Duke Energy Ohio Exhibit ________

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke Energy Ohio, Inc. to Adjust Rider DR-IM and Rider AU for 2014 SmartGrid Costs.	)))	Case No. 15-883-GE-RDR

DIRECT TESTIMONY OF

DONALD L. SCHNEIDER, JR.

ON BEHALF OF

DUKE ENERGY OHIO, INC.

June 4, 2015

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Donald L. Schneider, Jr., and my business address is 400 South Tryon Street, Charlotte, North Carolina, 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Business Services LLC, an affiliate of Duke Energy Ohio, Inc. (Duke Energy Ohio or Company), as Director, Advanced Metering.

Q. WHAT ARE YOUR RESPONSIBILITIES AS DIRECTOR, ADVANCED METERING?

A. As Director, Advanced Metering, my primary responsibility is managing the project execution of Advanced Metering Infrastructure (AMI) related projects for all Duke Energy Corp. (Duke Energy) jurisdictions. Prior to the merger between Duke Energy and Progress Energy, I was responsible for managing the project execution for both AMI and Distribution Automation (DA) deployments for all legacy Duke Energy jurisdictions.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Science Degree in Electrical Engineering from the University of Evansville in 1986. After graduation, I was employed by Duke Energy Indiana (then known as Public Service Indiana) as an electrical engineer. Throughout my career, I have held various positions of increasing responsibility in the areas of engineering and operations, including distribution planning, distribution design, field operations, and capital budgets. Prior to my current role, I was General Manager, Midwest Premise Services, responsible for managing all of Duke Energy's Midwest Premise Services and Meter Reading departments. I was promoted to my current position in 2008.

Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?

A. Yes. I have been registered as a professional engineer with the State Board of Registration for Professional Engineers in the state of Indiana since 1995.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?

A. Yes. I provided written testimony in several earlier Duke Energy Ohio SmartGrid Rider proceedings, including Case No. 09-543-GE-UNC, Case No. 10-867-GE-RDR, Case No. 10-2326-GE-RDR, Case No. 12-1811-GE-RDR, Case No. 13-1141-GE-RDR, and Case No. 14-1051-GE-RDR.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. Through this testimony, I will provide an update on Duke Energy Ohio's smart grid deployment, including the AMI and DA deployments, and detail the successes achieved to the benefit of Duke Energy Ohio's customers. Additionally, I am sponsoring the 2014 Distribution System Loading Report and Distribution System Efficiency Metrics as Attachments DLS-1 and DLS-2, respectively. These are reports that the Company agreed to provide with this application.

II. DUKE ENERGY OHIO'S CURRENT DEPLOYMENT

Q. PLEASE DISCUSS THE STATUS OF DUKE ENERGY OHIO'S AMI AND DA DEPLOYMENTS.

A. Our large-scale AMI and DA field deployments were complete as of December 31, 2014. On the AMI side, the Company has certified 98.9% of the planned AMI meters. Work continues in 2015 to certify the remaining AMI meters that were installed in 2014 but not certified by year-end. As stated in my testimony in last year's smart grid cost recovery case, final commissioning of DA circuits for Integrated Volt Var Control (IVVC) continues during the first half of 2015. The Company still expects all planned DA circuits to be commissioned for IVVC by the end of the second quarter of 2015.

Q. PLEASE DISCUSS THE AMI AND DA FIELD DEPLOYMENTS DURING 2014 AND THE TOTALS TO DATE SINCE 2008.

A. In 2014, the fifth year of our full-scale AMI deployment, the Company installed electric meters, gas meters/modules and communications nodes/devices to close out the full-scale AMI deployment project. Through December 31, 2014, the Company has installed a cumulative total of 720,320 electric AMI meters, 435,670 gas modules, 12,978 gas AMR modules (in gas only areas) and 143,431 communications nodes/devices and have "certified" 706,593 electric meters and 440,394 gas modules. The term "certified" is used to identify when a meter has successfully completed the commissioning and verification process, and the meter data is ready to be used for billing. With the planned AMI deployment complete, the project team has turned over continued and future installations, certifications, and communications network fine-tuning to operations.

In 2014, the sixth year of our DA deployment, the Company installed and/or upgraded system devices inside substations and system devices on distribution circuits, to close out the DA project. Through December 31, 2014, the Company has installed and/or automated with two-way communications capabilities a total of 1,152 system devices inside substations and over 6,723 system devices on distribution circuits. These numbers reflect 100 percent of our total planned DA field deployment. With the completion of our DA field deployment, as with the AMI deployment, continued and future operations and maintenance of the DA infrastructure has been turned over to operations.

Q. CAN YOU PROVIDE AN UPDATE ON THE IVVC EFFORT IN 2014 AND FUTURE PLANS?

A. Duke Energy Ohio continues to turn IVVC functionality on circuit-by-circuit for deployed DA devices. At the end of 2014, Duke Energy Ohio had 417 circuits commissioned for IVVC. The Company's ultimate goal is to have a total of 511 circuits commissioned for IVVC by the end of the second quarter of 2015. As of the date of this filing, the Company has 503 total circuits commissioned for IVVC.

Q. PLEASE EXPLAIN THE SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX AND HOW DUKE ENERGY OHIO IS PERFORMING AGAINST TARGETS.

A. The System Average Interruption Frequency Index (SAIFI) is a standard that the utility industry uses to report the average number of sustained (greater than five minutes) interruptions per customer per year. In Duke Energy Ohio's 2008 Electric Security Plan (ESP), the Company agreed to a stipulation under which we committed to achieving specified SAIFI targets for each year of the smart grid deployment. The agreed upon and approved targets are:

Year	SAIFI
2009	**1.50**
2010	**1.44**
2011	**1.38**
2012	**1.31**
2013	**1.24**
2014	**1.17**
2015	**1.10**

Duke Energy Ohio is pleased to note that it has met or exceeded its SAIFI target for 2009, 2010, 2011, 2012, 2013, and 2014. The 2009 SAIFI result was 1.30, 2010 was 1.10, 2011 was 1.38, 2012 was 1.08, 2013 was 0.98, and 2014 was 0.99. Duke Energy Ohio's performance against SAIFI targets represents just one of many benefits achieved to date through the smart grid deployment.

Q. WHAT ARE SOME OTHER BENEFITS DUKE ENERGY OHIO HAS ACHIEVED THROUGH ITS SMART GRID DEPLOYMENT?

A. AMI benefits are demonstrated in several ways, including the fact that customers with certified AMI meters can see their daily energy usage data online via the Duke Energy Ohio customer portal. In 2014, the Company again increased its percentage of service orders performed remotely to 93.9%. That meant providing customers with quicker resolution of service reconnects and off-cycle meter reads, in addition to increasing the number of remote on-cycle meter reads. In the electric utility industry, the customer premise work required to conduct meter reading and other meter orders historically has some of the highest incident rates due to the nature of the work. By increasing the percentage of remote meter reads, the Ohio/Kentucky meter reading department witnessed a nearly 90% reduction in the number of recordable injuries and preventable vehicle accidents from pre- to post-AMI. Finally, self-healing teams saved over 5.5 million customer outage minutes in 2014, bringing the total customer outage minutes saved since the beginning of deployment to over 13 million.

Q. CAN YOU PROVIDE DETAIL ABOUT SELF-HEALING TEAM OPERATIONS IN 2014?

A. Self-healing teams operated at a higher success rate in 2014 compared to 2013. Our Ohio self-healing teams had 55 successful operations out of the 75 opportunities during which they were called upon, resulting in a 73% successful operation rate in 2014. There were 20 times in 2014 when self-healing teams did not operate properly when called upon. Telecommunication issues led to six of the missed operations, with half of those issues involving the same substation. All the telecommunications issues have been addressed. The Company worked with equipment vendors to investigate and address five missed operations caused by equipment failures and worked with a software vendor to address another two missed operations caused by software logic issues. We experienced two missed operations attributed to device configuration issues and another two missed operations due to system model issues. Those configuration and system model issues were addressed, and we applied lessons learned there to all the rest of our self-healing teams. Finally, there were three missed operations related to human performance, and we addressed those misunderstandings internally as well.

Q. PLEASE DESCRIBE ANY SEPARATE REPORTS YOU ARE INCLUDING WITH YOUR TESTIMONY.

A. I am including two separate annual reports with my testimony. The first report, titled Duke Energy Ohio Distribution System Loading Report - 2014, Attachment DLS-1, reflects the 2014 distribution system summer peak load details by circuit. This report shows distribution system summer peak loading, power factor, and losses on a circuit by circuit basis. The automation of distribution devices and implementation of IVVC results in system load reduction, more favorable system power factor, and reduced system losses.

The second report, titled Duke Energy Ohio Distribution System Efficiency Metrics – IVVC, Attatchment DLS-2, is a report of Duke Energy Ohio's megawatthour (MWH) reduction under IVVC based on the number of circuits under IVVC control for 2014. The report details the number of circuits that were commissioned for IVVC control by year-end 2014 and utilizes 2012 as the baseline year for the system average voltage from which the MWH reduction under IVVC is calculated. The Report shows that IVVC-enabled circuits operated with an average voltage of 121.1, equating to a 1.71 percent average voltage reduction with IVVC from the 2012 baseline. This voltage reduction lead to an 80,402 MWh reduction assuming a Conservation Voltage Reduction (CVR) factor of 0.79. These IVVC results are within expectations of the IVVC system.

II. CONCLUSION

Q. WERE ATTACHMENTS DLS-1 AND DLS-2 PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes.

Q. IS THE INFORMATION CONTAINED IN ATTACHMENTS DLS-1 AND DLS-2 TRUE AND ACCURATE TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?

A. Yes.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Planning Area	PI Data	Station Number	Substation Name	Circuit Name	Voltage (kV)	2014 Sum Peak Load (kW)	2014 Sum Losses (kW)	2014 Sum Peak Demand (kW)	PF (%)	Losses (%)
West	Y	272	Banning	41	12.47	5962	18	5980	100.00%	0.30%
West	Y	272	Banning	42	12.47	7536	84	7620	100.00%	1.10%
West	Y	156	Barnesburg	41	12.47	7031	0	6983	97.00%	0.00%
West	Y	186	Brower	51	34.5	2139	1	2140	85.00%	0.05%
West	Y	6	Elmwood	41	12.47	8935	65	9000	96.00%	0.72%
West	Y	6	Elmwood	42	12.47	6012	138	6150	98.00%	2.24%
West	Y	6	Elmwood	43	12.47	4277	63	4340	100.00%	1.45%
West	Y	6	Elmwood	44	12.47	2198	12	2210	83.00%	0.54%
West	Y	6	Elmwood	45	12.47	5827	63	5890	89.00%	1.07%
West	Y	6	Elmwood	46	12.47	7206	82	7289	97.00%	1.12%
West	Y	6	Elmwood	47	12.47	5014	105	5120	89.00%	2.05%
West	Y	6	Elmwood	48	12.47	5826	44	5870	93.00%	0.75%
West	Y	47	Finneytown	41	12.47	4048	42	4090	91.00%	1.03%
West	Y	47	Finneytown	42	12.47	9206	313	9520	99.00%	3.29%
West	Y	47	Finneytown	43	12.47	7329	201	7530	100.00%	2.67%
West	Y	47	Finneytown	44	12.47	8464	196	8660	98.00%	2.26%
West	Y	47	Finneytown	45	12.47	6762	68	6830	94.00%	1.00%
West	Y	47	Finneytown	46	12.47	8218	91	8309	94.00%	1.10%
West	Y	72	Glenview	41	12.47	7058	82	7140	98.00%	1.15%
West	Y	72	Glenview	42	12.47	8064	246	8310	99.00%	2.96%
West	Y	72	Glenview	43	12.47	6615	65	6680	100.00%	0.97%
West	Y	72	Glenview	44	12.47	4837	33	4870	97.00%	0.68%
West	Y	72	Glenview	55	34.5	13704	106	13810	100.00%	0.77%
West	Y	72	Glenview	56	34.5	13714	86	13800	100.00%	0.62%
West	Y	95	Lincoln	41	12.47	6382	88	6470	95.00%	1.36%
West	Y	95	Lincoln	42	12.47	6130	70	6200	98.00%	1.13%
West	Y	95	Lincoln	43	12.47	6802	88	6890	100.00%	1.28%
West	Y	95	Lincoln	44	12.47	7282	78	7360	99.00%	1.06%
West	Y	95	Lincoln	45	12.47	4086	64	4150	88.00%	1.54%

West	Y	95	Lincoln	46	12.47	1564	6	1570	91.00%	0.38%
West	Y	95	Lincoln	47	12.47	3301	29	3330	100.00%	0.87%
West	Y	95	Lincoln	48	12.47	6194	116	6310	100.00%	1.84%
West	Y	36	Mapleknoll	41	12.47	4679	21	4700	100.00%	0.45%
West	Y	36	Mapleknoll	42	12.47	5070	20	5090	93.00%	0.39%
West	Y	36	Mapleknoll	43	12.47	1279	1	1280	95.00%	0.08%
West	Y	36	Mapleknoll	44	12.47	7029	71	7100	99.00%	1.00%
West	Y	36	Mapleknoll	45	12.47	8800	150	8950	100.00%	1.68%
West	Y	292	Monfort Heights	41	12.47	6989	61	7050	93.00%	0.87%
West	Y	49	Morgan	51	34.5	11139	101	11240	86.00%	0.90%
West	Y	49	Morgan	52	34.5	16243	208	16450	88.00%	1.26%
West	Y	49	Morgan	53	34.5	11567	143	11710	94.00%	1.22%
West	Y	49	Morgan	54	34.5	22472	298	22770	99.00%	1.31%
West	Y	79	Mt Healthy	41	12.47	6697	144	6841	100.00%	2.10%
West	Y	79	Mt Healthy	42	12.47	7673	267	7940	98.00%	3.36%
West	Y	79	Mt Healthy	43	12.47	6510	60	6570	93.00%	0.91%
West	Y	79	Mt Healthy	44	12.47	9765	165	9930	97.00%	1.66%
West	Y	119	New Burlington	41	12.47	6851	49	6900	98.00%	0.71%
West	Y	119	New Burlington	42	12.47	10776	244	11020	98.00%	2.21%
West	Y	190	Pippin	41	12.47	5632	119	5750	93.00%	2.07%
West	Y	17	Terminal	41	12.47	7000	80	7080	99.00%	1.13%
West	Y	17	Terminal	42	12.47	8500	130	8630	98.00%	1.51%
West	Y	17	Terminal	43	12.47	9951	291	10242	100.00%	2.84%
West	Y	17	Terminal	44	12.47	8228	280	8507	97.00%	3.29%
West	Y	17	Terminal	58	34.5	5833	71	5904	97.00%	1.20%
West	Y	17	Terminal	59	34.5	8527	48	8576	94.00%	0.56%
West	Y	277	White Oak	41	12.47	8717	203	8920	99.00%	2.28%
West	Y	277	White Oak	42	12.47	6107	38	6145	99.00%	0.62%
West	Y	97	Willey	51	34.5	11731	209	11940	95.00%	1.75%
West	Y	97	Willey	52	34.5	10110	91	10200	100.00%	0.89%
West	Y	97	Willey	53	34.5	15683	517	16200	98.00%	3.19%
West	Y	97	Willey	54	34.5	9219	82	9300	99.00%	0.88%
C	Y	11	ASHLAND	41	12.47	4247	55	4302	99.00%	1.28%

C	Y	11	ASHLAND	42	12.47	8796	186	8982	100.00%	2.07%
C	Y	11	ASHLAND	43	12.47	3665	26	3691	100.00%	0.70%
C	Y	11	ASHLAND	44	12.47	3305	11	3316	98.00%	0.33%
C	Y	11	ASHLAND	45	12.47	4114	28	4142	98.00%	0.68%
C	Y	11	ASHLAND	46	12.47	6739	94	6833	99.00%	1.38%
C	Y	11	ASHLAND	46	12.47	6083	78	6161	99.00%	1.27%
C	Y	11	ASHLAND	48	12.47	1960	14	1974	98.00%	0.71%
C	Y	11	ASHLAND	49	12.47	5552	35	5587	93.00%	0.63%
C	Y	21	BRIGHTON	41	12.47	2826	14	2840	100.00%	0.50%
C	Y	21	BRIGHTON	42	12.47	465	1	466	99.00%	0.19%
C	Y	21	BRIGHTON	43	12.47	4525	107	4632	99.00%	2.30%
C	Y	21	BRIGHTON	44	12.47	3986	36	4022	96.00%	0.90%
C	Y	21	BRIGHTON	45	12.47	1431	2	1433	88.00%	0.14%
C	Y	21	BRIGHTON	46	12.47	5366	65	5431	100.00%	1.20%
C	Y	21	BRIGHTON	47	12.47	3094	6	3100	94.00%	0.19%
C	Y	21	BRIGHTON	48	12.47	3105	8	3113	100.00%	0.25%
C	Y	21	BRIGHTON	49	12.47	7640	73	7713	99.00%	0.95%
C	Y	21	BRIGHTON	2123	12.47	1400	3	1403	87.00%	0.23%
C	N	39	CENTRAL	41	12.47	4238	32	4270	100.00%	0.75%
C	N	39	CENTRAL	42	12.47	3506	28	3534	94.00%	0.79%
C	N	39	CENTRAL	43	12.47	4582	45	4627	98.00%	0.97%
C	N	39	CENTRAL	44	12.47	7901	151	8052	99.00%	1.88%
C	N	39	CENTRAL	45	12.47	3034	22	3056	100.00%	0.72%
C	N	39	CENTRAL	46	12.47	1637	11	1648	68.00%	0.67%
C	N	13	CHARLES	41	12.47	5188	41	5229	86.00%	0.78%
C	N	13	CHARLES	42	12.47	3680	14	3694	90.00%	0.38%
C	N	13	CHARLES	43	12.47	9080	61	9141	98.00%	0.67%
C	N	13	CHARLES	44	12.47	3640	12	3652	93.00%	0.33%
C	N	13	CHARLES	45	12.47	4228	16	4244	92.00%	0.38%
C	N	13	CHARLES	46	12.47	7960	82	8042	94.00%	1.02%
C	Y	91	CHESTER	41	12.47	8020	49	8069	98.00%	0.61%
C	Y	91	CHESTER	42	12.47	6385	62	6446	100.00%	0.96%
C	Y	91	CHESTER	43	12.47	6568	44	6612	99.00%	0.67%

C	Y	91	CHESTER	44	12.47	3204	10	3214	100.00%	0.31%
C	Y	44	COOPER	41	12.47	5282	84	5366	96.00%	1.57%
C	Y	44	COOPER	42	12.47	7873	65	7938	99.00%	0.82%
C	Y	204	CORNELL	41	12.47	6166	56	6222	99.00%	0.90%
C	Y	204	CORNELL	42	12.47	10346	142	10488	100.00%	1.35%
C	Y	204	CORNELL	43	12.47	7794	95	7889	98.00%	1.20%
C	Y	204	CORNELL	44	12.47	4947	20	4967	99.00%	0.40%
C	Y	204	CORNELL	51	34.5	24208	144	24352	100.00%	0.59%
C	Y	204	CORNELL	52	34.5	16020	77	16098	94.00%	0.48%
C	Y	64	CUMMINSVILLE	41	12.47	3717	32	3749	100.00%	0.85%
C	Y	64	CUMMINSVILLE	42	12.47	8583	143	8726	96.00%	1.64%
C	Y	64	CUMMINSVILLE	43	12.47	6747	84	6831	99.00%	1.23%
C	Y	64	CUMMINSVILLE	44	12.47	6965	106	7071	100.00%	1.50%
C	Y	64	CUMMINSVILLE	45	12.47	3166	14	3180	85.00%	0.44%
C	Y	64	CUMMINSVILLE	46	12.47	1177	4	1181	64.00%	0.34%
C	Y	64	CUMMINSVILLE	47	12.47	4429	23	4452	99.00%	0.52%
C	Y	26	DEER PARK	41	12.47	11231	265	11496	100.00%	2.31%
C	Y	26	DEER PARK	42	12.47	8293	117	8410	97.00%	1.39%
C	Y	26	DEER PARK	43	12.47	6888	105	6993	99.00%	1.50%
C	Y	26	DEER PARK	44	12.47	8979	263	9242	96.00%	2.85%
C	Y	26	DEER PARK	45	12.47	10311	132	10443	100.00%	1.26%
C	Y	26	DEER PARK	46	12.47	8123	154	8277	100.00%	1.86%
C	Y	26	DEER PARK	47	12.47	7788	103	7891	99.00%	1.31%
C	Y	26	DEER PARK	48	12.47	6823	50	6873	98.00%	0.73%
C	Y	46	EVENDALE	51	34.5	7468	35	7503	89.00%	0.47%
C	Y	46	EVENDALE	55	34.5	13335	134	13469	97.00%	0.99%
C	Y	46	EVENDALE	58	34.5	5391	32	5423	92.00%	0.59%
C	Y	46	EVENDALE	4652	34.5	2091	4	2095	88.00%	0.19%
C	Y	285	FERGUSON	41	12.47	6837	93	6930	95.00%	1.34%
C	Y	285	FERGUSON	42	12.47	8433	115	85477	98.00%	0.13%
C	Y	285	FERGUSON	43	12.47	6020	80	6100	100.00%	1.31%
C	Y	285	FERGUSON	44	12.47	7890	73	7963	99.00%	0.92%
C	Y	357	GLENDALE	41	12.47	2645	4	2649	87.00%	0.15%

C	Y	357	GLENDALE	42	12.47	1701	1	1703	85.00%	0.06%
C	Y	357	GLENDALE	43	12.47	6962	35	6997	100.00%	0.50%
C	Y	357	GLENDALE	44	12.47	4546	37	4583	98.00%	0.81%
C	Y	130	GOLF MANOR	41	12.47	7614	134	7748	97.00%	1.73%
C	Y	130	GOLF MANOR	42	12.47	7547	74	7621	99.00%	0.97%
C	Y	180	HOPEWELL	41	12.47	5560	83	5643	99.00%	1.47%
C	Y	180	HOPEWELL	42	12.47	8536	49	8585	97.00%	0.57%
C	Y	48	IVORYDALE	41	12.47	4225	68	4293	100.00%	1.58%
C	Y	48	IVORYDALE	42	12.47	3288	18	3306	94.00%	0.54%
C	Y	48	IVORYDALE	43	12.47	2046	10	2056	77.00%	0.49%
C	Y	48	IVORYDALE	44	12.47	5226	11	5237	99.00%	0.21%
C	Y	99	KEMPER	41	12.47	3842	27	3869	97.00%	0.70%
C	Y	99	KEMPER	42	12.47	4710	46	4756	96.00%	0.97%
C	Y	99	KEMPER	43	12.47	8960	123	9083	97.00%	1.35%
C	Y	99	KEMPER	44	12.47	10978	158	11136	100.00%	1.42%
C	Y	99	KEMPER	45	12.47	6024	82	6106	99.00%	1.34%
C	Y	99	KEMPER	46	12.47	8307	145	8453	100.00%	1.72%
C	Y	41	LATERAL	41	12.47	5423	36	5459	99.00%	0.66%
C	Y	41	LATERAL	42	12.47	6167	68	6235	99.00%	1.09%
C	Y	41	LATERAL	43	12.47	3498	13	3511	98.00%	0.37%
C	Y	41	LATERAL	44	12.47	7252	17	7269	100.00%	0.23%
C	Y	41	LATERAL	45	12.47	3536	14	3550	90.00%	0.39%
C	Y	41	LATERAL	46	12.47	5319	45	5364	100.00%	0.84%
C	Y	41	LATERAL	48	12.47	494	0	494	56.00%	0.00%
C	Y	41	LATERAL	49	12.47	6092	32	6124	99.00%	0.52%
C	N	140	MICA	41	12.47	5031	16	5048	95.00%	0.32%
C	Y	12	MITCHELL	41	12.47	7121	76	7197	99.00%	1.06%
C	Y	12	MITCHELL	43	12.47	6088	92	6181	100.00%	1.49%
C	Y	12	MITCHELL	44	12.47	5993	73	6065	96.00%	1.20%
C	Y	583	M-M DOW	43	12.47	6608	45	6653	98.00%	0.68%
C	Y	52	NORTHGREEN	41	12.47	5676	49	5725	100.00%	0.86%
C	Y	52	NORTHGREEN	42	12.47	5652	41	5693	99.00%	0.72%
C	Y	52	NORTHGREEN	43	12.47	8479	60	8539	100.00%	0.70%

C	Y	52	NORTHGREEN	44	12.47	6868	44	6912	100.00%	0.64%
C	Y	8	OAKLEY	37	12.47	780	1	781	87.00%	0.13%
C	Y	8	OAKLEY	38	12.47	8546	187	8733	100.00%	2.14%
C	Y	8	OAKLEY	39	12.47	5313	45	5358	100.00%	0.84%
C	Y	8	OAKLEY	40	12.47	8378	151	8529	100.00%	1.77%
C	Y	8	OAKLEY	41	12.47	8508	107	8615	99.00%	1.24%
C	Y	8	OAKLEY	42	12.47	5399	43	5442	100.00%	0.79%
C	Y	8	OAKLEY	43	12.47	5612	38	5650	100.00%	0.67%
C	Y	8	OAKLEY	44	12.47	8002	65	8066	100.00%	0.81%
C	Y	8	OAKLEY	45	12.47	7776	80	7856	97.00%	1.02%
C	Y	8	OAKLEY	46	12.47	5933	146	6079	97.00%	2.40%
C	Y	8	OAKLEY	47	12.47	2743	1	2744	95.00%	0.04%
C	Y	8	OAKLEY	48	12.47	4584	42	4626	99.00%	0.91%
C	Y	8	OAKLEY	49	12.47	4012	26	4038	96.00%	0.64%
C	Y	8	OAKLEY	52	34.5	6375	69	6444	100.00%	1.07%
C	Y	8	OAKLEY	853	34.5	8811	17	8828	98.00%	0.19%
C	Y	8	OAKLEY	854	34.5	2757	14	2771	89.00%	0.51%
C	Y	5	PRICE HILL	41	12.47	7860	49	7909	95.00%	0.62%
C	Y	5	PRICE HILL	42	12.47	7178	150	7328	100.00%	2.05%
C	Y	5	PRICE HILL	43	12.47	7429	86	7515	100.00%	1.14%
C	Y	293	QUEENSGATE	41	12.47	6609	62	6671	100.00%	0.93%
C	Y	293	QUEENSGATE	42	12.47	5719	29	5748	97.00%	0.50%
C	Y	293	QUEENSGATE	43	12.47	5195	46	5241	100.00%	0.88%
C	Y	293	QUEENSGATE	44	12.47	3326	36	3362	99.00%	1.07%
C	Y	82	ROCHELLE	42	12.47	9212	105	9317	98.00%	1.13%
C	Y	82	ROCHELLE	43	12.47	3046	10	3056	81.00%	0.33%
C	Y	82	ROCHELLE	45	12.47	4434	25	4459	100.00%	0.56%
C	Y	82	ROCHELLE	48	12.47	3841	13	3854	100.00%	0.34%
C	Y	82	ROCHELLE	8222	12.47	4405	13	4418	86.00%	0.29%
C	Y	82	ROCHELLE	8223	12.47	6183	49	6232	87.00%	0.79%
C	Y	165	SPRINGDALE	41	12.47	6488	28	6516	99.00%	0.43%
C	Y	165	SPRINGDALE	42	12.47	7559	113	7672	100.00%	1.47%
C	Y	3	WALNUT HILLS	41	12.47	5207	45	5252	96.00%	0.86%

C	Y	3	WALNUT HILLS	42	12.47	5545	29	5574	97.00%	0.52%
C	Y	3	WALNUT HILLS	43	12.47	6904	34	6938	99.00%	0.49%
C	Y	3	WALNUT HILLS	45	12.47	2484	15	2499	88.00%	0.60%
C	Y	3	WALNUT HILLS	46	12.47	6968	41	7009	100.00%	0.58%
C	Y	3	WALNUT HILLS	335	12.47	7111	36	7147	100.00%	0.50%
C	N	15	WEST END	42	12.47	3284	25	3309	91.00%	0.76%
C	Y	15	WEST END	43	12.47	1296	2	1298	90.00%	0.15%
C	Y	15	WEST END	44	12.47	857	3	860	88.00%	0.35%
C	Y	15	WEST END	45	12.47	3120	25	3145	88.00%	0.79%
C	Y	15	WEST END	47	12.47	693	1	694	87.00%	0.14%
C	Y	15	WEST END	48	12.47	1709	2	1711	93.00%	0.12%
C	Y	218	WHITTIER	43	12.47	7700	74	7773	100.00%	0.95%
C	Y	218	WHITTIER	47	12.47	1583	1	1584	97.00%	0.06%
C	Y	288	WOODLAWN	41	12.47	7642	35	7677	100.00%	0.46%
C	Y	268	WYSCARVER	41	12.47	6000	32	6032	100.00%	0.53%
C	Y	268	WYSCARVER	42	12.47	7612	66	7678	94.00%	0.86%
E	Y	362	Aicholtz	41	12.47	9000	70	9070	98.79%	0.77%
E	Y	362	Aicholtz	42	12.47	7931	156	8087	99.88%	1.93%
E	Y	141	Amelia	41	12.47	7833	70	7904	99.56%	0.89%
E	Y	141	Amelia	42	12.47	7591	100	7690	99.97%	1.29%
E	Y	139	Batavia	41	12.47	6659	101	6760	91.40%	1.49%
E	Y	139	Batavia	42	12.47	4056	17	4073	99.92%	0.42%
E	Y	318	Berkshire	41	12.47	5737	37	5775	99.97%	0.65%
E	Y	318	Berkshire	42	12.47	7126	63	7190	99.41%	0.88%
E	Y	310	Blairville	41	12.47	5694	60	5753	99.24%	1.03%
E	Y	105	Branch Hill	41	12.47	5997	76	6073	93.08%	1.25%
E	Y	105	Branch Hill	42	12.47	5021	33	5054	99.85%	0.65%
E	Y	58	Brown	41	12.47	4865	190	5054	99.15%	3.75%
E	Y	172	Buckwheat	41	12.47	5751	36	5787	98.75%	0.62%
E	Y	178	Clertoma	41	12.47	1529	3	1532	74.73%	0.20%
E	Y	283	Fairfax	41	12.47	7024	50	7074	100.00%	0.71%
E	Y	283	Fairfax	42	12.47	7570	145	7715	96.42%	1.88%
E	Y	283	Fairfax	43	12.47	7531	104	7636	98.94%	1.37%

E	Y	283	Fairfax	44	12.47	7016	53	7069	98.49%	0.75%
E	Y	265	Feldman	41	12.47	6786	132	6918	99.79%	1.91%
E	Y	265	Feldman	42	12.47	5364	73	5436	99.97%	1.33%
E	Y	265	Feldman	43	12.47	5883	117	6000	98.61%	1.95%
E	Y	265	Feldman	44	12.47	7412	124	7536	97.68%	1.65%
E	Y	265	Feldman	45	12.47	5057	70	5128	99.77%	1.37%
E	Y	265	Feldman	46	12.47	5782	69	5851	100.00%	1.18%
E	Y	359	Felicity	41	12.47	5049	91	5140	99.58%	1.77%
E	Y	192	Glen Este	41	12.47	6649	40	6689	99.80%	0.60%
E	Y	71	Hamlet	41	12.47	5126	52	5179	99.85%	1.01%
E	Y	159	Lake Waynoka	41	12.47	2898	35	2932	94.49%	1.18%
E	Y	27	Linwood	41	12.47	6286	70	6356	98.76%	1.10%
E	Y	27	Linwood	42	12.47	4617	40	4658	89.48%	0.87%
E	Y	27	Linwood	43	12.47	5579	103	5682	91.74%	1.81%
E	Y	27	Linwood	44	12.47	7560	76	7636	98.92%	1.00%
E	Y	257	Madeira	41	12.47	7915	183	8098	98.90%	2.26%
E	Y	257	Madeira	42	12.47	8224	103	8328	99.20%	1.24%
E	Y	51	Markley	41	12.47	6417	57	6474	98.84%	0.88%
E	Y	51	Markley	42	12.47	5381	118	5498	95.73%	2.14%
E	Y	51	Markley	43	12.47	5975	36	6012	99.73%	0.61%
E	Y	51	Markley	44	12.47	5251	34	5286	99.30%	0.65%
E	Y	51	Markley	45	12.47	5499	56	5554	95.78%	1.00%
E	Y	51	Markley	46	12.47	9348	85	9433	98.88%	0.90%
E	Y	206	McMann	41	12.47	7852	56	7908	100.00%	0.71%
E	Y	301	Moscow	41	12.47	1497	32	1529	96.99%	2.09%
E	Y	301	Moscow	42	12.47	1375	22	1397	94.51%	1.57%
E	Y	195	Mt Repose	41	12.47	6313	33	6346	99.67%	0.52%
E	Y	195	Mt Repose	42	12.47	5536	70	5606	99.78%	1.25%
E	Y	206	Mt Washington	41	12.47	5626	40	5667	97.69%	0.71%
E	N	129	New Hope	31	12.47	1610	62	1672	99.94%	3.71%
E	Y	143	New Richmond	41	12.47	5971	111	6083	87.66%	1.83%
E	Y	92	Newtown	41	12.47	7130	105	7235	99.48%	1.45%
E	Y	92	Newtown	42	12.47	5422	120	5543	97.82%	2.17%

E	Y	92	Newtown	43	12.47	8325	114	8439	99.69%	1.35%
E	Y	92	Newtown	44	12.47	8099	156	8255	93.03%	1.89%
E	Y	341	Nicholsville	41	12.47	1675	38	1713	92.08%	2.22%
E	Y	341	Nicholsville	42	12.47	1890	21	1910	95.33%	1.07%
E	Y	341	Nicholsville	43	12.47	2824	41	2865	96.06%	1.43%
E	Y	106	North Pole	41	12.47	1756	44	1800	98.28%	2.44%
E	Y	212	Olive Branch	41	12.47	4378	58	4436	98.16%	1.31%
E	Y	212	Olive Branch	42	12.47	3108	78	3186	93.68%	2.45%
E	N	198	Pleasant Plain	31	12.47	1131	24	1155	90.02%	2.08%
E	N	198	Pleasant Plain	32	12.47	1449	13	1462	90.00%	0.89%
E	Y	94	Remington	41	12.47	4363	82	4445	98.78%	1.84%
E	Y	94	Remington	42	12.47	4442	76	4518	98.25%	1.68%
E	Y	94	Remington	43	12.47	8089	145	8234	99.93%	1.76%
E	Y	94	Remington	44	12.47	6203	158	6360	95.81%	2.48%
E	Y	117	Russellville	41	12.47	2852	58	2910	99.17%	1.99%
E	Y	81	South Bethel	41	12.47	4767	105	4872	99.74%	2.16%
E	Y	69	Summerside	41	12.47	7776	171	7946	99.40%	2.15%
E	Y	69	Summerside	42	12.47	5769	61	5830	95.97%	1.05%
E	Y	69	Summerside	43	12.47	9300	129	9429	99.98%	1.37%
E	Y	126	Sutton	41	12.47	6164	37	6201	99.61%	0.60%
E	Y	63	Tobasco	41	12.47	7792	162	7954	97.81%	2.04%
E	Y	60	Tobasco	42	12.47	7617	88	7706	99.96%	1.15%
E	Y	61	Tobasco	43	12.47	8473	169	8642	97.36%	1.96%
E	Y	62	Tobasco	44	12.47	8039	85	8125	98.07%	1.05%
E	Y	63	Tobasco	45	12.47	7215	98	7313	99.78%	1.34%
E	Y	63	Tobasco	46	12.47	6633	167	6799	96.55%	2.45%
E	Y	122	Vera Cruz	41	12.47	2601	40	2641	73.77%	1.51%
E	Y	214	Wards Corner	41	12.47	3682	50	3732	99.90%	1.34%
E	Y	214	Wards Corner	42	12.47	4583	19	4602	96.06%	0.41%
E	Y	214	Wards Corner	43	12.47	5625	117	5742	99.26%	2.04%
E	Y	145	Withamsville	41	12.47	4343	29	4373	97.31%	0.67%
E	Y	145	Withamsville	42	12.47	6552	154	6706	99.00%	2.30%
E	Y	145	Withamsville	43	12.47	6966	54	7020	100.00%	0.77%

E	Y	145	Withamsville	44	12.47	5223	16	5240	99.45%	0.31%
E	Y	58	Brown	51	34.5	8932	200	9132	76.77%	2.19%
E	Y	58	Brown	52	34.5	9255	251	9506	92.36%	2.64%
E	Y	29	Cedarville	51	34.5	14316	241	14557	98.47%	1.66%
E	Y	29	Cedarville	52	34.5	15324	329	15653	99.94%	2.10%
E	Y	29	Cedarville	53	34.5	4897.5	54.5	4952	91.46%	1.10%
E	Y	29	Cedarville	54	34.5	14696	216	14912	87.46%	1.45%
E	Y	29	Cedarville	55	34.5	6280.5	74.5	6355	73.65%	1.17%
E	Y	23	Clinton County	51	34.5	10844	61	10905	98.16%	0.56%
E	Y	23	Clinton County	52	34.5	7380	184	7564	94.14%	2.43%
E	Y	23	Clinton County	53	34.5	5688	83	5771	62.43%	1.44%
E	Y	84	Eastwood	51	34.5	19422	237	19659	99.23%	1.21%
E	Y	84	Eastwood	52	34.5	8807.5	63.5	8871	91.31%	0.72%
E	Y	88	Hillcrest	51	34.5	6510	42	6552	93.76%	0.64%
E	Y	88	Hillcrest	52	34.5	4069.5	39.5	4109	85.74%	0.96%
E	Y	200	OBannonville	51	34.5	12381.5	111.5	12493	89.92%	0.89%
E	Y	200	OBannonville	52	34.5	9967	79	10046	97.32%	0.79%
E	Y	94	Remington	51	34.5	13045	208	13253	99.85%	1.57%
E	Y	94	Remington	52	34.5	11979.5	71.5	12051	94.49%	0.59%
E	Y	94	Remington	53	34.5	17692.5	245.5	17938	97.90%	1.37%
E	Y	94	Remington	59	34.5	22340.4	307.4	22647.8	97.64%	1.36%
E	Y	81	South Bethel	51	34.5	3983	79	4062	68.64%	1.94%
E	Y	81	South Bethel	52	34.5	10847	102	10949	99.10%	0.93%
E	Y	69	Summerside	55	34.5	22690.4	177.4	22867.8	99.14%	0.78%
E	Y	69	Summerside	56	34.5	9642	196	9838	98.54%	1.99%
E	Y	69	Summerside	57	34.5	4406	32	4438	91.86%	0.72%
E	Y	69	Summerside	59	34.5	10362.4	69.4	10431.8	99.42%	0.67%
North	N	211	ALLEN	41	12.47	9751	145	9896	100.00%	1.47%
North	N	211	ALLEN	42	12.47	8696	108	8804	100.00%	1.23%
North	Y	40	BETHANY	41	12.47	6843	82	6925	99.00%	1.18%
North	Y	40	BETHANY	42	12.47	6116	237	6353	100.00%	3.73%
North	Y	40	BETHANY	43	12.47	7710	310	8020	100.00%	3.87%
North	Y	40	BETHANY	44	12.47	8086	218	8304	99.00%	2.63%

North	Y	40	BETHANY	45	12.47	4046	98	4145	97.00%	2.36%
North	Y	40	BETHANY	46	12.47	9900	182	10082	100.00%	1.81%
North	Y	40	BETHANY	47	12.47	8810	310	9120	100.00%	3.40%
North	Y	40	BETHANY	48	12.47	8211	324	8535	99.00%	3.80%
North	Y	133	DIMMICK	41	12.47	3675	33	3708	100.00%	0.89%
North	Y	133	DIMMICK	42	12.47	7043	92	7135	97.00%	1.29%
North	Y	133	DIMMICK	43	12.47	7537	75	7613	99.00%	0.99%
North	Y	133	DIMMICK	44	12.47	8765	248	9013	96.00%	2.75%
North	Y	85	KINGS MILLS	41	12.47	9442	449	9891	99.00%	4.54%
North	Y	85	KINGS MILLS	52	34.5	9756	118	9874	100.00%	1.20%
North	Y	85	KINGS MILLS	53	34.5	7863	159	8022	100.00%	1.98%
North	Y	85	KINGS MILLS	54	34.5	379	24	402	100.00%	5.97%
North	Y	31	LIBERTY	41	12.47	6061	139	6200	98.00%	2.24%
North	Y	31	LIBERTY	42	12.47	8208	112	8320	97.00%	1.35%
North	Y	31	LIBERTY	43	12.47	4455	59	4514	100.00%	1.31%
North	N	169	MAINEVILLE	41	12.47	8358	226	8584	100.00%	2.63%
North	N	169	MAINEVILLE	42	12.47	4241	63	4304	95.00%	1.46%
North	N	169	MAINEVILLE	43	12.47	5714	84	5798	92.00%	1.45%
North	Y	155	MASON	41	12.47	6503	63	6566	96.00%	0.96%
North	Y	137	MONTGOMERY	41	12.47	4364	40	4404	100.00%	0.91%
North	Y	137	MONTGOMERY	42	12.47	10783	149	10932	99.00%	1.36%
North	Y	137	MONTGOMERY	43	12.47	7631	92	7723	97.00%	1.19%
North	Y	137	MONTGOMERY	44	12.47	5889	39	5928	93.00%	0.66%
North	Y	137	MONTGOMERY	45	12.47	7913	142	8055	98.00%	1.76%
North	Y	137	MONTGOMERY	46	12.47	7198	61	7259	100.00%	0.84%
North	Y	320	PARK	41	12.47	4988	22	5010	100.00%	0.44%
North	Y	320	PARK	42	12.47	6621	121	6742	99.00%	1.79%
North	Y	320	PARK	43	12.47	5785	58	5843	82.00%	0.99%
North	Y	320	PARK	44	12.47	8198	429	8628	98.00%	4.97%
North	Y	320	PARK	45	12.47	1180	8	1188	77.00%	0.67%
North	Y	320	PARK	46	12.47	3061	53	3114	100.00%	1.70%
North	Y	320	PARK	47	12.47	9800	108	9908	100.00%	1.09%
North	Y	164	PISGAH	41	12.47	3709	34	3743	100.00%	0.91%

North	Y	164	PISGAH	42	12.47	6129	93	6222	100.00%	1.49%
North	Y	164	PISGAH	43	12.47	4631	36	4667	99.00%	0.77%
North	Y	164	PISGAH	44	12.47	7533	74	7607	97.00%	0.97%
North	Y	191	SIMPSON	41	12.47	4711	11	4722	86.00%	0.23%
North	Y	191	SIMPSON	42	12.47	6168	53	6221	87.00%	0.85%
North	Y	191	SIMPSON	43	12.47	4481	37	4518	100.00%	0.82%
North	Y	191	SIMPSON	44	12.47	9211	108	9319	98.00%	1.16%
North	Y	191	SIMPSON	45	12.47	6549	140	6689	100.00%	2.09%
North	Y	191	SIMPSON	46	12.47	7378	38	7416	100.00%	0.51%
North	Y	191	SIMPSON	47	12.47	3201	16	3217	75.00%	0.50%
North	Y	191	SIMPSON	48	12.47	2692	9	2701	91.00%	0.33%
North	Y	175	SOCIALVILLE	41	12.47	11068	228	11297	99.00%	2.02%
North	Y	175	SOCIALVILLE	42	12.47	5665	62	5727	100.00%	1.08%
North	Y	175	SOCIALVILLE	43	12.47	8671	130	8801	100.00%	1.48%
North	Y	175	SOCIALVILLE	44	12.47	9337	119	9456	98.00%	1.26%
North	Y	176	TWENTY MILE	41	12.47	9983	152	10135	97.00%	1.50%
North	Y	176	TWENTY MILE	42	12.47	3443	31	3474	95.00%	0.89%
North	Y	176	TWENTY MILE	43	12.47	5023	7	4934	96.00%	0.14%
North	Y	176	TWENTY MILE	44	12.47	8086	141	8227	98.00%	1.71%
North	Y	37	CARLISLE	41	12.47	7379	196	7575	98.00%	2.59%
North	Y	37	CARLISLE	42	12.47	8464	99	8563	99.00%	1.16%
North	Y	34	FRANKLIN	41	12.47	7348	169	7517	100.00%	2.25%
North	Y	34	FRANKLIN	42	12.47	6364	134	6498	97.00%	2.06%
North	Y	34	FRANKLIN	43	12.47	3103	28	3131	100.00%	0.89%
North	Y	34	FRANKLIN	44	12.47	6384	68	6452	100.00%	1.05%
North	N	237	HUNTER	41	12.47	6047	83	6130	99.00%	1.35%
North	N	237	HUNTER	42	12.47	282	5	287	70.00%	1.74%
North	N	237	HUNTER	43	12.47	6132	77	6208	94.00%	1.24%
North	Y	65	JACKSON	41	12.47	7524	142	7666	99.00%	1.85%
North	Y	65	JACKSON	42	12.47	3010	14	3024	100.00%	0.46%
North	Y	65	JACKSON	43	12.47	7060	61	7121	100.00%	0.86%
North	Y	65	JACKSON	44	12.47	5532	59	5591	99.00%	1.06%
North	N	108	LESOURDSVILLE	41	12.47	6584	111	6695	95.00%	1.66%

North	N	108	LESOURDSVILLE	42	12.47	4612	56	4669	96.00%	1.20%
North	N	108	LESOURDSVILLE	43	12.47	3752	35	3715	95.00%	0.94%
North	Y	83	MANCHESTER	41	12.47	4753	46	4799	100.00%	0.96%
North	Y	83	MANCHESTER	42	12.47	4637	62	4699	99.00%	1.32%
North	Y	83	MANCHESTER	43	12.47	1323	10	1333	89.00%	0.75%
North	Y	83	MANCHESTER	44	12.47	7616	132	7748	100.00%	1.70%
North	Y	83	MANCHESTER	45	12.47	4908	55	4963	100.00%	1.11%
North	Y	83	MANCHESTER	46	12.47	4758	145	4903	98.00%	2.96%
North	Y	33	MIDDLETOWN	41	12.47	1637	27	1664	90.00%	1.62%
North	Y	33	MIDDLETOWN	42	12.47	2191	17	2298	95.00%	0.74%
North	Y	33	MIDDLETOWN	43	12.47	6636	200	6836	95.00%	2.93%
North	N	158	MONROE	41	12.47	11034	31	11065	100.00%	0.28%
North	N	158	MONROE	42	12.47	6594	173	6766	100.00%	2.56%
North	N	158	MONROE	43	12.47	10186	177	10363	99.00%	1.71%
North	Y	332	NICKEL	41	12.47	3220	63	3283	99.00%	1.92%
North	Y	332	NICKEL	42	12.47	3575	33	3608	93.00%	0.91%
North	Y	332	NICKEL	43	12.47	2798	26	2824	98.00%	0.92%
North	N	322	OTTERBEIN	41	12.47	5340	271	5611	99.00%	4.83%
North	N	322	OTTERBEIN	42	12.47	3940	175	4115	95.00%	4.25%
North	N	121	PLEASANT VALLEY	41	12.47	6377	95	6472	100.00%	1.47%
North	N	121	PLEASANT VALLEY	42	12.47	8142	50	8191	100.00%	0.61%
North	N	121	PLEASANT VALLEY	43	12.47	7953	74	8028	95.00%	0.92%
North	Y	352	POAST TOWN	41	12.47	6390	192	6582	100.00%	2.92%
North	Y	352	RED LION	41	12.47	7098	444	7542	96.00%	5.89%
North	Y	352	RED LION	42	12.47	5387	107	5494	100.00%	1.95%
North	Y	352	RED LION	43	12.47	3978	162	4140	93.00%	3.91%
North	N	115	SEVEN MILE	41	12.47	949	11	960	95.00%	1.15%
North	Y	115	SEVEN MILE	42	12.47	6444	147	6590	99.00%	2.23%
North	Y	179	SPRINGBORO	41	12.47	8396	353	8749	100.00%	4.03%
North	Y	179	SPRINGBORO	42	12.47	18879	1030	19909	99.00%	5.17%
North	Y	179	SPRINGBORO	43	12.47	22302	1655	23958	97.00%	6.91%
North	Y	179	SPRINGBORO	44	12.47	23786	1679	25466	98.00%	6.59%
North	Y	32	TRENTON	41	12.47	5920	130	6049	91.00%	2.15%

North	Y	32	TRENTON	42	12.47	5208	163	5371	100.00%	3.03%
North	Y	32	TRENTON	43	12.47	6270	126	6396	97.00%	1.97%
North	Y	32	TRENTON	44	12.47	9480	150	9630	98.00%	1.56%
North	Y	32	TRENTON	45	12.47	3510	114	3624	100.00%	3.15%
North	Y	32	TRENTON	46	12.47	1610	14	1624	98.00%	0.86%
North	Y	162	UNION	41	12.47	7259	386	7645	68.00%	5.05%
North	Y	162	UNION	4	12.47	9991	119	10110	99.00%	1.18%
North	Y	162	UNION	49	12.47	6186	38	6224	100.00%	0.61%
North	N	87	BECKETT	41	12.47	4846	51	4897	94.00%	1.04%
North	N	87	BECKETT	42	12.47	9569	210	9779	98.00%	2.15%
North	Y	57	FAIRFIELD	41	12.47	5845	127	5972	99.00%	2.13%
North	Y	57	FAIRFIELD	42	12.47	7331	99	7430	98.00%	1.33%
North	Y	57	FAIRFIELD	43	12.47	5523	38	5561	98.00%	0.68%
North	Y	57	FAIRFIELD	44	12.47	8538	142	8680	100.00%	1.64%
North	Y	57	FAIRFIELD	45	12.47	2972	21	2993	97.00%	0.70%
North	Y	57	FAIRFIELD	46	12.47	4875	82	4957	95.00%	1.65%
North	Y	57	FAIRFIELD	56	34.5	5729	34	5763	100.00%	0.59%
North	Y	57	FAIRFIELD	51	34.5	1199	2	1201	90.00%	0.17%
North	Y	57	FAIRFIELD	58	34.5	21240	400	21639	100.00%	1.85%
North	Y	296	GASTON	41	12.47	5897	125	6022	98.00%	2.08%
North	Y	353	GILMORE	41	12.47	5991	31	6022	100.00%	0.51%
North	Y	353	GILMORE	42	12.47	8662	49	8711	100.00%	0.56%
North	Y	166	HALL	41	12.47	7230	79	7309	99.00%	1.08%
North	Y	166	HALL	42	12.47	6663	51	6714	99.00%	0.76%
North	Y	166	HALL	43	12.47	6662	94	6755	96.00%	1.39%
North	Y	166	HALL	44	12.47	3788	55	3843	98.00%	1.43%
North	N	208	HENSLEY	41	12.47	11251	394	11645	100.00%	3.38%
North	Y	232	LOCUST	41	12.47	8302	84	8386	100.00%	1.00%
North	Y	232	LOCUST	42	12.47	8630	54	8684	100.00%	0.62%
North	Y	187	MAUD	41	12.47	6849	45	6894	98.00%	0.65%
North	Y	287	MAUD	42	12.47	8691	94	8785	100.00%	1.07%
North	Y	24	MILLIKIN	41	12.47	6252	104	6356	100.00%	1.64%
North	Y	24	MILLIKIN	42	12.47	11795	252	12047	99.00%	2.09%

North	Y	24	MILLIKIN	43	12.47	9612	285	9897	100.00%	2.88%
North	Y	24	MILLIKIN	44	12.47	11729	1051	12780	100.00%	8.22%
North	Y	103	MILLVILLE	41	12.47	6580	116	6696	99.00%	1.73%
North	Y	103	MILLVILLE	42	12.47	5702	197	5899	100.00%	3.34%
North	Y	25	MULHAUSER	41	12.47	9797	113	9909	99.00%	1.14%
North	Y	25	MULHAUSER	42	12.47	7230	51	7281	95.00%	0.70%
North	Y	25	MULHAUSER	43	12.47	7996	149	8145	100.00%	1.83%
North	Y	25	MULHAUSER	44	12.47	8341	153	8494	99.00%	1.80%
North	Y	25	MULHAUSER	45	12.47	6487	22	6509	99.00%	0.34%
North	Y	25	MULHAUSER	46	12.47	9395	110	9504	98.00%	1.16%
North	Y	363	NILLES	41	12.47	6459	20	6479	100.00%	0.31%
North	Y	363	NILLES	42	12.47	4886	20	4906	92.00%	0.41%
North	Y	38	PORT UNION	41	12.47	8843	116	8959	98.00%	1.29%
North	Y	38	PORT UNION	42	12.47	4962	41	5003	100.00%	0.82%
North	Y	38	PORT UNION	43	12.47	8497	148	8645	94.00%	1.71%
North	Y	38	PORT UNION	44	12.47	7135	55	7190	97.00%	0.76%
North	Y	38	PORT UNION	45	12.47	11478	123	11601	100.00%	1.06%
North	Y	38	PORT UNION	56	34.5	15828	283	16111	99.00%	1.76%
North	Y	38	PORT UNION	57	34.5	10220	57	10278	100.00%	0.55%
North	Y	355	PRINCETON	41	12.47	8117	178	8295	98.00%	2.15%
North	Y	355	PRINCETON	42	12.47	12403	426	12828	100.00%	3.32%
North	Y	355	PRINCETON	43	12.47	8170	191	8361	98.00%	2.28%
North	Y	355	PRINCETON	44	12.47	9722	326	10048	99.00%	3.24%
North	Y	207	RIVER CIRCLE	41	12.47	5551	56	5607	94.00%	1.00%
North	Y	330	SEWARD	41	12.47	6703	104	6806	99.00%	1.53%
North	Y	330	SEWARD	42	12.47	7770	66	7836	100.00%	0.84%
North	Y	330	SEWARD	43	12.47	1850	3	1853	91.00%	0.16%
North	Y	330	SEWARD	44	12.47	3798	107	3905	95.00%	2.74%
North	Y	330	SEWARD	45	12.47	2713	22	2735	100.00%	0.80%
North	Y	330	SEWARD	46	12.47	5459	63	5522	92.00%	1.14%
North	Y	327	STILLWELL	41	12.47	4790	77	4867	98.00%	1.58%
North	Y	183	SYMMES	41	12.47	7201	77	7278	97.00%	1.06%
North	Y	183	SYMMES	42	12.47	4224	25	4249	100.00%	0.59%

North	Y	183	SYMMES	43	12.47	4651	86	4737	100.00%	1.82%
North	Y	150	TYLERSVILLE	41	12.47	4703	24	4727	99.00%	0.51%
North	Y	150	TYLERSVILLE	42	12.47	7239	76	7315	100.00%	1.04%
North	N	196	WARREN	41	12.47	7340	342	7682	98.00%	4.45%
North	N	196	WARREN	42	12.47	6148	468	6616	100.00%	7.07%
CW	Y	267	Delhi	41	12.47	8204	112	8316	98.00%	1.35%
CW	Y	267	Delhi	42	12.47	9467	188	9654	99.00%	1.95%
CW	Y	267	Delhi	43	12.47	8636	86	8722	99.00%	0.99%
CW	Y	267	Delhi	44	12.47	5450	36	5486	100.00%	0.66%
CW	Y	68	Ebenezer	41	12.47	1916	8	1924	94.00%	0.42%
CW	Y	68	Ebenezer	42	12.47	6420	32	6225	98.00%	0.51%
CW	Y	68	Ebenezer	43	12.47	7723	111	7834	100.00%	1.42%
CW	Y	68	Ebenezer	44	12.47	8410	151	8561	98.00%	1.76%
CW	Y	68	Ebenezer	58	35	23878	411	24289	100.00%	1.69%
CW	Y	68	Ebenezer	6859	35	4402	25	4427	85.00%	0.56%
CW	Y	146	Hillside	41	12.47	7084	232	7316	93.00%	3.17%
CW	Y	61	Kleeman	41	12.47	7934	207	8141	99.00%	2.54%
CW	Y	61	Kleeman	42	12.47	11567	292	11859	100.00%	2.46%
CW	Y	61	Kleeman	43	12.47	8001	239	8241	97.00%	2.90%
CW	Y	61	Kleeman	44	12.47	10067	405	10472	98.00%	3.87%
CW	Y	61	Kleeman	45	12.47	8004	133	8137	98.00%	1.63%
CW	Y	61	Kleeman	46	12.47	7777	113	7890	98.00%	1.43%
CW	Y	230	Mack	41	12.47	6879	101	6980	96.00%	1.45%
CW	Y	230	Mack	42	12.47	6747	101	6848	99.00%	1.47%
CW	Y	230	Mack	43	12.47	7807	93	7900	98.00%	1.18%
CW	Y	230	Mack	44	12.47	3914	73	3987	100.00%	1.83%
CW	Y	123	Miamitown	41	12.47	6358	181	6539	85.00%	2.77%
CW	Y	96	Midway	51	35	8976	40	9016	99.00%	0.44%
CW	Y	96	Midway	9653	35	9573	144	9719	91.00%	1.48%
CW	Y	96	Midway	9654	35	7715	131	7846	91.00%	1.67%
CW	Y	181	Neumann	41	12.47	8040	172	8211	98.00%	2.09%
CW	Y	181	Neumann	42	12.47	8751	114	8865	100.00%	1.29%
CW	N	185	Rybolt	41	12.47	9273	184	6457	95.00%	2.85%

CW	N	185	Rybolt	42	12.47	9192	160	9352	98.00%	1.71%
CW	Y	223	Sayler Park	41	12.47	9053	278	9331	100.00%	2.98%

Duke Energy Ohio Distribution System Efficiency Metrics – IVVC 2014 Report

The attached report is being filed annually along with Duke Energy Ohio's Smart Grid Cost Recovery filing as agreed to by parties on February 6, 2013 when parties met to discuss reporting of distribution system efficiencies from Integrated Volt/Var Control (IVVC) implementation. As discussed in that meeting, the IVVC development and testing began in the 4th quarter of 2012 with the first report beginning in 2012.

The following report reflects the number of circuits that were operating under IVVC control by year-end 2014. This report utilizes 2012 as the baseline year for the System Average Voltage from which the MWH Reduction under IVVC is calculated.

The MWh Reduction with IVVC is calculated with an assumed CVR Factor of .5 and .79.

Report Year	2014					
System Avg Voltage Baseline(2012)	123.2					
IVVC Operation	**Avg Voltage with IVVC**	% Avg Volt Reduction with IVVC	MWH under IVVC Control	**MWh Reduction with IVVC**	Assumed CVR Factor	Circuits under IVVC Control
IVVC Circuit Avg Voltage	121.1	1.71	5,951,744	**51,185**	0.5	417
IVVC Circuit Avg Voltage	121.1	1.71	5,951,744	**80,402**	0.79	417