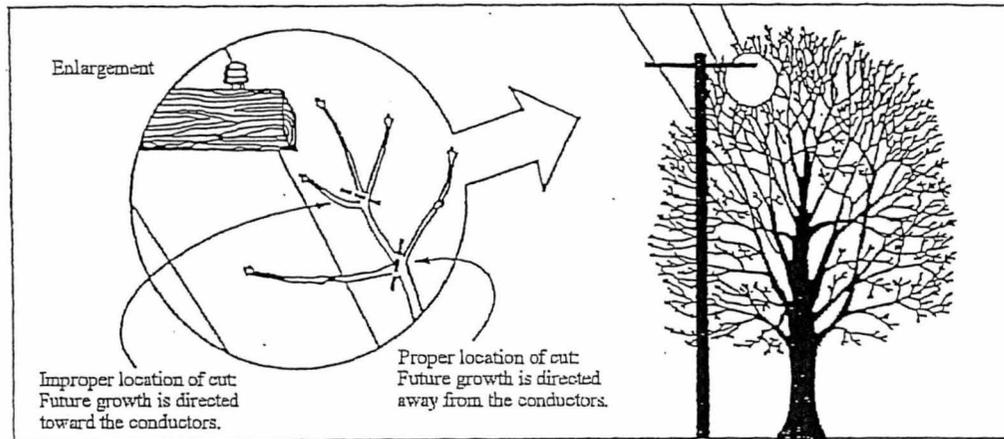
RUS

M1.30G

## Appendix D: Natural Pruning



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## Natural Pruning

Natural pruning is a method by which branches are cut at a suitable parent limb back toward the center of the tree. The cut should be made as close as possible to the branch collar at the branch base, however the branch collar should not be injured or removed. Every branch has a branch bark ridge that separates the branch from the main stem. The cut should be made on the outer side of the ridge. If the cut is made on the inner side of the branch bark ridge, a "larger" wound will result that may inhibit the tree's ability to naturally compartmentalize the wound, increasing wound closure time and the risk of entry for microorganisms. This method of pruning is sometimes called "drop-crotch pruning", "directional pruning" or "lateral pruning." Large branches should be removed to laterals at least one-third the diameter of the branch being removed. Natural pruning is especially adapted to the topping of large trees where a great deal of wood must be removed.

In natural pruning, almost all cuts are made with a saw, and very little pole pruning work is required. This results in a natural looking tree when finished, even if a large amount of wood has been removed. However, a hydraulic or manual pole pruner is required to trim those smaller laterals that cannot be properly trimmed using the pole saw and each crew shall be equipped with the necessary hydraulic pruners for lift crews and manual pruners for climbing crews.

Natural pruning is also directional pruning, since it tends to guide the growth of the tree away from the wires. Stubbing or pole-clip clearance, on the other hand, tends to promote rapid sucker growth right back into the conductors. It is important to remember that natural pruning does work, and that two or three pruning cycles done in this manner will bring about an ideal situation for both the utility and the tree owner. Most shade trees lend themselves easily to this type of pruning.

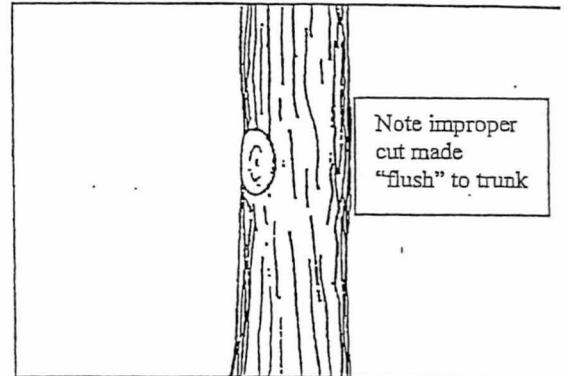
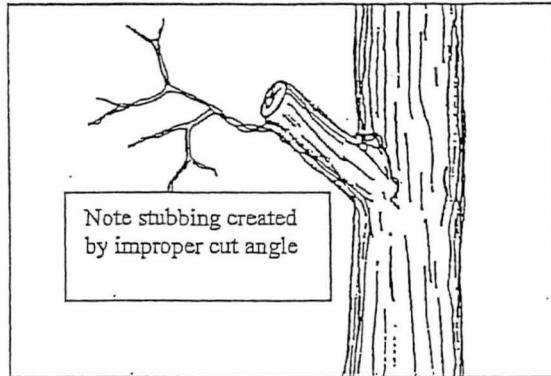
Natural pruning techniques should be used for top pruning, side pruning, under pruning, and combinations as described on the following pages.



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# Natural Pruning Details

## Improper Trimming Techniques

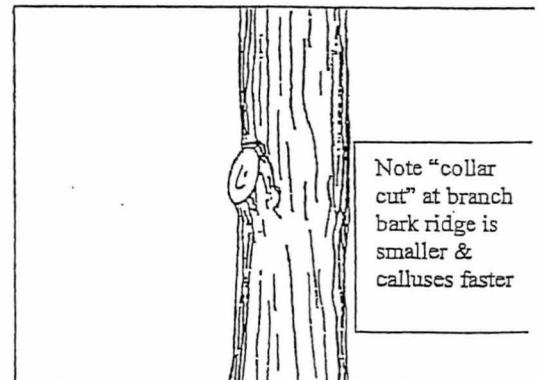
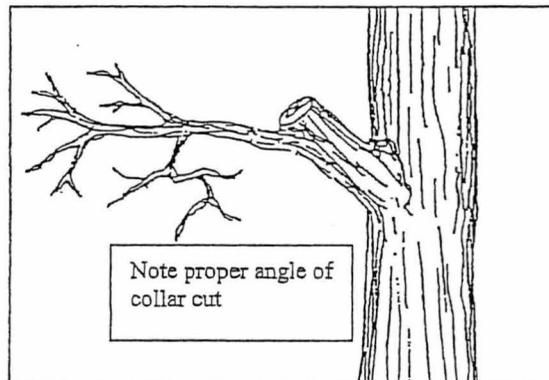


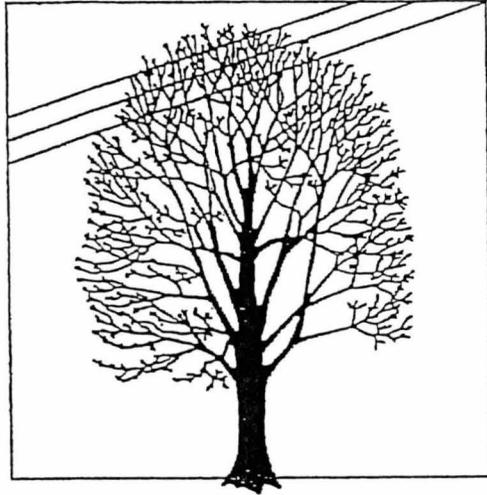
Details of improper trimming and proper natural pruning techniques are shown here. The branch at left above was cut back to a lateral that is too small. Branches should be cut back to a lateral that is at least one-third the size of the branch being removed as shown at left below. If a proper lateral is not available, the branch should be cut back to the trunk. Note that the remaining limb should be trimmed in a manner that meets the minimum clearance requirements while "training" it to grow away from the conductors. When limbs growing toward the conductors cannot be trimmed to meet these requirements, they should be removed back to the trunk of the tree.

The cut shown at right above is an improper flush cut where the branch collar was removed. The cut at right below shows the proper method to remove the branch at the trunk, leaving the branch collar but not a stub.

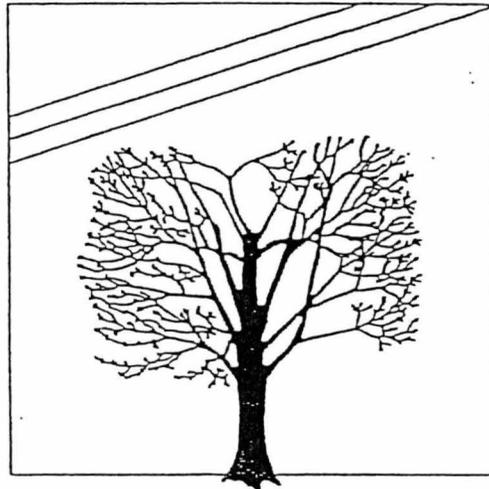
The CONTRACTOR shall remove all past stubbing, correctly pruning these limbs back to a lateral one third the size of the parent limb, or removing them back to the trunk of the tree, to promote proper callus formation. Removal back to the trunk will be the preferred method when it would create a "cleaner" appearance and minimize future re-growth and pruning.

## Proper Pruning Techniques





Before Top Pruning



After Top Pruning

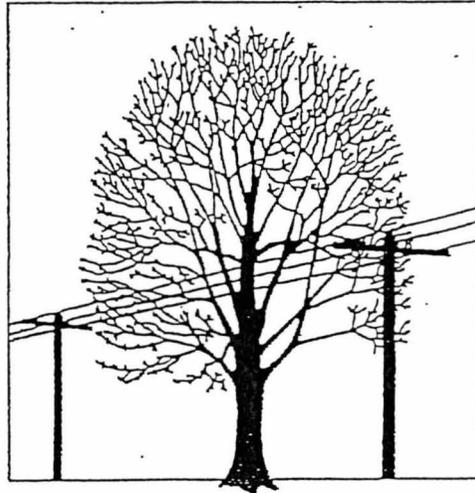
## 1. TOP PRUNING

Top pruning involves cutting back large portions of the upper crown of the tree. Top pruning is often required where a tree is located directly beneath a line. The main leader or leaders are cut back to a suitable lateral. (The lateral should be at least one-third the diameter of the limb being removed.) While most cuts should be made with a saw; a hydraulic or manual pole pruner is still required to properly prune the small lateral limbs that cannot be properly pruned using a pole saw.

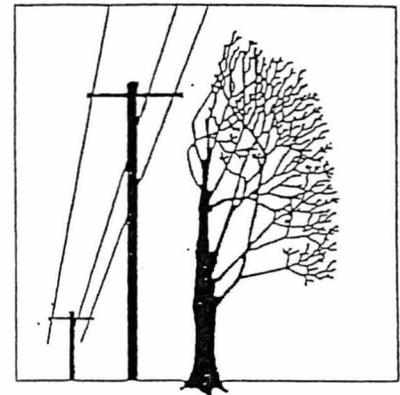
For the sake of appearance and to limit the amount of regrowth, it is best not to remove more than one-fourth of the crown when top pruning. In certain species, removal of too much of the crown may result in death of the tree.

Top pruning is generally required to address the situation where a tall growing tree has been planted or grown underneath the lines. Top pruning should NOT be used on those trees that are located partially under the line, where part of the tree could be trained to grow away from and/or beside the line, unless specifically required by the property owner and approved by the utility. Side pruning is discussed below.





Before Side Pruning



After Side Pruning  
Rural – R/W areas

## 2. SIDE PRUNING IN NON-RESIDENTIAL RIGHT-OF-WAY AREAS

In non-residential or rural right of way situations side pruning consists of cutting back or removing the side branches that are threatening the conductors from ground to sky. Side pruning is required where trees are growing adjacent to utility lines. Limbs should be removed at a lateral branch or the main trunk wherever possible to minimize future re-growth. All branches beneath the conductors should be removed to prevent them from growing up into the lines. Avoid unsightly notches in the tree, if possible.

## 3. SIDE PRUNING IN RESIDENTIAL AREAS

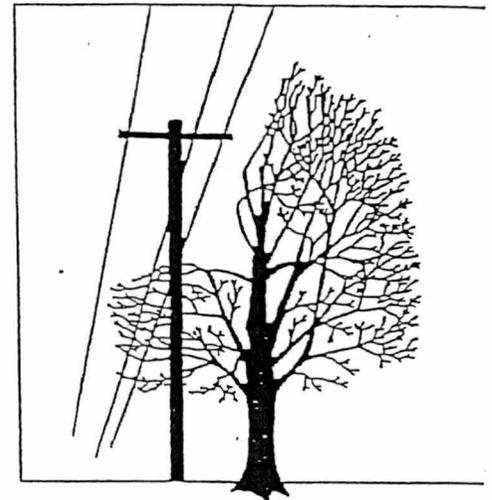
In residential situations, where the tree to be trimmed is part of a lawn or landscape setting it is often necessary to leave a "shelf" of branches below the phone cable level, or at least 12–15 feet below the primary level. While this is NOT a preferred pruning method, it is commonly required in residential areas in order to maintain as much of the natural appearance, screening and shade value of the tree as possible. Trees that would require excessive pruning or create serious visual impacts for the property owner should be candidates for removal.

When shelf pruning is performed the remaining branches shall be trimmed so as to train them to grow in a horizontal direction, or down and away from the conductors.



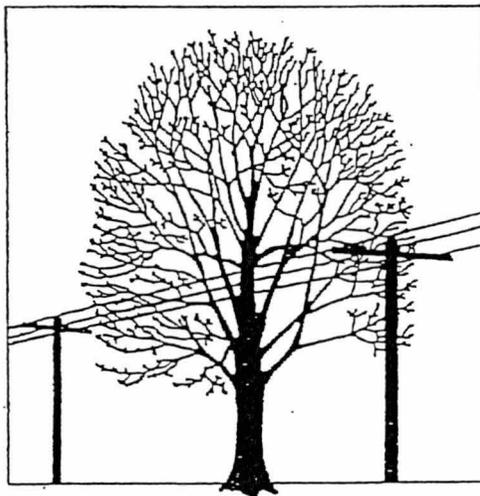
Branches growing up, toward the overhead conductors should be removed or trimmed to laterals growing away from the wires.

After Side Pruning  
Residential Areas

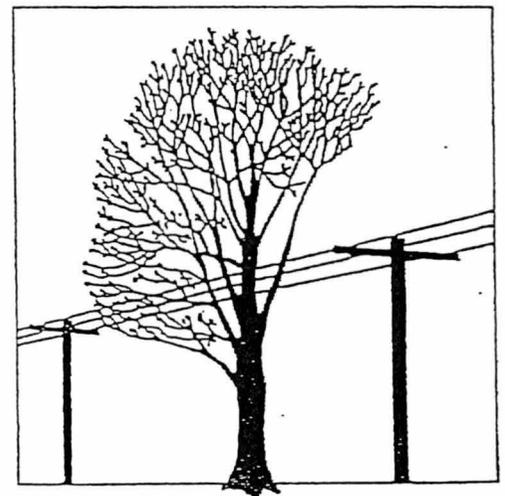


#### 4. UNDER PRUNING

Under pruning involves removing the lower limbs of the tree to allow wires to pass below the tree crown. All cuts should be made as close as possible to the branch bark ridge at the branch collar, to avoid leaving unsightly stubs. The natural shape of the tree is retained in this type of pruning, and the tree can continue its normal growth. Overhangs shall be trimmed or removed in accordance with the defined clearance requirements. Where overhangs will be allowed to remain, the CONTRACTOR shall visually inspect the remaining overhang to identify dead, decayed, cracked, split or weak conditions that may exist at the time of pruning and could damage the facilities if they broke out the tree and fell on the lines. Hazardous conditions shall be promptly reported to the utility.



Before Under Pruning



After Under Pruning



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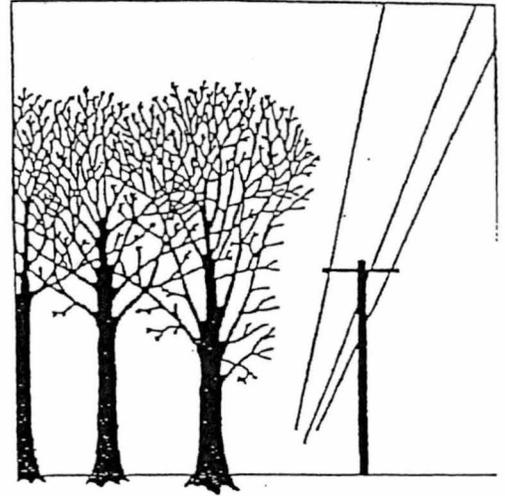
## 5. COMBINATIONS

It may be necessary to combine several pruning types in order to achieve a good-looking job and to obtain adequate clearances.

## Improper Trimming Methods

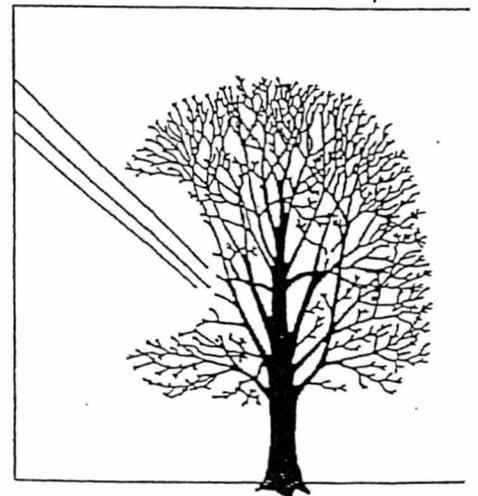
### 6. SIDE TRIM STUBBING

This is done by stubbing off portions of limbs along the side of the tree to obtain clearance. Cutting off portions of limbs (leaving stubs) to obtain clearance creates many fast-growing suckers that become a serious line clearance problem. Corrective pruning will be required to eliminate and repair past stubbing practices when they are encountered.



### 7. "SHAPING" AROUND LINES

"Shaping" is done by trimming limbs in an arc to obtain clearance. This unsightly method of trimming leaves branches above the conductors that could bend or break, causing outages. Shaping also creates many fast-growing suckers.

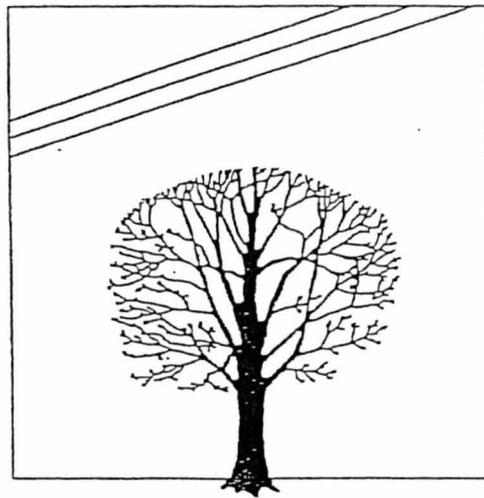
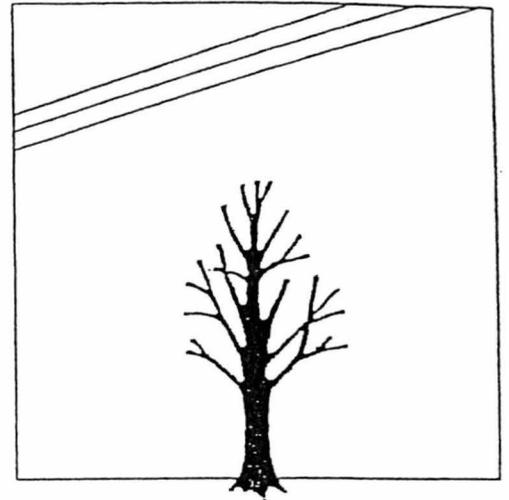


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## 8. POLLARDING

Pollarding is done by stubbing off major limbs to greatly reduce the size of the tree crown. The result is not only unsightly, but promotes a multitude of fast-growing suckers that sprout from the stubs. The combination of stubbing and re-sprouting leads to weak limb attachments, disease and decay, which then lead to a serious reliability and line clearance problem.

Pollarding is unacceptable.



## 9. ROUNDING OVER

Rounding over (or shearing) is done by making many small cuts so that the treetop is sheared in a uniform line. This creates an unhealthy tree condition and results in rapid regrowth of suckers directly toward the electric conductors.

When a round over is done using a pole saw the trimmer usually leaves numerous stubs, rather than following drop crotch and directional pruning principles. This stubbing commonly leads to decay, disease and rapid re-growth. This condition is unacceptable, except when mandated by customer requirements, and even then should be a last resort.

When a round over must be done, it shall be completed using the proper hydraulic or manual pruning tools, following the proper collar cut procedures. Stubbing is unacceptable. The utility shall be notified before a round over is performed.

