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421 West Main Street Post Office Box 634 Frankfort, KY 40602-0634 [502] 223-3477 [502] 223-4124 Fax www.stites.com

Mark R. Overstreet (502) 209-1219 (502) 223-4387 FAX moverstreet@stites.com

December 21, 2007

#### HAND DELIVERED

James A. Welch Director of Engineering Public Service Commission of Kentucky 211 Sower Boulevard Frankfort, Kentucky 40601

#### Kentucky Power Company Distribution Vegetation Management Plan RE:

Dear Mr. Welch:

Enclosed please find Kentucky Power Company's Distribution Vegetation Management Plan. It is being filed in accordance with the Commission's October 26, 2006 Order in Case No. 2006-00494.

Please do not hesitate to contact me if you have any questions. Very truly yours, Mark RI Overstreet

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## KENTUCKY POWER COMPANY DISTRIBUTION VEGETATION MANAGEMENT PLAN

#### Introduction

Pursuant to the Kentucky Public Service Commission Order in Administrative Case No. 2006-00494<sup>1</sup>, all jurisdictional electric utilities are to formally develop distribution vegetation management practices and file a copy of same with the Commission on or before December 26, 2007. Kentucky Power Company hereby submits its distribution Vegetation Management Plan. In addition to the vegetation management plan being provided below, a copy of AEP's System Forestry Goals, Procedures & Guidelines was filed as part of Adm. Case No. 2006-00494, Commission's 2nd Set of data request, Item No.10.

### Vegetation Management Plan

Kentucky Power Company manages vegetation along approximately 9,700 miles of distribution line within its service territory. Kentucky Power's Vegetation Management Plan (VM Plan) integrates a blend of work methods to achieve long-term goals and address short-term corrective maintenance. The following activities are included in Kentucky Power's VM Plan: (1) tree pruning and removal, (2) manual, mechanical and chemical control of vegetation along right-of-ways, (3) pre and post inspections of required work, (4) tree replacement program, (5) public education, and (6) tree inventories, work management system and computerized functions.

The VM Plan was developed by Kentucky Power Forestry personnel by evaluating circuit reliability performance, maintenance histories, field analysis of Right-Of-Way (ROW) conditions, customer feedback, and input from field personnel. Local operations and engineering personnel were also consulted for their knowledge of circuit design, field observations, circuit performance, and local community issues.

The VM Plan is intended to be flexible and can be modified throughout the year to adapt to changing environmental conditions and any developing vegetation-related reliability issues.

1. <u>Right-of-way clearing cycle</u>

Kentucky Power Forestry utilizes a "Performance Based" approach to allocate resources for maintenance work. Tree-caused interruption information is used to determine the optimum timing for tree work on a circuit and/or line segment. This allows for resources to be allocated where they can produce the most benefit, rather than following a prescribed rotation. Kentucky Power believes that a

<sup>&</sup>lt;sup>1</sup> Adm. Case No. 2006-00494, An Investigation of the Reliability Measures of Kentucky's Jurisdictional Electric Distribution Utilities and Certain Reliability Maintenance Practices, final Order dated October 26, 2007.

performance based vegetation management approach is more cost-efficient, effective, and flexible.

Kentucky Power performs maintenance on 20 - 25% of its overhead line miles each year. This represents an average 4 to 5 year cycle. This is not a conventional "cycle trim", however. Due to the different characteristics in terrain, accessibility, and yard tree concentration, some circuits in urban settings typically require shorter maintenance cycles. Rural circuits, where herbicides techniques can be utilized, can be effectively managed with longer maintenance cycles.

Tree-Related Outage data identifies the circuits and/or line segments for resource allocation. The "Cut" portion of the VM Plan may involve complete circuit trimming or partial circuit trimming. The helicopter aerial saw will also be utilized in rural, mountainous terrain to reduce trimming costs and improve reliability. The "Cut" portion of the VM Plan also includes a three-year cycle reclearing of 667 miles of Station Zones to minimize Feeder Breaker interruptions. Resources have also been allocated to allow us to respond to reactive reliability issues. This unscheduled work is categorized as either Hotspot or Quality of Service (QOS) trimming and represents about eight per cent of the Forestry Budget.

Brush conditions are evaluated by Field personnel to determine the most costeffective herbicide treatment. Kentucky Power plans to use ULV (Ultra Low Volume), High Volume, basal, and aerial spray applications to treat over 1,900 acres of brush. The Spray Program is a crucial component of the Vegetation Management Plan. It allows Kentucky Power to maintain brush in a highly costeffective manner and greatly reduce future work loads and maintenance costs.

Right-of-Way widening will be performed on selected lines that are located in inaccessible areas, exhibit poor reliability, and/or affect critical or large numbers of customers. This will be funded under the Forestry Capital component of the VM Plan. Other proactive work activities to be employed are TGRs (Tree Growth Regulators), designed to slow regrowth on selected trimmed trees, and a TRIP (Tree Replacement Incentive Program), that provides an incentive for the property owner to allow us to remove selected "cycle-buster" trees.

#### 2. <u>Reliability criteria and reliability reports used to develop and monitor</u> <u>effectiveness of the VM Plan</u>

Tree-Related Outages (Tree In ROW and Tree Out of ROW) data are used to prioritize relative circuit performance. The number of Tree Outages and Customer Minutes of Interruption are measured for each circuit and are normalized on a "per Mile" basis. This interpretation indicates the circuits where resource allocation will have the greatest impact for improving reliability. Repeat Tree-Related Outage information identifies specific line segments that may require corrective maintenance. These line segments are inspected and evaluated by forestry personnel for possible inclusion into the VM Plan.

The effectiveness of a VM Plan often takes over three years to make manifest. Tree-related outage SAIFI and SAIDI indices are monitored to indicate how the data is trending over a five-year timeframe.

#### 3. How KPCo determines when to perform maintenance

Kentucky Power Forestry utilizes a comprehensive integrated approach to prescribe the most cost-effective maintenance method. Circuit reliability performance, maintenance history, physical inspection of vegetation conditions, Repeat Outage information, and local knowledge of the customer-base are several of the factors used to prescribe maintenance. The prescription will often be a combination of maintenance tools such as: full-circuit reclearing, partial circuit trimming, ground and aerial spraying, aerially sawing, Tree Growth Regulator application, hazard tree abatement, and "cycle buster" tree removal.

4. Evaluation of VM Plan

Tree Outage indices are used to evaluate the long-term (3-years plus) effectiveness of the Forestry Plan. Kentucky Power utilizes a web-based record-keeping program that provides up-to-date information that is used to monitor the tree trimming contractor's production, spending & budget status, and amount of unscheduled hotspot and Quality of Service trimming that is occurring.

#### Public Communication and Public Education

Kentucky Power Company provides notification to property owners or occupants that may be affected by planned vegetation management activities by making personal contact or by leaving door hangers. The work planners making the door-to-door visits discuss the required vegetation management activities. They also inform the customer about trees that are compatible with overhead lines, tree planting tips, power line identification and associated safety hazards, and our Tree Replacement Program. Pamphlets are available upon request.

AREA	PLANNED AI	ANNED Erial V Miles		PLANNED PLANNED SPRAY SPRAY MILES ACRES	FORESTRY CAPITAL FUNDING	FORESTRY UNSCHEDULED CAPITAL REACTIVE O&M FUNDING FUNDING	SCHEDULED 0&M FUNDING	TOTAL O&M FUNDING
HAZARD	273	27	339	1115	\$ 907,225	5 \$ 221,500	\$ 2,292,625	\$ 2,514,125
PIKEVILLE	413	27	253	625	\$ 979,093	3 \$ 426,975	\$ 2,533,630	\$ 2,960,605
ASHLAND	311	15	75	241	\$ 794,117	7 \$ 150,000	\$ 1,970,606	\$ 2,120,606
TOTALS	266	69	299	1981	\$ 2,680,435	5 \$ 798,475	\$ 6,796,861	\$ 7,595,336

2008 KENTUCKY POWER DISTRIBUTION VEGETATION MANAGEMENT PLAN Recap