

2006-494



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VIA OVERNIGHT MAIL

March 27, 2008

Mr. John A. Rogness III
Director of Engineering
Kentucky Public Service Commission
P.O. Box 615
211 Sower Boulevard
Frankfort, KY 40602

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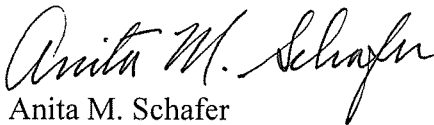
PUBLIC SERVICE
COMMISSION

Re: 2008 Reliability Report and Vegetation Management Plan Update

Dear Mr. Rogness:

Enclosed please find the signed copy of the Duke Energy Kentucky, Inc. 2008 Reliability Report and Vegetation Management Plan Update.

Sincerely,


Anita M. Schafer
Senior Paralegal

Enclosure

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

DUKE ENERGY KENTUCKY, INC.
2008 RELIABILITY REPORT AND VEGETATION MANAGEMENT PLAN
UPDATE

March 27, 2008

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I. Introduction

On October 26, 2007, the Commission issued its Order requiring all jurisdictional utilities to file annual reliability reports and to develop vegetation management plans.¹ Pursuant to the Order, jurisdictional utilities were required to report a minimum of 5 years of reliability data. The reports are required to be based upon a calendar year (January to December) and filed by the first business day in April in the year immediately following the reporting year.

Duke Energy Kentucky, Inc. (“DE-Kentucky”) submits its 2008 Reliability Report and Vegetation Management Plan update as required by the Commission’s October 26, 2007 Order in Case No. 2006-00494.

II. Reliability Report Summary

Exhibit A of the reliability report includes measurements of total system performance using the System Average Interruption Duration Index (“SAIDI”), the System Average Interruption Frequency Index (“SAIFI”), and the Customer Average Interruption Duration Index (“CAIDI”) calculated for each of the preceding five twelve-month periods following the reporting year.² DE-Kentucky uses IEEE Std. 1366 to determine major event days for the purpose of weather-normalizing outage data when calculating the reliability indices SAIFI, SAIDI and CAIDI. Except where noted in the Year-End Indices, major event days have been excluded from all reliability measures in this report.

¹ *In re An Investigation of the Reliability Measures of Kentucky’s Jurisdictional Electric Utilities.. Case No 2006-00494.* (Order at 8)(October 27, 2007).

² *Id.*

Exhibit B contains a list of customer interruptions by the ten most significant cause categories for the most recent five twelve- month periods.³ The cause codes used in Exhibit B are IEEE cause codes.

Exhibit C of the reliability report is an analysis of DE-Kentucky's ten worst performing circuits on the system for the reporting period taking into consideration all three reporting indices.⁴ This section includes an analysis of the cause of the poor performance, the circuit, index value, and the major outage category contributing to the circuit's performance. The durations of the reported outages are measured by number of minutes by index for SAIDI and CAIDI. This section also describes the corrective actions planned or already taken to improve circuit performance.

Exhibits D, E, and F of the reliability report comprise a list of the ten worst performing circuits as determined by the individual SAIFI, CAIDI, SAIFI indices, respectively. These sections also include the value index and primary cause of the circuit performance.

III. Vegetation Management Plan Update and Summary

DE-Kentucky filed its 2008 Vegetation Management Plan with this Commission on December 18, 2007 in Case No. 2006-00494.⁵ Duke Energy's Midwest Vegetation Management Group is responsible for controlling vegetation growth for 37,000 miles of transmission and distribution overhead electric lines and gas supply lines in Ohio, Indiana and Kentucky.

Exhibit G is a copy of DE-Kentucky's current Vegetation Management Plan. There have been no amendments or changes to the plan since it was initially filed with

³ *Id.* at 9, paragraph 6.

⁴ *Id.* at 7.

the Commission on December 18, 2007. There are no amendments or changes planned for 2008.

As part of its 2008 plan, DE-Kentucky planned to trim trees and maintain vegetation along 630.4 miles of its distribution system. As of March 2008, DE-Kentucky has completed approximately 62% of its scheduled trimming, or approximately 393.3 miles of its distribution system, leaving only 237.1 miles to be trimmed in 2008. DE-Kentucky is reorganizing crews to ensure we have proper storm coverage throughout the year and anticipates completing the scheduled trimming on time.

Respectfully submitted,



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Year-End Indices

Duke Kentucky Year-End Reliability Indices							
Year	Major Event Days Included				Major Event Days Excluded		
	SAIFI	CAIDI	SAIDI		SAIFI	CAIDI	SAIDI
2001	1.67	215.3	359.6		1.15	98.3	113.5
2002	1.66	86.0	142.5		1.55	82.5	127.7
2003	1.72	100.1	172.3		1.49	77.3	115.1
2004	1.07	74.4	79.9		1.07	74.3	79.7
2005	1.24	94.5	117.1		1.04	85.2	88.6
2006	2.05	141.0	289.7		1.43	81.3	116.5
2007	1.59	179.8	286.7		1.15	94.1	108.3

Customer Interruptions by Cause

Sum of Cust Interrupt (CI)		IEEE Cause												
Year	PowerOff	Month	PowerOff	Animal	Equipment	Error	Other	Overload	Scheduled	Storm	Tree	Unknown	Vehicle Damage	Grand Total
2003		1	1	124	2,098	895	92	84	19	8	686	5	4,012	
		2	35	19,183	647	3,833	10	30,345	272	161	84	54,570		
		3	102	799	42	37	7,691	124	35	52	8,882			
		4	479	61	39	220	75	370	4	1,003	2,251			
		5	772	1,581	62	680	6,738	7,838	2,358	3,523	23,552			
		6	541	3,036	1,890	1	37	1,118	1,947	12,770	1,646	22,986		
		7	579	4,551	1,614	12	15	27,467	7,008	2,493	5,849	49,588		
		8	346	3,739	1,706	299	199	7,301	5,161	306	676	19,733		
		9	497	565	238	36	1,361	2,283	2,386	491	7,857			
		10	2,702	2,239	1,394	216	2	579	2,972	592	10,696			
		11	538	189	481	3	125	670	405	74	2,485			
		12	553	3,523	33	6	36	18	319	395	4,885			
2004		1	3,010	1,103	1,163	5	126	62	285	617	6,371			
		2	474	1,470	4,993	1	358	248	256	36	7,836			
		3	518	2,242	157	7	38	420	251	139	210	3,982		
		4	443	3,417	30	1	183	16	82	1,082	1,620	6,874		
		5	2,511	5,787	79	34	14	4,411	3,989	750	7,751	25,326		
		6	1,319	1,196	65	9	314	486	2,678	2,577	352	8,996		
		7	897	1,320	364	29	101	4,627	4,423	709	3,702	16,172		
		8	641	2,128	51	35	244	2,953	763	1,141	466	8,422		
		9	1,244	2,806	28	52	136	1,153	3,553	81	9,053			
		10	5,342	2,965	8	1	235	9	880	599	4,339	14,378		
		11	671	14,648	44	37	3,543	215	558	19,716				
		12	122	4,175	26	139	68	393	2,880	2,267	131	10,201		
2005		1	173	2,862	1,082	117	42	347	13	2,124	6,760			
		2	2,282	2,896	15	1	125	2,475	139	2,695	10,628			
		3	273	28	29	353	1	3,238	94	2,369	6,385			
		4	205	4,854	269	2	211	82	3,722	94	2,799	12,238		
		5	563	3,524	139	1	575	156	2,214	171	90	7,433		
		6	657	5,625	24	45	408	2,008	573	584	3	9,927		
		7	631	6,023	324	596	634	1,154	997	9,454	323	20,136		
		8	607	4,015	1	65	52	506	4,718	572	400	548	11,484	
		9	280	3,688	178	16	296	549	5,336	8,531	96	18,970		
		10	908	7,678	1,595	44	133	1	431	184	2,933	13,907		
		11	867	3,458	158	127	1,566	1,362	7,278	279	107	15,202		

Customer Interruptions by Cause

Sum of Cust Interrupt (CI)		IEEE Cause										Grand Total		
Year	PowerOff	Month	PowerOff	Animal	Equipment	Error	Other	Overload	Scheduled	Storm	Tree		Unknown	Vehicle Damage
		12		187	654		174	1	150		24	240	483	1,913
2006		1		287	11,399		107	3	968	445	4,407	3,156	1,166	21,938
		2		49	574		10	2	19		145	16	9	824
		3		264	5,739		715	1	264	1,670	441	154	2,784	12,032
		4		1,416	2,445		58	10	1,908	2,626	16,813	4,073	2,993	32,342
		5		2,911	659		10	824	272	278	263	1,891	869	7,977
		6		3,186	5,823		7,679	11	1,196	2,749	5,900	1,769	630	28,943
		7		2,473	8,819		216	63	82	8,282	5,222	2,797	775	28,729
		8		513	1,252		274	50	359	180	5,619	1,939	1,971	12,157
		9		1,750	583		67	2	258	1,417	964	752	1,582	7,375
		10		903	208		68		1,017	393	4,362	434	16,066	23,451
		11		3,428	1,168		16	1	679		454	271	5,187	11,204
		12		1,549	1,950		7	1	233	2	57	1	444	4,244
2007		1		1,484	2,943		13	3	39	2	70	6,013	125	10,692
		2		289	2,872		23	36	402	231	4,982	5	58	8,898
		3		740	1,402		76		130	38	2,477	1	36	4,900
		4		668	265		89		118	3,895	3,569	841	2,254	11,699
		5		2,618	1,764		14		151	517	2,611	112	3,735	11,522
		6		2,408	1,703		30	2	261	3,406	6,304	3,303		17,417
		7		1,195	2,889		1,376		1,016	2,211	5,716	796	638	15,837
		8		947	3,637		59	135	544	377	4,315	51	35	10,100
		9		1,808	1,426		419	42	1,501	93	2,216	13,241	321	21,067
		10		1,478	3,643		182		117	1,066	2,234	8,860	281	17,861
		11		1,349	2,583		28		306	34	59	1	46	4,406
		12		310	6,582		85	13	29	197	7,033	5,105	8	19,362
Grand Total				65,993	200,480	3,694	30,171	6,544	20,252	135,911	160,670	114,233	90,836	828,784

2007-Worst-10 Analysis-Action

Rank	Sum of Ranks	Substation Name-Feeder	Feeder SAIDI	SAIDI Rank	Feeder SAIFI	SAIFI Rank	Feeder CAIDI	CAIDI Rank	SubCirc	Analysis and Major Contributing Outage Category	Action Taken or Planned
1	16.0	HANDS (128) -45	555.0	2	2.68	6	207.2	8	128-45	This circuit is on the worst-10 list because of Vehicle Damage. On 5/7/07 a pole was hit and broken on Taylor Mill Rd at Heathermoor Blvd.	This was a random occurrence and has been repaired. No further action is planned.
2	30.0	WEST END (015) -41	605.9	1	4.65	2	130.3	27	015-41	This circuit is on the worst-10 list because of Tree-Caused Outages.	This circuit was last trimmed in 2005 and will be trimmed next in 2009.
3	47.0	CLARYVILLE (147) -41	263.7	5	1.42	32	185.9	10	147-41	This circuit is on the worst-10 list because of Tree-Caused Outages.	Trimming on this circuit was started on January 21, 2008 and is in progress now. We expect the recent trimming will reduce tree-caused outages in 2008 and beyond.
4	51.0	BUFFINGTON (067) -41	240.1	8	1.69	24	141.7	19	067-41	This circuit is on the worst-10 list because of an Equipment-Caused Outage. On 8/18/07, a failed underground feeder cable caused an outage.	This problem has been repaired. No further action is planned.
5	53.0	BUFFINGTON (067) -45	249.6	6	1.92	19	130.0	28	067-45	This circuit is on the worst-10 list because of an Equipment-Caused Outage. On 11/28/07, a broken crossarm brace caused the circuit to lock out.	This problem has been repaired. No further action is planned.
6	55.0	LIMABURG (189) -42	334.6	4	3.26	3	102.7	48	189-42	This circuit is on the worst-10 list because of Tree-Caused Outages.	This circuit was last trimmed on February 8, 2008. We expect the recent trimming will reduce tree-caused outages in 2008 and beyond.
7	63.0	MT ZION (305) -43	230.5	9	2.10	14	109.9	40	305-43	This circuit is on the worst-10 list because of a Storm-Caused outage. On April 3, 2007, the substation circuit breaker was damaged during a storm.	This problem has been repaired. No further action is planned.
8	63.0	CRESCENT (070) -43	224.2	10	1.94	18	115.4	35	070-43	This circuit is on the worst-10 list because of Tree-Caused Outages in May and June, 2007.	This circuit was last trimmed in July, 2007. We expect the recent trimming will reduce tree-caused outages in 2008 and beyond.
9	64.0	WILDER (059) -42	192.3	11	1.25	38	153.6	15	059-42	This circuit is on the worst-10 list because of a Storm-Caused outage. On June 2, 2007, overhead conductor just outside Wilder Station was brought down during a storm.	This problem has been repaired. No further action is planned.

2007-Worst-10 Analysis-Action

10	69.0	WILDER (059) -46	244.2	7	2.70	5	90.4	57	059-46	This circuit is on the worst-10 list because of Tree-Caused Outages.	Trimming on this circuit was started on February 29, 2008 and is in progress now. We expect the recent trimming will reduce tree-caused outages in 2008 and beyond.
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2007-Worst-10 SAIDI

Rank	Substation Name-Feeder	Feeder SAIDI	SAIDI Rank	Feeder SAIFI	SAIFI Rank	Feeder CAIDI	CAIDI Rank	SubCirc	Major Outage Category
1	WEST END (015) -41	605.9	1	4.65	2	130.3	27	15-41	Tree
2	HANDS (128) -45	555.0	2	2.68	6	207.2	8	128-45	Vehicle
3	BELLEVUE (131) -43	357.9	3	6.29	1	56.9	92	131-43	Tree
4	LIMABURG (189) -42	334.6	4	3.26	3	102.7	48	189-42	Tree
5	CLARYVILLE (147) -41	263.7	5	1.42	32	185.9	10	147-41	Tree
6	BUFFINGTON (067) -45	249.6	6	1.92	19	130.0	28	67-45	Equipment
7	WILDER (059) -46	244.2	7	2.70	5	90.4	57	59-46	Tree
8	BUFFINGTON (067) -41	240.1	8	1.69	24	141.7	19	67-41	Equipment
9	MT ZION (305) -43	230.5	9	2.10	14	109.9	40	305-43	Storm
10	CRESCENT (070) -43	224.2	10	1.94	18	115.4	35	70-43	Tree

2007-Worst-10 SAIFI

Rank	Substation Name-Feeder	Feeder SAIDI	SAIDI Rank	Feeder SAIFI	SAIFI Rank	Feeder CAIDI	CAIDI Rank	SubCirc	Major Outage Category
1	BELLEVUE (131) -43	357.9	3	6.29	1	56.9	92	131-43	Tree
2	WEST END (015) -41	605.9	1	4.65	2	130.3	27	15-41	Tree
3	LIMABURG (189) -42	334.6	4	3.26	3	102.7	48	189-42	Tree
4	WILDER (059) -45	176.4	15	3.19	4	55.2	94	59-45	Equipment
5	WILDER (059) -46	244.2	7	2.70	5	90.4	57	59-46	Storm
6	HANDS (128) -45	555.0	2	2.68	6	207.2	8	128-45	Equipment
7	DECOURSEY (299) -41	151.1	23	2.58	7	58.5	91	299-41	Scheduled
8	VERONA (125) -42	148.0	26	2.51	8	59.0	90	125-42	Vehicle
9	BELLEVUE (131) -41	148.1	25	2.32	9	63.8	85	131-41	Tree
10	COLD SPRING (132) -49	180.8	13	2.31	10	78.3	72	132-49	Tree

2007-Worst-10 CAIDI

Rank	Substation Name-Feeder	Feeder SAIDI	SAIDI Rank	Feeder SAIFI	SAIFI Rank	Feeder CAIDI	CAIDI Rank	SubCirc	Major Outage Category
1	DONALDSON (055) -44	11.7	89	0.03	99	355.6	1	55-44	Equipment
2	DIXIE (089) -43	7.3	98	0.02	101	315.0	2	89-43	Storm
3	CLARYVILLE (147) -43	72.8	54	0.25	74	291.0	3	147-43	Equipment
4	FLORENCE (241) -47	0.4	107	0.00	108	276.0	4	241-47	Equipment
5	CLARYVILLE (147) -42	116.6	35	0.45	62	259.4	5	147-42	Tree
6	OAKBROOK (210) -41	97.9	40	0.41	64	238.5	6	210-41	Storm
7	DIXIE (089) -41	5.2	100	0.02	102	230.8	7	89-41	Storm
8	HANDS (128) -45	555.0	2	2.68	6	207.2	8	128-45	Vehicle
9	BUFFINGTON (067) -43	1.8	102	0.01	106	196.3	9	67-43	Equipment
10	CLARYVILLE (147) -41	263.7	5	1.42	32	185.9	10	147-41	Tree

DE-Kentucky's Vegetation Management Plan
Initially Submitted December 18, 2007

Goals

Duke Energy's goals for its Vegetation Management Operations are to balance the need for reliable utility service with safe and cost-effective vegetation management practices that preserve our local communities' natural surroundings, aesthetics and the environment. Targeted herbicides provide one of the most cost-effective and environmentally friendly means of controlling undesirable vegetation.

Safety

Our goals are to work safely at all times to achieve a zero injury culture and to minimize the safety risk of vegetation and conductor contacts. Serious or fatal shocks can occur when working in trees near power lines. Duke Energy strives to minimize that risk by trimming properly in accordance with industry tree trimming safety standards.

Reliability

Duke Energy's electric service reliability, as measured by SAIFI and SAIDI, has improved in recent years due in part to our more rigorous tree trimming practices. Duke Energy strives to trim its Kentucky distribution circuits every four-and-one-half years and transmission every six years.

Tree Care Standards

Duke Energy requires its employees and contractors to prune trees in accordance with American National Standards Institute ("ANSI") and National Arborist Association ("NAA") standards. The relevant standards are ANSI Z133, Safety in Tree Trimming Operations, and ANSI A300, Safety in Tree Care Operations. These ANSI standards were developed in cooperation with the NAA. Additionally, Duke Energy follows the practices in Field Guide for Qualified Line Clearance Tree Workers by Dr. Alex L. Shigo, former head of the U.S. Forest Service. In rural areas, Duke Energy may authorize its contractors to use mechanized pruning equipment.

Tree Trimming Specifications

69KV and above Transmission Lines

- 15 feet clearance to the side from all conductors.
- 15 feet clearance below the lowest conductor.
- No overhanging/encroaching branches permitted.
- Trim to the previously established widths of our right-of-way and practice established beyond the 15 feet widths.

3 Phase Primary Lines

- 10 feet clearance to the side from all conductors.
- 10 feet clearance below the conductors.
- No overhanging/encroaching branches.

Single Phase and Two Phase Primary lines

- 10 feet clearance to the side from all conductors.
- 10 feet clearance below the conductors.
- Overhang: all live branches above the conductors shall be removed to a minimum height of 15 feet, and at a 45-degree angle. All dead and structurally weak branches overhanging any primary voltage wires shall be removed.
- Underneath the primary: 10 feet clearance from the conductors to the closest limbs beneath the phases.

Secondary Lines

- 5 feet clearance to the side from the secondary line.
- 5 feet clearance above and below the secondary line.

Services Lines

- 1 foot swing clearance from all service lines.

Brush/Wood Removal

- Circuit maintenance - brush is removed, wood cut into movable pieces.
- Customer may request off-cycle maintenance in accordance with the clearance standards above - brush and wood is customer's responsibility.
- Storm Work - no brush or wood removal.

Customer Notification

- Duke Energy customers are notified of tree trimming being done on their property by door hanger cards.
- Duke Energy requires its contractors to contact local government officials prior to beginning work in the community.

Right Tree In The Right Place

- Duke Energy will cooperate in tree removal with local government officials as needed.

Determination of Need to Perform Maintenance/Evaluation of Plan Effectiveness

Duke Energy regularly monitors its SAIFI and SAIDI measures. If SAIFI or SAIDI were to significantly decline, Duke Energy would evaluate whether to modify its vegetation management practices, including its right-of-way clearing cycle, in order to improve SAIFI and SAIDI performance. Duke Energy also monitors the performance of individual circuits. In an individual circuit has a significant number of outages, Duke Energy will perform off-cycle tree trimming as needed. Duke Energy also monitors industry tree trimming standards and modifies its tree trimming practices as necessary to meet or exceed industry standards.