

2022 Rate Case  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
Reg Asset Account 1824000 Meter Reader Severances (AMS)  
For Test Year Ending December 31, 2021  
Sponsor: W. Alan Ledbetter

Meter Reader Severances (AMS) were approved in Docket No. 46957  
Five-year amortization was approved in Docket No. 46957 and began 11-27-2017 when rates were effective. (Previously, recovered through AMCRF which ended 11-26-2017)

Current Month	Beg/End Bal Month	Beginning Bal	Prior month amortization	Activity	Ending Balance	Amortization Periods	Current Month Amortization
Nov-16	October-16	507,222.49	(13,005.70)		494,216.79	38	13,005.71
Dec-16	November-16	494,216.79	(13,005.71)		481,211.08	37	13,005.70
Jan-17	December-16	481,211.08	(13,005.70)		468,205.38	36	13,005.71
Feb-17	January-17	468,205.38	(13,005.71)		455,199.67	35	13,005.70
Mar-17	February-17	455,199.67	(13,005.70)		442,193.97	34	13,005.71
Apr-17	March-17	442,193.97	(13,005.71)		429,188.26	33	13,005.70
May-17	April-17	429,188.26	(13,005.70)		416,182.56	32	13,005.71
Jun-17	May-17	416,182.56	(13,005.71)		403,176.85	31	13,005.70
Jul-17	June-17	403,176.85	(13,005.70)		390,171.15	30	13,005.71
Aug-17	July-17	390,171.15	(13,005.71)		377,165.44	29	13,005.70
Sep-17	August-17	377,165.44	(13,005.70)		364,159.74	28	13,005.71
Oct-17	September-17	364,159.74	(13,005.71)		351,154.03	27	13,005.70
Nov-17	10/31/17	351,154.03	(13,005.70)		338,148.33	26	11,271.62
Nov-17	11/26/17	338,148.33	(11,271.62)		326,876.71	60	726.39
Dec-17	11/27/2017 - 11/30/2017	326,876.71	(726.39)		326,150.32	60	5,447.95
Jan-18	December-17	326,150.32	(5,447.95)		320,702.37	59	5,447.95
Feb-18	January-18	320,702.37	(5,447.95)		315,254.42	58	5,447.95
Mar-18	February-18	315,254.42	(5,447.95)		309,806.47	57	5,447.95
Apr-18	March-18	309,806.47	(5,447.95)		304,358.52	56	5,447.95
May-18	April-18	304,358.52	(5,447.95)		298,910.57	55	5,447.95
Jun-18	May-18	298,910.57	(5,447.95)		293,462.62	54	5,447.95
Jul-18	June-18	293,462.62	(5,447.95)		288,014.67	53	5,447.95
Aug-18	July-18	288,014.67	(5,447.95)		282,566.72	52	5,447.95
Sep-18	August-18	282,566.72	(5,447.95)		277,118.77	51	5,447.95
Oct-18	September-18	277,118.77	(5,447.95)		271,670.82	50	5,447.95
Nov-18	October-18	271,670.82	(5,447.95)		266,222.87	49	5,447.95
Dec-18	November-18	266,222.87	(5,447.95)		260,774.92	48	5,447.95
Jan-19	December-18	260,774.92	(5,447.95)		255,326.97	47	5,447.95
Feb-19	January-19	255,326.97	(5,447.95)		249,879.02	46	5,447.95
Mar-19	February-19	249,879.02	(5,447.95)		244,431.07	45	5,447.95
Apr-19	March-19	244,431.07	(5,447.95)		238,983.12	44	5,447.95
May-19	April-19	238,983.12	(5,447.95)		233,535.17	43	5,447.95
Jun-19	May-19	233,535.17	(5,447.95)		228,087.22	42	5,447.95
Jul-19	June-19	228,087.22	(5,447.95)		222,639.27	41	5,447.95
Aug-19	July-19	222,639.27	(5,447.95)		217,191.32	40	5,447.95
Sep-19	August-19	217,191.32	(5,447.95)		211,743.37	39	5,447.95
Oct-19	September-19	211,743.37	(5,447.95)		206,295.42	38	5,447.95
Nov-19	October-19	206,295.42	(5,447.95)		200,847.47	37	5,447.95
Dec-19	November-19	200,847.47	(5,447.95)		195,399.52	36	5,447.95
Jan-20	December-19	195,399.52	(5,447.95)		189,951.57	35	5,447.95
Feb-20	January-20	189,951.57	(5,447.95)		184,503.62	34	5,447.95
Mar-20	February-20	184,503.62	(5,447.95)		179,055.67	33	5,447.95
Apr-20	March-20	179,055.67	(5,447.95)		173,607.72	32	5,447.95
May-20	April-20	173,607.72	(5,447.95)		168,159.77	31	5,447.95
Jun-20	May-20	168,159.77	(5,447.95)		162,711.82	30	5,447.95
Jul-20	June-20	162,711.82	(5,447.95)		157,263.87	29	5,447.95
Aug-20	July-20	157,263.87	(5,447.95)		151,815.92	28	5,447.95
Sep-20	August-20	151,815.92	(5,447.95)		146,367.97	27	5,447.95
Oct-20	September-20	146,367.97	(5,447.95)		140,920.02	26	5,447.95
Nov-20	October-20	140,920.02	(5,447.95)		135,472.07	25	5,447.95
Dec-20	November-20	135,472.07	(5,447.95)		130,024.12	24	5,447.95
Jan-21	December-20	130,024.12	(5,447.95)		124,576.17	23	5,447.95
Feb-21	January-21	124,576.17	(5,447.95)		119,128.22	22	5,447.95
Mar-21	February-21	119,128.22	(5,447.95)		113,680.27	21	5,447.95
Apr-21	March-21	113,680.27	(5,447.95)		108,232.32	20	5,447.95
May-21	April-21	108,232.32	(5,447.95)		102,784.37	19	5,447.95
Jun-21	May-21	102,784.37	(5,447.95)		97,336.42	18	5,447.95
Jul-21	June-21	97,336.42	(5,447.95)		91,888.47	17	5,447.95
Aug-21	July-21	91,888.47	(5,447.95)		86,440.52	16	5,447.95
Sep-21	August-21	86,440.52	(5,447.95)		80,992.57	15	5,447.95
Oct-21	September-21	80,992.57	(5,447.95)		75,544.62	14	5,447.95
Nov-21	October-21	75,544.62	(5,447.95)		70,096.67	13	5,447.95
Dec-21	November-21	70,096.67	(5,447.95)		64,648.72	12	5,447.95
Jan-22	December-21	64,648.72	(5,447.95)		59,200.77	11	5,447.95
Feb-22	January-22	59,200.77	(5,447.95)		53,752.82	10	5,447.95
Mar-22	February-22	53,752.82	(5,447.95)		48,304.87	9	5,447.95
Apr-22	March-22	48,304.87	(5,447.95)		42,856.92	8	5,447.95
May-22	April-22	42,856.92	(5,447.95)		37,408.97	7	5,447.95
Jun-22	May-22	37,408.97	(5,447.95)		31,961.02	6	5,447.95
Jul-22	June-22	31,961.02	(5,447.95)		26,513.07	5	5,447.95
Aug-22	July-22	26,513.07	(5,447.95)		21,065.12	4	5,447.95

2022 Rate Case  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
Reg Asset Account 1824000 Meter Reader Severances (AMS)  
For Test Year Ending December 31, 2021  
Sponsor. W. Alan Ledbetter

Meter Reader Severances (AMS) were approved in Docket No 46957  
Five-year amortization was approved in Docket No 46957 and began 11-27-2017 when rates were effective (Previously, recovered through AMCRF which ended 11-26-2017)

Current Month	Beg/End Bal Month	Beginning Bal	Prior month amortization	Activity	Ending Balance	Amortization Periods	Current Month Amortization
Sep-22	August-22	21,065 12	(5,447 95)		15,617 17	3	5,447 95
Oct-22	September-22	15,617 17	(5,447 95)		10,169 22	2	5,447 95
Nov-22	October-22	10,169 22	(5,447 95)		4,721 27	1	4,721 27 partial month (26 days)

*Reference Docket No 46957 Finding of Fact Nos :*

36 All Oncor investment, including advanced metering system (AMS) investment, through the end of the test year (December 31, 2016) of \$10,989,502,464, including \$12,570,327,998 of net plant in service, as presented in Oncor's RFP, is prudent and includable in rate base, except that the six neighborhood reliability lithium-ion batteries used by Oncor are not included in this finding. Oncor can seek a prudence finding related to these batteries in a future proceeding.

37 All investment in the distribution and transmission assets that are provided to Oncor in the Sharyland Transaction are used by and useful to Oncor in providing service, are prudent, reasonable, and necessary, and are includable in Oncor's rate base, which with the inclusion of those assets is \$10,991,993,213.

26 days of amort based on prior rate case amortization of 11 years

4 days of amortization based on Dkt 46957 amort of 5 years

326,876 71	November 26, 2017 Unamortized Bal
60	Months
5,447 95	Monthly Amortization

65,375 40	Test year amortization
11,840 15	per year
K&M O&M adjustment #35	(53,535 25) A902

If approved in 2022 base rate case, amortization schedule will be revised to reflect five-year recovery of 12-31-2021 balance

2022 Rate Case  
 Oncor Electric Delivery Company LLC  
 Regulatory Asset Account 1824200 AMS Under-recovery  
 For Test Year Ending December 31, 2021  
 Sponsor: W. Alan Ledbetter

WP/II-E-4.1.1 AMS Under-recovery reg asset  
 Page 1 of 1

Balance approved in Docket No 46957 \$ 204,757,130.60

Amortization by year (AMS under-recovery asset was approved with a 10-year amortization in Docket No 46957)

Annual amortization approved in Docket No 46957 of \$20,475,713 reduces billed base rate revenues and the AMS under-recovery reg asset

11-27-2017 through 12-31-2017	\$ (1,933,817.94)	Docket No. 46957 base rates effective 11-27-2017
2018	\$ (20,475,713.00)	
2019	\$ (20,475,713 00)	
2020	\$ (20,475,713 00)	
2021	\$ (20,475,713 00)	

Unamortized balance approved in Docket No. 46957 \$ 120,920,460 66

Balance approved in Docket No 49721 \$ 6,384,000.00

AMCRF cancel/rebills 11-27-2017 through 12-31-2021 \$ (4,669.28)

Balance at 12-31-2021 \$ 127,299,791 38

Annual amortization - five-year recovery requested in this docket \$ 25,459,958.28 Sch II-E-4.1 and II-E-4 1.1

Increase in amortization from Docket No 46957 base-rate recovery \$ 4,984,245 28

Requested annual amortization over five-years will reduce billed base rate revenues and the AMS under-recovery reg asset

*Docket No. 46957 Application of Oncor for Authority to Change Rates (2017 base rate case)*

Ordering Paragraphs from Order

11. Oncor's regulatory-asset balances shall be amortized over 10 years as shown below, beginning on November 27, 2017-

AMS: Balance — \$204,757,130 Annual Amortization — \$20,475,713

12. If Oncor recovers more than its approved balance of AMS regulatory asset, Oncor shall refund the over-recovered amount.

*Docket No. 49721 Reconciliation of 2017 AMS Costs and Final Determination of Net Operating Cost Savings from AMS Deployment*

Ordering Paragraphs from Order

1. Oncor's application to reconcile its AMS costs from January 1, through November 26, 2017 is approved to the extent provided in this Order. 2

Oncor must add the approved under-recovered \$6 384 million of AMS costs that Oncor incurred from January 1, 2017 through November 26, 2017

to Oncor's existing AMS under-recovered regulatory asset approved by the Commission in Docket No. 46957, which reflects the differences

between the AMS surcharges billed and the net revenue requirements based on the actual expenses and net investment, and must recover that

additional under-recovered amount in future base rates. 3 Oncor must record the costs of this reconciliation as a regulatory asset, and those costs

must be reviewed in Oncor's next base-rate case.

	2020-2021	K&M	Adjusted	
	Grand Total	Adjustment	Total	Comments
<b>Contractor Expenses</b>				
Additional Cleaning	9,328,772 00		9,328,772 00	To minimize the chance of contamination all Oncor facilities were cleaned multiple times daily Areas were also wiped down daily which was not on a normal basis prior to the COVID19 pandemic
Information Technology System Support	371,770 80		371,770 80	Additional Information Technology contractors were required and also working after hours to maintain the Oncor system impact from increased remote use activity This included system enhancements, upgrades, and services to existing systems
Security & Medical	10,703,680 39		10,703,680 39	Local law enforcement provided security to facilities to ensure that only employees and required contractors entered Oncor facilities and followed entry procedures Contract personnel provided temperature screening at Oncor facilities to employees and contractors to enter the buildings
<b>Total Contractor Expenses</b>	<b>20,404,223 19</b>		<b>20,404,223 19</b>	
<b>Employee Expenses</b>				
Employee Appreciation	9,160 41	\$ (4,824 94)	4,335 47	Employee appreciation expenses were meal gift cards or group meals To avoid exposure of traveling to various food locations, meals were provided at Oncor facilities to take back to their work areas Only one person per vehicle was allowed which required employees to use personal vehicles to travel to work sites
Meals/Mileage/Hotel	2,111,550 35		2,111,550 35	Employees also incurred mileage, hotel and parking expenses traveling to backup office locations to enable social distancing, purchased vacation that employees were unable to use and the company repaid the employees for what they were not able to take due to Covid 19
vacation buyback	868,896 66		868,896 66	
Non Productive Time Clearing	(245 92)		(245 92)	Over-correction of variable labor allocation moved out of Regulatory Asset account
<b>Total Employee Expenses</b>	<b>2,989,361 50</b>		<b>2,989,361 50</b>	
<b>Material/Supplies Purchases</b>				
Safety/Cleaning Supplies	2,347,274 75		2,347,274 75	The increased cleaning and sanitizing of Oncor facilities resulted the need for additional cleaning supplies for mopping floors, spraying services, travel sprays, paper goods, individually wrapped eating utensils, etc Safety supplies were also impacted with the need to ensure that rental vehicles and personal vehicles used for company use had proper safety supplies in those vehicles
<b>Total Material/Supplies Purchases</b>	<b>2,347,274 75</b>		<b>2,347,274 75</b>	
<b>Professional/Consulting Services</b>				
COVID19 consulting/ discussion	941,146 03		941,146 03	Expenses covered analysis of work areas when bringing personnel back to Oncor facility Services and review of Oncor systems on load impact from remote use Legal services for regulatory, FERC, and Cyber Security from Covid19 impacts
<b>Total Professional/Consulting Services</b>	<b>941,146 03</b>		<b>941,146 03</b>	
<b>Rental/Lease Expenses</b>				
Generators Rental & Supplies	305,839 18		305,839 18	Temporary mobile offices have been leased to provide work areas for those employees that are needed to be at Oncor facilities Generators were also leased to provide the required power to the temporary offices
Mobile office & hand wash stations(Temporary Office Furnishings)	444,863 39	(36,351 43)	408,511 96	For social distancing furnishings for temporary office areas included, tables, chairs, ceiling fans, small refrigerators,temporary restrooms Cubicle work stations were installed for additional distancing
Rental Vehicles	7,038,060 13		7,038,060 13	Only one person per vehicle required the use of rental vehicles Pickups and cars are the main rentals with a few service body trucks A few bucket trucks have been rented in case another bucket truck is down for an extended period and the rental bucket truck helps continue operations.
Wifi/Zoom/Webex	189,034 52		189,034 52	Working remotely required the ability to have meetings that allowed for presentation sharing Using systems such as Wifi/Zoom/Webex provides this capability This required several groups to get these systems to continue meetings remotely
<b>Total Rental/Lease Expenses</b>	<b>7,977,797 22</b>		<b>7,977,797 22</b>	
<b>Grand Total</b>	<b>34,659,803</b>	<b>(41,176)</b>	<b>34,618,626</b>	

Docket No 50664 Issues Related to the State of Disaster for Coronavirus Disease 2019, Third Order Related to Accrual of Regulatory Assets, Accounting Order

- Each electric utility and water and sewer utility in the state of Texas shall record as a regulatory asset expenses resulting from the effects of COVID-19
- In future proceedings, the Commission will consider, on a case by case basis, the appropriate adjustment to a utility's rates to reflect the recovery of the approved amount of regulatory assets recorded in accordance with this Order (see detail on tab Docket No 50664)

Requestion amortization of regulatory asset 1823575 over five years in this case

Balance - \$34,618,626 32

Annual Amortization - \$6,923,725 26

(O&M Adjustment #42)

	Amortization	
Beginning balance		34,618,626 32
Year 1	(6,923,725 26)	27,694,901 06
Year 2	(6,923,725 26)	20,771,175 79
Year 3	(6,923,725 26)	13,847,450 53
Year 4	(6,923,725 26)	6,923,725 26
Year 5	(6,923,725 26)	-

2022 Rate Case

Oncor Electric Delivery Company LLC

Over-Refund of Capital Structure Refund (Docket No 48522 Rider CSR & Rider WCSR - DLS & XFMR)

For Test Year Ending December 31, 2021

Sponsor W. Alan Ledbetter

WP II-E-4.1 1 CSR  
Page 1 of 1

Regulatory Liability Account 2541351 by project for the Capital Structure Refund		Amount to be refunded		Cap Structure		Requested recovery			
CSREFUND	Cap Structure Refund Regulatory Liability	\$	(3,491,822 10)	Docket No 48522 allocation factors *	Factors as a % of total	Reg Liability Refund	Over-refund/to be collected/(refunded)	To be collected/(refunded)	Over 5 years
CSRFDGRD	GuardlightsCap Struct Ref	\$	(9 542 63)						
CSRFDLPR	Prim grlr 10kw Cap Struct Ref	\$	(167,006 44)	2 456888%	4 203815%	\$ (146,789 74)	\$ 20,216 70	\$	4,043 34
CSRFDLSC	SEC Glr 10kw Cap Structure Ref	\$	(1,414,921 29)	22 220160%	38 019414%	\$ (1,327,570 29)	\$ 87,351 00	\$	17,470 20
CSRFDMTL	Metered SL Cap Struct Ref	\$	(1,212 24)				\$		
CSRFDRES	RES Cap Structure Refund	\$	(1,837,915 23)	31 122307%	53 251276%	\$ (1,859,439 81)	\$ (21,524 58)	\$	(4,304 92)
CSRFDSPR	Prim less 10kw Cap Struct Ref	\$	(919 20)	0 015394%	0 026340%	\$ (919 73)	\$ (0 53)	\$	(0 11)
CSRFDSSC	Sec less10kw Cap Structure Ref	\$	(92,152 06)	1 478648%	2 530015%	\$ (88,343 61)	\$ 3,808 45	\$	761 69
CSRFDSUB	Prim Substation Cap Struct Ref	\$	(10,784 31)	0 157406%	0 269327%	\$ (9,404 41)	\$ 1,379 90	\$	275 98
CSRFDTRN	Transmission Cap Struct Ref	\$	(7,254 09)	0 113927%	0 194933%	\$ (6,806 71)	\$ 447 38	\$	89 48
CSRFDUML	Unmtr SL Cap Struct Ref	\$	(31,611 84)	0 717020%	1 226844%	\$ (42,839 23)	\$ (472 52)	\$	(94 50)
WCSRDL50	Wholesale DLS Cap Struct Ref	\$	(40 47)	0 132896%	0 227389%	\$ (7,940 03)	\$ (7,899 56)	\$	(1,579 91)
WCSRXFMR	Wholesale XFMR Cap Struct Ref	\$	(106 79)	0 029601%	0 050648%	\$ (1,768 55)	\$ (1,661 76)	\$	(332 35)
	Refunds to date (incl cancel/rebills)	\$	(3,573,466 59)	58 444247%	100 000000%	\$ (3,491,822 10)	\$ 81,644 49	\$	16,328 90
Over-Refund of Capital Structure Refund to be collected		\$	81,644 49	Balance at 12-31-2021	Excluding Network Transmission (fully refunded)				K&M adjustment #38 Account 928

\* Docket No 48522, Item No 1, page 11 of 21  
Three projects reflect lighting class

2022 Rate Case  
 Oncor Electric Delivery Company LLC  
 Regulatory Asset 1823200-Mobile Generators Costs  
 For Test Year Ending December 31, 2021  
 Sponsor: W. Alan Ledbetter

Legal costs for mobile gen leases (Hunton - HB 2483 Emergency_Nov)	\$10,588 00
Legal costs for mobile gen leases (Hunton - HB 2483 Emergency_Dec)	<u>\$15,500 00</u>
Balance at 12-31-2021	\$26,088 00

Requested recovery over 5 years	5
Requested recovery of annual amortization expense (account 592)	\$ 5,217 60 K&M adjustment #40

HB 2483

(h) The commission shall permit

(1) a transmission and distribution utility that leases and operates facilities under Subsection (b)(1) to recover the reasonable and necessary costs of leasing and operating the facilities, including the present value of future payments required under the lease, using the rate of return on investment established in the commission's final order in the utility's most recent base rate proceeding; and

(2) a transmission and distribution utility that procures, owns, and operates facilities under Subsection (b)(2) to recover the reasonable and necessary costs of procuring, owning, and operating the facilities, using the rate of return on investment established in the commission's final order in the utility's most recent base rate proceeding

(i) The commission shall authorize a transmission and distribution utility to defer for recovery in a future ratemaking proceeding the incremental operations and maintenance expenses and the return, not otherwise recovered in a rate proceeding, associated with the leasing or procurement, ownership, and operation of the facilities.

(j) A transmission and distribution utility may request recovery of the reasonable and necessary costs of leasing or procuring, owning, and operating facilities under this section, including any deferred expenses, through a proceeding under Section 36 210 or in another ratemaking proceeding. A lease under Subsection (b)(1) must be treated as a capital lease or finance lease for ratemaking purposes

(k) This section expires September 1, 2029

PURA § 39 918

(h) The commission shall permit (1) a transmission and distribution utility that leases and operates facilities under Subsection (b)(1) to recover the reasonable and necessary costs of leasing and operating the facilities, including the present value of future payments required under the lease, using the rate of return on investment established in the commission's final order in the utility's most recent base rate proceeding, and (2) a transmission and distribution utility that procures, owns, and operates facilities under Subsection (b)(2) to recover the reasonable and necessary costs of procuring, owning, and operating the facilities, using the rate of return on investment established in the commission's final order in the utility's most recent base rate proceeding. (i) The commission shall authorize a transmission and distribution utility to defer for recovery in a future ratemaking proceeding the incremental operations and maintenance expenses and the return, not otherwise recovered in a rate proceeding, associated with the leasing or procurement, ownership, and operation of the facilities (j) A transmission and distribution utility may request recovery of the reasonable and necessary costs of leasing or procuring, owning, and operating facilities under this section, including any deferred expenses, through a proceeding under Section 36 210 or in another ratemaking proceeding. A lease under Subsection (b)(1) must be treated as a capital lease or finance lease for ratemaking purposes (k) This section expires September 1, 2029

	Transmission	Distribution
<u>Amortization Adjustment</u>		
2012	-	47,160 08
2013	-	130,329 59
2014	-	267,039 01
2015	-	543,783 79
2016	25,339 07	802,661.77
2017	36,256 14	928,688.47
2018	40,133 42	4,071,810 52
2019	40,133 42	4,699,103.64
2020	40,133.42	4,971,160 17
2021	40,133 42	5,120,186 99
Total	222,128 91	21,581,924 02

<u>Regulatory Liability</u>		
Excess Amortization in Rates		
2017	3,790 38	69,136 05
2018	40,133 42	1,645,679 48
2019	40,133 42	3,872,200 63
2020	40,133 42	4,770,813 51
2021	40,133.42	4,971,160 17
Sub-Total	164,324 08	15,328,989 85

Texas GMT on Excess Amort		
2017	20.01	364 90
2018	211 82	8,685 90
2019	211 82	20,437 47
2020	211 82	25,180.35
2021	211 82	26,237 78
Sub-Total	867 30	80,906 41

Lower Return on Rate Base		
2017	(162 42)	(14,531 34)
2018	(1,719 72)	(180,455 57)
2019	(1,719 72)	(350,246 25)
2020	(1,719 72)	(718,015 87)
2021	(1,719 72)	(1,098,828.78)
Sub-Total	(7,041 30)	(2,362,077.81)

Carrying Cost on Overbilling			
2017	0 21	51.23	0 58%
2018	224 92	7,055 30	1 05%
2019	1,207 76	68,899 30	1.99%
2020	2,374 54	162,862 62	2 35%
2021	1,160 62	87,137 89	0 82%
Sub-Total	4,968 05	326,006 34	

Net Regulatory Liability by Year		
2017	3,648 18	55,020 84
2018	38,850 45	1,480,965 11
2019	39,833 29	3,611,291 16
2020	41,000 07	4,240,840 62
2021	39,786 15	3,985,707 06
Total at 12/31/2021	163,118 13	13,373,824 79

Amortization expense	(32,623 63)	(2,674,764 96)
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2021 test year entries		
Accumulated Provision for Amortization	21,804,052 94	
Amortization Expense		21,804,052 94
<i>To adjust amortization expense for untimely intangible plant retirements</i>		
Operating Revenues	13,205,968 53	
Interest Expense	330,974 39	
Regulatory Liability		13,536,942 92
<i>To accrue regulatory liability for overbilling related to intangible retirements</i>		

Operating Revenue Debit Breakdown				12ME 12/31/2021
Distribution DCRF Total	Account			DCRF Rev
Residential	4405008	53 1948%	6,940,760 93	70018750 92
Small Sec-IDR	4425008	2 3433%	134 24	1,381 60
Small Sec-NIDR	4425208		305,615 29	3,145,342 71
Small Pri-IDR	4426008	0.0187%	21 35	194 17
Small Pri-NIDR	4426208		2,418 59	21,990 99
Large Sec-IDR	4427008	38 1889%	1,530,173 41	16,035,658 68
Large Sec-NIDR	4427208		3,452,644 93	36,182,458 34
Large Pri-IDR	4428008	3 9354%	432,942 91	4,681,002 66
Large Pri-NIDR	4428208		80,540.94	870,813 04
Substation-IDR	4428108	0 2554%	33,178 12	406,288.10
Substation-NIDR	4428128		146 01	1,788 01
Transmission	4429008	0 1010%	13,178 30	162,115 37
Unmetered Ltg	4445008	1 6831%	163,086 82	1,665,867 68
Metered Ltg	4446008		5,656 80	57,781 95
GuardLights	4447008		50,864 21	519,557 88
Wholesale-Substn	4471008	0 0496%	6,471 72	
Wholesale-DL	4471009	0 2298%	29,983 88	
Transmission Total	4470000		158,150 08	

Interest Expense Breakdown		
Distribution	4310100	326,006 34
Transmission	4310100	4,968 05

<u>Total</u>	(13,536,942 92) Reg liability - to be refunded	Sch II-B-12	<u>TRAN</u>	<u>DIST</u>
	(2,707,388 58) to be refunded over 5 years	Sch II-E-4 1	Account 407	(32,623.63) (2,674,764 96)

	Balance acquired at 5-16-2019	Post-acquisition amortization *	Balance at 12-31-2021
Transmission Project	\$ 1,049,228.00		\$ 1,049,228.00
Transition to Competition - SPS Settlement	\$ 325,044.00		\$ 325,044.00
Transition to Competition	\$ 1,666,137.00	\$ (437,561.58)	\$ 1,228,575.42
Total NTU regulatory asset	\$ 3,040,409.00	\$ (437,561.58)	\$ 2,602,847.42
Total NTU regulatory asset for TRAN and DIST			\$ 2,602,847.42
Requested recovery (amortization) over 5 years in this case		\$ 520,569.48	
less current recovery and related amortization through WTS rate		\$ 166,775.52	
Increase in recovery and related amortization - K&M adjustment #37		\$ 353,793.96	

See Note 1 below

Costs incurred for move from the SPP to ERCOT and to transition to retail competition SPP charges for that SPS incurred to serve Sharyland's network load (transmission charges SPP billed to SPS after transition from SPP system)  
 Costs incurred for move from the SPP to ERCOT and to transition to retail competition.

NTU TRAN	NTU DIST
\$ 1,883,105.60	\$ 719,741.82
NTU T&D	NTU DIST
\$ 376,621.12	\$ 143,948.36
\$ 166,775.52	\$ -
\$ 209,845.60	\$ 143,948.36

Account 928

PUC Dockets

Docket No. 37990 Joint Report and Application of Sharyland Utilities, L.P., Sharyland Distribution & Transmission Services, L.L.C., Hunt Transmission Services, L.L.C., Cap Rock Energy Corporation, and Newcorp Resources Electric Cooperative, Inc. for Regulatory Approvals Pursuant to PURA § 14.101, 37.154, 39.262, and 39.915

Docket No. 39070 Application of Sharyland Utilities, L.P. to Approve Study and Plan Pursuant to the Commission's Order in Docket No. 37990 Concerning the Movement of Sharyland's Stanton and Colorado City Divisions from the Southwest Power Pool to ERCOT

Docket No. 39592 Application of Sharyland Utilities, L.P. to Approve Retail Plan Pursuant to the Commission's Order in Docket No. 37990 and for Other Relief

Project No. 41137 Reports on Transitioning Sharyland Stanton, Colorado City, Brady and Celeste Divisions to Competition Pursuant to Order in Docket No. 39592

Docket No. 41430 Joint Report and Application of Sharyland Utilities, LP, Sharyland Distribution & Transmission Services, LLC and Southwestern Public Service Company for Approval of Purchase and Sale of Facilities, for Regulatory Accounting Treatment of Gain on Sale, and for Transfer of Certificate Rights

Docket No. 41474 Application of Sharyland Utilities, L.P. to Establish Retail Delivery Rates, Approve Tariff for Retail Delivery Service, and Adjust Wholesale Transmission Rate (approved original Rider Transition to Competition Charge)

Docket No. 45414 Review of the Rates of Sharyland Utilities, L.P., Establishment of Rates for Sharyland Distribution & Transmission Services, L.L.C., and Request for Grant of a Certificate of Convenience and Necessity and Transfer of Certificate Rights

Docket No. 47469 Joint Report and Application of Sharyland Utilities, L.P., Sharyland Distribution & Transmission Services, L.L.C., and Oncor Electric Delivery Company LLC for Transfer of Facilities, Transfer of Rights Under and Amendment of Certificates of Convenience and Necessity, and for Other Regulatory Approvals

Docket No. 48929 Joint Report and Application of Oncor Electric Delivery Company LLC, Sharyland Distribution & Transmission Services L.L.C., Sharyland Utilities L.P., and Sempra Energy for Regulatory Approvals under PURA §§ 14.101, 37.154, 39.262 and 39.915

Acquisition date was May 16, 2019. Oncor NTU's WTS tariff effective May 17, 2019 (Docket No. 49519)

\* Oncor NTU's WTS tariff includes annual amortization for transition to competition regulatory asset of \$166,775.52

Note 1 - Transmission Project (Docket No. 40537 Application of Sharyland Utilities, LP to Amend a Certificate of Convenience and Necessity for the Gardendale to Grady 138-kV Transmission Line in Martin and Midland Counties)

Sharyland moved from SPP to ERCOT and transitioned to competition pursuant to Commission orders issued in Docket Nos. 39070 and 39592. Prior to purchase of the Hobbs to Midland and Grassland to Borden lines from SPS (Docket No. 41430) costs were incurred for labor, overhead, engineering services, and land appraisals to develop the Gardendale to Grady line. The Gardendale to Grady line was ultimately cancelled after SPS decided that it could sell the Hobbs to Midland and Grassland to Borden lines to Sharyland. It was necessary to begin planning for other transmission solutions because SPS originally refused to sell those lines, and failure to have planned for a transmission solution to the load growth that was occurring in the Stanton division would have placed



**2022 Rate Case**  
**Oncor Electric Delivery Company LLC**  
**Power Line Safety Regulatory Asset (Account 1824700)**  
**Test Year Ending 12-31-2021**  
**Sponsor: W. Alan Ledbetter**

**WP\_II-E-4.1.1 PLSA Regulatory Asset**  
**Page 1 of 1**

	O&M K&M Adjustment #58			O&M K&M Adjustment #41
	Balance at 12-31-2021	K&M adjustment	Adjusted test year balance	Proposed recovery over five years
TRAN	\$ 6,343,989.41		\$ 6,343,989.41	\$ 1,268,797.88
NTU TRAN	\$ 556,203.00		\$ 556,203.00	\$ 111,240.60
DIST	\$ 647,372.72	\$ (34,164.94)	\$ 613,207.78	\$ 122,641.56
	\$ 7,547,565.13	\$ (34,164.94)	\$ 7,513,400.19	\$ 1,502,680.04

PURA §36.066. COSTS RELATED TO REPORTING ON SAFETY PROCESSES AND INSPECTIONS FOR CERTAIN UTILITIES

(a) Costs incurred by an electric utility to comply with Section 38.102 shall be recorded as a regulatory asset for timely recovery in rates established by the commission. (b) The commission may adopt rules relating to the recording of regulatory assets under this section.

Note, PURA §38.102 REPORTS ON SAFETY PROCESSES AND INSPECTIONS and §38.004 MINIMUM CLEARANCE STANDARD.

The Public Utility Commission of Texas adopted 16 Texas Administrative Code (TAC) §25.97, relating to Line Inspection and Safety, without changes to the proposed text as published in the November 29, 2019 issue of the Texas Register (44 Tex. Reg. 7272 (2019)). The new rule implemented the safety reporting provisions in Public Utility Regulatory Act (PURA) §38.102, which was enacted by the 86th Texas Legislature in House Bill 4150 (HB 4150). HB 4150 also added §§35.010 and 36.066, and amended §38.004. These changes to PURA became effective on September 1, 2019. This new rule was adopted under Project Number 49827.

2022 Rate Case  
 Oncor Electric Delivery Company LLC  
 Regulatory Asset Account 1822050 - Rocky Mound Series Compensator  
 Rocky Mound Reactive Compensation Facilities Project Termination  
 For Test Year Ending December 31, 2021  
 Sponsor: W. Alan Ledbetter

Regulatory asset account 1822050 costs for Rocky Mound Reactive Compensation Facilities Project Termination (costs transferred from cancelled capex project 10T63150):

Construction Overheads	114,043.11
Contractor Expense	135,289.88
Employee Expenses other than labor	28,660.11
Environmental Permits/DD	325.00
Grading	69,400.07
Ground Surveying	31,704.46
Materials & Supplies	1,376.97
Professional Svcs External	1,109,563.12
Security Fencing	28,535.00
Balance at 12-31-2021	\$ 1,518,897.72

Amortization period in years	5
Requested annual amortization	\$ 303,779.54 Account 407 (Sch II-E-4.1 and II-E-4.1.1)

The CREZ Reactive Power Study Compensation Study was filed by ERCOT in Docket No. 33672. Study confirmed that the Clear Crossing - Willow Creek CREZ transmission line should be built with 50% series compensation, designed to be installed at Rocky Mound.

In Docket No. 37902, Oncor was awarded one half of the 50% reactive compensation to be installed on the Clear Crossing - Willow Creek 345 kV CREZ transmission line. Estimated cost of new facilities was \$30 million. These facilities were to be installed at Oncor's Rocky Mound station location. Following the award of this facility, Oncor undertook sourcing efforts, secured a contractor, and ordered the series capacitors that would be installed at Rocky Mound.

Joint notifications were filed in Docket Nos. 37902 and 38517 on 9-7-2012, 9-25-2014, and 1-11-2018. Docket No. 37902 Update Notifications of CREZ Project Update reflected ERCOT and Oncor believed it was prudent to complete the CREZ Reactive Study prior to installation of the Rocky Mound series capacitors to allow possible changes in the specifications or type of series capacitors to be installed and insure that the proper protection and mitigation measures are in place prior to energization of the series capacitors. ERCOT believed that a new 2015 in-service date was acceptable.

Given certain Subsynchronous Oscillation ("SSO") concerns, ERCOT requested that Oncor halt procurement of the Rocky Mound series compensation facilities in 2012. On September 7, 2012, Oncor and ERCOT notified the Public Utility Commission of Texas ("Commission") that the Rocky Mound series compensation would not be placed in-service according to the CREZ schedule to permit additional SSO study. The Commission was then further notified in September 2014, that the project would be on-hold until further notice. Prior to ERCOT's 2012 request that Oncor suspend activities related to the series compensation, Oncor diligently pursued placing these facilities in-service on the Commission's designated timeline. This work included preparing the site, entering into procurement contracts, and conducting engineering planning and design. These activities totaled \$1.519M in costs, but avoided approximately \$25.8M of additional costs necessary to put these facilities in-service.

Docket No. 38517 Application of Oncor to Amend its CCN for the Clear Crossing-Willow Creek CREZ 345 kV Transmission Line

Oncor Transmission capex project 10T63150 cancelled

Project description: CREZ 50% SERIES COMPENSATION #A ON THE CLEAR CROSSING - WILL  
 This work authorization covers the cost to perform preliminary engineering studies to install a 50% series compensation on the 345 kV CREZ double circuit line from Clear Crossing - Willow Creek (2-1926.9 kcmil ACSS/TW conductors). Project was planned for service by 12-2-2013.

2022 Rate Case  
Oncor Electric Delivery Company LLC  
Support for Sharyland Interim Rate Regulatory Asset (Account 1824400)  
Test Year Ending December 31, 2021  
Sponsor: W Alan Ledbetter

Oncor's Regulatory Asset for Sharyland's Residential Interim Rates  
Account 1824400

Docket No 47469 Order, Ordering Paragraph No  
10 The Commission approves Oncor's recovery of the interim rate regulatory asset related to Sharyland Utilities' residential interim rates approved in Docket No 45414, but not until the Commission approves the manner in which it will be recovered in a future proceeding

Docket No 45414-On July 28, 2017, SOAH issued Order No 27, approving Sharyland's requested interim rates

Final Reimbursements per Sharyland files

September 2017	\$ 124,805 33
October 2017	\$ 233,581 17
November 2017	\$ 241,953 01
December 2017	\$ 27,023 48
<b>Total</b>	<b>\$ 627,362 99</b>

Account 928

Balance @ 12/31/2021 Requested recovery period \$ years Requested annual amortization \$ 125,472 60 K&M O&M adjustment #50 Account 928

September 2017 Billings by Cycle

Row Labels	Sum of Distribution System Charge	Sum of Old Rate @ 0.062669	Sum of Rate Change Difference
SU_01	87,881 35	87,920 55	(39 20)
SU_02	157,960 52	158,035 93	(75 41)
SU_03	178,456 76	178,514 77	(58 01)
SU_04	225,781 75	225,857 62	(75 87)
SU_05	427,465 76	427,754 03	(288 27)
SU_06	204,272 50	235,805 49	(31,532 99)
SU_07	73,200 61	84,373 08	(11,172 47)
SU_08	41,318 27	47,647 34	(6,329 07)
SU_09	95,075 28	108,950 48	(13,875 20)
SU_10	65,777 31	75,677 42	(9,900 11)
SU_11	47,639 39	54,867 39	(7,228 00)
SU_12	50,564 60	58,378 64	(7,814 04)
SU_13	31,181 45	36,052 78	(4,871 33)
SU_14	48,590 89	56,031 86	(7,440 97)
SU_15	21,763 99	25,195 37	(3,431 38)
SU_16	36,100 81	41,420 11	(5,319 30)
SU_17	26,572 83	30,480 79	(3,907 96)
SU_18	29,697 78	34,061 64	(4,363 86)
SU_19	27,714 60	32,218 71	(4,504 11)
SU_20	17,745 02	20,322 80	(2,577 78)
<b>Grand Total</b>	<b>1,894,761 47</b>	<b>2,019,566 80</b>	<b>(124,805.33)</b>

October 2017 Billings by Cycle

Row Labels	Sum of Distribution System Charge	Sum of Old Rate @ 0.062669	Sum of Rate Change Difference
SU_01	137,091 16	157,228 47	(20,137 31)
SU_02	108,649 11	124,628 00	(15,978 89)
SU_03	132,549 82	152,004 67	(19,454 85)
SU_04	169,103 66	193,976 07	(24,872 41)
SU_05	332,386 85	381,294 04	(48,907 19)
SU_06	171,748 34	197,007 67	(25,259 33)
SU_07	61,177 31	70,174 86	(8,997 55)
SU_08	38,138 94	43,748 04	(5,609 10)
SU_09	81,155 52	93,091 22	(11,935 70)
SU_10	63,252 96	72,555 33	(9,302 37)
SU_11	39,059 57	44,804 13	(5,744 56)
SU_12	40,827 54	46,831 89	(6,004 35)
SU_13	24,662 78	28,312 88	(3,650 10)
SU_14	38,720 46	44,414 96	(5,694 50)
SU_15	19,279 63	22,115 00	(2,835 37)
SU_16	26,497 73	30,401 59	(3,903 86)
SU_17	18,553 65	21,282 25	(2,728 60)
SU_18	22,121 66	25,332 94	(3,211 28)
SU_19	23,414 91	26,858 75	(3,443 84)
SU_20	40,319 72	46,249 73	(5,930 01)
<b>Grand Total</b>	<b>1,588,731 32</b>	<b>1,822,312 49</b>	<b>(233,581 17)</b>

November 2017 Billings by Cycle

Row Labels	Sum of Distribution System Charge	Sum of Old Rate @ 0.062669	Sum of Rate Change Difference
MC_01	53,878 76	93,823 78	(39,945 02)
MC_02	41,910 42	72,982 16	(31,071 74)
MC_03	20,912 65	36,416 96	(15,504 31)
SU_01	23,760 18	27,255 80	(3,495 62)
SU_02	90,000 86	103,237 61	(13,236 75)
SU_03	102,515 99	117,593 22	(15,077 23)
SU_04	133,297 87	152,901 86	(19,603 99)
SU_05	229,982 48	263,835 15	(33,852 67)
SU_06	126,929 93	145,597 54	(18,667 61)
SU_07	49,844 31	57,174 78	(7,330 47)
SU_08	30,375 38	34,842 70	(4,467 32)
SU_09	62,425 83	71,806 81	(9,380 98)
SU_10	39,030 39	44,771 00	(5,740 61)
SU_11	26,729 78	30,660 72	(3,930 94)
SU_12	28,061 11	32,168 33	(4,107 22)
SU_13	17,945 74	20,585 02	(2,639 28)
SU_14	26,813 69	30,757 18	(3,943 49)
SU_15	11,074 27	12,703 03	(1,628 76)
SU_16	14,045 46	16,111 05	(2,065 59)
SU_17	9,836 00	11,282 57	(1,446 57)
SU_18	11,313 69	12,977 60	(1,663 91)
SU_19	11,240 57	12,893 70	(1,653 13)
SU_20	8,785 06	10,077 15	(1,292 09)
(blank)	(387 70)	-	(387 70)
<b>Grand Total</b>	<b>1,170,322 71</b>	<b>1,412,275 72</b>	<b>(241,953.01)</b>

December 2017 Billings by Cycle

Row Labels	Sum of Distribution System Charge	Sum of Old Rate @ 0.062669	Sum of Rate Change Difference
MC_01	11,725 45	20,418 69	(8,693 24)
SU_01	1,804 23	2,069 67	(265 44)
SU_02	27,377 33	31,403 63	(4,026 30)
SU_03	26,619 99	30,534 87	(3,914 88)
SU_04	31,413 68	36,033 73	(4,620 05)
SU_05	25,547 02	29,310 52	(3,763 50)
SU_06	9,984 83	11,453 60	(1,468 77)
SU_07	2,145 74	2,461 27	(315 53)
SU_08	(82 04)	(94 11)	12 07
SU_09	(132 41)	(151 89)	19 48
SU_10	(60 88)	(69 83)	8 95
SU_11	(68 08)	(78 09)	10 01
SU_13	(43 07)	(49 40)	6 34
SU_15	(23 55)	(27 02)	3 47
SU_16	0 14	0 17	(0 03)
SU_17	(17 27)	(19 82)	2 55
SU_18	(1 51)	(1 73)	0 22
SU_19	16 62	19 06	(2 44)
SU_20	115 94	132 33	(16 39)
<b>Grand Total</b>	<b>136,322 17</b>	<b>163,345 65</b>	<b>(27,023 48)</b>

Amounts Oncor reimbursed Sharyland and deterred as a regulatory asset until customers were transitioned to Oncor

124,805 33

233,581 17

241,953 01

27,023 48

Tariff for Retail Delivery Service  
SHARYLAND UTILITIES, L.P.

Chapter 6		Sheet No. 6
Chapter Title: Company Specific Items	Effective Date: September 10, 2017	
Applicable: Sharyland Utilities, L.P.	Revision: 1	

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CHAPTER 6: COMPANY SPECIFIC ITEMS

6.1 RATE SCHEDULES

6.1.1 DELIVERY SYSTEM CHARGES

6.1.1.1 CHARGES FOR TRANSMISSION AND DISTRIBUTION SYSTEM SERVICE

6.1.1.1.1 RESIDENTIAL SERVICE

AVAILABILITY

This schedule is applicable to Delivery Service for residential purposes of a permanent nature to individual private dwellings, including their appurtenant structures, and to individually metered apartments when such Delivery Service is to one Point of Delivery and measured through one Meter and is not for shared or resale purposes. Residential Service is limited to one individual private dwelling per platted parcel of land or postal delivery address.

If a premise is primarily used for non-residential purposes, Delivery Service will be provided under another of the Company's appropriate Secondary or Primary Service rate schedule. This schedule is not available for non-residential service, including but not limited to water wells, electric gates or fences, barns, boat docks, airplane hangars, or recreational vehicle parks, or for structures on the platted parcel of land requiring a separate Meter.

**TYPE OF SERVICE**

Delivery Service will be single-phase, 60 hertz, at a standard secondary voltage. Delivery Service will be metered using Company's standard meter provided for this type of Delivery Service. Any other metering option(s) will be provided at an additional charge. Where Delivery Service of the type desired is not available at the Point of Delivery, additional charges and special contract arrangements may be required prior to Delivery Service being furnished.

**MONTHLY RATE**

**I. Transmission and Distribution Charges:**

Customer Charge	\$5.69	per Retail Customer
Metering Charge	\$4.31	per Retail Customer
Transmission System Charge		See Rider TCRF
Distribution System Charge	\$0.054634	per kWh

- II. System Benefit Fund Charge: See Rider SBF
- III. Transmission Cost Recovery Factor: See Rider TCRF
- IV. Energy Efficiency Cost Recovery Factor: See Rider EECRF
- V. Transition to Competition Charge: See Rider TTCC
- VI. Power Cost Recovery Factor Reconciliation: See Rider PCRFR

Support for Sharyland Interim Rate Regulatory Asset (Account 1824400)  
From Docket No. 45414 Unopposed Motion for Residential Interim Rates  
II Request for Residential Interim Rates

The proposed interim rates will be applied to Sharyland's current residential retail electric delivery customers in the SBC divisions and reflect a Residential class retail electric delivery revenue requirement decrease of \$3 million on an annual basis for the SBC divisions. The residential interim rates are proposed to take effect beginning 45 days after entry of an order approving residential interim rates. The residential interim rates would remain in effect until the earlier of (i) the date upon which all of Sharyland's customers in the residential class in the SBC divisions have been transitioned to Oncor, as contemplated in the Proposed Transaction, or (ii) in the event the Proposed Transaction is terminated prior to closing, the effective date of Sharyland's new residential retail electric delivery rates finally ordered in this rate proceeding. The annotated and clean residential tariff sheets with the proposed residential interim rates are attached hereto as Exhibit A.

Applicants also propose that Sharyland will record on its books as a regulatory asset the difference between the money collected under the residential interim rates and the amount of money that would have been collected under Sharyland's currently-approved residential retail electric delivery rates for the SBC divisions. In the event the Proposed Transaction is terminated prior to closing the regulatory asset would be eliminated and the residential interim rates, only, would be subject to refund or surcharge from the Residential class in the SBC divisions to the extent the residential retail electric delivery rates ultimately established in this rate proceeding differ from the interim rates.<sup>2</sup>

This request is consistent with the Commission's interim relief rule, 16 TAC § 22.125. Section 22.125(a) of that rule provides that this relief is available for a tariff filing that has been docketed.<sup>3</sup> This proceeding, in which Applicants have proposed a retail electric delivery tariff applicable to residential customers, is a docketed case. The rule also provides that interim rates can be granted based on agreement of all parties.<sup>4</sup> As discussed above, all parties to this proceeding either support or do not oppose this request for residential interim rates. Section 22.125(b) states, "A request for interim relief shall be filed no later than 30 days before the interim relief is proposed to take effect, unless all parties agree to a later filing."<sup>5</sup> This Motion requests that residential interim rates take effect 45 days after an order approving the residential interim rates. This request is just and reasonable, as required by 16 TAC § 22.125(d), because the interim rates will provide timely rate relief to the residential customers in Sharyland's SBC divisions during the pendency of the Commission's consideration of the Proposed Transaction and the transition to Oncor.<sup>6</sup> Further, OPUC, the party representing the residential customers who will pay the interim rates, supports this Motion. Finally, as discussed above, the residential interim rates, only, will be subject to refund or surcharge in this proceeding consistent with 16 TAC § 22.125(e), as well as PURA § 36.155, if the Proposed Transaction is terminated prior to closing. Thus, this Motion complies with the applicable Commission rule.

Oncor Electric Delivery Company LLC  
 Business Units - ESD (Distribution), TRN (Transmission) & NTUSU (Transmission)  
 Self-Insurance Reserve/SIR Regulatory Asset Balances to Be Reviewed  
 January 1, 2017 through December 31, 2021  
 Sponsor: W. Alan Ledbetter

Period	Losses Reflected in SIR			Annual Accrual for SIR Loss Incidents			Non-Reviewed SIR Deficit / (Surplus)		
	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total
January 2017	-	-	-	(2,579,543.36)	(194,159.18)	(2,773,702.54)	(2,579,543.36)	(194,159.18)	(2,773,702.54)
February 2017	(14,885.28)	-	(14,885.28)	(2,579,543.36)	(194,159.18)	(2,773,702.54)	(2,594,428.64)	(194,159.18)	(2,788,587.82)
March 2017	11,164,838.16	24,495.92	11,189,334.08	(2,579,543.36)	(194,159.18)	(2,773,702.54)	8,585,294.80	(169,663.26)	8,415,631.54
April 2017	(10,829,896.63)	-	(10,829,896.63)	(2,579,543.36)	(194,159.18)	(2,773,702.54)	(13,409,439.99)	(194,159.18)	(13,603,599.17)
May 2017	3,752,737.83	-	3,752,737.83	(2,579,543.36)	(194,159.18)	(2,773,702.54)	1,173,194.47	(194,159.18)	979,035.29
June 2017	50,724,380.63	24,608.71	50,748,989.34	(2,579,543.36)	(194,159.18)	(2,773,702.54)	48,144,837.27	(169,550.47)	47,975,286.80
July 2017	(25,388,116.77)	-	(25,388,116.77)	(2,579,543.36)	(194,159.18)	(2,773,702.54)	(27,967,660.13)	(194,159.18)	(28,161,819.31)
August 2017	6,816,568.13	-	6,816,568.13	(2,579,543.36)	(194,159.18)	(2,773,702.54)	4,237,024.77	(194,159.18)	4,042,865.59
September 2017	42,432,199.25	3,022,962.22	45,455,161.47	(2,579,543.36)	(194,159.18)	(2,773,702.54)	39,852,655.89	2,828,803.04	42,681,458.93
October 2017	(13,599,702.14)	(3,000,000.00)	(16,599,702.14)	(2,579,543.36)	(194,159.18)	(2,773,702.54)	(16,179,245.50)	(3,194,159.18)	(19,373,404.68)
November 2017	8,909,894.42	(194,208.61)	8,715,685.81	(2,993,937.58)	(243,271.29)	(3,237,208.87)	5,915,956.84	(437,479.90)	5,478,476.94
December 2017	5,403,831.52	2,970,504.09	8,374,335.61	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(283,668.48)	2,408,004.09	2,124,335.61
2017 Totals	79,371,849.12	2,848,362.33	82,220,211.45	(34,476,871.18)	(2,747,363.09)	(37,224,234.27)	44,894,977.94	100,999.24	44,995,977.18

Oncor Electric Delivery Company LLC  
 Business Units - ESD (Distribution), TRN (Transmission) & NTUSU (Transmission)  
 Self-Insurance Reserve/SIR Regulatory Asset Balances to Be Reviewed  
 January 1, 2017 through December 31, 2021  
 Sponsor: W. Alan Ledbetter

Period	Losses Reflected in SIR			Annual Accrual for SIR Loss Incidents			Non-Reviewed SIR Deficit / (Surplus)		
	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total
January 2018	-	-	-	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,687,500.00)	(562,500.00)	(6,250,000.00)
February 2018	-	-	-	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,687,500.00)	(562,500.00)	(6,250,000.00)
March 2018	12,079,543.96	30,024.14	12,109,568.10	(5,687,500.00)	(562,500.00)	(6,250,000.00)	6,392,043.96	(532,475.86)	5,859,568.10
April 2018	(12,079,543.96)	-	(12,079,543.96)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(17,767,043.96)	(562,500.00)	(18,329,543.96)
May 2018	765,227.71	-	765,227.71	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(4,922,272.29)	(562,500.00)	(5,484,772.29)
June 2018	37,182,287.76	43,938.85	37,226,226.61	(5,687,500.00)	(562,500.00)	(6,250,000.00)	31,494,787.76	(518,561.15)	30,976,226.61
July 2018	(21,108,040.85)	-	(21,108,040.85)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(26,795,540.85)	(562,500.00)	(27,358,040.85)
August 2018	8,907,706.94	-	8,907,706.94	(5,687,500.00)	(562,500.00)	(6,250,000.00)	3,220,206.94	(562,500.00)	2,657,706.94
September 2018	34,310,552.75	-	34,310,552.75	(5,687,500.00)	(562,500.00)	(6,250,000.00)	28,623,052.75	(562,500.00)	28,060,552.75
October 2018	(20,790,712.07)	-	(20,790,712.07)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(26,478,212.07)	(562,500.00)	(27,040,712.07)
November 2018	4,920,817.20	-	4,920,817.20	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(766,682.80)	(562,500.00)	(1,329,182.80)
December 2018	39,748,090.23	56,749.98	39,804,840.21	(5,687,500.00)	(562,500.00)	(6,250,000.00)	34,060,590.23	(505,750.02)	33,554,840.21
2018 Totals	83,935,929.67	130,712.97	84,066,642.64	(68,250,000.00)	(6,750,000.00)	(75,000,000.00)	15,685,929.67	(6,619,287.03)	9,066,642.64



Oncor Electric Delivery Company LLC  
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Self-Insurance Reserve/SIR Regulatory Asset Balances to Be Reviewed  
January 1, 2017 through December 31, 2021  
Sponsor: W. Alan Ledbetter

Period	Losses Reflected in SIR			Annual Accrual for SIR Loss Incidents			Non-Reviewed SIR Deficit / (Surplus)		
	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total
January 2019	113,907.38	-	113,907.38	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,573,592.62)	(562,500.00)	(6,136,092.62)
February 2019	655,668.75	-	655,668.75	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,031,831.25)	(562,500.00)	(5,594,331.25)
March 2019	12,270,469.43	23,560.88	12,294,030.31	(5,687,500.00)	(562,500.00)	(6,250,000.00)	6,582,969.43	(538,939.12)	6,044,030.31
April 2019	(8,645,932.24)	-	(8,645,932.24)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(14,333,432.24)	(562,500.00)	(14,895,932.24)
May 2019	2,478,246.20	3,000,000.00	5,478,246.20	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(3,209,253.80)	2,437,500.00	(771,753.80)
June 2019	116,048,221.60	4,971,142.38	121,019,363.98	(5,687,500.00)	(562,500.00)	(6,250,000.00)	110,360,721.60	4,408,642.38	114,769,363.98
July 2019	(116,048,221.60)	(4,138,552.58)	(120,186,774.18)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(121,735,721.60)	(4,701,052.58)	(126,436,774.18)
August 2019	15,103,896.64	(155,366.88)	14,948,529.76	(5,687,500.00)	(562,500.00)	(6,250,000.00)	9,416,396.64	(717,866.88)	8,698,529.76
September 2019	164,028,018.98	7,610,012.37	171,638,031.35	(5,687,500.00)	(562,500.00)	(6,250,000.00)	158,340,518.98	7,047,512.37	165,388,031.35
October 2019	(105,919,461.06)	(7,576,647.65)	(113,496,108.71)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(111,606,961.06)	(8,139,147.65)	(119,746,108.71)
November 2019	1,462,359.38	3,000,000.00	4,462,359.38	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(4,225,140.62)	2,437,500.00	(1,787,640.62)
December 2019	158,892,406.74	7,397,511.95	166,289,918.69	(5,687,500.00)	(562,500.00)	(6,250,000.00)	153,204,906.74	6,835,011.95	160,039,918.69
2019 Totals	240,439,580.20	14,131,660.47	254,571,240.67	(68,250,000.00)	(6,750,000.00)	(75,000,000.00)	172,189,580.20	7,381,660.47	179,571,240.67

Oncor Electric Delivery Company LLC  
 Business Units - ESD (Distribution), TRN (Transmission) & NTUSU (Transmission)  
 Self-Insurance Reserve/SIR Regulatory Asset Balances to Be Reviewed  
 January 1, 2017 through December 31, 2021  
 Sponsor: W. Alan Ledbetter

Period	Losses Reflected in SIR			Annual Accrual for SIR Loss Incidents			Non-Reviewed SIR Deficit / (Surplus)		
	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total
January 2020	-	(6,006,851.93)	(6,006,851.93)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,687,500.00)	(6,569,351.93)	(12,256,851.93)
February 2020	(588,053.70)	-	(588,053.70)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(6,275,553.70)	(562,500.00)	(6,838,053.70)
March 2020	7,540,921.14	197,996.22	7,738,917.36	(5,687,500.00)	(562,500.00)	(6,250,000.00)	1,853,421.14	(364,503.78)	1,488,917.36
April 2020	(7,507,268.39)	(107,017.71)	(7,614,286.10)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(13,194,768.39)	(669,517.71)	(13,864,286.10)
May 2020	83,713.27	-	83,713.27	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,603,786.73)	(562,500.00)	(6,166,286.73)
June 2020	44,916,446.74	745,121.91	45,661,568.65	(5,687,500.00)	(562,500.00)	(6,250,000.00)	39,228,946.74	182,621.91	39,411,568.65
July 2020	(42,513,755.36)	(187,261.50)	(42,701,016.86)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(48,201,255.36)	(749,761.50)	(48,951,016.86)
August 2020	3,167,281.91	-	3,167,281.91	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(2,520,218.09)	(562,500.00)	(3,082,718.09)
September 2020	81,106,543.57	250,528.56	81,357,072.13	(5,687,500.00)	(562,500.00)	(6,250,000.00)	75,419,043.57	(311,971.44)	75,107,072.13
October 2020	(45,725,186.21)	644,862.43	(45,080,323.78)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(51,412,686.21)	82,362.43	(51,330,323.78)
November 2020	15,098,382.85	-	15,098,382.85	(5,687,500.00)	(562,500.00)	(6,250,000.00)	9,410,882.85	(562,500.00)	8,848,382.85
December 2020	39,136,676.91	(1,437,608.72)	37,699,068.19	(5,687,500.00)	(562,500.00)	(6,250,000.00)	33,449,176.91	(2,000,108.72)	31,449,068.19
2020 Totals	94,715,702.73	(5,900,230.74)	88,815,471.99	(68,250,000.00)	(6,750,000.00)	(75,000,000.00)	26,465,702.73	(12,650,230.74)	13,815,471.99

Oncor Electric Delivery Company LLC  
Business Units - ESD (Distribution), TRN (Transmission) & NTUSU (Transmission)  
Self-Insurance Reserve/SIR Regulatory Asset Balances to Be Reviewed  
January 1, 2017 through December 31, 2021  
Sponsor: W. Alan Ledbetter

Period	Losses Reflected in SIR			Annual Accrual for SIR Loss Incidents			Non-Reviewed SIR Deficit / (Surplus)		
	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total	Property-A924	Liability-A925	Total
January 2021	(84,294.27)	-	(84,294.27)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,771,794.27)	(562,500.00)	(6,334,294.27)
February 2021	94,598.49	-	94,598.49	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(5,592,901.51)	(562,500.00)	(6,155,401.51)
March 2021	111,514,555.09	34,473.92	111,549,029.01	(5,687,500.00)	(562,500.00)	(6,250,000.00)	105,827,055.09	(528,026.08)	105,299,029.01
April 2021	(107,369,235.75)	(403.34)	(107,369,639.09)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(113,056,735.75)	(562,903.34)	(113,619,639.09)
May 2021	16,863,654.61	-	16,863,654.61	(5,687,500.00)	(562,500.00)	(6,250,000.00)	11,176,154.61	(562,500.00)	10,613,654.61
June 2021	125,572,169.72	3,048,942.71	128,621,112.43	(5,687,500.00)	(562,500.00)	(6,250,000.00)	119,884,669.72	2,486,442.71	122,371,112.43
July 2021	(125,572,169.72)	(3,026,680.03)	(128,598,849.75)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(131,259,669.72)	(3,589,180.03)	(134,848,849.75)
August 2021	6,481,001.76	-	6,481,001.76	(5,687,500.00)	(562,500.00)	(6,250,000.00)	793,501.76	(562,500.00)	231,001.76
September 2021	136,754,983.76	3,234,883.00	139,989,866.76	(5,687,500.00)	(562,500.00)	(6,250,000.00)	131,067,483.76	2,672,383.00	133,739,866.76
October 2021	(11,432,863.50)	(3,078,476.85)	(14,511,340.35)	(5,687,500.00)	(562,500.00)	(6,250,000.00)	(17,120,363.50)	(3,640,976.85)	(20,761,340.35)
November 2021	6,501,086.28	-	6,501,086.28	(5,687,500.00)	(562,500.00)	(6,250,000.00)	813,586.28	(562,500.00)	251,086.28
December 2021	29,432,468.36	3,840,430.27	33,272,898.63	(5,687,500.00)	(562,500.00)	(6,250,000.00)	23,744,968.36	3,277,930.27	27,022,898.63
2021 Totals	188,755,954.83	4,053,169.68	192,809,124.51	(68,250,000.00)	(6,750,000.00)	(75,000,000.00)	120,505,954.83	(2,696,830.32)	117,809,124.51
5 Year Total & 12/31/21 Bal	687,219,016.55	15,263,674.71	702,482,691.26	(307,476,871.18)	(29,747,363.09)	(337,224,234.27)	379,742,145.37	(14,483,688.38)	365,258,456.99

Requested recovery - amortizations over 5 years  
K&M adjustment #45      75,948,429.07      (2,896,737.68)      73,051,691.40

Requesting 5-year recovery (amortization) of to be reviewed balance  
5

Verify to NOREVIEW balance from 3DELV Cons GL BU Trial Balance 2021 Dec.      365,258,456.99

2022 Rate Case  
Oncor Electric Delivery Company LLC  
Self Insurance Reserve Reg Asset - Approved Most Recently in Docket No 46957  
Sponsor W. Alan Ledbetter

ONCOR ELECTRIC DELIVERY COMPANY LLC (incl. Oncor NTU)  
SELF INSURANCE RESERVE - APPROVED BALANCE AND AMORTIZATION  
8 YEAR AMORTIZATION PERIOD  
01/01/12 - 11/26/17

	TOTAL	DIST (ESD)	TRAN (TRN)	Annual Amo
Reviewed and approved in Docket No 38929 (Finding of Fact No 42)	252,115,362.32	256,575,192.45	(4,459,830.13)	31,514,420.29
Property - 924 (based on actual reserve balance)	261,268,079.00	264,422,105.26	(3,154,026.26)	32,658,509.88
Liability - 925 (based on actual reserve balance)	(9,152,716.67)	(7,846,912.80)	(1,305,803.87)	(1,144,089.58)
Reviewed and approved balance at 01/01/2012	221,488,943.91	225,130,741.89	(3,641,797.89)	Difference due to continued amortization
	30,626,418.41	31,444,450.56	(818,032.14)	from 06/30/10 to 12/31/11

ONCOR ELECTRIC DELIVERY COMPANY LLC (incl. Oncor NTU)  
SELF INSURANCE RESERVE AMORTIZATION  
10 YEAR AMORTIZATION PERIOD  
11/27/17 - 11/30/27

	TOTAL	DIST (ESD)	TRAN (TRN)	Annual Amo
Reviewed and approved in Docket No 46957 (Finding of Fact No 49)	362,504,103.07	360,247,433.05	2,256,670.02	36,250,410.31
Balance of Reviewed and approved in prior Docket	63,916,842.51	64,771,246.89	(854,404.39)	6,391,684.25
Reviewed and approved balance at 12/31/2016	426,420,945.58	425,018,679.94	1,402,265.63	42,642,094.56
Property - 924 (based on actual reserve balance)	413,082,605.37	410,617,286.78	2,465,318.59	41,308,260.54
Liability - 925 (based on actual reserve balance)	13,338,340.20	14,401,393.17	(1,063,052.96)	1,333,834.02
				42,642,094.56
Reviewed and approved balance at 11/27/2017 Property A924	383,508,510.31	380,686,173.47	2,822,336.84	Difference due to continued amortization
Reviewed and approved balance at 11/27/2017 Liability A925	14,374,376.90	15,289,620.16	(915,243.25)	from 01/01/17 to 11/26/17

	DIST	TRAN	DIST	TRAN	Total	
					DIST & TRAN	
					A924 & A925	
2017 - 2021 Amortization						
Docket No 46957 Approved						
unamortized balances @ 12-31-2021						
A924 Property	198,056,080.02	652,392.67	212,561,206.76	1,812,925.92		
A925 Liability	5,008,343.45	(583,070.61)	9,393,049.72	(479,982.35)		
	203,064,423.47	69,322.06	221,954,256.48	1,332,943.57	223,287,200.05	
			Requested recovery - amortizations	Total		
			A924 Property	42,512,241.35	362,585.18	42,874,826.53
			A925 Liability	1,878,609.94	(95,996.47)	1,782,613.47

Amortization of Project APPROVED In A1868400 and A2281000 as follows

Period	DIST (ESD)				TRAN (TRN)			
	9240000 Property	9250000 Liability	Total	1866400 Balance	9240000 Property	9250000 Liability	Total	1866400 Balance
Jan-12	2,754,396.93	(81,738.68)	2,672,658.25	222,458,083.64	(32,854.44)	(13,602.12)	(46,456.56)	(3,595,341.43)
Feb-12	2,754,396.93	(81,738.68)	2,672,658.25	219,785,425.39	(32,854.44)	(13,602.12)	(46,456.56)	(3,548,884.87)
Mar-12	2,754,396.93	(81,738.68)	2,672,658.25	217,112,767.14	(32,854.44)	(13,602.12)	(46,456.56)	(3,502,428.31)
Apr-12	2,754,396.93	(81,738.68)	2,672,658.25	214,440,108.89	(32,854.44)	(13,602.12)	(46,456.56)	(3,455,971.75)
May-12	2,754,396.93	(81,738.68)	2,672,658.25	211,767,450.64	(32,854.44)	(13,602.12)	(46,456.56)	(3,409,515.19)
Jun-12	2,754,396.93	(81,738.68)	2,672,658.25	209,094,792.39	(32,854.44)	(13,602.12)	(46,456.56)	(3,363,058.63)
Jul-12	2,754,396.93	(81,738.68)	2,672,658.25	206,422,134.14	(32,854.44)	(13,602.12)	(46,456.56)	(3,316,602.07)
Aug-12	2,754,396.93	(81,738.68)	2,672,658.25	203,749,475.89	(32,854.44)	(13,602.12)	(46,456.56)	(3,270,145.51)
Sep-12	2,754,396.93	(81,738.68)	2,672,658.25	201,076,817.64	(32,854.44)	(13,602.12)	(46,456.56)	(3,223,688.95)
Oct-12	2,754,396.93	(81,738.68)	2,672,658.25	198,404,159.39	(32,854.44)	(13,602.12)	(46,456.56)	(3,177,232.39)
Nov-12	2,754,396.93	(81,738.68)	2,672,658.25	195,731,501.14	(32,854.44)	(13,602.12)	(46,456.56)	(3,130,775.83)
Dec-12	2,754,396.93	(81,738.68)	2,672,658.25	193,058,842.89	(32,854.44)	(13,602.12)	(46,456.56)	(3,084,319.27)
Jan-13	2,754,396.93	(81,738.68)	2,672,658.25	190,386,184.64	(32,854.44)	(13,602.12)	(46,456.56)	(3,037,862.71)
Feb-13	2,754,396.93	(81,738.68)	2,672,658.25	187,713,526.39	(32,854.44)	(13,602.12)	(46,456.56)	(2,991,406.15)
Mar-13	2,754,396.93	(81,738.68)	2,672,658.25	185,040,868.14	(32,854.44)	(13,602.12)	(46,456.56)	(2,944,949.59)
Apr-13	2,754,396.93	(81,738.68)	2,672,658.25	182,368,209.89	(32,854.44)	(13,602.12)	(46,456.56)	(2,898,493.03)
May-13	2,754,396.93	(81,738.68)	2,672,658.25	179,695,551.64	(32,854.44)	(13,602.12)	(46,456.56)	(2,852,036.47)
Jun-13	2,754,396.93	(81,738.68)	2,672,658.25	177,022,893.39	(32,854.44)	(13,602.12)	(46,456.56)	(2,805,579.91)
Jul-13	2,754,396.93	(81,738.68)	2,672,658.25	174,350,235.14	(32,854.44)	(13,602.12)	(46,456.56)	(2,759,123.35)
Aug-13	2,754,396.93	(81,738.68)	2,672,658.25	171,677,576.89	(32,854.44)	(13,602.12)	(46,456.56)	(2,712,666.79)
Sep-13	2,754,396.93	(81,738.68)	2,672,658.25	169,004,918.64	(32,854.44)	(13,602.12)	(46,456.56)	(2,666,210.23)
Oct-13	2,754,396.93	(81,738.68)	2,672,658.25	166,332,260.39	(32,854.44)	(13,602.12)	(46,456.56)	(2,619,753.67)
Nov-13	2,754,396.93	(81,738.68)	2,672,658.25	163,659,602.14	(32,854.44)	(13,602.12)	(46,456.56)	(2,573,297.11)
Dec-13	2,754,396.93	(81,738.68)	2,672,658.25	160,986,943.89	(32,854.44)	(13,602.12)	(46,456.56)	(2,526,840.55)
Jan-14	2,754,396.93	(81,738.68)	2,672,658.25	158,314,285.64	(32,854.44)	(13,602.12)	(46,456.56)	(2,480,383.99)
Feb-14	2,754,396.93	(81,738.68)	2,672,658.25	155,641,627.39	(32,854.44)	(13,602.12)	(46,456.56)	(2,433,927.43)
Mar-14	2,754,396.93	(81,738.68)	2,672,658.25	152,968,969.14	(32,854.44)	(13,602.12)	(46,456.56)	(2,387,470.87)
Apr-14	2,754,396.93	(81,738.68)	2,672,658.25	150,296,310.89	(32,854.44)	(13,602.12)	(46,456.56)	(2,341,014.31)
May-14	2,754,396.93	(81,738.68)	2,672,658.25	147,623,652.64	(32,854.44)	(13,602.12)	(46,456.56)	(2,294,557.75)
Jun-14	2,754,396.93	(81,738.68)	2,672,658.25	144,950,994.39	(32,854.44)	(13,602.12)	(46,456.56)	(2,248,101.19)
Jul-14	2,754,396.93	(81,738.68)	2,672,658.25	142,278,336.14	(32,854.44)	(13,602.12)	(46,456.56)	(2,201,644.63)
Aug-14	2,754,396.93	(81,738.68)	2,672,658.25	139,605,677.89	(32,854.44)	(13,602.12)	(46,456.56)	(2,155,188.07)

Docket No 38929 base rates and amortizations effective 01/01/2012 through 11/26/2017

Requested 5-year recovery of approved unamortized balance @ 12-31-2021





2022 Rate Case  
 Oncor Electric Delivery Company LLC  
 Self Insurance Reserve Reg Asset - Approved Most Recently in Docket No. 46957  
 Sponsor: W Alan Ledbetter

Aug-26	3,421,810.72	120,011.61	3,541,822.33	27,154,028.32	20,544.32	(8,858.77)	11,685.55	690,238.32
Sep-26	3,421,810.72	120,011.61	3,541,822.33	23,612,205.99	20,544.32	(8,858.77)	11,685.55	678,552.77
Oct-26	3,421,810.72	120,011.61	3,541,822.33	20,070,383.66	20,544.32	(8,858.77)	11,685.55	666,867.22
Nov-26	3,421,810.72	120,011.61	3,541,822.33	16,528,561.33	20,544.32	(8,858.77)	11,685.55	655,181.67
Dec-26	3,421,810.72	120,011.61	3,541,822.33	12,986,739.00	20,544.32	(8,858.77)	11,685.55	643,496.12
Jan-27	3,421,810.72	120,011.61	3,541,822.33	9,444,916.67	20,544.32	(8,858.77)	11,685.55	631,810.57
Feb-27	3,421,810.72	120,011.61	3,541,822.33	5,903,094.34	20,544.32	(8,858.77)	11,685.55	620,125.02
Mar-27	3,421,810.72	120,011.61	3,541,822.33	2,361,272.01	20,544.32	(8,858.77)	11,685.55	608,439.47
Apr-27	3,421,810.72	120,011.61	3,541,822.33	(1,180,550.32)	20,544.32	(8,858.77)	11,685.55	596,753.92
May-27	3,421,810.72	120,011.61	3,541,822.33	(4,722,372.65)	20,544.32	(8,858.77)	11,685.55	585,068.37
Jun-27	3,421,810.72	120,011.61	3,541,822.33	(8,264,194.98)	20,544.32	(8,858.77)	11,685.55	573,382.82
Jul-27	3,421,810.72	120,011.61	3,541,822.33	(11,806,017.31)	20,544.32	(8,858.77)	11,685.55	561,697.27
Aug-27	3,421,810.72	120,011.61	3,541,822.33	(15,347,839.64)	20,544.32	(8,858.77)	11,685.55	550,011.72
Sep-27	3,421,810.72	120,011.61	3,541,822.33	(18,889,661.97)	20,544.32	(8,858.77)	11,685.55	538,326.17
Oct-27	3,421,810.72	120,011.61	3,541,822.33	(22,431,484.30)	20,544.32	(8,858.77)	11,685.55	526,640.62
Nov-27	3,421,810.72	120,011.61	3,541,822.33	(25,973,306.63)	20,544.32	(8,858.77)	11,685.55	514,955.07
Dec-27	3,421,810.72	120,011.61	3,541,822.33	(29,515,128.96)	20,544.32	(8,858.77)	11,685.55	503,269.52

2022 Rate Case  
 Oncor Electric Delivery Company LLC  
 Over-Refund of Tax Refund Factor (Docket No. 48325 Rider TRF & Rider WTRF - DLS & XFMR)  
 For Test Year Ending December 31, 2021  
 Sponsor: W. Alan Ledbetter

Project	Project Description	Docket No. 48325, Item No. 128, Page 13 of 28	Refunds to-date incl. cancel/rebills	Regulatory Liability Account 2541351 for the Tax Refund Factor		Requested recovery
				Balance at Dec 31, 2021	Over-refund to be collected/(refunded)	To be collected/(refunded) Over 5 years
FITRLDIS	REG LIABILITY FOR FIT CHANGE	\$	(57,776,722)			
FITDSGRD	Guardlights FIT Ref	\$		136,108.92		
FITDSLPR	Primary grtr 10kw FIT Ref	\$	(2,804,446)	3,206,979.02	\$	80,506.60
FITDSLSC	Secondary gtr 10kw FIT Ref	\$	(20,632,346)	21,971,226.47	\$	267,776.09
FITDSMTL	Metered SL FIT Ref	\$		21,018.90		
FITDSRES	Residential FIT Ref	\$	(31,765,366)	32,455,092.38	\$	137,945.28
FITDSSPR	Primary less 10kw FIT Ref	\$	(18,590)	18,992.67	\$	80.53
FITDSSSC	Secondary less 10kw FIT Ref	\$	(1,431,657)	1,364,443.00	\$	(13,442.80)
FITDSSUB	Primary Substation FIT Ref	\$	(206,308)	225,329.21	\$	3,804.24
FITDSTRN	Transmission FIT Ref	\$	(129,003)	128,944.39	\$	(11.72)
FITDSUML	Unmetered SL FIT Ref	\$	(619,407)	442,404.98	\$	(3,974.84)
FITRFDLS	FIT RATE CHANGE REFUND	\$	(139,285)	141,996.68	\$	542.34
FITRFXFM	FIT RATE CHANGE REFUND XFMR	\$	(30,314)	32,488.67	\$	434.93
<b>Total</b>		\$	(57,776,722)	60,145,025.29	\$	473,660.66

K&M adjustment #39  
 Account 928

Three projects reflect lighting class



2022 Rate Case  
Oncor Electric Delivery Company LLC  
Regulatory Asset - Wholesale Distribution Substation Service (Account 1824300)  
For Test Year Ending December 31, 2021  
Sponsor: W. Alan Ledbetter

WDSS received from Sharyland Utilities by month/year:

Nov-17	\$ 621,058.01	
Dec-17	\$ 978,758.00	
Jan-18	\$ 1,004,966.90	
Feb-18	\$ 1,066,735.96	
Mar-18	\$ 1,099,749.04	
Apr-18	\$ 1,133,321.60	
May-18	\$ 1,196,979.23	
Jun-18	\$ 1,246,328.12	
Jul-18	\$ 1,267,172.71	
Aug-18	\$ 1,291,921.28	
Sep-18	\$ 1,323,224.91	
Oct-18	\$ 1,391,374.13	
Nov-18	\$ 1,420,460.53	
Dec-18	\$ 1,429,188.18	
Jan-19	\$ 1,440,053.67	
Feb-19	\$ 1,452,719.96	
Mar-19	\$ 1,468,132.91	
Apr-19	\$ 1,492,527.88	
Apr-19 portion payable to NTU after acquisition	\$ (1,426,951.61)	Was NTX A/R at InfraREIT acq; Oncor paid NTU after acquisition of NTU
May-19	\$ 828,996.33	
May-19 portion payable to NTU after acquisition	\$ (763,420.33)	Was NTX A/R at InfraREIT acq, Oncor paid NTU after acquisition of NTU
Jun-19	\$ 65,576.00	
Jul-19	\$ 63,049.75	
Aug-19	\$ 59,338.77	
Sep-19	\$ 57,916.24	
Oct-19	\$ 57,916.24	
Nov-19	\$ 40,313.61	
Total payments to Sharyland Utilities	\$ 21,307,408.02	Docket Nos 46957 and 47649

WDSS received from Oncor NTU by month/year

Apr-19	\$ 1,426,951.61
May-19	\$ 1,395,251.24
Jun-19	\$ 1,488,410.38
Jul-19	\$ 1,510,769.42
Aug-19	\$ 1,587,220.30
Sep-19	\$ 1,598,070.70
Oct-19	\$ 1,610,894.06
Nov-19	\$ 1,660,834.06
Dec-19	\$ 1,685,454.70
Jan-20	\$ 1,700,131.34

2022 Rate Case  
Oncor Electric Delivery Company LLC  
Regulatory Asset - Wholesale Distribution Substation Service (Account 1824300)  
For Test Year Ending December 31, 2021  
Sponsor: W. Alan Ledbetter

Feb-20	\$ 1,731,955.66	
Mar-20	\$ 1,731,955.66	
Apr-20	\$ 1,733,279.18	
May-20	\$ 1,734,261.26	
Jun-20	\$ 1,751,324.46	
Jul-20	\$ 1,766,344.30	
Aug-20	\$ 1,762,502.22	
Sep-20	\$ 1,750,933.74	
Oct-20	\$ 1,751,972.14	
Nov-20	\$ 1,717,092.46	
Dec-20	\$ 1,712,373.90	
Jan-21	\$ 1,699,026.06	
Feb-21	\$ 1,699,026.06	
Mar-21	\$ 1,731,603.66	
Apr-21	\$ 1,699,696.62	
May-21	\$ 1,721,307.66	
Jun-21	\$ 1,776,972.94	
Jul-21	\$ 1,743,270.70	
Aug-21	\$ 1,737,760.14	
Sep-21	\$ 1,748,137.10	
Oct-21	\$ 1,748,137.10	
Nov-21	\$ 1,746,202.86	
Dec-21	\$ 1,736,387.34	
Total payments to Oncor NTU	\$ 55,595,511.03	Docket No. 48929
Proceeds from AEP related to Oncor's sale of distribution facilities in Mission and McAllen to AEP	\$ (1,445,018.06)	Docket No. 49402 (portion of WDSS regulatory asset for Mission & McAllen)
Refund from SPS (including interest)	\$ (190,831.62)	Addressed in Docket No. 47469, Item No. 69
Total WDSS regulatory asset at 12-31-2021	\$ 75,267,069.37	
Requested annual recovery in this docket over 5 years	\$ 15,053,413.87	K&M O&M adjustment #33 Account 5880000, EC 065

**Docket No. 46957 Order**

Finding of Fact No. 53

Oncor is authorized to establish a regulatory asset to capture the amounts Oncor pays to Sharyland under Sharyland's Wholesale Distribution Substation Service Tariff Ordering Paragraph No. 14

Oncor is authorized to establish a regulatory asset to capture the amounts Oncor pays to Sharyland under Sharyland's Wholesale Distribution Substation Service Tariff. However, Oncor is not presently authorized to recover those amounts. Oncor is permitted to seek recovery of those amounts in a future proceeding.

2022 Rate Case  
Oncor Electric Delivery Company LLC  
Regulatory Asset - Wholesale Distribution Substation Service (Account 1824300)  
For Test Year Ending December 31, 2021  
Sponsor: W. Alan Ledbetter

Docket No. 48929 Order

Finding of Fact No. 73

Approval to Create a Regulatory Asset

The signatories agreed that Oncor can establish a regulatory asset to capture the amounts Oncor pays to the North Texas Utility under Sharyland Utilities, L.P.'s wholesale-distribution-substation-service tariff until rates are established to recover those costs. It is reasonable for Oncor to establish a regulatory asset to capture the amounts Oncor pays to the North Texas Utility under Sharyland Utilities, L.P.'s wholesale-distribution-substation-service tariff until rates are established to recover these costs.

Ordering Paragraph No. 10

Oncor may establish a regulatory asset to capture the amounts that Oncor pays to the North Texas Utility under Sharyland Utilities, L.P.'s wholesale-distribution-substation-service tariff until rates are established to recover those costs.

Timing as a result of these PUCT orders

Oncor-Sharyland exchange closed November 9, 2017 (Docket No. 47469). Sharyland's retail delivery customers transitioned/became retail delivery customers of Oncor.

Sharyland owned McAllen and Stanton Division substations (total of 37 substations) and billed Oncor for wholesale-distribution-substation service ("WDSS") related to these 37 substations.

Oncor's base rates approved in Docket No. 46957 were effective November 27, 2017. These rates reflect the impact of the Oncor-Sharyland exchange however exclude recovery of Oncor's wholesale-distribution-substation-service costs incurred related to the 37 substations that Sharyland continued to own after the exchange and that continued to serve the retail delivery customers transitioned to Oncor from Sharyland. Beginning November 27, 2017, Sharyland began billing Oncor for wholesale-distribution-substation services at Sharyland's Tariff WDSS rates related to the wholesale-distribution-substation services to serve these retail delivery customers served by Oncor that were previously served by Sharyland until customers were transitioned to Oncor. The orders in Docket Nos. 46957 and 48929 approved Oncor establishing a regulatory asset to capture the WDSS amounts Oncor pays to Sharyland and NTU permitting Oncor to seek recovery of those amounts in a future proceeding.

Oncor's acquisition of Oncor NTU (InfraREIT/NTX) was approved in Docket No. 48929. The acquisition closed May 16, 2019. Oncor NTU's tariffs were effective May 17, 2019.

Oncor NTU (NTX) owns 34 substations and bills Oncor for WDSS related to these 34 substations.

Sharyland (STX) continued to own three substations in the McAllen Division (Bentsen, Railroad, and Taylor) and billed Oncor for WDSS related to these three substations until Oncor sold facilities in Mission and McAllen to AEP and the retail delivery customers in Mission and McAllen were transitioned to AEP.

Docket No. 49402 - AEP's acquisition of Oncor's facilities in Mission and McAllen - Oncor's updated retail delivery tariff excluded these cities effective November 21, 2019.

Sharyland no longer bills Oncor and Oncor no longer incurs WDSS related to Sharyland's three substations since AEP now serves the retail delivery customers in Mission and McAllen.

Docket No. 47469, Item No. 69 reflects SPS refund due Oncor for Oncor customers formerly served by Sharyland. Consistent with advice from PUC Staff, Oncor applied refund as an offset to the WDSS regulatory asset.

**2022 Rate Case**  
**Oncor Electric Delivery Company LLC**  
**Other Revenues**  
**For the Test Year Ending December 31, 2021**  
**Sponsor: W Alan Ledbetter & M. Troxle**

Total Consolidated Test Year Operating Revenue	\$ 4,764,035,928
Less Retail T&D Wires Revenue (CC,MC, DSC, DCRF)	2,227,838,706
Less TCRF & TSC Revenue (TCRF, TSC)	1,475,932,111
Less TCRF - Over/Under Calculation (Billed)	41,275,820
Less Advanced Meter Service	(20,475,713)
Less Energy Efficiency Cost Recovery Factor	77,125,798
Less Rate Case Expense Recovery Factor	292
Less Remand	(453)
Less Wholesale Rate NTS - Oncor Legacy	731,597,198
Less Wholesale Rate NTS - NTUSU	147,879,221
Less Wholesale Rate (XFMR/DLS)	2,270,930
Less WDSS - NTUSU	20,787,528
Less Unbilled Revenue DSC/DCRF/Discretionary	(11,126,626)
Less Unbilled TCRF, EECRF, AMCRF	(3,756,986)
Less Deferred Unbilled TCRF, EECRF, AMCRF	3,756,986
<b>Total Consolidated Other Revenue Items</b>	<b>\$ 70,931,116</b>

Account	Detail of Other Revenue Items	TRAN Rev Credit	Distribution Rev Credit	NTU TRAN Rev Credit	Grand Totals
450	Forfeited Discounts (Penalties for late payment)		\$ 1,070,706	\$ -	\$ 1,070,706
451	Retail T&D Discretionary Revenues		20,397,857	-	20,397,857
451	Miscellaneous Service Revenue		456,565	-	456,565
454	Rents from Pole Contacts		8,281,656	-	8,281,656
	Rents from Fiber Optics	961,339	1,059,911	-	2,021,250
	Rents from Other:				
	Antenna Lease	14,538,318	16,700	-	14,555,018
	Rent from Property - ROW/Misc Bldg rentals	616,896	-	-	616,896
	Total Cost of Ownership - NTU	305,804	-	-	305,804
	Total Cost of Ownership - STU	49,531	-	-	49,531
	Sub-total Rents from Other	\$ 15,510,550	\$ 16,700	\$ -	\$ 15,527,250
454	Rents from Affiliate (NTUSU)	\$ 305,804	\$ -	\$ -	\$ 305,804
	Sub-total Rents - Account 454 (Consolidated)	\$ 16,166,085	\$ 9,358,267	\$ -	\$ 25,524,352
456	Other Revenue-Other				
	Miscellaneous Billings	\$ 276,973	\$ -	\$ -	\$ 276,973
	Mutual Assistance	52,029	176,505	-	228,534
	CIAC Gross Up	708,439	5,189,025	-	5,897,464
	To, From & Over - original DC tie	885,187	-	176,005	1,061,191
	To, From & Over - original DC tie - SMGPM	13,297	-	2,810	16,107
	To, From & Over - Mexico tie	296,912	-	58,947	355,859
	Pro Retail/Dual Feed	1,041,201	329,942	1,565	1,372,707
	Services provided to NTUSU (elim)	9,283,183	-	-	9,283,183
	Services provided to SU	542,796	-	-	542,796
	Tampening - TDSP energy portion of tampening	-	177,841	-	177,841
	Sub-total Other Revenue	\$ 13,100,016	\$ 5,879,313	\$ 239,327	\$ 19,212,655
456	TRN Services for NTUSU (elim)	\$ 9,283,183	\$ -	\$ -	\$ 9,283,183
	Sub-total Other Revenue - Account 456	\$ 16,978,997	\$ 6,263,313	\$ 239,327	\$ 23,481,636
	Sub-total Regulated T&D	\$ 33,145,081	\$ 37,546,708	\$ 239,327	\$ 70,931,116
	Addback Eliminations	\$ 9,588,988			\$ 9,588,988
	Subtotal				\$ 80,520,103

Adjustments Known and Measurable Changes	TCOS	Distribution	NTUSU	Totals	
Other Electric Revenues	\$ (52,029)	\$ (176,505)		\$ (228,534)	(1)
ROW and Miscellaneous A454	101,559			101,559	(2)
Other Electric Revenues A456	409			409	(2)
Power Factor		17,616,778		17,616,778	(3)
Discretionary		2,070,647		2,070,647	(4)
Total K&M changes				\$ 19,560,659	
<b>Total Other Revenues</b>	<b>\$ 42,784,008</b>	<b>\$ 57,057,628</b>	<b>\$ 239,327</b>	<b>\$ 29,149,847</b>	

Note

- (1) Exclude Mutual Assistance
- (2) K&M adjustment for September 2021 TRN billing (revenue) See WP/II-D ADJUSTMENTS/59 for details
- (3) See WP/IV-J-7, Page 15 of 18
- (4) See WP/IV-J-2/1, Page 2 of 2

2022 RATE CASE  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
SCHEDULE II-F FUNCTIONALIZATION FACTORS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021  
SPONSOR: W. ALAN LEDBETTER

		NTU	DC	CONSOL		NTU	CONSOL				
	TRAN	TRAN	TIE	TRAN	DIST	DIST	DIST	MET	TDCS	Total	
PAYXAG ESD	499,001.22	-	-	499,001.22	104,258,327.97	-	104,258,327.97	31,085,348.77	1,250,915.33	137,093,593.29	
TRN	40,827,408.44	-	-	40,827,408.44	9,754,366.46	-	9,754,366.46	-	-	50,581,774.90	
Total	\$ 41,326,409.66	\$ -	\$ -	\$ 41,326,409.66	\$ 114,012,694.43	\$ -	\$ 114,012,694.43	\$ 31,085,348.77	\$ 1,250,915.33	\$ 187,675,368.19	
Pct	22.02%	0.00%	0.00%	22.02%	60.75%	0.00%	60.75%	16.56%	0.67%		
TOMXFP ESD	55,639,921.93	-	-	55,639,921.93	2,096,533,142.02	-	2,096,533,142.02	115,302,031.90	94,276,888.06	2,361,751,983.91	
TRN	164,451,943.27	-	-	164,451,943.27	17,186,085.30	-	17,186,085.30	-	-	181,638,028.57	* Excludes amount for DC Tie
TRNDS	1,341,818.78	-	-	1,341,818.78	3,838,037.15	-	3,838,037.15	1,004,573.25	48,765.52	6,233,194.70	
Total	\$ 221,433,683.98	\$ -	\$ -	\$ 221,433,683.98	\$ 2,117,557,264.47	\$ -	\$ 2,117,557,264.47	\$ 116,306,605.15	\$ 94,325,653.58	\$ 2,549,623,207.18	
Pct	8.68%	0.00%	0.00%	8.68%	83.05%	0.00%	83.05%	4.56%	3.70%		
DISTOPX ESD	-	-	-	-	35,185,586.80	-	35,185,586.80	28,582,785.12	-	63,768,371.92	
TRN	199,831.28	-	-	199,831.28	3,848,993.88	-	3,848,993.88	-	-	4,048,825.16	
Total	\$ 199,831.28	\$ -	\$ -	\$ 199,831.28	\$ 39,034,580.68	\$ -	\$ 39,034,580.68	\$ 28,582,785.12	\$ -	\$ 67,817,197.08	
Pct	0.29%	0.00%	0.00%	0.29%	57.56%	0.00%	57.56%	42.15%	0.00%		
DISTMAX ESD	-	-	-	-	151,247,759.83	-	151,247,759.83	16,702,839.54	-	167,950,599.37	
TRN	406,672.37	-	-	406,672.37	9,177,394.72	-	9,177,394.72	-	-	9,584,067.09	
Total	\$ 406,672.37	\$ -	\$ -	\$ 406,672.37	\$ 160,425,154.55	\$ -	\$ 160,425,154.55	\$ 16,702,839.54	\$ -	\$ 177,534,666.46	
Pct	0.23%	0.00%	0.00%	0.23%	90.36%	0.00%	90.36%	9.41%	0.00%		
C902_3 ESD	-	-	-	-	10,743.10	-	10,743.10	8,727,371.96	10,906,553.98	19,644,669.04	
TRN	-	-	-	-	-	-	-	-	-	-	
Total	\$ -	\$ -	\$ -	\$ -	\$ 10,743.10	\$ -	\$ 10,743.10	\$ 8,727,371.96	\$ 10,906,553.98	\$ 19,644,669.04	
Pct	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.05%	44.43%	55.52%		
C906_9 ESD	-	-	-	-	249,937.92	-	249,937.92	579,610.08	46,425,416.93	47,254,964.93	
TRN	-	-	-	-	-	-	-	-	-	-	
Total	\$ -	\$ -	\$ -	\$ -	\$ 249,937.92	\$ -	\$ 249,937.92	\$ 579,610.08	\$ 46,425,416.93	\$ 47,254,964.93	
Pct	0.00%	0.00%	0.00%	0.00%	0.53%	0.00%	0.53%	1.23%	98.24%		
D-PAYXAC ESD	499,001.22	-	-	499,001.22	104,258,327.97	-	104,258,327.97	31,085,348.77	1,250,915.33	137,093,593.29	
Total	\$ 499,001.22	\$ -	\$ -	\$ 499,001.22	\$ 104,258,327.97	\$ -	\$ 104,258,327.97	\$ 31,085,348.77	\$ 1,250,915.33	\$ 137,093,593.29	
Pct	0.36%	0.00%	0.00%	0.36%	76.05%	0.00%	76.05%	22.67%	0.91%		
T-PAYXAC TRN	40,827,408.44	-	-	40,827,408.44	9,754,366.46	-	9,754,366.46	-	-	50,581,774.90	
Total	\$ 40,827,408.44	\$ -	\$ -	\$ 40,827,408.44	\$ 9,754,366.46	\$ -	\$ 9,754,366.46	\$ -	\$ -	\$ 50,581,774.90	
Pct	80.72%	0.00%	0.00%	80.72%	19.28%	0.00%	19.28%	0.00%	0.00%		
DISTOPX-IESD	-	-	-	-	35,185,586.80	-	35,185,586.80	28,582,785.12	-	63,768,371.92	
Total	\$ -	\$ -	\$ -	\$ -	\$ 35,185,586.80	\$ -	\$ 35,185,586.80	\$ 28,582,785.12	\$ -	\$ 63,768,371.92	
Pct	0.00%	0.00%	0.00%	0.00%	55.18%	0.00%	55.18%	44.82%	0.00%		
DISTMAX-ESD	-	-	-	-	35,185,586.80	-	35,185,586.80	28,582,785.12	-	63,768,371.92	
Total	\$ -	\$ -	\$ -	\$ -	\$ 35,185,586.80	\$ -	\$ 35,185,586.80	\$ 28,582,785.12	\$ -	\$ 63,768,371.92	
Pct	0.00%	0.00%	0.00%	0.00%	55.18%	0.00%	55.18%	44.82%	0.00%		

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
TEST YEAR SALES DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.1.

See Schedule II-H-1.2 for supporting documentation.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
TEST YEAR ENERGY FLOWS ACROSS DC TIES  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.1.1.

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E NELSON

Weather Adjustment (MWH) By Class (based on 20-year average weather 2001-2020)

Line No	Year	Month	Residential (a)	SECLE10 (b)	SECGT10_IDR (c)	SECGT10_NIDR (d)	PRMLE10 (e)	PRMGT10_IDR_NoSUB (f)	PRMGT10_IDR_SUB (g)	PRMGT10_NIDR (h)	Transmission (i)	Lighting (j)	Total (k)
1	2021	1	176,299	2,131	18,422	27,240	0	1,235	451	147	0	0	225,925
2	2021	2	(86,661)	(1,080)	208	310	0	964	332	114	0	0	(85,813)
3	2021	3	(1,051,981)	(13,874)	(64,739)	(106,379)	0	1,794	641	222	0	0	(1,234,316)
4	2021	4	251,523	3,604	20,895	27,939	0	2,738	674	338	0	0	307,712
5	2021	5	207,360	3,212	45,779	66,059	0	11,950	3,485	1,615	0	0	339,461
6	2021	6	486,768	8,032	75,907	118,460	0	15,924	4,230	2,184	0	0	711,505
7	2021	7	202,638	4,236	26,843	43,905	0	10,225	2,441	1,391	0	0	291,679
8	2021	8	384,606	7,779	50,243	83,303	0	15,626	3,170	1,397	0	0	546,123
9	2021	9	(7,700)	585	(3,453)	(5,837)	0	1,403	(256)	183	0	0	(15,075)
10	2021	10	(73,527)	(1,188)	(19,582)	(30,869)	0	(5,348)	(1,617)	(889)	0	0	(133,020)
11	2021	11	(12,178)	(229)	(17,501)	(24,697)	0	(5,189)	(1,491)	(650)	0	0	(61,935)
12	2021	12	448,145	6,573	26,972	36,981	0	(1,264)	(859)	(160)	0	0	516,388
13	Total		925,293	19,782	159,995	236,414	0	50,057	11,200	5,891	0	0	1,408,633
14													
15													
16													
17													
18													
19													
20	2021	1	3,202,892	296,726	5,289	195,067	2,979	1,521	121	5,712	268	56,343	3,766,918
21	2021	2	3,208,216	296,916	5,291	195,641	2,976	1,525	121	5,688	269	56,263	3,772,906
22	2021	3	3,214,871	297,390	5,289	196,641	3,005	1,522	122	5,669	270	56,215	3,780,994
23	2021	4	3,221,873	299,035	5,290	196,661	3,034	1,519	122	5,641	275	56,208	3,789,658
24	2021	5	3,228,777	299,788	5,309	197,010	3,065	1,531	122	5,598	277	56,134	3,797,611
25	2021	6	3,234,379	300,604	5,371	197,289	3,069	1,565	124	5,545	278	56,089	3,804,313
26	2021	7	3,236,273	301,274	5,367	197,702	3,081	1,564	124	5,545	282	55,909	3,807,121
27	2021	8	3,240,184	301,519	5,364	198,092	3,093	1,560	128	5,534	282	55,731	3,811,487
28	2021	9	3,244,734	302,471	5,374	197,946	3,096	1,556	129	5,544	283	55,596	3,816,729
29	2021	10	3,248,681	303,108	5,455	197,922	3,111	1,600	129	5,543	283	55,408	3,821,240
30	2021	11	3,253,575	303,828	5,449	197,868	3,103	1,597	129	5,551	283	55,288	3,826,671
31	2021	12	3,258,283	304,430	5,446	198,142	3,101	1,598	130	5,560	283	55,208	3,832,181
32	Total												
33													
34													
35													
36													
37													
38													
39													
40													
41													
42													
43													
44													
45													
46													
47													
48													
49													
50													
51	Total		924,379	19,816	162,642	237,182	0	51,901	11,920	5,878	0	0	1,413,718

Customer Count

Customer-Adjusted Weather\*

\*By Class, December Ended Customer Count/Current Month\*Current Month Weather Adjustment MWH



PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Residential Weather Adjustment (MWH)												
Line	Year	Month	CDD Model Coefficient (a)	CDD Model Scaler CoolIndex (b)	CoolUse (c)	Customer (d)	CDD Coefficient (e) = (a*b*c*d)/1000	Actual CDD (f)	Normal CDD (g)	CDD Deviation (h)=g-f	CDD MWH Adjustment (i)=e*h	
1	2021	1	2.289	0.8300	1.0700	3,202,892	6,511	0.053	1.817	1.764	11,487	
2	2021	2	2.289	0.8300	1.0700	3,208,216	6,522	0.073	1.347	1.274	8,308	
3	2021	3	2.289	0.8300	1.0700	3,214,871	6,535	3.380	5.150	1.770	11,568	
4	2021	4	2.289	0.8300	1.0700	3,221,873	6,550	15.688	22.956	7.268	47,601	
5	2021	5	2.289	0.8300	1.0700	3,228,777	6,564	41.607	76.129	34.521	226,586	
6	2021	6	2.289	0.8300	1.0700	3,234,379	6,575	140.655	214.749	74.093	487,167	
7	2021	7	2.289	0.8300	1.0700	3,236,273	6,579	352.364	383.154	30.790	202,566	
8	2021	8	2.289	0.8300	1.0700	3,240,184	6,587	386.179	444.569	58.390	384,604	
9	2021	9	2.289	0.8300	1.0700	3,244,734	6,596	385.151	383.939	(1.211)	(7,991)	
10	2021	10	2.289	0.8300	1.0700	3,248,681	6,604	218.247	204.881	(13.367)	(88,276)	
11	2021	11	2.289	0.8300	1.0700	3,253,575	6,614	70.424	57.399	(13.025)	(86,146)	
12	2021	12	2.289	0.8300	1.0700	3,258,283	6,624	7.754	9.728	1.974	13,074	
13	Total							1,622	1,806	184.242	1,210,548	
Year	Month	HDD Model Coefficient (j)	HDD Model Scaler HeatIndex (k)	HeatUse (l)	Customer (m)	HDD Coefficient (n) = (j*k*l*m)/1000	Actual HDD (o)	Normal HDD (p)	HDD Deviation (q)=p-o	HDD MWH Adjustment (r)=n*q		
19	2021	1	2.055	0.9800	1.0800	3,202,892	6,966	198.480	222.139	23.658	164,812	
20	2021	2	2.055	0.9800	1.0800	3,208,216	6,978	234.818	221.208	(13.610)	(94,970)	
21	2021	3	2.055	0.9800	1.0800	3,214,871	6,992	311.735	159.634	(152.101)	(1,063,548)	
22	2021	4	2.055	0.9800	1.0800	3,221,873	7,008	25.418	54.518	29.100	203,922	
23	2021	5	2.055	0.9800	1.0800	3,228,777	7,023	15.068	12.330	(2.738)	(19,226)	
24	2021	6	2.055	0.9800	1.0800	3,234,379	7,035	1.105	1.048	(0.057)	(399)	
25	2021	7	2.055	0.9900	1.0800	3,236,273	7,111	0.001	0.011	0.010	72	
26	2021	8	2.055	0.9900	1.0800	3,240,184	7,119	0.000	0.000	0.000	2	
27	2021	9	2.055	0.9900	1.0800	3,244,734	7,129	0.000	0.041	0.041	291	
28	2021	10	2.055	0.9900	1.0800	3,248,681	7,138	0.231	2.297	2.066	14,749	
29	2021	11	2.055	0.9900	1.0800	3,253,575	7,149	16.473	26.820	10.347	73,968	
30	2021	12	2.055	0.9900	1.0800	3,258,283	7,159	59.034	119.805	60.772	435,071	
31	Total							862	820	(42.511)	(285,255)	
Year	Month	Total (s)=i+r										
37	2021	1	176,299									
38	2021	2	(86,661)									
39	2021	3	(1,051,981)									
40	2021	4	251,523									
41	2021	5	207,360									
42	2021	6	486,768									
43	2021	7	202,638									
44	2021	8	384,606									
45	2021	9	(7,700)									
46	2021	10	(73,527)									
47	2021	11	(12,178)									
48	2021	12	448,145									
49	Total		925,293									

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Secondary Service Less Than or Equal to 10 KW Weather Adjustment (MWH)										
Line No.	Year	Month	CDD Model Coefficient (a)	Customer (b)	CDD Coefficient (c) = (a*b)/1000	Actual CDD (d)	Normal CDD (e)	CDD Deviation (f)=e-d	CDD MWH Adjustment (g)=c*f	
1	2021	1	0.459	296,726	136	0.030	1.157	1.127	153	
2	2021	2	0.459	296,916	136	0.049	0.858	0.809	110	
3	2021	3	0.459	297,390	137	2.231	3.397	1.166	159	
4	2021	4	0.459	299,035	137	10.407	16.036	5.629	773	
5	2021	5	0.459	299,788	138	29.707	55.889	26.182	3,603	
6	2021	6	0.459	300,604	138	104.493	162.595	58.102	8,017	
7	2021	7	0.459	301,274	138	264.927	295.557	30.630	4,236	
8	2021	8	0.459	301,519	138	291.079	347.286	56.207	7,779	
9	2021	9	0.459	302,471	139	290.824	295.001	4.177	580	
10	2021	10	0.459	303,108	139	160.556	150.606	(9.950)	(1,384)	
11	2021	11	0.459	303,828	139	49.788	40.273	(9.515)	(1,327)	
12	2021	12	0.459	304,430	140	5.076	6.399	1.323	185	
13	Total					1,209	1,375	165.889	22,883	
14										
15										
Year	Month	HDD Model Coefficient (h)	Customer (i)	HDD Coefficient (j) = (h*i)/1000	Actual HDD (k)	Normal HDD (l)	HDD Deviation (m)=l-k	HDD MWH Adjustment (n)=i*m		
19	2021	1	0.298	296,726	88	227.608	249.974	22.366	1,978	
20	2021	2	0.298	296,916	88	260.638	247.186	(13.452)	(1,190)	
21	2021	3	0.298	297,390	89	335.051	176.700	(158.351)	(14,033)	
22	2021	4	0.298	299,035	89	27.543	59.318	31.775	2,832	
23	2021	5	0.298	299,788	89	17.077	12.706	(4.371)	(391)	
24	2021	6	0.298	300,604	90	0.764	0.938	0.174	16	
25	2021	7	0.298	301,274	90	0.000	0.008	0.006	1	
26	2021	8	0.298	301,519	90	0.000	0.000	0.000	0	
27	2021	9	0.298	302,471	90	0.000	0.054	0.054	5	
28	2021	10	0.298	303,108	90	0.140	2.313	2.173	196	
29	2021	11	0.298	303,828	91	17.173	29.299	12.126	1,098	
30	2021	12	0.298	304,430	91	64.303	134.722	70.419	6,388	
31						950	913	(37.081)	(3,101)	
32										
33										
34	Year	Month							Total (o)=g+n	
35										
36										
37	2021	1							2,131	
38	2021	2							(1,080)	
39	2021	3							(13,874)	
40	2021	4							3,604	
41	2021	5							3,212	
42	2021	6							8,032	
43	2021	7							4,236	
44	2021	8							7,779	
45	2021	9							585	
46	2021	10							(1,188)	
47	2021	11							(229)	
48	2021	12							6,573	
49	Total								19,782	

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Secondary Service Greater Than 10 KW Weather Adjustment (MWH)

Line No	Year	Month	CDD Model Coefficient (a)	Customer (b)	CDD Coefficient (c) = (a*b)/1000	Actual CDD (d)	Normal CDD (e)	CDD Deviation (f)=e-d	CDD MWH Adjustment (g)=c*f
1	2021	1	11.532	200,356	2.311	0.627	6.111	5.483	12,670
2	2021	2	11.532	200,932	2.317	0.923	4.927	4.004	9,279
3	2021	3	11.532	201,930	2.329	10.113	15.109	4.995	11,632
4	2021	4	11.532	201,951	2.329	41.907	50.859	8.952	20,849
5	2021	5	11.532	202,319	2.333	83.825	131.168	47.343	110,458
6	2021	6	11.532	202,660	2.337	215.242	298.312	83.070	194,142
7	2021	7	11.532	203,069	2.342	453.605	483.816	30.211	70,748
8	2021	8	11.532	203,456	2.346	485.782	542.701	56.919	133,546
9	2021	9	11.532	203,320	2.345	482.785	478.817	(3.968)	(9,304)
10	2021	10	11.532	203,377	2.345	304.885	283.023	(21.862)	(51,273)
11	2021	11	11.532	203,317	2.345	119.779	98.325	(21.454)	(50,302)
12	2021	12	11.532	203,588	2.348	23.960	23.726	(0.234)	(549)
13	Total					2,223	2,417	193.461	451,895
14									
15									
Year	Month	HDD Model Coefficient (h)	Customer (i)	HDD Coefficient (j) = (h*i)/1000	Actual HDD (k)	Normal HDD (l)	HDD Deviation (m)=l-k	HDD MWH Adjustment (n)=i*m	
16									
17									
18									
19	2021	1	5.945	200,356	1.191	134.515	162.214	27.699	32,993
20	2021	2	5.945	200,932	1.195	171.545	164.210	(7.334)	(8,761)
21	2021	3	5.945	201,930	1.200	264.567	112.336	(152.231)	(182,750)
22	2021	4	5.945	201,951	1.201	6.918	30.227	23.309	27,984
23	2021	5	5.945	202,319	1.203	3.540	4.688	1.148	1,381
24	2021	6	5.945	202,660	1.205	0.007	0.195	0.187	226
25	2021	7	5.945	203,069	1.207	0.000	0.000	0.000	0
26	2021	8	5.945	203,456	1.210	0.000	0.000	0.000	0
27	2021	9	5.945	203,320	1.209	0.000	0.011	0.011	13
28	2021	10	5.945	203,377	1.209	0.001	0.681	0.680	822
29	2021	11	5.945	203,317	1.209	5.836	12.540	6.705	8,104
30	2021	12	5.945	203,588	1.210	23.979	77.272	53.293	64,502
31	Total					611	564	(46.534)	(55,486)
32									
33									
34	Year	Month						Total (o)=g+n	
35									
36									
37	2021	1						45,662	
38	2021	2						518	
39	2021	3						(171,118)	
40	2021	4						48,834	
41	2021	5						111,839	
42	2021	6						194,368	
43	2021	7						70,748	
44	2021	8						133,546	
45	2021	9						(9,290)	
46	2021	10						(50,451)	
47	2021	11						(42,198)	
48	2021	12						63,953	
49	Total							396,409	

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Line	Year	Month	Secondary Service Greater Than 10 KW IDR and Non-IDR Weather Adjustment (MWH)				
			SECGT10 IDR KWH (a)	SECGT10 NIDR KWH (b)	SECGT10 Large KWH (c)	SECGT10 IDR KWH Share (d)=a/c	SECGT10 NIDR KWH Share (e)=b/c
1	2021	1	1,351,918,368	1,998,993,921	3,350,912,289	0.403	0.597
2	2021	2	1,326,371,430	1,977,503,676	3,303,875,106	0.401	0.599
3	2021	3	1,339,560,309	2,201,181,387	3,540,741,696	0.378	0.622
4	2021	4	1,346,806,153	1,800,792,498	3,147,598,651	0.428	0.572
5	2021	5	1,406,273,540	2,029,244,473	3,435,518,013	0.409	0.591
6	2021	6	1,462,016,083	2,281,615,721	3,743,631,804	0.391	0.609
7	2021	7	1,695,733,062	2,773,542,025	4,469,275,087	0.379	0.621
8	2021	8	1,697,138,007	2,813,879,859	4,511,017,866	0.376	0.624
9	2021	9	1,692,406,091	2,861,233,955	4,553,640,046	0.372	0.628
10	2021	10	1,554,722,199	2,450,797,322	4,005,519,521	0.388	0.612
11	2021	11	1,463,865,882	2,065,732,092	3,529,597,974	0.415	0.585
12	2021	12	1,408,196,282	1,930,751,950	3,338,948,232	0.422	0.578
13	Total		17,745,007,406	27,185,268,879	44,930,276,285		
14							
15							
16	Year	Month	SECGT10 KWH Adjustment (f)	SECGT10 IDR KWH Adjustment (g)=f*d	SECGT10 NIDR KWH Adjustment (h)=f-g		
17							
18							
19	2021	1	45,662	18,422	27,240		
20	2021	2	518	208	310		
21	2021	3	(171,118)	(64,739)	(106,379)		
22	2021	4	48,834	20,895	27,939		
23	2021	5	111,839	45,779	66,059		
24	2021	6	194,368	75,907	118,460		
25	2021	7	70,748	26,843	43,905		
26	2021	8	133,546	50,243	83,303		
27	2021	9	(9,290)	(3,453)	(5,837)		
28	2021	10	(50,451)	(19,582)	(30,869)		
29	2021	11	(42,198)	(17,501)	(24,697)		
30	2021	12	63,953	26,972	36,981		
31	Total		396,409	159,995	236,414		

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Primary Service Greater Than 10 KW Weather Adjustment (MWH)							
Line	Year	Month	CDD Model Coefficient (a)	Actual CDD (b)	Normal CDD (c)	CDD Deviation (d)=c-b	CDD MWH Adjustment (e)=a*d
1	2021	1	194 170	6 512	13 627	7 115	1,381
2	2021	2	194 170	6 864	12 417	5 553	1,078
3	2021	3	194 170	25 659	36 041	10 382	2,016
4	2021	4	194 170	87 529	103 375	15 846	3,077
5	2021	5	194 170	154 033	223 894	69 861	13,565
6	2021	6	194 170	323 068	416 324	93 256	18,107
7	2021	7	194 170	539 671	599 495	59 824	11 616
8	2021	8	194 170	544 171	631 840	87 669	17,023
9	2021	9	194 170	548 056	556 224	8 168	1,586
10	2021	10	194 170	386 999	354 876	(32 123)	(6,237)
11	2021	11	194 170	181 662	151 588	(30 074)	(5,840)
12	2021	12	194 170	53 943	46 608	(7 334)	(1,424)
13	Total			2,858	3,146	288 142	55,949
14							
15							
HDD Model							
Line	Year	Month	Coefficient (f)	Actual HDD (g)	Normal HDD (h)	HDD Deviation (i)=h-g	Adjustment (j)=f*i
16							
17							
18							
19	2021	1	0 000	0 000	0 000	0 000	0
20	2021	2	0 000	0 000	0 000	0 000	0
21	2021	3	0 000	0 000	0 000	0 000	0
22	2021	4	0 000	0 000	0 000	0 000	0
23	2021	5	0 000	0 000	0 000	0 000	0
24	2021	6	0 000	0 000	0 000	0 000	0
25	2021	7	0 000	0 000	0 000	0 000	0
26	2021	8	0 000	0 000	0 000	0 000	0
27	2021	9	0 000	0 000	0 000	0 000	0
28	2021	10	0 000	0 000	0 000	0 000	0
29	2021	11	0 000	0 000	0 000	0 000	0
30	2021	12	0 000	0 000	0 000	0 000	0
31	Total		0	0	0	0 000	0
32							
33							
Line	Year	Month	Total (k)=e+j				
34							
35							
36							
37	2021	1					1,381
38	2021	2					1,078
39	2021	3					2,016
40	2021	4					3,077
41	2021	5					13,565
42	2021	6					18,107
43	2021	7					11,616
44	2021	8					17,023
45	2021	9					1,586
46	2021	10					(6,237)
47	2021	11					(5,840)
48	2021	12					(1,424)
49	Total						55,949

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

Line No.	Year	Month	Primary Service Greater Than 10 KW IDR and Non-IDR Weather Adjustment (MWH)				
			PRMGT10_IDR _NoSUB KWH (a)	PRMGT10 NIDR KWH (b)	PRMGT10 Large KWH (c)	PRMGT10 IDR KWH Share (d)=a/c	PRMGT10 NIDR KWH Share (e)=b/c
1	2021	1	1,196,329,426	142,162,335	1,338,491,761	0.894	0.106
2	2021	2	1,150,822,551	136,104,227	1,286,926,778	0.894	0.106
3	2021	3	1,014,192,818	125,450,911	1,139,643,729	0.890	0.110
4	2021	4	1,181,580,735	146,049,568	1,327,630,303	0.890	0.110
5	2021	5	1,246,661,858	168,470,619	1,415,132,477	0.881	0.119
6	2021	6	1,284,301,945	176,125,535	1,460,427,480	0.879	0.121
7	2021	7	1,342,534,030	182,621,139	1,525,155,169	0.880	0.120
8	2021	8	1,253,721,174	112,099,971	1,365,821,145	0.918	0.082
9	2021	9	1,307,569,606	170,101,246	1,477,670,852	0.885	0.115
10	2021	10	1,300,302,492	216,102,761	1,516,405,253	0.857	0.143
11	2021	11	1,256,982,908	157,504,876	1,414,487,784	0.889	0.111
12	2021	12	1,336,111,748	168,890,297	1,505,002,045	0.888	0.112
13	Total		14,871,111,291	1,901,683,485	16,772,794,776		
14							
Line No.	Year	Month	PRMGT10	PRMGT10	PRMGT10		
			Large KWH Adjustment (f)	IDR KWH Adjustment (g)=f*d	NIDR KWH Adjustment (h)=f-g		
19	2021	1	1,381	1,235	147		
20	2021	2	1,078	964	114		
21	2021	3	2,016	1,794	222		
22	2021	4	3,077	2,738	338		
23	2021	5	13,565	11,950	1,615		
24	2021	6	18,107	15,924	2,184		
25	2021	7	11,616	10,225	1,391		
26	2021	8	17,023	15,626	1,397		
27	2021	9	1,586	1,403	183		
28	2021	10	(6,237)	(5,348)	(889)		
29	2021	11	(5,840)	(5,189)	(650)		
30	2021	12	(1,424)	(1,264)	(160)		
31	Total		55,949	50,057	5,891		

PUC DOCKET NO  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MONTHLY SALES DATA  
TEST YEAR ENDING December 31, 2021

SPONSOR: D. E. NELSON

SUBSTATION Weather Adjustment (MWH)							
Line	Year	Month	CDD Model			CDD Deviation (d)=c-b	CDD MWH Adjustment (e)=a*d
			Coefficient (a)	Actual CDD (b)	Normal CDD (c)		
1	2021	1	8.826	94,537	145,632	51,095	451
2	2021	2	8.826	99,828	137,459	37,631	332
3	2021	3	8.826	252,488	325,108	72,619	641
4	2021	4	8.826	689,613	765,987	76,375	674
5	2021	5	8.826	1,056,072	1,450,974	394,902	3,485
6	2021	6	8.826	1,964,483	2,443,706	479,223	4,230
7	2021	7	8.826	3,047,986	3,324,504	276,517	2,441
8	2021	8	8.826	3,026,706	3,385,861	359,155	3,170
9	2021	9	8.826	3,069,819	3,040,771	(29,048)	(256)
10	2021	10	8.826	2,261,947	2,078,758	(183,190)	(1,617)
11	2021	11	8.826	1,184,539	1,015,610	(168,929)	(1,491)
12	2021	12	8.826	492,341	394,999	(97,341)	(859)
13	Total			17,240	18,509	1,269,009	11,200
14							
15							
HDD Model							
Line	Year	Month	Coefficient (f)	Actual HDD (g)	Normal HDD (h)	HDD Deviation (i)=h-g	Adjustment (j)=f*i
16	2021	1	0.000	0.000	0.000	0.000	0
17	2021	2	0.000	0.000	0.000	0.000	0
18	2021	3	0.000	0.000	0.000	0.000	0
19	2021	4	0.000	0.000	0.000	0.000	0
20	2021	5	0.000	0.000	0.000	0.000	0
21	2021	6	0.000	0.000	0.000	0.000	0
22	2021	7	0.000	0.000	0.000	0.000	0
23	2021	8	0.000	0.000	0.000	0.000	0
24	2021	9	0.000	0.000	0.000	0.000	0
25	2021	10	0.000	0.000	0.000	0.000	0
26	2021	11	0.000	0.000	0.000	0.000	0
27	2021	12	0.000	0.000	0.000	0.000	0
28	2021	1	0.000	0.000	0.000	0.000	0
29	2021	2	0.000	0.000	0.000	0.000	0
30	2021	3	0.000	0.000	0.000	0.000	0
31	Total			0	0	0.000	0
32							
33							
Line	Year	Month	Total (k)=e+j				
34	2021	1					451
35	2021	2					332
36	2021	3					641
37	2021	4					674
38	2021	5					3,485
39	2021	6					4,230
40	2021	7					2,441
41	2021	8					3,170
42	2021	9					(256)
43	2021	10					(1,617)
44	2021	11					(1,491)
45	2021	12					(859)
46	Total						11,200

2021 TEST YEAR DATA  
Oncor Electric Delivery Company LLC  
Unadjusted Test Year Load Data  
For the Test Year Ended December 31, 2021  
Sponsor: D.E. Nelson

System Line Loss Calculation  
Energy Loss Factor Calculation

Line No.	(a)	(b)	(c)	(d)
1	System Net Consumed, MWh (as Calculated page 3)			119,258,131
2				
3	Booked Sales and Energy Losses by Voltage Level, MWh			
4	(Booked Sales and Energy Losses Page 3):			
5			Energy	Booked
6			<u>Losses</u>	<u>Sales</u>
7	Substation		680,635	6,412,195
8	Primary		1,030,222	17,209,450
9	Secondary		<u>2,002,629</u>	<u>91,923,000</u>
10	Total		3,713,486	115,544,645
11				
12	Percent Losses Calculation Procedure			
13	Substation:			
14	Input to Distribution Substation Transformation System, MWh			119,258,131
15	Substation Losses, MWh			680,635
16	Substation Sales, MWh			<u>6,412,195</u>
17	Remainder to Distribution Primary System, MWh			112,165,301
18	Percent Losses (Line 15/Line14)			0.5707%
19	Primary:			
20	Input to Distribution Primary System, MWh			112,165,301
21	Primary Losses, MWh			1,030,222
22	Primary Sales, MWh			<u>17,209,450</u>
23	Remainder to Distribution Secondary System, MWh			93,925,629
24	Percent Losses (Line 21/Line 20)			0.9185%
25	Secondary:			
26	Input to Distribution Secondary System, MWh			93,925,629
27	Secondary Losses, MWh			<u>2,002,629</u>
28	Secondary Sales, MWh			91,923,000
29	Percent Losses (Line 27/Line 26)			2.1321%
30				
31	Loss Factors			
32	Loss Element by Voltage Level (1 - (Percent Losses/100):			
33	Substation			0.994293
34	Primary			0.990815
35	Secondary			0.978679
36				
37	Factor by Voltage Level :			
38	Substation (1.0/Line 33)			1.00574000
39	Primary (Line 38/Line 34)			1.01506321
40	Secondary (Line 39/Line 35)			1.03717731



2021 TEST YEAR DATA  
Oncor Electric Delivery Company LLC  
Unadjusted Test Year Load Data  
For the Test Year Ended December 31, 2021  
Sponsor: D.E. Nelson

System Line Loss Calculation  
Demand Loss Factor Calculation

Line No.	(a)	(b)	(c)	(d)
1	System Peak Demand, MW (as Calculated Page 3)			23,735.8
2				
3	Coincident Demand and Demand Losses, MW			
4	(Coincident Demands and Demand Losses Page 3):			
5			Demand	Coincident
6			<u>Losses</u>	<u>Demand</u>
7	Substation		150.2	766.8
8	Primary		309.3	2,197.9
9	Secondary		<u>364.6</u>	<u>19,947.0</u>
10	Total		824.1	22,911.6
11				
12	Percent Losses Calculation Procedure			
13	Substation:			
14	Input to Distribution Substation System, MW			23,735.8
15	Substation Losses, MW			150.2
16	Substation Demand, MW			<u>766.8</u>
17	Remainder to Distribution Primary System, MW			22,818.7
18	Percent Losses (Line 15/Line 14)			0.6330%
19	Primary:			
20	Input to Distribution Primary System, MW			22818.7
21	Primary Losses, MW			309.3
22	Primary Demand, MW			<u>2197.9</u>
23	Remainder to Distribution Secondary System, MW			20311.6
24	Percent Losses (Line 21/Line 20)			1.3554%
25	Secondary:			
26	Input to Distribution Secondary System, MW			20,311.6
27	Secondary Losses, MW			<u>364.6</u>
28	Secondary Demand, MW			19,947.0
29	Percent Losses (Line 27/Line 26)			1.7950%
30				
31	Loss Factors			
32	Loss Element by Voltage Level (1 - (Percent Losses/100):			
33	Substation			0.993670
34	Primary			0.986446
35	Secondary			0.982050
36				
37	Factor by Voltage Level :			
38	Substation (1.0/Line 33)			1.00637000
39	Primary (Line 38/Line 34)			1.02019752
40	Secondary (Line 39/Line 35)			1.03884525

2021 TEST YEAR DATA  
Oncor Electric Delivery Company LLC  
Unadjusted Test Year Load Data  
For the Test Year Ending December 31, 2021  
Sponsor: D.E. Nelson

2021 Analysis of System Losses

**Calculated Losses Using 2015 Oncor Integrated Power System Loss Analysis**

	<u>MWh</u>	<u>MW</u>
Retail Sales from Service Drop	91,923,000	19,946.95
Service Drop Factor *	1.00314	1.00381
Output from Secondary	92,211,638	20,022.95
Secondary Conductor Loss Factor *	1.00100	1.00189
Output from Line Transformers	92,303,850	20,060.79
Line Transformer Loss Factor *	1.01757	1.01250
Input to Line Transformers	93,925,629	20,311.55
Sales from Primary	17,209,450	2,197.90
Output from Primary Lines	111,135,079	22,509.45
Primary Line Loss Factor *	1.00927	1.01374
Output from Distribution Substations	112,165,301	22,818.73
Sales from Substations	6,412,195	766.78
Total Output from Distribution Substations	118,577,496	23,585.51
Distribution Substation Loss Factor *	1.00574	1.00637
Input to Distribution Substations	119,258,131	23,735.75
 Total System Losses	 3,713,486	 824.12

NOTE:

2021 Annual Energy from company records and Demand at ERCOT's 2021 annual peak

\* For Loss Factors, refer to WP/II-H-1.3/2

# **ONCOR ELECTRIC DELIVERY SYSTEM**

**2015 Analysis of System Losses**

**November 2016**

Second Draft  
1/17/17

Prepared by:



Management Applications Consulting, Inc.  
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## MANAGEMENT APPLICATIONS CONSULTING, INC.

1103 Rocky Drive • Suite 201 • Reading, PA 19609-1157 • 610/670-9199 • fax 610/670-9190 • www.manapp.com

January 17, 2017

Mr. \_\_\_\_\_  
Title  
Oncor Electric Delivery System  
Street  
City, ST Zip

**RE: 2015 LOSS ANALYSIS**

Dear Mr. \_\_\_\_\_:

Transmitted herewith are the results of the 2015 Analysis of System Losses for the Oncor Electric Delivery System's (Oncor) power system. Our analysis develops cumulative expansion factors (loss factors) for both demand (peak/kW) and energy (average/kWh) losses by discrete voltage levels applicable to metered sales data. Table 1 of the Executive Summary presents the results and appropriate loss factors to apply to metered load research or sales data for adjustment to system input.

On behalf of MAC, we appreciate the opportunity to assist you in performing the loss analysis contained herein. The level of detailed load research and sales data by voltage level, coupled with a summary of power flow data and power system model, forms the foundation for determining reasonable and representative power losses on the Oncor system. Our review of these data and calculated loss results support the proposed loss factors as presented herein for your use in various cost of service, rate studies, and demand analyses.

Should you require any additional information, please let us know at your earliest convenience.

Sincerely,

A handwritten signature in cursive script that reads "Paul M. Normand".

Paul M. Normand  
Principal

Enclosure  
PMN/rjp

## Oncor Electric Delivery System 2015 Analysis of System Losses

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### TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY .....	1
2.0	INTRODUCTION .....	6
2.1	Conduct of Study .....	6
2.2	Electric Power Losses .....	7
2.3	Loss Impacts from Distributed Generation (DG) .....	8
2.4	Description of Model .....	8
3.0	METHODOLOGY .....	9
3.1	Background .....	9
3.2	Calculations and Analysis .....	11
3.2.1	Transmission Systems .....	11
3.2.2	Transformers .....	11
3.2.3	Distribution System .....	12
4.0	DISCUSSION OF RESULTS.....	13

Appendix A – Results of Oncor Electric Delivery System 2015 Loss Analysis

Appendix B – Discussion of Hoebel Coefficient



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 1.0 EXECUTIVE SUMMARY

This report presents Oncor Electric Delivery System's (Oncor) 2015 Analysis of System Losses for the power systems as performed by Management Applications Consulting, Inc. (MAC). The study developed separate demand (kW) and energy (kWh) loss factors for each voltage level of delivery service in the power system for Oncor. The cumulative loss factor results by voltage level, as presented herein, can be used to adjust metered kW and kWh sales data for losses in performing cost of service studies, determining voltage discounts, and other analyses which may require a loss adjustment.

The procedures used in the overall loss study emphasized the use of "in house" resources where possible. To this end, extensive use was made of the Company's ERCOT peak hour MW flow data and transformer plant investments in the model. In addition, measured and estimated load data provided a means of calculating reasonable estimates of losses by using a "top-down" and "bottom-up" procedure. In the "top-down" approach, losses through and including distribution substations, were calculated along with conductor and transformer loss estimates, and metered sales.

Our analyses began with system MW loads and losses at the input into the distribution substation system are known with reasonable accuracy. Estimated and actual Company load data provided the starting point for performing a "bottom-up" approach for calculating the remaining distribution losses. Basically, this "bottom-up" approach develops line loadings by first determining loads and losses at each level beginning at a customer's meter service entrance and then going through secondary lines, line transformers, primary lines and finally distribution substation which is the input level for this study. These distribution system loads and associated losses are then compared to the initial calculated input into Distribution Substation loadings for reasonableness prior to finalizing the loss factors. An overview of the loss study is shown on Figure I.

The load research data provided the starting point for performing a "bottom-up" approach for estimating the remaining distribution losses. These distribution system loads and associated losses are then compared to the initial calculated input into Distribution Substation loadings for reasonableness prior to finalizing the loss factors.

Table 1, below, provides the final results from Appendix A for the 2015 calendar year. Exhibits 8 and 9 of Appendix A present a more detailed analysis of the final calculated summary results of losses by voltage segments and delivery service level in the power system. These Table 1 cumulative loss expansion factors are applicable only to metered sales at the point of receipt for adjustment to the power system's input level which is substations in this study.



**Oncor Electric Delivery System  
2015 Analysis of System Losses**

**TABLE 1  
Loss Factor Multipliers at Metered Sales Level, Calendar Year 2015**

<u>Voltage Level of Service</u>	<u>Oncor Delivery System</u>
<u>Demand (kW)</u>	
Transmission	N/A
Primary Lines	1.02019
Secondary	1.03885
<u>Energy (kWh)</u>	
Transmission	N/A
Primary Lines	1.01506
Secondary	1.03717
Losses – Net System Input <sup>1</sup>	MWH MW
	3.25% 3.56%
Losses – Net System Output <sup>2</sup>	MWH MW
	3.36% 3.69%
<b>Composite System Loss Factors at Metered Sales Level</b>	
System	MWH MW
	1.03362 1.03688

The net system input shown in Table 1 represents the MWh losses of 3.25% for the total Oncor load using calculated losses divided by the associated input energy to the system. The 3.36% represents the same losses using system output instead of input as a reference. The net system output reference shown in Table 1 represents MWh losses of 3.36% and MW losses of 3.69%. These results use the appropriate total losses for each but are divided by system output or sales. These calculations are all based on the data and results shown on Exhibits 1, 7 and 9 of the study.

Due to the very nature of losses being primarily a function of equipment loading levels for a peak load hour, the loss factor derivations for any voltage level must consider both the load at that level plus the loads from lower voltages and their associated losses. As a result, cumulative losses on losses equates to additional load at higher levels along with future changes (+ or –) in loads throughout the power system. It is therefore important to recognize that losses are multiplicative in nature (future) and not additive (test year only) for all future years to ensure total recovery based on prospective fixed loss factors for each service voltage.

<sup>1</sup> Net system input equals firm sales plus losses. See Appendix A, Exhibit 1, for their calculations.

<sup>2</sup> Net system output uses losses divided by output or sales data as a reference (excludes losses).



## Oncor Electric Delivery System 2015 Analysis of System Losses

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The derivation of the cumulative loss factors shown in Table 1 have been detailed for all electrical facilities in Exhibit 9, page 1 for demand and page 2 for energy. Beginning on line 1 of page 1 (demand) under the secondary column, metered sales are adjusted for service losses on lines 3 and 4. This new total load (with losses) becomes the load amount for the next higher facilities of secondary conductors and their loss calculations. This process is repeated for all the installed facilities until the secondary sales are at the input level (line 45). The final loss factor for all delivery voltages using this same process is shown on line 46 and Table 1 for demand. This procedure is repeated in Exhibit 9, page 2, for the energy loss factors.

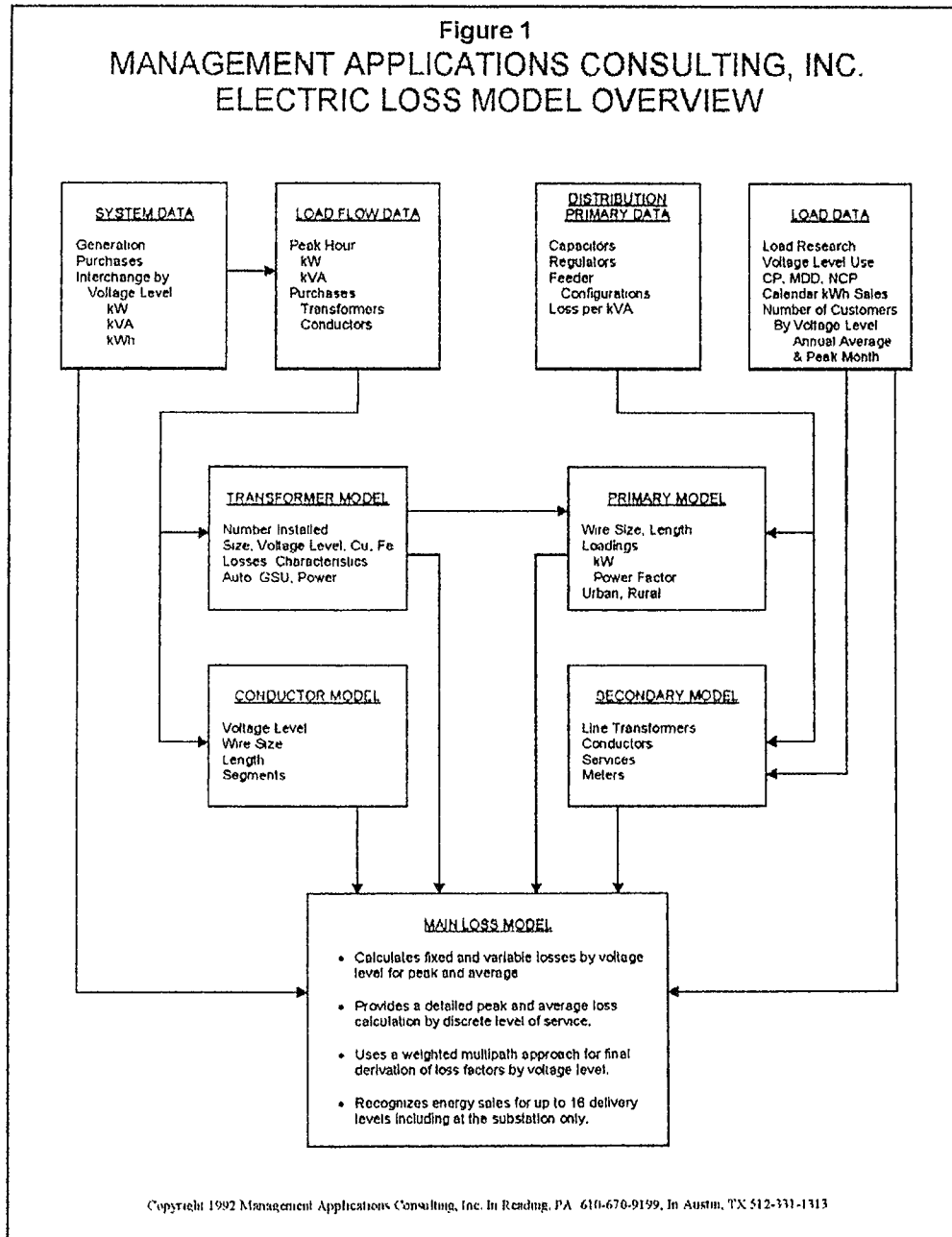
The loss factor calculation is simply the input required (line 45) divided by the metered sales (line 43).

An overview of the loss study is shown on Figure 1 on the next page. Figure 2 simply illustrates the major components that must be considered in a loss analysis.





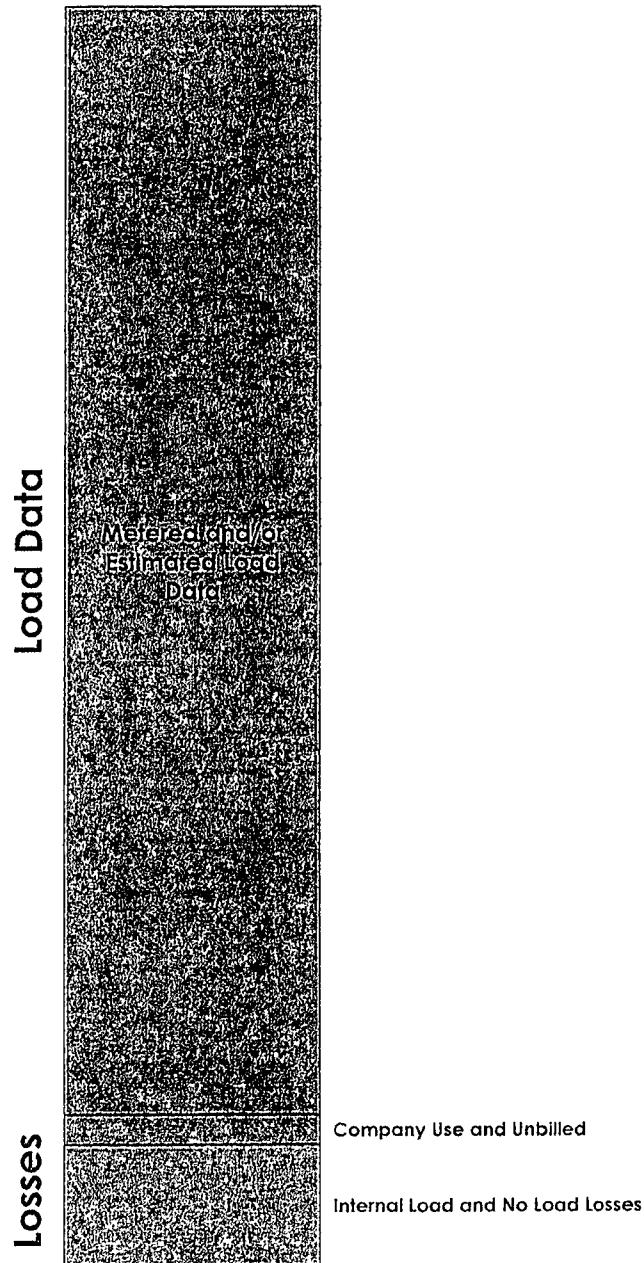
## Oncor Electric Delivery System 2015 Analysis of System Losses



## Oncor Electric Delivery System 2015 Analysis of System Losses

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FIGURE 2  
Generic Internal Energy Elements



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 2.0 INTRODUCTION

This report of the 2015 Analysis of System Losses for the Oncor Electric Delivery System provides a summary of results, conceptual background or methodology, description of the analyses, and input information related to the study.

#### 2.1 Conduct of Study

Typically, between five to ten percent of the total peak hour MW and annual MWH requirements of an electric utility is lost or unaccounted for in the delivery of power to customers from the Transmission level through and including secondary voltage levels at the meter. Investments must be made in facilities which support the total load which includes losses or unaccounted for load. Revenue requirements associated with load losses are an important concern to utilities and regulators in that customers must equitably share in all of these cost responsibilities. Loss expansion factors by voltage level are the mechanism by which customers' metered demand and energy data are mathematically adjusted to the generation or input level (point of reference) when performing cost and revenue calculations.

An acceptable accounting of losses can be determined for any given time period using available engineering, system, and customer data along with empirical relationships. This loss analysis for the delivery of demand and energy utilizes such an approach. A microcomputer loss model<sup>3</sup> is utilized as the vehicle to organize the available data, develop the relationships, calculate the losses, and provide an efficient and timely avenue for future updates and sensitivity analyses. Our procedures and calculations rely on numerous databases that include customer statistics and power system investments at various voltage levels of service.

Company personnel performed most of the data gathering and data processing efforts and checked for reasonableness. MAC provided assistance as necessary to construct databases, transfer files, perform calculations, and check the reasonableness of results. Efforts in determining the data required to perform the loss analysis centered on information which was available from existing studies or reports within the Company. From an overall perspective, our efforts concentrated on five major areas:

1. System information concerning ERCOT peak demand and annual energy requirements by voltage level of service using metered data and load research,
2. Substation loads at their input (including losses),
3. Distribution system primary and secondary loss calculations,
4. Derivation of fixed and variable losses by voltage level, and
5. Development of final cumulative expansion factors at each voltage for peak demand (kW) and annual energy (kWh) requirements at the point of delivery (meter).

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<sup>3</sup>Copyright by Management Applications Consulting, Inc.



## Oncor Electric Delivery System 2015 Analysis of System Losses

### 2.2 Electric Power Losses

Losses in power systems consist of primarily technical losses with a much smaller level of non-technical losses.

#### Technical Losses

Electrical losses result from the transmission of energy over various electrical equipment. The largest component of total losses during peaking conditions is power dissipation as a result of varying loading conditions and are oftentimes called load losses which are mostly related to the square of the current ( $I^2R$ ). These peak hour losses can be as high as 60% to 75% of all technical losses during peak loading conditions. The remaining losses are called no-load and represent essentially fixed (constant) energy losses throughout the year. These no-load losses represent energy required to energize various electrical equipment regardless of their loading levels over the entire year. The major portion of these no-load losses consists of core or magnetizing energy related to installed transformers throughout the power system and generates the major component of annual losses on any distribution system.

The following Table 2 summarizes the unadjusted fixed and variable losses by major functional categories from Exhibit 5 of Appendix A:

**TABLE 2**

	<u>DEMAND (PEAK HOUR) – MW</u>			<u>ENERGY (ANNUAL AVERAGE) – MWH</u>		
	FIXED	VARIABLE	TOTAL	FIXED	VARIABLE	TOTAL
TRANS (%)	0.00	0.00	0.00 N/A	0	0	0 N/A
SUBTRANS (%)	0.00	0.00	0.00 N/A	0	0	0 N/A
DIST SUBS (%)	49.67 34.63%	93.76 65.37%	143.43 100.00%	341,427 56.21%	265,963 43.79%	607,390 100.00%
PRIMARY (%)	0.61 0.20%	298.94 99.80%	299.56 100.00%	5,350 0.57%	936,888 99.43%	942,238 100.00%
SECONDARY (%)	163.45 44.97%	199.98 55.03%	363.42 100.00%	1,431,800 74.84%	481,367 25.16%	1,913,167 100.00%
TOTAL SYS (%)	213.72 26.50%	592.68 73.50	806.40 100.00%	1,778,576 51.36%	1,684,217 48.64%	3,462,794 100.00%
TOTAL DIST (%)	213.72 26.50%	592.68 73.50%	806.40 100.00%	1,778,576 51.36%	1,684,217 48.64%	3,462,794 100.00%



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### Non-Technical Losses

These are unaccounted for energy losses that are related to energy theft, metering, non-payment by customers, and accounting errors. Losses related to these areas are generally very small and can be extremely difficult and subjective to quantify. Our efforts generally do not develop any meaningful level because we assume that improving technology and utility practices have minimized these amounts.

### **2.3 Loss Impacts from Distributed Generation (DG)**

The impacts of losses on a power system from the installation of various DG facilities will depend somewhat on the penetration level, type of installations and location on a circuit. Based on the results presented in Table 2 of this loss study, the impacts are significantly different from looking at any single peak load hour versus the potential impacts over all hours of an entire year. Use of a typical uniform loss factor(s) for each voltage level may require additional consideration to recognize that a reduced consumption level could have little or no impact due to the recovery requirements for the high level of fixed losses over the entire hourly electric grid condition for any DG location.

### **2.4 Description of Model**

The loss model is a customized applications model, constructed using the Excel software program. Documentation consists primarily of the model equations at each cell location. A significant advantage of such a model is that the actual formulas and their corresponding computed values at each cell of the model are immediately available to the analyst.

A brief description of the three (3) major categories of effort for the preparation of each loss model is as follows:

- Main sheet which contains calculations for all primary and secondary losses, summaries of all conductor and transformer calculations from other sheets discussed below, output reports and supporting results.
- Transformer sheet which contains data input and loss calculations for each distribution substation from high voltage transformer. Separate iron and winding losses are calculated for each transformer by identified type.
- Conductor sheet containing summary data by major voltage level as to circuit miles, loading assumptions, and kW and kWh loss calculations. This area of the model was not used as this loss study did not consider high voltage facilities.



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 3.0 METHODOLOGY

#### 3.1 Background

The objective of a Loss Study is to provide a reasonable set of energy (average) and demand (peak) loss expansion factors which account for system losses associated with the transmission and delivery of power to each voltage level over a designated period of time. The focus of this study is to identify the difference between total energy inputs and the associated sales with the difference being equitably allocated to all delivery levels. Several key elements are important in establishing the methodology for calculating and reporting the Company's losses. These elements are:

- Selection of voltage level of services,
- Recognition of losses associated with conductors, transformations, and other electrical equipment/components within voltage levels,
- Identification of customers and loads at various voltage levels of service,
- Review of generation or net power supply input at each level for the test period studied, and
- Analysis of kW and kWh sales by voltage levels within the test period.

The three major areas of data gathering and calculations in the loss analysis were as follows:

1. System Information (monthly and annual)
  - MW at the distribution substations and metered MWH sales.
  - Coincident peak (ERCOT) estimates and net power supply input from all sources and voltage levels.
  - Customer load data estimates from available load research information, adjusted MWH sales, and number of customers in the customer groupings and voltage levels identified in the model.
  - System default values, such as power factor, loading factors, and load factors by voltage level.



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 2. Distribution System

- Distribution Substations – Data was developed for modeling each substation as to its size and loading. Loss calculations were prepared from this data to determine load and no load losses separately for each transformer.
- Primary lines – Line loading and loss characteristics for several representative primary circuits were obtained from the Company. These loss results developed kW loss per MW of load and a composite average was calculated to derive the primary loss estimate.
- Line transformers – Losses in line transformers were based on each customer service group’s size, as well as the number of customers per transformer. Accounting and load data provided the foundation with which to model the transformer loadings and to calculate load and no load losses.
- Secondary circuits – Typical secondary circuits were estimated for conductor sizes, lengths, loadings, and customer penetration for residential and small general service customers based on data provided by the Company.
- Services – Typical services were estimated for each secondary service class of customers identified in the study with respect to type, length, and loading.
- Meters – Estimated one-hour losses were developed for each customer class and voltage level.

The loss analysis was thus performed by constructing the model in segments and subsequently calculating the composite until the constraints of peak demand and energy were met:

- Information as to the physical characteristics and loading of each transformer and conductor segment was modeled.
- Conductors, transformers, and distribution were grouped by voltage level, and unadjusted losses were calculated.
- The loss factors calculated at each voltage level were determined by “compounding” the per-unit losses. Equivalent sales at the supply point were obtained by dividing sales at a specific level by the compounded loss factor to determine losses by voltage level.



## Oncor Electric Delivery System 2015 Analysis of System Losses

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- The resulting demand and energy loss expansion factors were then used to adjust all sales to the generation or input level in order to estimate the difference.
- Reconciliation of kW and kWh sales by voltage level was accomplished by adjusting the initial loss factor estimates until the mismatch was eliminated.

### 3.2 Calculations and Analysis

This section provides a discussion of the input data, assumptions, and calculations performed in the loss analysis. Specific appendices have been included in order to provide documentation of the input data utilized in the model.

#### 3.2.1 Transmission Systems

Not applicable.

#### 3.2.2 Transformers

The transformer loss analysis required several steps in order to properly consider the characteristics associated with various transformer types; such as, distribution substations and line transformers. In addition, further efforts identified both iron and winding losses within each of these transformer types in order to obtain reasonable peak (kW) and average energy (kWh) losses. While iron losses were considered essentially constant for each hour, recognition had to be made for the varying degree of winding losses due to hourly equipment loadings.

Standardized test data tables were used to represent no load information (fixed) and full load (variable) losses for different sizes of transformers. This test data was incorporated into the loss model to develop relationships representing winding and iron or core losses for the transformer loss calculation as discussed in Section 4.0.

The remaining miscellaneous losses considered in the loss study consisted of several areas which do not lend themselves to any reasonable level of modeling for estimating their respective losses and were therefore lumped together into a single loss factor of 0.10%. The typical range of values for these losses is from 0.10% to 0.25%, and we have assumed the lower value to be conservative at this time. The losses associated with this loss factor include bus bars, unmetered station use, grounding transformers, cooling fans, heating and air conditioning requirements, and other remaining station use requirements.





## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 3.2.3 Distribution System

The load data at the substation and customer level, coupled with primary and secondary network information, was sufficient to model the distribution system in adequate detail to calculate losses.

#### Primary Lines

Primary line loadings take into consideration the available distribution load along with the actual customer loads including losses. Primary line loss estimates were prepared by the Company for use in this loss study. These estimates considered loads per substation, voltage levels, loadings, total circuit miles, wire size, and single- to three-phase investment estimates. All of these factors were considered in calculating the actual demand (kW) and energy (kWh) for the primary system.

#### Line Transformers

Losses in line transformers were determined based on typical transformer sizes for each secondary customer service group and an estimated or calculated number of customers per transformer. Accounting records and estimates of load data provided the necessary database with which to model the loadings. These calculations also made it possible to determine separate winding and iron losses for distribution line transformers, based on a table of representative losses for various transformer sizes.

#### Secondary Line Circuits

A calculation of secondary line circuit losses was performed for loads served through these secondary line investments. Estimates of typical conductor sizes, lengths, loadings and customer class penetrations were made to obtain total circuit miles and losses for secondary. Customer loads which do not have secondary line requirements were also identified so that a reasonable estimate of losses and circuit miles of these investments could be made.

#### Service Drops and Meters

Service drops were estimated for each secondary customer reflecting conductor size, length and loadings to obtain demand losses. A separate calculation was also performed using customer maximum demands to obtain kWh losses. Meter loss estimates were also made for each customer and incorporated into the calculations of kW and kWh losses included in the Summary Results.



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### 4.0 DISCUSSION OF RESULTS

A brief description of each Exhibit provided in Appendix A follows:

#### Exhibit 1 – Summary of Company Data

This exhibit reflects system information used to determine percent losses and a detailed summary of kW and kWh losses by voltage level. The loss factors developed in Exhibit 7 are also summarized by voltage level.

#### Exhibit 2 – Summary of Conductor Information

A summary of MW and MWH load and no load losses for conductors by voltage levels is presented. The sum of all calculated losses by voltage level is based on input data information provided in Appendix A. Percent losses are based on equipment loadings.

#### Exhibit 3 – Summary of Transformer Information

This exhibit summarizes transformer losses by various types and voltage levels throughout the system. Load losses reflect the winding portion of transformer losses while iron losses reflect the no load or constant losses. MWH losses are estimated using a calculated loss factor for winding and the test year hours times no load losses.

#### Exhibit 4 – Summary of Losses Diagram (2 Pages)

This loss diagram represents the inputs and output of power at system peak conditions. Page 1 details information from all points of the power system and what is provided to the distribution system for primary loads. This portion of the summary can be viewed as a “top down” summary into the distribution system.

Page 2 represents a summary of the development of primary line loads and distribution substations based on a “bottom up” approach. Basically, loadings are developed from the customer meter through the Company’s physical investments based on load research and other metered information by voltage level to arrive at MW and MVA requirements during peak load conditions by voltage levels.

#### Exhibit 5 – Summary of Sales and Calculated Losses

Summary of Calculated Losses represents a tabular summary of MW and MWH load and no load losses by discrete areas of delivery within each voltage level. Losses have been identified and are derived based on summaries obtained from Exhibits 2 and 3 and losses associated with meters, capacitors and regulators.



## Oncor Electric Delivery System 2015 Analysis of System Losses

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### Exhibit 6 – Development of Loss Factors, Unadjusted

This exhibit calculates demand and energy losses and loss factors by specific voltage levels based on sales level requirements. The actual results reflect loads by level and summary totals of losses at that level, or up to that level, based on the results as shown in Exhibit 5. Finally, the estimated values at generation are developed and compared to actual generation to obtain any difference or mismatch.

### Exhibit 7 – Development of Loss Factors, Adjusted

The adjusted loss factors are the results of adjusting Exhibit 6 for any difference. All differences between estimated and actual are prorated to each level based on the ratio of each level's total load plus losses to the system total. These new loss factors reflect an adjustment in losses due only to the kW and kWh mismatch.

### Exhibit 8 – Adjusted Losses and Loss Factors by Facility

These calculations present an expanded summary detail of Exhibit 7 for each segment of the power system with respect to the flow of power and associated losses from the receipt of energy at the meter to the generation for the Oncor power system.

### Exhibit 9 – Summary of Losses by Delivery Voltage

These calculations present a reformatted summary of losses presented in Exhibits 7 and 8 by power system delivery segment as calculated by voltage level of service based on reported metered sales.



**Oncor Electric Delivery System  
2015 Analysis of System Losses**

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**Appendix A**

**Results of 2015 Oncor Integrated  
Power System Loss Analysis**



ONCOR 2015 LOSS ANALYSIS

ONCOR

EXHIBIT 1

SUMMARY OF COMPANY DATA

ONCOR ERCOT PEAK INPUT	22,679 MW
ANNUAL SYSTEM INPUT	106,435,000 MWH
ANNUAL SALES OUTPUT	102,972,872 MWH
SYSTEM LOSSES @ INPUT	3,462,128 or 3.25%
SYSTEM LOSSES @ OUTPUT	3,462,128 or 3.36%
SYSTEM LOAD FACTOR	53.6%

SUMMARY OF LOSSES - OUTPUT RESULTS

SERVICE	KV	--- MW ---	% TOTAL	--- MWH ---	% TOTAL
		Input		Input	
TRANS	345,138,69	0.0	0.00%	0	0.00%
			0.00%		0.00%
PRIM SUBS	25 TO 4	143.5	17.79%	607,273	17.54%
			0.63%		0.57%
PRIMARY	25 TO 4	299.7	37.15%	942,056	27.21%
			1.32%		0.89%
SECONDARY	120/240,to,477	363.6	45.07%	1,912,799	55.25%
			1.60%		1.80%
TOTAL		806.7	100.00%	3,462,128	100.00%
			3.56%		3.25%

SUMMARY OF LOSS FACTORS

SERVICE	KV	CUMMULATIVE SALES EXPANSION FACTORS			
		DEMAND (Peak)		ENERGY (Annual)	
		d	1/d	e	1/e
TOT TRANS	345,138,69	1.00000	1.00000	1.00000	1.00000
PRIM SUBS	25 TO 4	1.00637	0.99367	1.00574	0.99429
PRIMARY	25 TO 4	1.02019	0.98021	1.01506	0.98517
SECONDARY	120/240,to,477	1.03885	0.96261	1.03717	0.96416

ONCOR 2015 LOSS ANALYSIS

SUMMARY OF CONDUCTOR INFORMATION

EXHIBIT 2

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	--- MWH LOSSES ---		TOTAL
			LOAD	NO LOAD	
--- BULK ----- 765 KV OR GREATER -----					
TIE LINES	0.0	0.00%	0.000	0.000	0.000
<u>BULK TRANS</u>	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>
SUBTOT	0.0		0.000	0.000	0.000
--- TRANS ----- 69 KV TO 345.00 KV -----					
TIE LINES	0	0.00%	0.000	0.000	0.000
TRANS1	345 KV	0.0	0.00%	0.000	0.000
<u>TRANS2</u>	<u>69.138 KV</u>	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.000</u>
SUBTOT		0.0	0.000	0.000	0.000
--- SUBTRANS ----- NA KV TO NA KV -----					
TIE LINES	0	0.00%	0.000	0.000	0.000
SUBTRANS1	NA KV	0.0	0.00%	0.000	0.000
SUBTRANS2	NA KV	0.0	0.00%	0.000	0.000
<u>SUBTRANS3</u>	<u>NA KV</u>	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.000</u>
SUBTOT		0.0	0.000	0.000	0.000
PRIMARY LINES	73,142		298.542	0.865	299.407
SECONDARY LINES	25,260		37.758	0.000	37.758
SERVICES	48,694		63.739	12.039	75.777
<b>TOTAL</b>	<b>147,096</b>		<b>400.038</b>	<b>12.904</b>	<b>412.942</b>

--- MWH LOSSES ---		
LOAD	NO LOAD	TOTAL
0	0	0
<u>0</u>	<u>0</u>	<u>0</u>
0	0	0
0	0	0
<u>0</u>	<u>0</u>	<u>0</u>
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
935,904	7,578	943,483
87,940	0	87,940
170,703	105,458	276,161
<b>1,194,547</b>	<b>113,036</b>	<b>1,307,583</b>

ONCOR 2015 LOSS ANALYSIS

SUMMARY OF TRANSFORMER INFORMATION

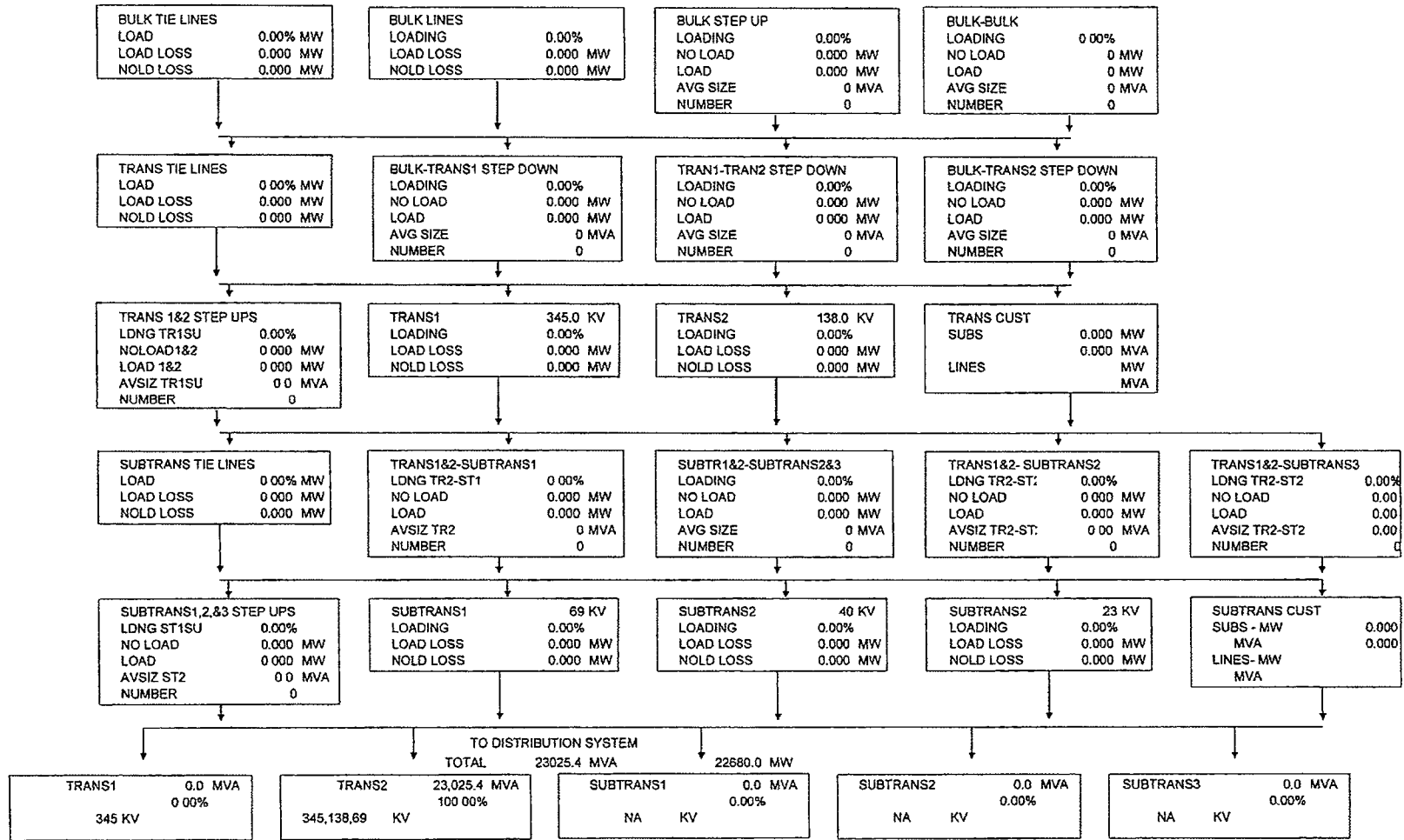
EXHIBIT 3

DESCRIPTION	KV CAPACITY		NUMBER TRANSFMR	AVERAGE SIZE	LOADING %	MVA LOAD	MW LOSSES			MWH LOSSES			
	VOLTAGE	MVA					LOAD	NO LOAD	TOTAL	LOAD	NO LOAD	TOTAL	
BULK STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
BULK - BULK	NA	0.0	0	0.0	0.00%	0	0	0.000	0.000	0	0	0	
BULK - TRANS1	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
BULK - TRANS2	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 - TRANS2	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS1	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS2	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS3	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2 STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS1	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS2	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS3	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1 STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2 STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN3 STEP-UP	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1-SUBTRAN2	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1-SUBTRAN3	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2-SUBTRAN3	NA	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
DISTRIBUTION SUBSTATIONS													
TRANS1 - NA	25,21.6	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 - NA	13.2,12.5	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 - NA	4.16	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2 - 345,138,69	25,21.6	8,592.0	319	26.9	89.14%	7,659	30.580	14.409	44.989	102,494	95,074	197,567	
TRANS2 - 345,138,69	13.2,12.5	17,575.0	1149	15.3	86.73%	15,244	62.910	34.324	97.234	162,770	238,681	401,451	
TRANS2 - 345,138,69	4.16	480.0	95	5.1	25.59%	123	0.270	0.933	1.203	699	7,672	8,371	
SUBTRAN1- NA	25,21.6	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1- NA	13.2,12.5	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1- NA	4.16	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2- NA	25,21.6	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2- NA	13.2,12.5	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2- NA	4.16	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN3- NA	25,21.6	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN3- NA	13.2,12.5	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN3- NA	4.16	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
PRIMARY - PRIMARY		188.5	65	2.9	55.00%	104	0.402	0.356	0.759	984	3,121	4,104	
LINE TRANSFMR		57,484.0	958,829	60.0	38.61%	22,194	98.479	151.409	249.888	222,724	1,326,342	1,549,066	
TOTAL		84,320	960,457				192.841	201.431	394.072	489,670	1,670,890	2,160,560	

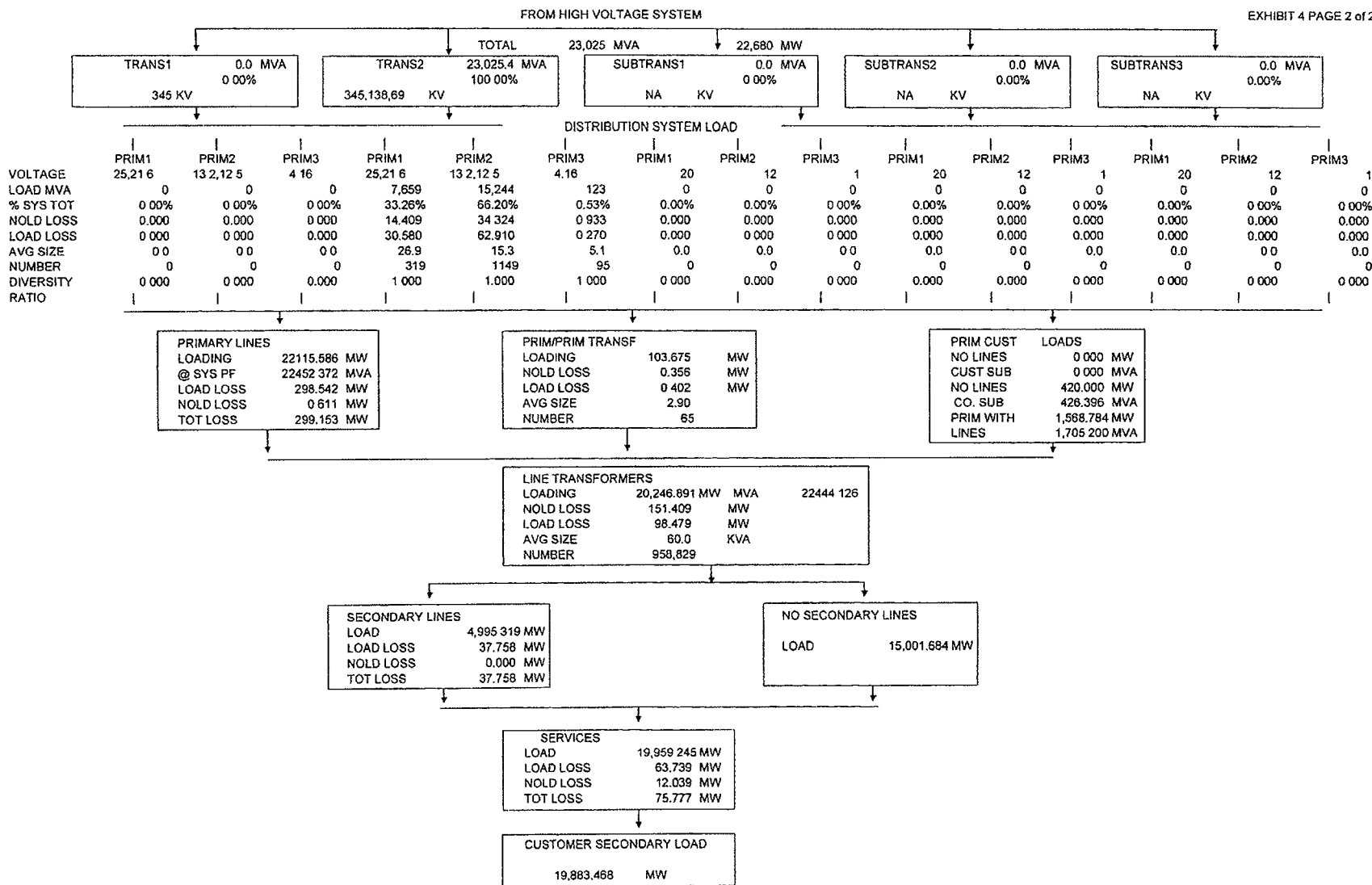
SUMMARY OF LOSSES DIAGRAM - DEMAND MODEL - SYSTEM PEAK

22679 MW

EXHIBIT 4 PAGE 1 of 2







2015

ONCOR 2015 LOSS ANALYSIS

SUMMARY of SALES and CALCULATED LOSSES

EXHIBIT 5

LOSS # AND LEVEL	MW LOAD	NO LOAD +	LOAD =	TOT LOSS	EXP FACTOR	CUM EXP FAC	MWH LOAD	NO LOAD +	LOAD =	TOT LOSS	EXP FACTOR	CUM EXP FAC
1 BULK XFMMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0
2 BULK LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
3 TRANS1 XFMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
4 TRANS1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
5 TRANS2TR1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
6 TRANS2BLK SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
7 TRANS2 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
TOTAL TRAN	0.0	0.00	0.00	0.00	1.000000	1.000000	0	0	0	0	1.000000	1.000000
8 STR1BLK SD												
9 STR1T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
10 SRT1T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
11 SUBTRANS1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
12 STR2T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
13 STR2T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
14 STR2S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
15 SUBTRANS2 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
16 STR3T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
17 STR3T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
18 STR3S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
19 STR3S2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
20 SUBTRANS3 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
21 SUBTRANS TOTAL	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
DISTRIBUTION SUBST												
TRANS1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
TRANS2	22,678.7	49.67	93.76	143.43	1.006364	1.006364	106,435,666	341,427	265,963	607,390	1.0057394	1.0057394
SUBTR1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
SUBTR2	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
SUBTR3	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
WEIGHTED AVERAGE	22,678.7	49.67	93.76	143.43	1.006364	1.006364	106,435,666	341,427	265,963	607,390	1.0057394	1.0057394
PRIMARY INTRCHNGE	0.0				0.000000		0				0.000000	
PRIMARY LINES	22,115.2	0.61	298.94	299.56	1.013731	1.020183	102,610,160	5,350	936,888	942,238	1.0092678	1.0150604
LINE TRANSF	20,246.9	151.41	98.48	249.89	1.012496	1.032932	89,713,392	1,326,342	222,724	1,549,066	1.0175702	1.0328952
SECONDARY	19,997.0	0.00	37.76	37.76	1.001892	1.034886	88,164,325	0	87,940	87,940	1.0009984	1.0339265
SERVICES	19,959.2	12.04	63.74	75.78	1.003811	1.038830	88,076,386	105,458	170,703	276,161	1.0031453	1.0371785
TOTAL SYSTEM		213.72	592.68	806.40			1,778,576	1,684,217	3,462,794			

ONCOR 2015 LOSS ANALYSIS

DEVELOPMENT of LOSS FACTORS  
UNADJUSTED  
DEMAND

EXHIBIT 6

LOSS FACTOR LEVEL	CUSTOMER SALES MW	CALC LOSS TO LEVEL	SALES MW @ SUB INPUT	CUM PEAK EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	0.0	0.0	0.0	1.00000	1.00000
TOTAL TRANS	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS	0.0	0.0	0.0	1.00000	1.00000
PRIM SUBS	420.0	2.7	422.7	1.00636	0.99368
PRIM LINES	1,568.8	31.7	1,600.4	1.02018	0.98022
SECONDARY	<u>19,883.5</u>	<u>772.1</u>	<u>20,655.5</u>	1.03883	0.96262
TOTALS	21,872.3	806.4	22,678.7		

DEVELOPMENT of LOSS FACTORS  
UNADJUSTED  
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	CALC LOSS TO LEVEL	SALES MWH @ SUB INPUT	CUM ANNUAL EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0	0	0	0.00000	0.00000
TRANS SUBS	0	0	0	0.00000	0.00000
TRANS LINES	0	0	0	1.00000	1.00000
TOTAL TRANS	0	0	0	0.00000	0.00000
SUBTRANS	0	0	0	1.00000	1.00000
PRIM SUBS	3,218,116	18,470	3,236,586	1.00574	0.99429
PRIM LINES	11,954,531	180,040	12,134,571	1.01506	0.98516
SECONDARY	<u>87,800,225</u>	<u>3,264,284</u>	<u>91,064,509</u>	1.03718	0.96415
TOTALS	102,972,872	3,462,794	106,435,666		

ESTIMATED VALUES AT DIST SUB INPUT

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	0
TRANS LINES	0.00	0
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	0.00	0
PRIM SUBS	422.67	3,236,586
PRIM LINES	1,600.45	12,134,571
SECONDARY	20,655.54	91,064,509
SUBTOTAL	22,678.66	106,435,666
ACTUAL ENERGY	22,679.00	106,435,000
MISMATCH	(0.34)	666
% MISMATCH	0.00%	0.00%

ONCOR 2015 LOSS ANALYSIS

DEVELOPMENT of LOSS FACTORS  
ADJUSTED  
DEMAND

EXHIBIT 7

LOSS FACTOR LEVEL	CUSTOMER SALES MW	SALES ADJUST	CALC LOSS TO LEVEL	SALES MW @ SUB INPUT	CUM PEAK EXPANSION FACTORS	
	a	b	c	d	e	f=1/e
BULK LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	0.0	0.0	0.0	0.0	1.00000	1.00000
TOTAL TRANS	0.0	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS	0.0	0.0	0.0	0.0	1.00000	1.00000
PRIM SUBS	420.0	0.0	2.7	422.7	1.00637	0.99367
PRIM LINES	1,568.8	0.0	31.7	1,600.5	1.02019	0.98021
SECONDARY	<u>19,883.5</u>	<u>0.0</u>	772.4	<u>20,655.9</u>	1.03885	0.96261
			806.7			
TOTALS	21,872.3	0.0	806.7	22,679.0	1.03688	0.96443

DEVELOPMENT of LOSS FACTORS  
ADJUSTED  
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	SALES ADJUST	CALC LOSS TO LEVEL	SALES MWH @ SUB INPUT	CUM ANNUAL EXPANSION FACTORS	
	a	b	c	d	e	f=1/e
BULK LINES	0	0	0	0	0.00000	0.00000
TRANS SUBS	0	0	0	0	0.00000	0.00000
TRANS LINES	0	0	0	0	1.00000	1.00000
TOTAL TRANS	0	0	0	0	0.00000	0.00000
SUBTRANS	0	0	0	0	1.00000	1.00000
PRIM SUBS	3,218,116	0	18,466	3,236,582	1.00574	0.99429
PRIM LINES	11,954,531	0	180,005	12,134,536	1.01506	0.98517
SECONDARY	<u>87,800,225</u>	<u>0</u>	3,263,656	<u>91,063,881</u>	1.03717	0.96416
			3,462,128			
TOTALS	102,972,872	0	3,462,128	106,435,000	1.03362	0.96747

ESTIMATED VALUES AT DIST SUB INPUT

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	0
TRANS LINES	0.00	0
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	0.00	0
PRIM SUBS	422.67	3,236,582
PRIM LINES	1,600.46	12,134,536
SECONDARY	20,655.86	91,063,881
	22,679.00	106,435,000
ACTUAL ENERGY	22,679.00	106,435,000
MISMATCH	(0.00)	(0)
% MISMATCH	0.00%	0.00%

ONCOR 2015 LOSS ANALYSIS

Adjusted Losses and Loss Factors by Facility

EXHIBIT 8

Unadjusted Losses by Segment				
	MW	Unadjusted	MWH	Unadjusted
Service Drop Losses	75.78	75.78	276,161	276,161
Secondary Losses	37.76	37.76	87,940	87,940
Line Transformer Losses	249.89	249.89	1,549,066	1,549,066
Primary Line Losses	299.56	299.56	942,238	942,238
Distribution Substation Losses	143.43	143.43	607,390	607,390
Subtransmission Losses	0.00	0.00	0	0
<u>Transmission System Losses</u>	<u>0.00</u>	<u>0.00</u>	<u>0</u>	<u>0</u>
Total	806.40	806.40	3,462,794	3,462,794

Mismatch Allocation by Segment				
	MW		MWH	Note adjusting
Service Drop Losses	-0.03		53	53
Secondary Losses	-0.02		17	17
Line Transformer Losses	-0.11		298	298
Primary Line Losses	-0.13		181	181
Distribution Substation Losses	-0.06		117	117
Subtransmission Losses	0.00		0	0
<u>Transmission System Losses</u>	<u>0.00</u>		<u>0</u>	<u>0</u>
Total	-0.34		666	666

Adjusted Losses by Segment				
	MW	% of Total	MWH	% of Total
Service Drop Losses	75.81	9.4%	276,108	8.0%
Secondary Losses	37.77	4.7%	87,923	2.5%
Line Transformer Losses	249.99	31.0%	1,548,768	44.7%
Primary Line Losses	299.68	37.1%	942,056	27.2%
Distribution Substation Losses	143.49	17.8%	607,273	17.5%
Subtransmission Losses	0.00	0.0%	0	0.0%
<u>Transmission System Losses</u>	<u>0.00</u>	<u>0.0%</u>	<u>0</u>	<u>0.0%</u>
Total	806.75	100.0%	3,462,128	100.0%

Loss Factors by Segment		
	MW	MWH
Retail Sales from Service Drops	19,883.47	87,800,225
<u>Adjusted Service Drop Losses</u>	<u>75.81</u>	<u>276,108</u>
Input to Service Drops	19,959.28	88,076,333
Service Drop Loss Factor	1.00381	1.00314
Output from Secondary	19,959.28	88,076,333
<u>Adjusted Secondary Losses</u>	<u>37.77</u>	<u>87,923</u>
Input to Secondary	19,997.05	88,164,255
Secondary Conductor Loss Factor	1.00189	1.00100
Output from Line Transformers	19,997.05	88,164,255
<u>Adjusted Line Transformer Losses</u>	<u>249.99</u>	<u>1,548,768</u>
Input to Line Transformers	20,247.05	89,713,024
Line Transformer Loss Factor	1.01260	1.01757
Secondary Composite	1.01829	1.02179
Retail Sales from Primary	1,454.78	11,494,341
Req. Whls Sales from Primary	114.00	460,190
<u>Input to Line Transformers</u>	<u>20,247.05</u>	<u>89,713,024</u>
Output from Primary Lines	21,815.83	101,667,555
<u>Adjusted Primary Line Losses</u>	<u>299.68</u>	<u>942,056</u>
Input to Primary Lines	22,115.51	102,609,611
Primary Line Loss Factor	1.01374	1.00927
Output PI from Distribution Substations	22,115.51	102,609,611
Req. Whls Sales from Substations	73.00	305,471
Retail Sales from Substations	347.00	2,912,645
Total Output from Distribution Substations	22,535.51	105,827,727
<u>Adjusted Distribution Substation Losses</u>	<u>143.49</u>	<u>607,273</u>
Input to Distribution Substations	22,679.00	106,435,000
Distribution Substation Loss Factor	1.00637	1.00574
Retail Sales at from SubTransmission	0.00	0
Req. Whls Sales from SubTransmission	0.00	0
<u>Input to Distribution Substations</u>	<u>0.00</u>	<u>0</u>
Output from SubTransmission	0.00	0
<u>Adjusted SubTransmission System Losses</u>	<u>0.00</u>	<u>0</u>
Input to SubTransmission	0.00	0
SubTransmission Loss Factor	1.00000	1.00000
<u>Input to Distribution Substations</u>	<u>22,678.66</u>	<u>106,435,666</u>
Retail Sales at from Transmission	0.00	0
Req. Whls Sales from Transmission	0.00	0
<u>Input Subtransmission</u>	<u>0.00</u>	<u>0</u>
Output from Transmission	22,679.00	106,435,000
<u>Adjusted Transmission System Losses</u>	<u>0.00</u>	<u>0</u>
Input to Transmission	22,679.00	106,435,000
Transmission Loss Factor	1.00000	1.00000

DEMAND MW			SUMMARY OF LOSSES AND LOSS FACTORS BY DELIVERY VOLTAGE					EXHIBIT 9
			SALES	LOSSES	SECONDARY	PRIMARY	SUBSTATION	PAGE 1 of 2
SERVICE LEVEL		MW						
1	SERVICES							
2	SALES		19,883.47		19,883.5			
3	LOSSES			75.8	75.8			
4	INPUT				19,959.3			
5	EXPANSION FACTOR	1.00381						
6	SECONDARY							
7	SALES							
8	LOSSES			37.8	37.8			
9	INPUT				19,997.1			
10	EXPANSION FACTOR	1.00189						
11	LINE TRANSFORMER							
12	SALES							
13	LOSSES			250.0	250.0			
14	INPUT				20,247.0			
15	EXPANSION FACTOR	1.01250						
16	PRIMARY							
17	SECONDARY				20,247.0			
18	SALES		1568.78			1,568.8		
19	LOSSES			299.7	278.1	21.6		
20	INPUT							
21	EXPANSION FACTOR	1.01374						
22	SUBSTATION							
23	PRIMARY				20,525.2	1,590.3		
24	SALES		420.0				420.0	
25	LOSSES			143.5	130.7	10.1	2.7	
26	INPUT				20,655.9	1,600.5	422.7	
27	EXPANSION FACTOR	1.00637						
28	SUB-TRANSMISSION							
29	DISTRIBUTION SUBS				17,309.6			
30	SALES		0.00			832.2	0.0	
31	LOSSES			0.0	0.0	0.0	0.0	
32	INPUT				17,309.6	832.2	0.0	
33	EXPANSION FACTOR	1.00000						
34	TRANSMISSION							
35	SUBTRANSMISSION				17,309.6	832.2		
36	DISTRIBUTION SUBS				3,346.3	768.2	422.7	
37	SALES		0.00					
38	LOSSES			0.0	0.0	0.0	0.0	
39	INPUT				20,655.9	1,600.5	422.7	
40	EXPANSION FACTOR	1.00000						
41	TOTALS	LOSSES	CALCULATED	806.7	772.4	31.7	2.7	
			SCALED	806.7	772.4	31.7	2.7	
42		% OF TOTAL		100%	95.74%	3.93%	0.33%	
43		SALES	21,872.3		19,883.5	1,568.8	420.0	
44		% OF TOTAL	100.00%		90.91%	7.17%	1.92%	
45		INPUT	22,679.0		20,655.9	1,600.5	422.7	
46	CUMMULATIVE EXPANSION LOSS FACTORS		1.03688	1.03885	1.02019	NA		
	(from meter to system input)		SYSTEM					

ENERGY MWH			SUMMARY OF LOSSES AND LOSS FACTORS BY DELIVERY VOLTAGE					EXHIBIT 9 PAGE 2 of 2
SERVICE LEVEL	SALES	LOSSES	SECONDARY	PRIMARY	SUBSTATION			
1 SERVICES								
2 SALES	87,800,225		87,800,225					
3 LOSSES		276,108	276,108					
4 INPUT			88,076,333					
5 EXPANSION FACTOR	1.00314							
6 SECONDARY								
7 SALES			87,923	87,923				
8 LOSSES			88,164,255					
9 INPUT								
10 EXPANSION FACTOR	1.00100							
11 LINE TRANSFORMER								
12 SALES			1,548,768	1,548,768				
13 LOSSES			89,713,024					
14 INPUT								
15 EXPANSION FACTOR	1.01757							
16 PRIMARY								
17 SECONDARY			89,713,024					
18 SALES	11,954,531.000			11,954,531				
19 LOSSES		942,056	831,285	110,771				
20 INPUT								
21 EXPANSION FACTOR	1.00927							
22 SUBSTATION								
23 PRIMARY			90,544,309	12,065,302				
24 SALES	3,218,116				3,218,116			
25 LOSSES		607,273	519,572	69,234	18,467			
26 INPUT			91,063,881	12,134,537	3,236,583			
27 EXPANSION FACTOR	1.00674							
28 SUB-TRANSMISSION								
29 DISTRIBUTION SUBS			81,320,045	4,805,277	0.000			
30 SALES	0				0.000			
31 LOSSES		0	0	0	0.000			
32 INPUT			81,320,045	4,805,277				
33 EXPANSION FACTOR	1.00000							
34 TRANSMISSION								
35 SUBTRANSMISSION			81,320,045	4,805,277				
36 DISTRIBUTION SUBS			9,743,835	7,329,260	3,236,583			
37 SALES	0							
38 LOSSES		0	0	0	0			
39 INPUT			91,063,881	12,134,537	3,236,583			
40 EXPANSION FACTOR	1.00000							
41 TOTALS	LOSSES	Calculated	3,462,128	3,263,656	180,006	18,467		
		Scated	3,462,128	3,263,656	180,005	18,467		
42	% OF TOTAL		100%	94.27%	5.20%	0.53%		
43	SALES	102,972,872		87,800,225	11,954,531	3,218,116		
44	% OF TOTAL	100.00%		85.27%	11.61%	3.13%		
45	INPUT	106,435,000		91,063,881	12,134,536	3,236,583		
46	CUMMULATIVE EXPANSION LOSS FACTORS		1.03362	1.03717	1.01506	NA		
	(from meter to system input)		SYSTEM					

**Oncor Electric Delivery System  
2015 Analysis of System Losses**

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**Appendix B**

**Discussion of Hoebel Coefficient**





## Oncor Electric Delivery System 2015 Analysis of System Losses

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### COMMENTS ON THE HOEBEL COEFFICIENT

The Hoebel constant represents an established industry standard relationship between peak losses and average losses and is used in a loss study to estimate energy losses from peak demand losses. H. F. Hoebel described this relationship in his article, "Cost of Electric Distribution Losses," Electric Light and Power, March 15, 1959.

Within any loss evaluation study, peak demand losses can readily be calculated given equipment resistance and approximate loading. Energy losses, however, are much more difficult to determine given their time-varying nature. This difficulty can be reduced by the use of an equation which relates peak load losses (demand) to average losses (energy). Once the relationship between peak and average losses is known, average losses can be estimated from the known peak load losses.

Within the electric utility industry, the relationship between peak and average losses is known as the loss factor. For definitional purposes, loss factor is the ratio of the average power loss to the peak load power loss, during a specified period of time. This relationship is expressed mathematically as follows:

$$\underline{(1) F_{LS} \cong A_{LS} \div P_{LS}}$$

where:	$F_{LS}$	=	Loss Factor
	$A_{LS}$	=	Average Losses
	$P_{LS}$	=	Peak Losses

The loss factor provides an estimate of the degree to which the load loss is maintained throughout the period in which the loss is being considered. In other words, loss factor is the ratio of the actual kWh losses incurred to the kWh losses which would have occurred if full load had continued throughout the period under study.

Examining the loss factor expression in light of a similar expression for load factor indicates a high degree of similarity. The mathematical expression for load factor is as follows:

$$\underline{(2) F_{LD} \cong A_{LD} \div P_{LD}}$$

where:	$F_{LD}$	=	Load Factor
	$A_{LD}$	=	Average Load
	$P_{LD}$	=	Peak Load

This load factor result provides an estimate of the degree to which the load loss is maintained throughout the period in which the load is being considered. Because of the similarities in definition, the loss factor is sometimes called the "load factor of losses." While the definitions are similar, a strict equating of the two factors cannot be made. There does exist, however, a relationship between these two factors which is dependent upon the shape of the load duration curve. Since resistive losses vary as the square of the load, it can be shown mathematically that the loss factor can vary between the extreme limits of load factor and load factor squared. The

## Oncor Electric Delivery System 2015 Analysis of System Losses

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relationship between load factor and loss factor has become an industry standard and is as follows:

$$(3) \ F_{LS} \cong H \cdot F_{LD}^2 + (1-H) \cdot F_{LD}$$

where:  $F_{LS}$  = Loss Factor  
 $F_{LD}$  = Load Factor  
 $H$  = Hoebel Coefficient

As noted in the attached article, the suggested value for H (the Hoebel coefficient) is 0.7. The exact value of H will vary as a function of the shape of the utility's load duration curve. In recent years, values of H have been computed directly for a number of utilities based on EEI load data. It appears on this basis, the suggested value of 0.7 should be considered a lower bound and that values approaching unity may be considered a reasonable upper bound. Based on experience, values of H have ranged from approximately 0.85 to 0.95. The standard default value of 0.9 is generally used.

Inserting the Hoebel coefficient estimate gives the following loss factor relationship using Equation (3):

$$(4) \ F_{LS} \cong 0.90 \cdot F_{LD}^2 + 0.10 \cdot F_{LD}$$

Once the Hoebel constant has been estimated and the load factor and peak losses associated with a piece of equipment have been estimated, one can calculate the average, or energy losses as follows:

$$(5) \ A_{LS} \cong P_{LS} * [H \cdot F_{LD}^2 + (1-H) \cdot F_{LD}]$$

where:  $A_{LS}$  = Average Losses  
 $P_{LS}$  = Peak Losses  
 $H$  = Hoebel Coefficient  
 $F_{LD}$  = Load Factor

Loss studies use this equation to calculate energy losses at each major voltage level in the analysis.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ADJUSTMENTS TO TEST YEAR LOAD DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021  
SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.3.1.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
DC TIE LOAD DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.3.2.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ADJUSTED TEST YEAR LOAD DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.4.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ADJUSTMENTS TO OPERATING STATISTICS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-1.5.

See Schedule II-H-1.2 for supporting documentation.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MODEL INFORMATION  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-2.1.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
DATA FOR MODELS IN II-H-2.1  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-2.2.



PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
MODEL VARIABLES  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-2.3.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
CUSTOMER INFORMATION  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-3.1.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
CUSTOMER ADJUSTMENTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-3.2.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
CUSTOMER ADJUSTMENT DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-3.3.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ANALYTIC MDMS METER MAX INTERVAL DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

Residential

Line No.	kW Level (a)	Bills		Monthly Hourly Demand		Usage	
		Number (b)	Cumulative (c)	kW (d)	Cumulative (e)	kWh (f)	Cumulative (g)
1	0	562,082	562,082	-	-	27,285,372	27,285,372
2	1	742,310	1,304,392	742,310	742,310	139,350,362	166,635,734
3	2	1,162,216	2,466,608	2,324,432	3,066,742	410,038,679	576,674,413
4	3	2,484,863	4,951,471	7,454,589	10,521,331	1,163,747,235	1,740,421,648
5	4	4,422,750	9,374,221	17,691,000	28,212,331	2,632,569,786	4,372,991,434
6	5	5,424,624	14,798,845	27,123,120	55,335,451	4,168,147,187	8,541,138,621
7	6	5,475,947	20,274,792	32,855,682	88,191,133	5,329,714,349	13,870,852,970
8	7	4,824,298	25,099,090	33,770,086	121,961,219	5,742,549,246	19,613,402,216
9	8	3,757,280	28,856,370	30,058,240	152,019,459	5,285,297,116	24,898,699,332
10	9	2,735,174	31,591,544	24,616,566	176,636,025	4,379,268,280	29,277,967,612
11	10	1,853,640	33,445,184	18,536,400	195,172,425	3,337,516,813	32,615,484,425
12	11	1,283,266	34,728,450	14,115,926	209,288,351	2,514,656,179	35,130,140,604
13	12	864,079	35,592,529	10,368,948	219,657,299	1,841,389,573	36,971,530,177
14	13	604,177	36,196,706	7,854,301	227,511,600	1,373,502,961	38,345,033,138
15	14	435,207	36,631,913	6,092,898	233,604,498	1,045,357,710	39,390,390,848
16	15	329,489	36,961,402	4,942,335	238,546,833	822,331,511	40,212,722,359
17	16	251,154	37,212,556	4,018,464	242,565,297	649,601,818	40,862,324,177
18	17	183,946	37,396,502	3,127,082	245,692,379	502,415,446	41,364,739,623
19	18	137,905	37,534,407	2,482,290	248,174,669	394,537,899	41,759,277,522
20	19	104,701	37,639,108	1,989,319	250,163,988	311,689,581	42,070,967,103
21	20	80,063	37,719,171	1,601,260	251,765,248	248,674,712	42,319,641,815
22	21	61,873	37,781,044	1,299,333	253,064,581	200,403,942	42,520,045,757
23	22	46,408	37,827,452	1,020,976	254,085,557	158,779,135	42,678,824,892
24	23	35,137	37,862,589	808,151	254,893,708	126,089,428	42,804,914,320
25	24	27,051	37,889,640	649,224	255,542,932	100,964,657	42,905,878,977
26	25	21,003	37,910,643	525,075	256,068,007	82,762,384	42,988,641,361
27	26	16,047	37,926,690	417,222	256,485,229	67,158,085	43,055,799,446
28	27	12,136	37,938,826	327,672	256,812,901	53,415,324	43,109,214,770
29	28	9,401	37,948,227	263,228	257,076,129	43,564,191	43,152,778,961
30	29	7,269	37,955,496	210,801	257,286,930	35,470,531	43,188,249,492
31	30	5,755	37,961,251	172,650	257,459,580	29,519,444	43,217,768,936
32							
33	Booked	38,792,738		Calculated	266,729,776	Booked	44,773,885,786
34							1.036006413
35							
36	Adjustment for Customer Growth						
37		306,658			2,139,088		359,072,373
38							0.008019683
39							
40	Weather Adjustment						
41		-			5,506,766		924,378,612
42							0.020645486
43							
44	Total Adjusted Billing Units						
45		39,099,396			274,375,630		46,057,336,770

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ANALYTIC MDMS METER MAX INTERVAL DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

Secondary Small

Line No.	kW Level	Bills		Monthly 15-Min Demand		Usage	
		Number	Cumulative	kW	Cumulative	kWh	Cumulative
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	0	1,038,999	1,038,999	0	0	72,339,696	72,339,696
2	1	748,178	1,787,177	748,178	748,178	238,169,295	310,508,991
3	2	330,215	2,117,392	660,430	1,408,608	160,948,293	471,457,284
4	3	222,054	2,339,446	666,162	2,074,770	145,887,055	617,344,339
5	4	181,038	2,520,484	724,152	2,798,922	150,066,158	767,410,497
6	5	156,821	2,677,305	784,105	3,583,027	156,283,111	923,693,608
7	6	135,992	2,813,297	815,952	4,398,979	159,503,732	1,083,197,340
8	7	107,784	2,921,081	754,488	5,153,467	146,797,990	1,229,995,330
9	8	79,821	3,000,902	638,568	5,792,035	122,393,261	1,352,388,591
10	9	56,243	3,057,145	506,187	6,298,222	90,971,580	1,443,360,171
11	10	35,263	3,092,408	352,630	6,650,852	54,349,049	1,497,709,220
12							
13	Booked	3,607,089		Calculated	8,152,793	Booked	1,835,932,149
14							1.225826832
15							
16	Adjustment for Customer Growth						
17		46,071			105,442		23,744,467
18							0.012933194
19							
20	Weather Adjustment						
21		-			87,998		19,816,236
22							0.010793556
23							
24	Total Adjusted Billing Units						
25		3,653,160			8,346,232		1,879,492,852

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
ANALYTIC MDMS METER MAX INTERVAL DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

Primary Small

Line No.	kW Level (a)	Bills		Monthly 15-Min Demand		Usage	
		Number (b)	Cumulative (c)	kW (d)	Cumulative (e)	kWh (f)	Cumulative (g)
1	0	8,189	8,189	0	0	285,716	285,716
2	1	2,211	10,400	2,211	2,211	808,985	1,094,701
3	2	1,555	11,955	3,110	5,321	987,798	2,082,499
4	3	1,378	13,333	4,134	9,455	1,291,562	3,374,061
5	4	1,584	14,917	6,336	15,791	2,027,554	5,401,615
6	5	1,608	16,525	8,040	23,831	2,390,656	7,792,271
7	6	1,875	18,400	11,250	35,081	3,131,331	10,923,602
8	7	1,756	20,156	12,292	47,373	3,338,312	14,261,914
9	8	1,260	21,416	10,080	57,453	2,831,389	17,093,303
10	9	876	22,292	7,884	65,337	2,066,804	19,160,107
11	10	257	22,549	2,570	67,907	637,564	19,797,671
12							
13	Booked	36,713		Calculated	94,194	Booked	27,461,549
14							1.38711008
15							
16	Adjustment for Customer Growth						
17		499			1,248		363,719
18							0.013244668
19							
20	Weather Adjustment						
21		-			0		0
22							0
23							
24	Total Adjusted Billing Units						
25		37,212			95,442		27,825,268

**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
OTHER NON-ELECTRIC REVENUE  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

Line No.	Acct No.	Detail of Miscellaneous Other Revenue	Distribution Rev Credit
	(a)	(b)	(c)
1	450	Forfeited Discounts	\$ 1,070,706
2			
3	451	Miscellaneous Service Revenue	\$ 456,565
4			
5	454	Rents from Pole Contacts	\$ 8,281,656
6		Rents from Fiber Optics	\$ 1,059,911
7		Rents from Antenna Leases	\$ 16,700
8		Rents from Property	
9			
10	456	Other Revenue - Other	
11		CIAC Gross Up	\$ 5,189,025
12		Pro Rata/Duel Feed	\$ 329,942
13		Tampering - TDSP energy portion of tampering	\$ 177,841
14			
15	456	Other Revenue - Engineering & Operations	
16		Facilities studies, interconnection studies, DG studies	\$ 390,000
17		Total - Non-Electric Revenue	\$ 16,972,346

Note: See WP/II-E-5



PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
REVENUE IMPACT DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

LINE NO.		
1	<b>Outdoor Lighting Revenue</b>	<b>\$10,691,536 *</b>
2		
3	<b>Street Lighting Revenue</b>	
4		
5	Non-Metered Facilities	
6	Adjusted Lighting @ Present Rates	
7		
8	POD Charge	\$333,012
9		
10	Schedule A	\$33,517,447
11	Schedule B	\$3,416,110
12	Schedule C	\$10,078
13	Schedule D	\$1,433,568
14	LED - Schedule A	\$10,342,178
15	Rectangular	\$110,017
16	Post Top	\$13,515
17	Incandescent	\$2,846
18	Historical	<u>\$45,686</u>
19	Facilities Charge	\$48,891,445
20		
21	Total	\$49,224,457 *

\*Schedule II-H-4.1 Page 9

This revenue reflects the change in lights from Non-LED lights to LED lights.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
REVENUE CALCULATION METHODOLOGIES  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-4.2.

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
WEATHER STATION DATA  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

There are no supporting workpapers for Schedule II-H-5.1.

**PUC DOCKET NO:  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**RESIDENTIAL MONTHLY WEIGHTS**

Line No.	(a) Weather Station	(b) Jan	(c) Feb	(d) Mar	(e) Apr	(f) May	(g) Jun	(h) Jul	(i) Aug	(j) Sep	(k) Oct	(l) Nov	(m) Dec	(n) Annual
1	Dallas-Fort Worth	68.7%	68.9%	69.2%	69.2%	69.6%	70.3%	71.0%	70.8%	70.6%	70.7%	69.1%	68.4%	69.9%
2	Midland-Odessa	5.7%	5.6%	5.5%	5.6%	5.9%	5.7%	5.6%	5.5%	5.4%	5.2%	5.8%	5.8%	5.6%
3	Lufkin	3.0%	3.0%	2.7%	2.8%	2.7%	2.7%	2.5%	2.5%	2.6%	2.6%	2.8%	3.0%	2.7%
4	Abilene	1.5%	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.1%	1.4%	1.5%	1.3%
5	Sherman-Denison	2.7%	2.8%	2.8%	2.6%	2.3%	2.2%	2.3%	2.4%	2.3%	2.4%	2.5%	2.7%	2.5%
6	Killeen-Temple	5.3%	5.1%	5.1%	4.9%	4.7%	4.5%	4.3%	4.3%	4.4%	4.5%	4.9%	5.1%	4.7%
7	Waco	3.9%	4.0%	4.0%	3.8%	3.6%	3.5%	3.5%	3.6%	3.7%	3.8%	3.9%	3.9%	3.7%
8	Wichita Falls.	2.0%	2.0%	2.0%	1.9%	1.9%	1.8%	1.9%	1.9%	1.9%	1.8%	1.9%	2.0%	1.9%
9	Longview	3.9%	3.9%	3.8%	3.8%	3.6%	3.6%	3.4%	3.5%	3.5%	3.5%	3.6%	3.9%	3.6%
10	Austin	3.4%	3.3%	3.4%	4.2%	4.4%	4.5%	4.3%	4.3%	4.4%	4.4%	4.2%	3.7%	4.1%
11		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**SEASONAL WEIGHTS**

Line No.	(a) Weather Station	Nov to Mar HDD	May to Sep CDD
16	Dallas-Fort Worth	68.9%	70.5%
17	Midland-Odessa	5.7%	5.6%
18	Lufkin	2.9%	2.6%
19	Abilene	1.4%	1.2%
20	Sherman-Denison	2.7%	2.3%
21	Killeen-Temple	5.1%	4.5%
22	Waco	3.9%	3.6%
23	Wichita Falls.	2.0%	1.9%
24	Longview	3.8%	3.5%
25	Austin	3.6%	4.4%
26		100.0%	100.0%

**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**RESIDENTIAL MONTHLY WEIGHTS**

Line No.	(a) Weather Station	(b) Jan	(c) Feb	(d) Mar	(e) Apr	(f) May	(g) Jun	(h) Jul	(i) Aug	(j) Sep	(k) Oct	(l) Nov	(m) Dec	(n) Annual
1	Dallas-Fort Worth	68.7%	68.9%	69.2%	69.2%	69.6%	70.3%	71.0%	70.8%	70.6%	70.7%	69.1%	68.4%	69.9%
2	Midland-Odessa	5.7%	5.6%	5.5%	5.6%	5.9%	5.7%	5.6%	5.5%	5.4%	5.2%	5.8%	5.8%	5.6%
3	Lufkin	3.0%	3.0%	2.7%	2.8%	2.7%	2.7%	2.5%	2.5%	2.6%	2.6%	2.8%	3.0%	2.7%
4	Abilene	1.5%	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.1%	1.4%	1.5%	1.3%
5	Sherman-Denison	2.7%	2.8%	2.8%	2.6%	2.3%	2.2%	2.3%	2.4%	2.3%	2.4%	2.5%	2.7%	2.5%
6	Killeen-Temple	5.3%	5.1%	5.1%	4.9%	4.7%	4.5%	4.3%	4.3%	4.4%	4.5%	4.9%	5.1%	4.7%
7	Waco	3.9%	4.0%	4.0%	3.8%	3.6%	3.5%	3.5%	3.6%	3.7%	3.8%	3.9%	3.9%	3.7%
8	Wichita Falls.	2.0%	2.0%	2.0%	1.9%	1.9%	1.8%	1.9%	1.9%	1.9%	1.8%	1.9%	2.0%	1.9%
9	Longview	3.9%	3.9%	3.8%	3.8%	3.6%	3.6%	3.4%	3.5%	3.5%	3.5%	3.6%	3.9%	3.6%
10	Austin	3.4%	3.3%	3.4%	4.2%	4.4%	4.5%	4.3%	4.3%	4.4%	4.4%	4.2%	3.7%	4.1%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021

SPONSOR: D. E. NELSON

RESIDENTIAL MONTHLY WEIGHTS BY YEAR

Line No.	(a) Weather Station	(b) Year	(c) - (n)												(o) Annual
			(d) Jan	(e) Feb	(f) Mar	(g) Apr	(h) May	(i) Jun	(j) Jul	(k) Aug	(l) Sep	(m) Oct	(n) Nov	(o) Dec	
1	Dallas-Fort Worth	2018	69.4%	69.0%	70.0%	69.5%	69.7%	70.7%	71.8%	71.3%	70.5%	70.6%	69.1%	68.3%	70.2%
2	Dallas-Fort Worth	2019	68.2%	69.0%	69.5%	68.8%	69.6%	70.1%	70.6%	70.8%	70.9%	71.3%	68.9%	68.5%	69.9%
3	Dallas-Fort Worth	2020	68.4%	68.5%	68.3%	69.3%	69.6%	70.0%	70.4%	70.4%	70.5%	70.1%	69.2%	68.6%	69.6%
4	Dallas-Fort Worth	Total	68.7%	68.9%	69.2%	69.2%	69.6%	70.3%	71.0%	70.8%	70.6%	70.7%	69.1%	68.4%	69.9%
5															
6	Lufkin	2018	3.1%	3.0%	2.6%	2.9%	2.8%	2.6%	2.5%	2.5%	2.6%	2.7%	2.9%	3.1%	2.7%
7	Lufkin	2019	2.8%	3.0%	2.7%	2.8%	2.8%	2.8%	2.6%	2.5%	2.5%	2.4%	2.8%	2.9%	2.7%
8	Lufkin	2020	2.9%	2.9%	2.8%	2.7%	2.6%	2.6%	2.5%	2.5%	2.6%	2.6%	2.6%	2.9%	2.7%
9	Lufkin	Total	3.0%	3.0%	2.7%	2.8%	2.7%	2.7%	2.5%	2.5%	2.6%	2.6%	2.8%	3.0%	2.7%
10															
11	Austin	2018	3.3%	3.2%	3.4%	4.1%	4.2%	4.3%	4.0%	4.1%	4.4%	4.2%	4.0%	3.5%	3.9%
12	Austin	2019	3.4%	3.3%	3.3%	3.9%	4.4%	4.6%	4.4%	4.4%	4.3%	4.4%	4.1%	3.7%	4.0%
13	Austin	2020	3.6%	3.4%	3.6%	4.4%	4.6%	4.7%	4.5%	4.4%	4.5%	4.6%	4.5%	4.1%	4.3%
14	Austin	Total	3.4%	3.3%	3.4%	4.2%	4.4%	4.5%	4.3%	4.3%	4.4%	4.4%	4.2%	3.7%	4.1%
15															
16	Killeen	2018	5.3%	5.2%	5.0%	4.8%	4.6%	4.3%	4.1%	4.3%	4.4%	4.5%	4.8%	5.2%	4.7%
17	Killeen	2019	5.3%	5.2%	5.1%	4.9%	4.7%	4.6%	4.4%	4.3%	4.4%	4.4%	5.0%	5.1%	4.7%
18	Killeen	2020	5.2%	5.0%	5.2%	4.8%	4.8%	4.6%	4.4%	4.5%	4.5%	4.6%	5.0%	5.1%	4.8%
19	Killeen	Total	5.3%	5.1%	5.1%	4.9%	4.7%	4.5%	4.3%	4.3%	4.4%	4.5%	4.9%	5.1%	4.7%
20															
21	Longview	2018	4.0%	4.0%	3.7%	3.8%	3.7%	3.5%	3.4%	3.5%	3.6%	3.7%	3.8%	4.0%	3.7%
22	Longview	2019	3.8%	3.9%	3.8%	3.8%	3.7%	3.7%	3.5%	3.4%	3.5%	3.4%	3.6%	3.9%	3.6%
23	Longview	2020	3.9%	3.9%	3.9%	3.7%	3.5%	3.5%	3.5%	3.4%	3.4%	3.5%	3.5%	3.8%	3.6%
24	Longview	Total	3.9%	3.9%	3.8%	3.8%	3.6%	3.6%	3.4%	3.5%	3.5%	3.5%	3.6%	3.9%	3.6%
25															
26	Waco	2018	3.9%	4.1%	4.0%	3.7%	3.6%	3.5%	3.5%	3.7%	3.8%	3.8%	3.9%	3.9%	3.8%
27	Waco	2019	4.0%	4.0%	4.0%	3.9%	3.6%	3.6%	3.5%	3.5%	3.6%	3.7%	3.9%	3.9%	3.8%
28	Waco	2020	3.9%	3.8%	4.1%	3.7%	3.6%	3.5%	3.4%	3.6%	3.7%	3.7%	3.8%	3.7%	3.7%
29	Waco	Total	3.9%	4.0%	4.0%	3.8%	3.6%	3.5%	3.5%	3.6%	3.7%	3.8%	3.9%	3.9%	3.7%
30															
31	Abilene	2018	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.1%	1.4%	1.5%	1.3%
32	Abilene	2019	1.5%	1.4%	1.4%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.1%	1.4%	1.5%	1.3%
33	Abilene	2020	1.5%	1.5%	1.4%	1.3%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.3%	1.4%	1.3%
34	Abilene	Total	1.5%	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.1%	1.4%	1.5%	1.3%
35															
36	Wichita Falls	2018	2.0%	2.0%	2.1%	2.0%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.9%	2.0%	1.9%
37	Wichita Falls	2019	2.0%	2.0%	2.0%	2.0%	1.8%	1.7%	1.9%	1.9%	1.9%	1.8%	1.9%	2.0%	1.9%
38	Wichita Falls	2020	2.0%	2.0%	1.9%	1.9%	1.8%	1.8%	1.9%	1.9%	1.8%	1.8%	1.9%	2.0%	1.9%
39	Wichita Falls	Total	2.0%	2.0%	2.0%	1.9%	1.9%	1.8%	1.9%	1.9%	1.9%	1.8%	1.9%	2.0%	1.9%
40															
41	Midland Odessa	2018	5.0%	5.2%	5.1%	5.5%	5.8%	5.8%	5.3%	5.1%	5.2%	5.1%	5.8%	5.9%	5.4%
42	Midland Odessa	2019	6.1%	5.4%	5.3%	5.8%	5.8%	5.4%	5.8%	5.6%	5.4%	5.0%	5.9%	5.8%	5.6%
43	Midland Odessa	2020	6.0%	6.1%	6.0%	5.5%	5.9%	5.9%	5.9%	5.7%	5.5%	5.6%	5.7%	5.7%	5.8%
44	Midland Odessa	Total	5.7%	5.6%	5.5%	5.6%	5.9%	5.7%	5.6%	5.5%	5.4%	5.2%	5.8%	5.8%	5.6%
45															
46	Denison	2018	2.6%	2.8%	2.8%	2.6%	2.4%	2.2%	2.3%	2.4%	2.4%	2.4%	2.5%	2.7%	2.5%
47	Denison	2019	2.7%	2.8%	2.8%	2.7%	2.3%	2.2%	2.3%	2.3%	2.3%	2.3%	2.5%	2.7%	2.5%
48	Denison	2020	2.8%	2.8%	2.7%	2.5%	2.3%	2.1%	2.3%	2.4%	2.3%	2.3%	2.4%	2.6%	2.4%
49	Denison	Total	2.7%	2.8%	2.8%	2.6%	2.3%	2.2%	2.3%	2.4%	2.3%	2.4%	2.5%	2.7%	2.5%
50															
51	System	2018	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
52	System	2019	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
53	System	2020	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
54	System	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**SECONDARY SERVICE LESS THAN OR EQUAL TO 10 KW MONTHLY WEIGHTS**

Line No.	(a) Weather Station	(b) Jan	(c) Feb	(d) Mar	(e) Apr	(f) May	(g) Jun	(h) Jul	(i) Aug	(j) Sep	(k) Oct	(l) Nov	(m) Dec	(n) Annual
1	Dallas-Fort Worth	61.0%	59.4%	59.9%	60.2%	60.0%	60.0%	59.1%	59.2%	59.6%	60.7%	60.9%	60.8%	60.0%
2	Midland-Odessa	11.5%	13.2%	13.3%	13.2%	13.2%	12.2%	12.9%	12.4%	11.8%	11.4%	11.7%	11.7%	12.4%
3	Lufkin	3.7%	3.7%	3.5%	3.5%	3.6%	3.9%	3.9%	3.9%	3.9%	3.8%	3.6%	3.6%	3.7%
4	Abilene	3.0%	2.9%	2.8%	2.9%	2.9%	2.9%	3.1%	3.1%	3.0%	2.9%	3.0%	3.0%	3.0%
5	Sherman-Denison	3.3%	3.4%	3.3%	3.1%	3.1%	3.2%	3.3%	3.4%	3.4%	3.2%	3.2%	3.2%	3.3%
6	Killeen-Temple	3.4%	3.3%	3.3%	3.3%	3.3%	3.4%	3.3%	3.4%	3.5%	3.4%	3.4%	3.4%	3.4%
7	Waco	3.7%	3.7%	3.8%	3.7%	3.7%	3.8%	3.8%	3.9%	4.0%	4.0%	3.9%	3.8%	3.8%
8	Wichita Falls.	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%
9	Longview	4.3%	4.4%	4.2%	4.1%	4.2%	4.4%	4.5%	4.6%	4.7%	4.5%	4.2%	4.3%	4.4%
10	Austin	3.4%	3.4%	3.3%	3.4%	3.4%	3.4%	3.3%	3.4%	3.5%	3.5%	3.6%	3.5%	3.4%
11		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**SEASONAL WEIGHTS**

Line No.	Weather Station	Nov to Mar HDD	May to Sep CDD
16	Dallas-Fort Worth	60.4%	59.6%
17	Midland-Odessa	12.3%	12.5%
18	Lufkin	3.6%	3.8%
19	Abilene	2.9%	3.0%
20	Sherman-Denison	3.3%	3.3%
21	Killeen-Temple	3.4%	3.4%
22	Waco	3.8%	3.9%
23	Wichita Falls.	2.6%	2.6%
24	Longview	4.3%	4.5%
25	Austin	3.4%	3.4%
26		100.0%	100.0%



**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**SECONDARY SERVICE LESS THAN OR EQUAL TO 10 KW MONTHLY WEIGHTS**

Line No.	(a) Weather Station	(b) Jan	(c) Feb	(d) Mar	(e) Apr	(f) May	(g) Jun	(h) Jul	(i) Aug	(j) Sep	(k) Oct	(l) Nov	(m) Dec	(n) Annual
1	Dallas-Fort Worth	61.0%	59.4%	59.9%	60.2%	60.0%	60.0%	59.1%	59.2%	59.6%	60.7%	60.9%	60.8%	60.0%
2	Midland-Odessa	11.5%	13.2%	13.3%	13.2%	13.2%	12.2%	12.9%	12.4%	11.8%	11.4%	11.7%	11.7%	12.4%
3	Lufkin	3.7%	3.7%	3.5%	3.5%	3.6%	3.9%	3.9%	3.9%	3.9%	3.8%	3.6%	3.6%	3.7%
4	Abilene	3.0%	2.9%	2.8%	2.9%	2.9%	2.9%	3.1%	3.1%	3.0%	2.9%	3.0%	3.0%	3.0%
5	Sherman-Denison	3.3%	3.4%	3.3%	3.1%	3.1%	3.2%	3.3%	3.4%	3.4%	3.2%	3.2%	3.2%	3.3%
6	Killeen-Temple	3.4%	3.3%	3.3%	3.3%	3.3%	3.4%	3.3%	3.4%	3.5%	3.4%	3.4%	3.4%	3.4%
7	Waco	3.7%	3.7%	3.8%	3.7%	3.7%	3.8%	3.8%	3.9%	4.0%	4.0%	3.9%	3.8%	3.8%
8	Wichita Falls.	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%
9	Longview	4.3%	4.4%	4.2%	4.1%	4.2%	4.4%	4.5%	4.6%	4.7%	4.5%	4.2%	4.3%	4.4%
10	Austin	3.4%	3.4%	3.3%	3.4%	3.4%	3.4%	3.3%	3.4%	3.5%	3.5%	3.6%	3.5%	3.4%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**SECONDARY SERVICE LESS THAN OR EQUAL TO 10 KW WEIGHTS BY YEAR**

Line No.	(a) Weather Station	(b) Year	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1	Dallas-Fort Worth	2018	61.7%	59.0%	59.7%	61.0%	60.2%	60.0%	59.1%	59.7%	60.2%	61.1%	61.3%	60.7%	60.3%
2	Dallas-Fort Worth	2019	60.9%	59.1%	60.0%	59.2%	59.5%	59.8%	58.7%	58.4%	58.9%	60.0%	60.1%	60.3%	59.6%
3	Dallas-Fort Worth	2020	60.1%	60.2%	60.1%	60.4%	60.3%	60.2%	59.5%	59.6%	59.7%	61.0%	61.3%	61.6%	60.3%
4	Dallas-Fort Worth	Total	61.0%	59.4%	59.9%	60.2%	60.0%	60.0%	59.1%	59.2%	59.6%	60.7%	60.9%	60.8%	60.0%
5															
6	Lufkin	2018	3.9%	3.6%	3.3%	3.5%	3.6%	3.9%	3.8%	3.9%	4.0%	3.9%	3.7%	3.7%	3.7%
7	Lufkin	2019	3.5%	3.8%	3.5%	3.5%	3.6%	3.9%	3.9%	3.8%	3.8%	3.8%	3.5%	3.6%	3.7%
8	Lufkin	2020	3.6%	3.7%	3.6%	3.6%	3.6%	3.8%	3.9%	3.9%	4.0%	3.8%	3.6%	3.6%	3.7%
9	Lufkin	Total	3.7%	3.7%	3.5%	3.5%	3.6%	3.9%	3.9%	3.9%	3.9%	3.8%	3.6%	3.6%	3.7%
10															
11	Austin	2018	3.6%	3.3%	3.2%	3.3%	3.3%	3.4%	3.2%	3.4%	3.6%	3.5%	3.6%	3.5%	3.4%
12	Austin	2019	3.4%	3.5%	3.3%	3.3%	3.4%	3.5%	3.4%	3.4%	3.4%	3.5%	3.5%	3.4%	3.4%
13	Austin	2020	3.4%	3.3%	3.4%	3.4%	3.4%	3.5%	3.4%	3.4%	3.6%	3.6%	3.6%	3.5%	3.5%
14	Austin	Total	3.4%	3.4%	3.3%	3.4%	3.4%	3.4%	3.3%	3.4%	3.5%	3.5%	3.6%	3.5%	3.4%
15															
16	Killeen	2018	3.4%	3.2%	3.1%	3.2%	3.2%	3.3%	3.2%	3.3%	3.5%	3.5%	3.5%	3.5%	3.3%
17	Killeen	2019	3.4%	3.5%	3.4%	3.4%	3.4%	3.5%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
18	Killeen	2020	3.4%	3.3%	3.4%	3.3%	3.4%	3.4%	3.4%	3.4%	3.5%	3.4%	3.5%	3.4%	3.4%
19	Killeen	Total	3.4%	3.3%	3.3%	3.3%	3.3%	3.4%	3.3%	3.4%	3.5%	3.4%	3.4%	3.4%	3.4%
20															
21	Longview	2018	4.5%	4.3%	4.0%	4.1%	4.1%	4.5%	4.6%	4.7%	4.8%	4.5%	4.3%	4.3%	4.4%
22	Longview	2019	4.2%	4.5%	4.3%	4.2%	4.2%	4.4%	4.5%	4.5%	4.7%	4.6%	4.2%	4.2%	4.4%
23	Longview	2020	4.3%	4.4%	4.3%	4.1%	4.2%	4.4%	4.6%	4.6%	4.6%	4.4%	4.2%	4.3%	4.4%
24	Longview	Total	4.3%	4.4%	4.2%	4.1%	4.2%	4.4%	4.5%	4.6%	4.7%	4.5%	4.2%	4.3%	4.4%
25															
26	Waco	2018	3.8%	3.6%	3.7%	3.6%	3.6%	3.8%	3.8%	3.9%	4.0%	3.9%	3.8%	3.8%	3.8%
27	Waco	2019	3.7%	3.9%	3.8%	3.7%	3.8%	3.9%	3.8%	3.8%	4.0%	4.0%	3.8%	3.8%	3.8%
28	Waco	2020	3.7%	3.7%	3.8%	3.8%	3.9%	3.9%	3.9%	4.0%	4.1%	4.0%	3.9%	3.8%	3.9%
29	Waco	Total	3.7%	3.7%	3.8%	3.7%	3.7%	3.8%	3.8%	3.9%	4.0%	4.0%	3.9%	3.8%	3.8%
30															
31	Abilene	2018	3.0%	2.8%	2.8%	2.8%	3.0%	3.1%	3.1%	3.1%	3.0%	2.8%	2.9%	2.9%	3.0%
32	Abilene	2019	2.9%	3.0%	2.8%	2.8%	2.8%	2.8%	3.0%	3.2%	3.0%	2.9%	3.0%	3.0%	2.9%
33	Abilene	2020	3.0%	3.0%	2.9%	2.9%	3.0%	3.0%	3.1%	3.1%	3.0%	2.8%	2.9%	3.0%	3.0%
34	Abilene	Total	3.0%	2.9%	2.8%	2.9%	2.9%	2.9%	3.1%	3.1%	3.0%	2.9%	3.0%	3.0%	3.0%
35															
36	Wichita Falls	2018	2.8%	2.6%	2.6%	2.6%	2.6%	2.7%	2.7%	2.8%	2.7%	2.6%	2.6%	2.7%	2.7%
37	Wichita Falls	2019	2.6%	2.7%	2.7%	2.5%	2.5%	2.5%	2.6%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%
38	Wichita Falls	2020	2.6%	2.6%	2.6%	2.6%	2.5%	2.5%	2.6%	2.6%	2.6%	2.4%	2.5%	2.5%	2.6%
39	Wichita Falls	Total	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%
40															
41	Midland Odessa	2018	9.9%	14.3%	14.4%	12.7%	13.3%	12.1%	13.1%	11.8%	10.9%	10.8%	11.2%	11.5%	12.1%
42	Midland Odessa	2019	12.1%	12.6%	12.8%	14.1%	13.7%	12.5%	13.6%	13.5%	12.7%	11.9%	12.7%	12.5%	12.9%
43	Midland Odessa	2020	12.5%	12.5%	12.7%	12.8%	12.7%	12.1%	12.1%	11.9%	11.7%	11.4%	11.3%	11.0%	12.1%
44	Midland Odessa	Total	11.5%	13.2%	13.3%	13.2%	13.2%	12.2%	12.9%	12.4%	11.8%	11.4%	11.7%	11.7%	12.4%
45															
46	Denison	2018	3.4%	3.3%	3.2%	3.1%	3.1%	3.3%	3.4%	3.5%	3.4%	3.3%	3.2%	3.3%	3.3%
47	Denison	2019	3.3%	3.5%	3.4%	3.2%	3.1%	3.2%	3.3%	3.3%	3.4%	3.3%	3.2%	3.3%	3.3%
48	Denison	2020	3.3%	3.3%	3.2%	3.1%	3.1%	3.2%	3.4%	3.4%	3.3%	3.2%	3.1%	3.2%	3.2%
49	Denison	Total	3.3%	3.4%	3.3%	3.1%	3.1%	3.2%	3.3%	3.4%	3.4%	3.2%	3.2%	3.2%	3.3%
50															
51	System	2018	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
52	System	2019	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
53	System	2020	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
54	System	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



**PUC DOCKET NO.  
ONCOR ELECTRIC DELIVERY COMPANY LLC  
WEATHER WEIGHTS  
FOR THE TEST YEAR ENDING DECEMBER 31, 2021**

**SPONSOR: D. E. NELSON**

**SECONDARY SERVICE GREATER THAN 10 KW MONTHLY WEIGHTS**

Line No.	(a) Weather Station	(b) Jan	(c) Feb	(d) Mar	(e) Apr	(f) May	(g) Jun	(h) Jul	(i) Aug	(j) Sep	(k) Oct	(l) Nov	(m) Dec	(n) Annual
1	Dallas-Fort Worth	74.6%	74.2%	74.1%	74.3%	73.9%	74.0%	74.2%	74.1%	74.0%	74.4%	74.0%	73.9%	74.1%
2	Midland-Odessa	6.6%	6.7%	6.9%	6.6%	6.9%	6.4%	6.4%	6.4%	6.3%	6.2%	6.7%	7.0%	6.6%
3	Lufkin	2.4%	2.5%	2.4%	2.5%	2.5%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%	2.4%	2.5%
4	Abilene	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.2%	1.1%	1.1%	1.2%	1.2%
5	Sherman-Denison	2.4%	2.5%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
6	Killeen-Temple	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.7%	2.7%	2.8%	2.7%	2.7%	2.7%	2.7%
7	Waco	3.2%	3.3%	3.3%	3.3%	3.3%	3.4%	3.3%	3.4%	3.5%	3.4%	3.3%	3.2%	3.3%
8	Wichita Falls.	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.5%
9	Longview	3.0%	3.1%	3.0%	3.1%	3.1%	3.2%	3.2%	3.1%	3.2%	3.1%	3.1%	3.1%	3.1%
10	Austin	2.5%	2.6%	2.6%	2.6%	2.7%	2.7%	2.6%	2.6%	2.7%	2.7%	2.7%	2.7%	2.7%
11		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**SEASONAL WEIGHTS**

Line No.	Weather Station	Nov to Mar HDD	May to Sep CDD
16	Dallas-Fort Worth	74.1%	74.0%
17	Midland-Odessa	6.8%	6.5%
18	Lufkin	2.4%	2.5%
19	Abilene	1.2%	1.2%
20	Sherman-Denison	2.4%	2.4%
21	Killeen-Temple	2.6%	2.7%
22	Waco	3.3%	3.4%
23	Wichita Falls.	1.5%	1.5%
24	Longview	3.1%	3.1%
25	Austin	2.6%	2.7%
26		100.0%	100.0%