

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the matter of the Annual Report of)
Electric Distribution System Reliability) Case No: 22 -0994 -EL-ESS
Pursuant to Rule 4901:1-10-10(C))

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 2021 .

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.



Signature

Holly Ross

Printed Name

Manager, Asset Mgmt.

Title

3/15/2022

Date

Duke Energy Ohio
Rule 10 Report for 2021

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>
135.52	131.63	140.48

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>
0.83	0.89	1.02

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>
745,651	665,971	760,173	87,659,870	106,787,385

Notes:

*CI = Customer Interruptions
CMI = Customer Minutes Interrupted

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4. 4901:1-10-10(C)(2): Major Event Outages

Date	Description	CI	CMI	CAIDI	SAIFI
6/18/2021	Strong thunderstorms with winds over 20 mph and approximately an inch of rain	53,885	14,414,551	267.51	0.07
Totals:		53,885	14,414,551		

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

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5a. 4901:1-10-10(C)(2): Transmission Outages

Outage Start Date	Transmission Circuit Impacted	Outage Start Time	Circuit kV	Outage Cause	Outage Length (minutes)
3/14/2021	1762	5:05 PM	69	Public Accident	157
4/30/2021	3869	3:02 PM	69	Weather	98
6/18/2021	9062	8:36 PM	69	Vegetation	24
7/5/2021	4861	8:32 AM	69	Other Cause (Mylar Balloon)	388
7/17/2021	1862	10:32 AM	69	Vegetation	107
7/22/2021	5767	5:38 AM	69	Public Accident	577
8/15/2021	6962	4:34 AM	69	Vegetation	204
8/26/2021	5767	2:49 PM	69	Unknown Cause	17
9/26/2021	3864	9:03 AM	69	Public Accident	1,146
10/7/2021	1862	3:15 AM	69	Equipment Failure	172
10/14/2021	5767	7:37 AM	69	Public Accident	304
11/11/2021	6961	9:08 AM	69	Vegetation	69

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

Only 1 customer was out for the full duration of the Transmission Line 3864 outage on 9/26/21. The remaining customers were all restored within 100 minutes or less.

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

Outage Start Date	CI per Outage	CMI per Outage	# of Impacted Circuits	IDs for Impacted Circuits	CI per Circuit	CMI per Circuit
3/14/2021	2,758	102,749	2	H38H5830043	2,082	12,492
3/14/2021	2,758	102,749	2	H5020260044	676	90,257
4/30/2021	736	72,075	2	H5022200041	476	46,634
4/30/2021	736	72,075	2	H5022200042	260	25,441
6/18/2021	22,189	211,954	11	H4622320042	2,842	25,578
6/18/2021	22,189	211,954	11	H4622320041	2,485	22,365
6/18/2021	22,189	211,954	11	H4622960041	817	19,608
6/18/2021	22,189	211,954	11	H38H0790042	1,661	14,949
6/18/2021	22,189	211,954	11	H40C0360041	1,347	12,123
6/18/2021	22,189	211,954	11	H40C0360045	1,829	16,461
6/18/2021	22,189	211,954	11	H38H0470045	2,093	18,837
6/18/2021	22,189	211,954	11	H38H0470044	3,263	29,367
6/18/2021	22,189	211,954	11	H38H0470042	2,245	20,205
6/18/2021	22,189	211,954	11	H38H0790044	3,589	32,301
6/18/2021	22,189	211,954	11	H40C0360043	18	160
7/5/2021	6,735	1,564,215	6	H38H0060046	993	145,971
7/5/2021	6,735	1,564,215	6	H38H0060048	835	141,950
7/5/2021	6,735	1,564,215	6	H38H0060047	1,601	292,983
7/5/2021	6,735	1,564,215	6	H38H0060042	14	2,604
7/5/2021	6,735	1,564,215	6	H38H284000D	1,977	470,027

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

Outage Start Date	CI per Outage	CMI per Outage	# of Impacted Circuits	IDs for Impacted Circuits	CI per Circuit	CMI per Circuit
7/5/2021	6,735	1,564,215	6	H38H0060041	1,315	510,680
7/17/2021	444	47,517	1	H4923010042	444	47,517
7/22/2021	3,680	394,218	3	H4621030042	543	204,841
7/22/2021	3,680	394,218	3	H4623270041	1,931	48,275
7/22/2021	3,680	394,218	3	H4622070041	1,206	141,102
8/15/2021	13,918	1,954,757	10	H4920710042	419	11,753
8/15/2021	13,918	1,954,757	10	H4920710041	1,852	53,708
8/15/2021	13,918	1,954,757	10	H4921450043	1,948	239,604
8/15/2021	13,918	1,954,757	10	H4921450042	2,091	259,284
8/15/2021	13,918	1,954,757	10	H4921450041	1,586	198,250
8/15/2021	13,918	1,954,757	10	H4923620042	2,906	578,294
8/15/2021	13,918	1,954,757	10	H4922120044	1,625	325,000
8/15/2021	13,918	1,954,757	10	H4921450044	129	15,916
8/15/2021	13,918	1,954,757	10	H4922090041	748	147,895
8/15/2021	13,918	1,954,757	10	H4922120043	614	125,053
8/26/2021	3,138	39,822	2	H4623270041	1,932	19,320
8/26/2021	3,138	39,822	2	H4622070041	1,206	20,502
9/26/2021	593	52,190	3	H38H1650041	479	48,803
9/26/2021	593	52,190	3	H4620250041	29	2,369
9/26/2021	593	52,190	3	H4623530041	85	1,018

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

Outage Start Date	CI per Outage	CMI per Outage	# of Impacted Circuits	IDs for Impacted Circuits	CI per Circuit	CMI per Circuit
10/7/2021	1,499	18,878	2	H492359000A	24	4,128
10/7/2021	1,499	18,878	2	H4923590041	1,475	14,750
10/14/2021	2,229	162,374	2	H4623270041	1,937	73,606
10/14/2021	2,229	162,374	2	H4622070041	292	88,768
11/11/2021	4,587	304,169	3	H4920510046	759	52,371
11/11/2021	4,587	304,169	3	H4923180041	1,762	109,244
11/11/2021	4,587	304,169	3	H4920510045	2,066	142,554

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

Only 1 customer was out for the full duration of the Transmission Line 3864 outage on 9/26/21. The remaining customers were all restored within 100 minutes or less.

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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
3/14/2021	37.2549	0.0037
4/30/2021	97.9276	0.0010
6/18/2021	9.5522	0.0298
7/5/2021	232.2517	0.0090
7/17/2021	107.0200	0.0006
7/22/2021	107.1244	0.0049
8/15/2021	140.4481	0.0187
8/26/2021	12.6902	0.0042
9/26/2021	88.0112	0.0008
10/7/2021	12.5937	0.0020
10/14/2021	72.8461	0.0030
11/11/2021	66.3111	0.0062

Notes:

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

Outage Cause	Events	Customers Interrupted	Customers Minutes Interrupted
Equipment failure	2,873	195,455	24,904,810
Lightning strike	277	11,055	1,736,778
Other Cause	686	80,406	5,945,778
Planned (IEEE)	2,385	27,270	4,071,262
Public Accident	856	144,967	20,154,388
Unknown Cause	396	28,761	3,085,462
Vegetation	1,633	132,573	23,640,191
Weather	166	6,332	1,104,308
Wildlife	1,381	39,152	3,016,894
Totals:	10,653	665,971	87,659,870

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

Outage Cause	Events	Customers Interrupted	Customers Minutes Interrupted
Equipment failure	15	1,669	770,134
Lightning strike	17	309	222,231
Other Cause	5	68	82,284
Planned (IEEE)	2	8	17,197
Public Accident	3	501	62,076
Unknown Cause	16	10,193	2,877,167
Vegetation	119	16,316	8,205,134
Weather	54	2,357	1,932,496
Wildlife	13	275	33,878
Totals:	244	31,696	14,202,597

Notes: Data for major events only, transmission is EXCLUDED

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

Outage Cause	Events	Customers Interrupted	Customers Minutes Interrupted
Equipment failure	2	1,499	18,878
Other Cause	9	6,735	1,564,215
Public Accident	15	9,260	711,532
Unknown Cause	5	9,282	107,373
Vegetation	22	34,994	2,450,845
Weather	2	736	72,075
Totals:	55	62,506	4,924,918

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 = 1,804

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

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

Case No(s). 22-0994-EL-ESS

Summary: Annual Report Duke Energy Ohio, Inc. Annual Report For The Year 2021 electronically filed by Mrs. Tammy M. Meyer on behalf of Duke Energy Ohio Inc. and D'Ascenzo, Rocco and Vaysman, Larisa and Kingery, Jeanne W. and Akhbari, Elyse Hanson