

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the matter of the Annual Report of                    )  
Electric Distribution System Reliability            ) Case No: 18 -0994 -EL-ESS  
Pursuant to Rule 4901:1-10-10(C)                )

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Pursuant to Rule 4901:1-10-10(C) of the Ohio Administrative Code,  
Duke Energy Ohio  
hereby submits the attached annual report for the year 2017 .

I certify that the following report accurately and completely reflects the annual report requirements pursuant to Rule 4901:1-10-10 of the Ohio Administrative Code.

Nick Melillo

Signature

Nick Melillo

Printed Name

Manager, PQ&I Engineering

Title

3/28/18

Date

**Duke Energy Ohio**  
**Rule 10 Report for 2017**

**1. 4901:1-10-10(C)(1): CAIDI (Customer Average Interruption Duration Index)**

<u>Performance Standard</u>	<u>After Exclusions</u>	<u>Before Exclusions</u>
122.81	127.28	178.66

**2. 4901:1-10-10(C)(1): SAIFI (System Average Interruption Frequency Index)**

<u>Performance Standard</u>	<u>After Exclusions</u>	<u>Before Exclusions</u>
1.05	1.16	1.48

**3. 4901:1-10-10(C)(1): Supporting Data**

Customers <u>Served</u>	CI* <u>After Exclusions</u>	CI <u>Before Exclusions</u>	CMI* <u>After Exclusions</u>	CMI <u>Before Exclusions</u>
717,067	832,567	1,060,366	105,965,751	189,448,155

**Notes:**

\*note: There is currently no agreed-upon CAIDI and SAIFI performance standard for Duke Energy Ohio. The numbers entered for CAIDI and SAIFI performance standards are the previously agreed-upon standards that ended in 2016.

\*CI = Customer Interruptions  
CMI = Customer Minutes Interrupted

**Duke Energy Ohio**  
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**4. 4901:1-10-10(C)(2): Major Event Outages**

<b>Date</b>	<b>Description</b>	<b>CI</b>	<b>CMI</b>	<b>CAIDI</b>	<b>SAIFI</b>
3/1/2017	Rain and thunderstorms, with 45mph wind gusts noted. Continuous sustained winds of at least 25mph from 2pm to midnight. Up to 4" of rain within DEO service territory.	45,137	32,121,434	711.64	0.06
4/28/2017	Heavy thunderstorms, with 25mph wind gusts noted.	11,126	3,591,545	322.81	0.02
7/7/2017	Heavy thunderstorms, with 40mph wind gusts noted. Up to 1.7" of rain within DEO service territory.	42,831	27,564,782	643.57	0.06
11/18/2017	Heavy rain, with 48mph wind gusts noted. Sustained 20mph winds from 11am to 5pm. Up to 0.7" of rain noted within DEO service territory.	52,177	15,454,474	296.19	0.07
<b>Totals:</b>		<b>151,271</b>	<b>78,732,235</b>		

**Notes:** These numbers are including transmission outage data on the Major Event days, per the ESSS guidelines: (C)(2): Performance on the same indices during major events and transmission outages, reported in separate categories with their respective supporting data

**Duke Energy Ohio**  
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**5a. 4901:1-10-10(C)(2): Transmission Outages**

<b>Outage Start Date</b>	<b>Transmission Circuit Impacted</b>	<b>Outage Start Time</b>	<b>Circuit kV</b>	<b>Outage Cause</b>	<b>Outage Length (minutes)</b>
1/10/2017	4366	7:39 PM	69	Vegetation	103
1/20/2017	9062	2:24 AM	69	Public Accident	31
1/31/2017	5665	8:46 AM	69	Equipment Failure	54
2/12/2017	9062	7:52 AM	69	Equipment Failure	21
3/1/2017	6365	7:07 AM	69	Vegetation	407
3/1/2017	1862	7:26 AM	69	Weather	763
3/1/2017	5863	7:26 AM	69	Weather	202
3/21/2017	6962	5:56 PM	69	Public Accident	192
3/28/2017	1862	1:04 PM	69	Public Accident	155
7/11/2017	1862	1:05 AM	69	Vegetation	10
7/13/2017	6961	3:08 PM	69	Other	82
8/21/2017	4366	7:08 PM	69	Vegetation	63
8/27/2017	3261	9:10 AM	69	Wildlife	56
10/15/2017	1862	3:57 PM	69	Vegetation	193
11/7/2017	3864	5:52 AM	69	Public Accident	61
11/18/2017	4366	12:17 PM	69	Vegetation	146
11/30/2017	1265	9:58 AM	69	Equipment Failure	131
12/18/2017	7481	4:36 PM	138	Equipment Failure	26

**Notes:** Data includes outages which occurred on Major Event Days. Momentary outages have been excluded.

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**5b. 4901:1-10-10(C)(2): Distribution Circuits Impacted by Transmission Outages**

<b>Outage Start Date</b>	<b>CI per Outage</b>	<b>CMI per Outage</b>	<b># of Impacted Circuits</b>	<b>IDs for Impacted Circuits</b>	<b>CI per Circuit</b>	<b>CMI per Circuit</b>
1/10/2017	4,738	485,831	2	H4921410041	2,183	222,666
1/10/2017	4,738	485,831	2	H4921410042	2,555	263,165
1/20/2017	6,754	81,062	6	H4622960041	762	23,622
1/20/2017	6,754	81,062	6	H462232000E	158	1,422
1/20/2017	6,754	81,062	6	H462232000G	786	7,074
1/20/2017	6,754	81,062	6	H4622320041	2,459	22,131
1/20/2017	6,754	81,062	6	H4622320042	2,137	19,233
1/20/2017	6,754	81,062	6	H4611150041	452	7,580
1/31/2017	4,368	119,648	7	H4612370041	1,586	31,720
1/31/2017	4,368	119,648	7	H4612370042	10	200
1/31/2017	4,368	119,648	7	H4612370043	729	14,580
1/31/2017	4,368	119,648	7	H461065000A	329	5,626
1/31/2017	4,368	119,648	7	H461065000B	269	4,769
1/31/2017	4,368	119,648	7	H461065000C	317	5,224
1/31/2017	4,368	119,648	7	H4611620049	1,128	57,528
2/12/2017	6,878	134,550	5	H4622960041	766	16,086
2/12/2017	6,878	134,550	5	H462232000E	157	2,512
2/12/2017	6,878	134,550	5	H462232000G	787	12,592
2/12/2017	6,878	134,550	5	H4622320041	2,458	49,160
2/12/2017	6,878	134,550	5	H4622320042	2,710	54,200

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**5b. 4901:1-10-10(C)(2): Distribution Circuits Impacted by Transmission Outages**

<b>Outage Start Date</b>	<b>CI per Outage</b>	<b>CMI per Outage</b>	<b># of Impacted Circuits</b>	<b>IDs for Impacted Circuits</b>	<b>CI per Circuit</b>	<b>CMI per Circuit</b>
3/1/2017	3,926	209,516	3	H4920510041	2,168	43,360
3/1/2017	3,926	209,516	3	H4920510044	1,419	28,380
3/1/2017	3,926	209,516	3	H4922060041	339	137,776
3/1/2017	1,482	971,286	2	H492359000A	307	74,761
3/1/2017	1,482	971,286	2	H4923590041	1,175	896,525
3/1/2017	936	189,072	1	H4920810041	936	189,072
3/21/2017	9,020	1,153,326	6	H4923620041	1,255	80,320
3/21/2017	9,020	1,153,326	6	H4923620042	2,909	546,892
3/21/2017	9,020	1,153,326	6	H4920710041	2,761	298,188
3/21/2017	9,020	1,153,326	6	H4922090041	631	66,886
3/21/2017	9,020	1,153,326	6	H4922120041	511	56,210
3/21/2017	9,020	1,153,326	6	H4922120042	953	104,830
3/28/2017	3,387	524,009	5	H492354000A	183	27,999
3/28/2017	3,387	524,009	5	H492359000A	305	46,665
3/28/2017	3,387	524,009	5	H4923590041	1,993	308,915
3/28/2017	3,387	524,009	5	H4923010041	496	76,880
3/28/2017	3,387	524,009	5	H4923010042	410	63,550
7/11/2017	1,749	17,490	1	H4921430041	1,749	17,490
7/13/2017	3,956	184,490	3	H4923180041	1,734	10,404
7/13/2017	3,956	184,490	3	H4923180042	1,474	113,498

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**5b. 4901:1-10-10(C)(2): Distribution Circuits Impacted by Transmission Outages**

<b>Outage Start Date</b>	<b>CI per Outage</b>	<b>CMI per Outage</b>	<b># of Impacted Circuits</b>	<b>IDs for Impacted Circuits</b>	<b>CI per Circuit</b>	<b>CMI per Circuit</b>
7/13/2017	3,956	184,490	3	H4920510046	748	60,588
8/21/2017	2,168	83,256	3	H4923410041	552	34,776
8/21/2017	2,168	83,256	3	H4923410042	586	17,580
8/21/2017	2,168	83,256	3	H4923410043	1,030	30,900
8/27/2017	6,726	376,656	4	H4623550041	1,873	104,888
8/27/2017	6,726	376,656	4	H4623550042	1,380	77,280
8/27/2017	6,726	376,656	4	H4623550043	2,072	116,032
8/27/2017	6,726	376,656	4	H4623550044	1,401	78,456
10/15/2017	3,005	516,719	5	H492354000A	182	34,944
10/15/2017	3,005	516,719	5	H492359000A	307	58,944
10/15/2017	3,005	516,719	5	H4923590041	1,588	306,484
10/15/2017	3,005	516,719	5	H4923010041	495	61,776
10/15/2017	3,005	516,719	5	H4923010042	433	54,571
11/7/2017	3,724	224,272	3	H4623530042	1,593	97,173
11/7/2017	3,724	224,272	3	H38H1650041	761	44,899
11/7/2017	3,724	224,272	3	H38H1650042	1,370	82,200
11/18/2017	2,214	323,244	3	H4923410041	579	84,534
11/18/2017	2,214	323,244	3	H4923410042	592	86,432
11/18/2017	2,214	323,244	3	H4923410043	1,043	152,278
11/30/2017	6,191	551,673	6	H38H0480043	306	37,815

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**5b. 4901:1-10-10(C)(2): Distribution Circuits Impacted by Transmission Outages**

<b>Outage Start Date</b>	<b>CI per Outage</b>	<b>CMI per Outage</b>	<b># of Impacted Circuits</b>	<b>IDs for Impacted Circuits</b>	<b>CI per Circuit</b>	<b>CMI per Circuit</b>
11/30/2017	6,191	551,673	6	H38H012000A	246	32,226
11/30/2017	6,191	551,673	6	H38H012000B	359	46,878
11/30/2017	6,191	551,673	6	H38H0120041	810	67,230
11/30/2017	6,191	551,673	6	H38H0120043	2,731	181,301
11/30/2017	6,191	551,673	6	H38H0120044	1,739	186,223
12/18/2017	13,835	293,782	7	H5020440041	880	8,800
12/18/2017	13,835	293,782	7	H5020440042	1,337	24,066
12/18/2017	13,835	293,782	7	H5020260041	2,109	42,180
12/18/2017	13,835	293,782	7	H5020260042	2,260	45,200
12/18/2017	13,835	293,782	7	H5020260043	2,798	72,748
12/18/2017	13,835	293,782	7	H5020260044	2,317	60,242
12/18/2017	13,835	293,782	7	H5020260046	2,134	40,546

**Notes:** Data includes outages which occurred on Major Event Days. Momentary outages have been excluded.



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**5c. 4901:1-10-10(C)(2): Index values during transmission outages**

Outage start date	CAIDI during outage	SAIFI during outage
1/10/2017	102.5393	0.0066
1/20/2017	12.0021	0.0094
1/31/2017	27.3919	0.0061
2/12/2017	19.5624	0.0096
3/1/2017	53.3663	0.0055
3/1/2017	655.3887	0.0021
3/1/2017	202.0000	0.0013
3/21/2017	127.8632	0.0126
3/28/2017	154.7118	0.0047
7/11/2017	10.0000	0.0024
7/13/2017	46.6355	0.0055
8/21/2017	38.4022	0.0030
8/27/2017	56.0000	0.0094
10/15/2017	171.9531	0.0042
11/7/2017	60.2234	0.0052
11/18/2017	146.0000	0.0031
11/30/2017	89.1089	0.0086
12/18/2017	21.2347	0.0193

**Notes:**

**Duke Energy Ohio**  
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**6a. 4901:1-10-10(C)(3)(a): Data excluding major events and transmission outages**

<b>Outage Cause</b>	<b>Events</b>	<b>Customers Interrupted</b>	<b>Customers Minutes Interrupted</b>
Equipment failure	2,871	231,803	25,655,956
Lightning	546	12,278	2,855,476
Other	1,194	66,241	4,685,916
Planned	9,335	91,140	12,593,996
Public Accident	781	121,765	14,809,043
Unknown	899	53,755	4,884,572
Vegetation	2,083	165,253	28,617,601
Weather, Storm	436	30,003	6,353,959
Wildlife	1,373	60,329	5,509,232
<b>Totals:</b>	<b>19,518</b>	<b>832,567</b>	<b>105,965,751</b>

**Notes:** Data excluding major events and transmission outages

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**6b. 4901:1-10-10(C)(3)(b): Data for major events only**

<b>Outage Cause</b>	<b>Events</b>	<b>Customers Interrupted</b>	<b>Customers Minutes Interrupted</b>
Equipment failure	91	17,096	8,077,593
Lightning	51	1,170	680,110
Other	32	1,291	1,372,244
Planned	89	883	61,276
Public Accident	9	4,711	180,026
Unknown	43	3,002	2,310,642
Vegetation	547	68,405	33,758,858
Weather, Storm	373	39,058	28,213,358
Wildlife	12	7,097	2,385,010
<b>Totals:</b>	<b>1,247</b>	<b>142,713</b>	<b>77,039,117</b>

**Notes:** Data for major events only, transmission is EXCLUDED

**Duke Energy Ohio**  
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**6c. 4901:1-10-10(C)(3)(c): Data for transmission outages only**

<b>Outage Cause</b>	<b>Events</b>	<b>Customers Interrupted</b>	<b>Customers Minutes Interrupted</b>
Equipment failure	27	31,272	1,099,653
Other	3	3,956	184,490
Public Accident	20	22,885	1,982,669
Vegetation	18	18,975	2,532,581
Weather, Storm	2	1,243	263,833
Wildlife	4	6,726	376,656
<b>Totals:</b>	<b>74</b>	<b>85,057</b>	<b>6,439,882</b>

**Notes:** This data is all Transmission outages, including those that occurred on Major Event Days. Momentary Outages have been excluded.

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**7. 4901:1-10-10(C)(4): Momentary Interruptions**

Total Number = 2,100

Notes: All Momentary interruptions. MED's Included, Transmission Included

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**3/29/2018 2:21:27 PM**

**in**

**Case No(s). 18-0994-EL-ESS**

Summary: Annual Report Duke Energy Ohio, Inc. Annual Report of Electric Distribution Reliability Pursuant to Rule 4901:1-10-10-(C) electronically filed by Dianne Kuhnell on behalf of Duke Energy Ohio, Inc. and Rocco D'Ascenzo and Watts, Elizabeth H.