Request 35: Please describe plans for replacing the part-time professional engineer (DSS) experienced with RUS line construction requirements and planning to retire at the end of 2020.

Response: In the short term, Grayson will look for a contracted professional engineer to assist with the RUS requirements and approving completed work orders.

In the long term, Grayson will analyze the benefits of either hiring a professional engineer for its staff when personnel changes occur or will inquire into the possibility of sharing a professional engineer with another cooperative with the same need.

Request 36: Please:

a. Using the accompanying table, provide budgeted and actual O&M and capital costs for contractor-provided engineering for the past 5 years and the to-date for the 2020.

b. Confirm that no material internal engineering costs exist, or describe and similarly chart them.

Response:

a.

DR 36.a Table								
Year	DDS O&M $		DDS Capital $		Leidos O&M$		Leidos Capital$	
	Budget	*Actual*	*Budget*	*Actual*	*Budget*	*Actual*	*Budget*	*Actual*
2015	$2,500.00	$0.00	$10,000.00	$9,243.31	$0.00	$1,820.00	$0.00	$0.00
2016	$2,500.00	$7,804.60	$10,000.00	$12,680.10	$0.00	$0.00	$61,363.00	$45,069.23
2017	$5,000.00	$9,598.11	$10,000.00	$9,411.20	$0.00	$1,521.29	$0.00	$0.00
2018	$5,000.00	$375.00	$10,000.00	$9,747.52	$0.00	$0.00	$0.00	$0.00
2019	$5,000.00	$3,325.00	$10,000.00	$13,183.45	$0.00	$0.00	$38,000.00	$34,600.00
2020 to date	$5,000.00	$175.00	$10,000.00	$7,798.50	$0.00	$0.00	$30,000.00	$0.00

b. Confirmed

Request 37: Using the accompanying table, please provide total capital budgets and capital spending for the last 5 years and a total for 2020 comprised of YTD plus remainder of year forecast.

Response:

DR 37 Table					
Year	**Total Capital Budget $**	**Total Capital Spending $**	**Line Extensions $**	**AMI Metering System $**	**GIS $**
2014					
2015	$5,648,780.00	$4,941,737.56	$748,709.56	$0.00	$0.00
2016	$4,853,234.00	$3,925,846.06	$634,762.96	$0.00	$273,495.26
2017	$4,512,042.00	$3,352,967.30	$759,877.57	$0.00	$329,697.97
2018	$4,894,215.00	$3,694,783.47	$666,053.44	$0.00	$29,170.04
2019	$5,913,773.00	$6,658,513.28	$461,385.00	$3,960,399.00	$0.00
2020 to date	$4,826,085.00	$1,877,546.70	$436,577.40	$201,989.04	$0.00

Request 38: Please:

a. Generally describe the scope of all major capital projects or purchases planned for 2021 through 2027

Response:

See attached document.

Purchases for 2025-2027 have not been planned. There is a likely possibility that some of the capital projects scheduled for 2021-2024 could stretch into 2025-2027.

b. Provide the currently forecasted or estimated costs for those projects or purchases.

Response:

See attached document.

KENTUCKY 61 Carter
Grayson Rural Electric Cooperative Corporation
2020-2024 Construction Work Plan

NEW CONSTRUCTION (Code 100)

740c Code	General Description	Number	Miles	2020/2021	2021/2022	2022/2023	2023/2024	Estimated Cost	Loan Funds
101	NEW UNDERGROUND LINES	236	4.77	$ 104,607	$ 108,796	$ 113,103	$ 117,646	$ 444,152	$ 444,152
102	NEW OVERHEAD LINES	620	92.02	$ 533,975	$ 555,365	$ 577,530	$ 600,625	$ 2,267,495	$ 2,267,495
100 TOTAL NEW CONSTRUCTION		856	96.79	$ 638,582	$ 664,161	$ 690,633	$ 718,271	$ 2,711,647	$ 2,711,647

DISTRIBUTION LINE CONVERSIONS (Code 300)

740c Code	General Description	Miles	2020/2021	2021/2022	2022/2023	2023/2024	Estimated Cost	Loan Funds
325	**ARGENTUM Circuit 2-Reconductor**							
	Reconductor 3-ph 1/0 ACSR and 3/0 ACSR to 3-ph 336 ACSR	1.3				$ 219,348	$ 219,348	$ 219,348
326	**ELLIOTTSVILLE Circuit 3-Reconductor**							
	Reconductor 3-ph 3/0 ACSR to 3-ph 336 ACSR	3.3			$ 535,392		$ 535,392	$ 535,392
	Relocate (3) 1-ph 219 amp regulators	-			-		-	-
327	**ELLIOTTSVILLE Circuit 3-Riddle Fork Multiphase**							
	Multi-phase and Reconductor 1-ph 1/0 ACSR to 3-ph 1/0 ACSR	1.6		$ 166,400			$ 166,400	$ 166,400
	Remove (1) 1-ph 150 amp regulator	-		-			-	-
	Add (3) 3-ph 70-L	-		-			-	-
	Add (1) 1-ph 50-4H	-		-			-	-
328	**ELLIOTTSVILLE Circuit 3-Route 801/1274 Multiphase**							
	Multi-phase and Reconductor 1-ph 4 ACSR and 6A to 2-ph 1/0 ACSR	2.5		$ 247,000			$ 247,000	$ 247,000
	Add (2) 1-ph 50-4H	-		-			-	-
	Add (1) 1-ph 35-4H	-		-			-	-
329	**LOW GAP Circuit 2-Whetstone Road**							
	Multi-phase and Reconductor 1-ph 4 ACSR to 3-ph 1/0 ACSR	1.0		$ 104,000			$ 104,000	$ 104,000
	Add (2) 1-ph 35-4H	-		-			-	-
330	**LOW GAP Circuit 3-Route 207 Multiphase**							
	Multi-phase 1-ph 1/0 ACSR to 3-ph 1/0 ACSR	1.1		$ 114,400			$ 114,400	$ 114,400
	Remove (2) 1-ph 70-L and (1) 1-ph 50-4H	-		-			-	-
	Add (2) 1-ph 25-4H	-		-			-	-
	Add (3) 1-ph 70L	-		-			-	-
	Add (1) 1-ph 50-4H	-		-			-	-
	Add (1) 1-ph 35-4H	-		-			-	-
	Remove (1) 1-ph 25-4H	-		-			-	-
331	**NEWFOUNDLAND Circuit 4-South Ruin Road**							
	Multi-phase and Reconductor 1-ph 4 ACSR to 3-ph 1/0 ACSR	2.3	$ 230,000				$ 230,000	$ 230,000
	Add (2) 1-ph 70-L	-	-					
332	**WARNOCK Circuit 4-Warnock Feeder 4 Reconductor**							
	Reconductor 3-ph 2 ACSR to 3-ph 336 ACSR	3.0				$ 506,189	$ 506,189	$ 506,189
300 TOTAL DISTRIBUTION LINE CONVERSIONS		16.1	$ 230,000	$ 631,800	$ 535,392	$ 725,537	$ 2,122,729	$ 2,122,729

MISCELLANEOUS DISTRIBUTION ITEMS (Code 600)

740c	Estimated	Loan

740c - Total

Code	General Description	Number	2020/2021	2021/2022	2022/2023	2023/2024	Cost	Funds
601	NEW UNDERGROUND TRANSFORMERS	-	$ 24,335	$ 25,310	$ 26,320	$ 27,375	$ 103,340	$ 103,340
601	NEW OVERHEAD TRANSFORMERS	-	$ 459,591	$ 462,935	$ 481,327	$ 500,764	$ 1,904,617	$ 1,904,617
601	NEW METERS	-	$ 52,002	$ 54,142	$ 56,282	$ 58,636	$ 221,062	$ 221,062
601	REPLACEMENT OVERHEAD TRANSFORMERS	-	$ 219,900	$ 228,700	$ 237,800	$ 247,300	$ 933,700	$ 933,700
601	REPLACEMENT METERS	-	$ -	$ 25,300	$ 26,300	$ 27,400	$ 79,000	$ 79,000
602	UNDERGROUND SERVICE DROPS	-	$ 11,905	$ 12,380	$ 12,880	$ 13,395	$ 50,560	$ 50,560
602	OVERHEAD SERVICE DROPS	-	$ 53,958	$ 56,120	$ 58,374	$ 60,697	$ 229,149	$ 229,149
603	SECTIONALIZING EQUIPMENT	-	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 400,000	$ 400,000
604	LINE REGULATORS		$ 432,000	$ 5,200	$ 8,112	$ -	$ 445,312	$ 445,312
604-1	**AIRPORT ROAD Circuit 2-Grahn Road** Remove (1) 1-ph 50 Amp regulator Install (3) 150 Amp regulators	1	$ 72,000				$ 72,000	$ 72,000
604-2	**ARGENTUM Circuit 1** Install (3) 1-ph 100 Amp regulator	1	$ 55,000				$ 55,000	$ 55,000
604-3	**ARGENTUM Circuit 2-AA Hwy (Route 10)** Install (3) 1-ph 100 Amp regulators	1	$ 55,000				$ 55,000	$ 55,000
604-4	**ELLIOTTVILLE Circuit 3** Relocate (3) 1-ph 219 Amp regulators	1			$ 8,112		$ 8,112	$ 8,112
604-5	**ELLIOTTVILLE Circuit 4-Christy Creek** Install (1) 1-ph 50 Amp regulator	1	$ 16,000				$ 16,000	$ 16,000
604-6	**MAZIE Circuit 2-Cain's Creek** Install (3) 1-ph 150 Amp regulators	1	$ 62,000				$ 62,000	$ 62,000
604-7	**PACTOLUS Circuit 4** Retire (3) 1-ph 100 Amp regulators Install (3) 1-ph 150 Amp regulators	1	$ 62,000				$ 62,000	$ 62,000
604-8	**PELFREY Circuit 1-Route 2** Install (3) 1-ph 100 Amp regulators	1	$ 55,000				$ 55,000	$ 55,000
604-9	**WARNOCK Circuit 4-Buzzard Roost** Install (3) 1-ph 100 Amp regulators	1	$ 55,000				$ 55,000	$ 55,000
604-10	**ELLIOTTVILLE Circuit 3-Riddle Fork Multiphase** Retire (1) 1-ph 150 Amp regulator	1		$ 5,200			$ 5,200	$ 5,200
606	POLE REPLACEMENT	1,300	$ 1,394,900	$ 1,450,475	$ 1,508,650	$ 1,569,100	$ 5,923,125	$ 5,923,125
608	CONDUCTOR REPLACEMENT	8.0	$ 77,666	$ 77,666	$ 77,666	$ 77,667	$ 310,665	$ 310,665
600 TOTAL MISCELLANEOUS DISTRIBUTION ITEMS			$ 2,826,257	$ 2,498,228	$ 2,593,711	$ 2,682,334	$ 10,600,530	$ 10,600,530

OTHER DISTRIBUTION ITEMS (Code 700)

740c Code	General Description	Number	2020/2021	2021/2022	2022/2023	2023/2024	Estimated Cost	Loan Funds
701	SECURITY LIGHTS	1,736	$ 356,748	$ 371,070	$ 385,826	$ 401,450	$ 1,515,094	$ 1,515,094
705	AMI	-	$ 12,500	$ 12,500	$ 12,500	$ 12,500	$ 50,000	$ 50,000
700 TOTAL OTHER DISTRIBUTION ITEMS			$ 369,248	$ 383,570	$ 398,326	$ 413,950	$ 1,565,094	$ 1,565,094
TOTAL COSTS PER YEAR			**$ 4,064,087**	**$ 4,177,759**	**$ 4,218,062**	**$ 4,540,092**	**$ 17,000,000**	**$ 17,000,000**

Request 39: Using the accompanying table, please provide:

a. The numbers of poles, individually, and within capital projects, replaced by Grayson and the line contractor during the last 5 years and to-date for 2020

b. The capital and O&M costs for the pole replacements.

Response:

DR 39 Table				
Year	**Total Number of Poles Replaced**	**O&M Charges $ for Pole Replacements**	**Capital Charges $ for Pole Replacements**	
2010	414		$1,156,633.30	
2011	484		$1,341,517.24	
2012	483		$1,551,332.23	
2013	361		$1,093,612.14	
2014	431		$1,484,318.43	
2015	347		$1,255,755.14	
2016	369		$1,225,100.34	
2017	295		$1,121,156.08	
2018	354		$1,464,174.15	
2019	270		$1,207,057.22	
2020 to date	188		$740,722.10	thru August
Totals	3996		$13,641,378.37	

Request 40: Please complete the accompanying table addressing pole plant.

Response:

DR 40 Table						
Total number of poles	**0-9 years old**	**10-19 years old**	**20-29 years old**	**30-39 years old**	**40 plus years old**	**Unknown age**
35347	5846	6975	7302	3374	1902	9948

Explanation for high number of Unknown age

- Unknown age of pole was determined if the birth mark on the pole was not identifiable.

Request 41: Please provide Grayson's estimated annual cost for inspecting, boring above and below ground level, determining shell thickness, treating with fungicide and insecticide, and wrapping below ground level 1/10 of all poles over 20 years old; using a professional wood pole inspection, testing, and treating contractor.

Response:

Based on an estimated 2,253 poles (1/10 of all poles older that 20 years plus unknown), estimated costs are as followed:

Ground Line Inspection (Bore/Drill, Wrap, Fungicide) - $90,120

Ground Line Inspection plus Insecticide - $126,168

Request 42: Please provide the time period during which Grayson had someone bore poles to determine shell thickness; and why was this procedure stopped.

Response:

Grayson had a professional pole inspector in 2018 test 100 poles from 10 circuits. Due to the expense of testing poles by a contractor, we have the service men do a visual inspection and a sound test while they do their line inspections.

Before 2018, the last known pole testing was in the early 90's. It is unknown why the procedure was stopped at that time.

Request 43: Please:

a. State whether Grayson uses reclosers on mainlines for the purpose of automatic sectionalizing to mainline of a circuit.

b. If so, describe programs for doing so and their changes in the past five years.

c. If so, provide the number of such reclosers and the percentage of

d. If so, how provide the number of lateral tap lines protected with reclosers

e. Provide the number of voltage regulators installed on the circuits.

Response:

a. Grayson confirms it uses reclosers on mainlines for the purpose of automatic sectionalizing to mainline circuit.

b. Three-phase reclosers with electronic controllers are located where the calculated load is above the expected minimum fault or on taps with predominately three-phase loads. The electronic recloser settings are based on a coordination margin of 8-12 cycles or greater with upline devices.

   Single-phase hydraulic reclosers are located on long taps to improve reliability and sectionalizing of faulted areas. Fuse-saving was recommended for single-phase hydraulic reclosers. A coordination margin of 8-12 cycles or greater is utilized between single-phase hydraulic reclosers and upline devices.

   Fuse-saving is part of the curve selection for single-phase hydraulic reclosers as well as three-phase electronic reclosers. All taps of the main lines are fused.

c. There are 119 multi-phase OCRs/Electronic Breakers for sectionalizing the main lines to reduce the number of consumers effected by an outage. Of the 42 circuits, 83% are sectionalized with the remaining circuits being either dedicated to a single load or being less than 5 miles.

d. There are 218 OCR's on taps protecting the main lines.

e. We currently have 3 three phase regulator banks and 8 singles on the system.

Request 44: Please complete the accompanying table regarding numbers and costs of transformers replaced since 2015.

Response:

Included below are the number of transformers replaced and the estimated O&M cost associated with the transformer change. Also included is the number of transformers purchased, as well as their capitalized costs.

DR 44 Table						
Year	**No. of Pole Mounted Transformers Replaced**	**No. of Pad Mounted Transformers Replaced**	**O&M Replacement Cost**	**Capital Replacement Cost**	**No. of Pole Mounted Transformers Purchased**	**No. of Pad Mounted Transformers Purchased**
2015	169	1	$11,617.74	$309,242.04	318	6
2016	195	0	$13,735.80	$266,687.19	246	7
2017	121	0	$8,825.74	$240,593.27	246	3
2018	177	3	$13,531.02	$185,540.64	190	6
2019	138	0	$10,341.72	$247,706.33	205	1
2020 to date	71	1	$5,543.62	$126,478.64	128	4

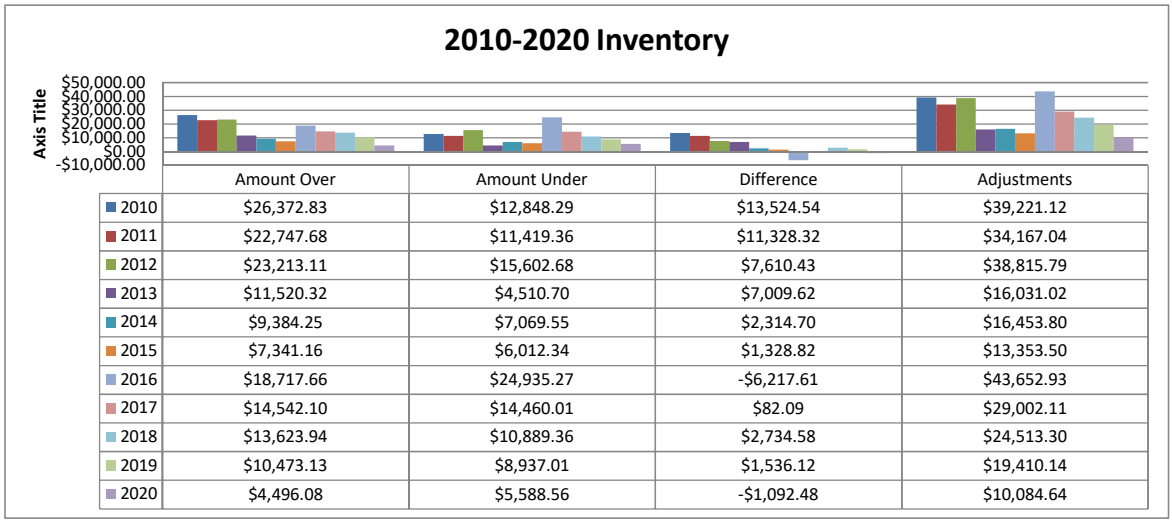
Request 45: Please complete the accompanying table of O&M budgets and costs for the last 5 years, for 2020 showing costs to date and a forecast for the remainder of the year.

Response:

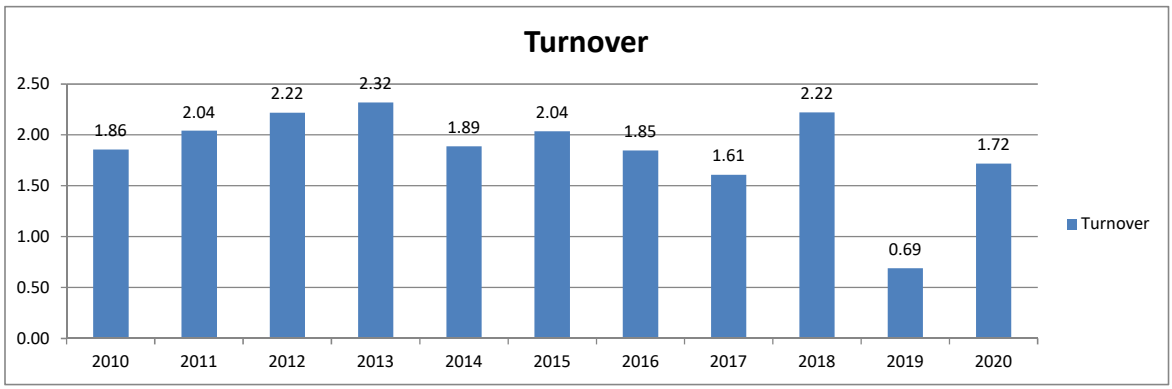
DR 45 Table		
Year	**Total O&M Budget $**	**Total O&M Spending $**
2014	$4,357,400.00	$5,194,566.00
2015	$4,699,220.00	$4,294,808.00
2016	$4,916,280.00	$4,763,172.00
2017	$5,172,780.00	$4,724,770.00
2018	$5,261,854.00	$5,033,533.00
2019	$5,083,165.00	$4,272,053.00
2020 to Date	$3,708,449.00	$3,453,553.00
2020 Projected	$5,562,683.00	$5,141,120.00

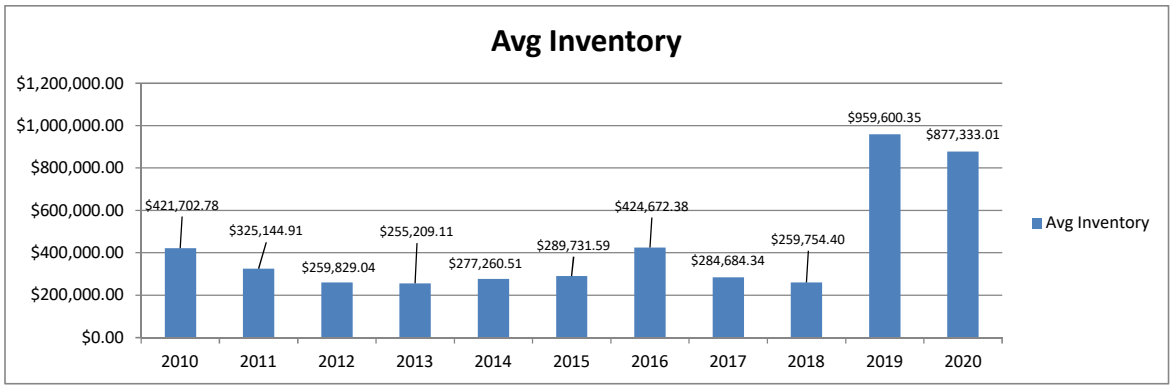
Inventory

	Amount Over	Amount Under	Difference	Adjustments	Avg Inventory	Beg Balance	Purchases	Ending Balance	Turnover
2010	$26,372.83	$12,848.29	$13,524.54	$39,221.12	$421,702.78	$265,283.96	$783,303.31	$265,826.02	1.86
2011	$22,747.68	$11,419.36	$11,328.32	$34,167.04	$325,144.91	$265,826.02	$657,919.26	$259,855.98	2.04
2012	$23,213.11	$15,602.68	$7,610.43	$38,815.79	$259,829.04	$259,855.98	$489,767.46	$173,019.93	2.22
2013	$11,520.32	$4,510.70	$7,009.62	$16,031.02	$255,209.11	$173,019.93	$622,737.80	$204,295.29	2.32
2014	$9,384.25	$7,069.55	$2,314.70	$16,453.80	$277,260.51	$204,295.29	$571,268.19	$252,233.33	1.89
2015	$7,341.16	$6,012.34	$1,328.82	$13,353.50	$289,731.59	$251,909.64	$535,641.34	$197,270.71	2.04
2016	$18,717.66	$24,935.27	-$6,217.61	$43,652.93	$424,672.38	$197,270.71	$829,882.11	$242,455.92	1.85
2017	$14,542.10	$14,460.01	$82.09	$29,002.11	$284,684.34	$242,455.92	$672,841.13	$457,389.03	1.61
2018	$13,623.94	$10,889.36	$2,734.58	$24,513.30	$259,754.40	$241,538.76	$594,311.81	$258,652.76	2.22
2019	$10,473.13	$8,937.01	$1,536.12	$19,410.14	$959,600.35	$258,652.76	$1,801,655.76	$1,397,882.86	0.69
2020	$4,496.08	$5,588.56	-$1,092.48	$10,084.64	$877,333.01	$1,397,882.84	$488,358.24	$379,902.87	1.72



	Amount Over	Amount Under	Difference	Adjustments
2010	$26,372.83	$12,848.29	$13,524.54	$39,221.12
2011	$22,747.68	$11,419.36	$11,328.32	$34,167.04
2012	$23,213.11	$15,602.68	$7,610.43	$38,815.79
2013	$11,520.32	$4,510.70	$7,009.62	$16,031.02
2014	$9,384.25	$7,069.55	$2,314.70	$16,453.80
2015	$7,341.16	$6,012.34	$1,328.82	$13,353.50
2016	$18,717.66	$24,935.27	-$6,217.61	$43,652.93
2017	$14,542.10	$14,460.01	$82.09	$29,002.11
2018	$13,623.94	$10,889.36	$2,734.58	$24,513.30
2019	$10,473.13	$8,937.01	$1,536.12	$19,410.14
2020	$4,496.08	$5,588.56	-$1,092.48	$10,084.64





Request 46: Please complete on an end of year basis the accompanying table addressing material and line equipment inventory under the control of the warehouseman and the plant accountant.

Response:

Transformers, reclosers, capacitors, and regulators are considered special equipment and an inventory of these pieces of equipment are not maintained, as they are capitalized when they are received.

DR 46 Table							
Year	**Materials and Hardware $**	**Conductor $**	**Pole mounted and Pad mount Transformers $**	**Poles $**	**Reclosers $**	**Capacitors $**	**Voltage Regulators $**
2018	$1,480,571.42	$58,891.21		$81,013.66			
2019	$732,654.29	$58,032.99		$51,840.75			
2020 to date	$293,990.59	$68,213.85		$50,120.29			

As supplement information for our inventory management, please see that attached document pertaining to our end of year inventory management.

Request 47: Please complete a table in as close a form as possible to the accompanying table for number of crews and spending for tree trimming, tree removal, bush hog brush cutting, and herbicide spraying for the last 5 years and for 2020 to date plus forecasted for the remainder of the year.

Response:

Associated costs for actual spending on trimming, removal, and brush cutting are not separated when billed. We are billed on an hourly basis. Included in a supplement document are the amount of trees trimmed and removed, along with the footage of brush cut.

The table includes the cost of the herbicide chemical applied, it does not, however, include the cost of labor for application.

DR 47 Table

Year	Total Vegetation Budget $	Total Vegetation Spending $	Number of different crews used during the year	Spending for Tree Trimming	Spending $ for Tree Removal	Spending $ for Bush Hog Brush Cutting	Spending $ for Herbicide Spraying
2014	$1,746,488.00	$1,838,633.69	11				$48,494.22
2015	$1,574,666.00	$1,569,576.18	11				$63,925.47
2016	$1,638,093.00	$1,684,139.30	11				$62,663.81
2017	$1,712,133.00	$1,653,689.34	11				$25,059.29
2018	$1,713,539.13	$1,639,764.40	11				$16,001.08
2019	$1,720,230.00	$1,791,096.55	11				$58,502.33
2020 to date	$1,810,693.00	$1,099,876.10	10				$22,588.67

	# Trees	# Trees		Spray				Footage
WEEK ENDING	TRIM	CUT	BRUSH Footage	SPANS	LENGTH	WIDTH	GALLONS	BUSH HOG
January								
1/4/2014	100	261	6225	20	5700	80	400	1400
1/11/2014	207	179	4740					2100
1/18/2014	246	131	6725					3400
1/25/2014	59	770	8475					2700
February								
2/1/2014	130	231	6975	0	0	0	0	0
2/8/2014	36	135	4430	0	0	0	0	1200
2/15/2014	18	49	790	0	0	0	0	0
2/22/2014	167	259	7185	0	0	0	0	4800
March								
3/1/2014	202	171	8850	0	0	0	0	5400
3/8/2014	97	143	7375	0	0	0	0	2100
3/15/2014	145	235	7935	0	0	0	0	4500
3/22/2014	116	325	7250	8	2500	40	200	1400
3/29/2014	111	162	10051	22	6000	80	400	5100
April								
4/5/2014	61	208	5980	28	7900	120	500	2100
4/12/2014	89	189	7675	22	6300	120	400	5200
4/19/2014	52	347	7590	18	5500	80	300	2400
4/26/2014	131	153	9625	28	8700	120	650	4200
May								
5/3/2014	123	178	6510	6	1800	40	100	3600
5/10/2014	90	198	6810	27	7500	120	450	3600
5/17/2014	77	291	8203	32	8500	120	500	5400
5/24/2014	259	187	8775	39	10500	160	800	5100
5/31/2014	139	194	6150	52	15600	160	1400	5200
June								
6/7/2014	103	253	5450	69	22700	460	1850	2700
6/14/2014	39	250	1800	42	10300	230	900	0
6/21/2014	55	160	7150	64	19410	380	1700	5700
6/28/2014	125	457	8855	106	28500	460	2000	5400
WEEK ENDING								
July								
7/5/2014	90	256	7560	76	23300	425	1650	3300
7/12/2014	104	286	6175	94	28400	460	1950	0
7/19/2014	103	165	6300	90	28000	460	2050	3900
7/26/2014	113	165	4075	78	22800	460	1600	1800
August								
8/2/2014	88	209	5425	69	20700	420	1950	2700
8/9/2014	160	195	3250	68	20000	460	1725	1200
8/16/2014	255	227	5725	90	25000	460	2000	2100
8/23/2014	153	292	7300	61	21200	500	1600	2700
8/30/2014	136	193	6975	60	20500	460	1625	2100
September								
9/7/2014	122	213	7350	60	19300	460	1600	3900
9/13/2014	160	254	6025	67	18100	460	1400	2400
9/20/2014	142	257	11765	17	5800	140	600	4200
9/27/2014	217	335	6525	18	5600	140	600	3000
October								
10/4/2014	158	220	6465	18	5800	140	600	2000
10/11/2014	170	210	11150	15	3600	150	400	7800
10/18/2014	145	342	11700	12	2900	70	250	6900
10/25/2014	104	387	8930	26	6500	140	800	3000
November								
11/1/2014	201	306	11625	27	6600	130	700	6600
11/8/2014	192	395	10710	28	5900	140	475	6000
11/15/2014	113	207	10730	14	3800	105	300	6000
11/22/2014	100	292	9300	12	4200	140	300	4200
11/29/2014	162	229	5765	11	3000	70	200	3000
December								
12/6/2014	206	344	9975	19	5600	175	300	3900
12/13/2014	142	515	12215	16	5000	155	380	4200
12/20/2014	141	470	7590	17	5600	140	400	2700
12/27/2014	104	306	6525	11	4100	105	300	3000
TOTALS:	6,758	13,386	384,709	1,244	311,310	7,805	29,455	177,300
Recleared:	-103901							
Bush hogged:	34							
Sprayed:	59							

Request 48: Please estimate annual costs, in 2020 dollars, for maintaining distribution circuits assuming an 8-year vegetation cycle; and the estimated cost to maintain a 5-year cycle.

Response:

Based on current contractors and cost:

8-Year Cycle: $2,411,312 per year

5-Year Cycle: $3,858,099 per year

Request 49: Please:

a. State whether Grayson ever used a certified arborist for inspecting for off-ROW hazard trees, or to assist with negotiating hazard tree removal with property owners.

b. Provide the estimated daily cost of such an arborist

Response:

a. Grayson has not used an arborist in the past for inspecting off-ROW or hazard trees

b. The estimated cost of an arborist is $35 per hour or $280 dollars per day.

Request 50: Please provide copies of year 2020 to date weekly work schedules, or other documents, that indicate the type of jobs, i.e. pole, recloser, transformer change outs, etc., worked during each week by each of the two 4-man line construction crews.

Response:

Please see supporting documents included.

Request 51: Please provide the average loaded (insurance, vacations, etc.) regular hourly cost of a construction crew linemen.

Response:

The average loaded regular hourly cost of a construction crew linemen, including all benefits, is [redacted]

Request 52: Please provide the average amount, in dollars, paid to the construction linemen and then to the maintenance linemen for overtime work in 2018 and 2019.

Response:

	2018	2019
Construction Linemen	$20,629.73	$18,149.54
Maintenance Linemen	$23,308.88	$21,933.61

Request 53: Please provide the current hourly regular-time cost, and overtime cost, of a contractor provided lineman.

Response:

The following are considered confidential due to competitive bidding policies and our agreements with our contractor.

Position	Regular Time	Overtime
General Foreman	[redacted]	[redacted]
Foreman	[redacted]	[redacted]
Lineman A/Journeyman	[redacted]	[redacted]
Lineman B	[redacted]	[redacted]
Apprentice Lineman	[redacted]	[redacted]
Groundman	[redacted]	[redacted]
Operator	[redacted]	[redacted]
Mechanic	[redacted]	[redacted]
Safety	[redacted]	[redacted]

Request 54: Please provide each job, in years 2018, 2019 and 2020 to date, directly related to improving the reliability of (1) the worst performing circuits, and (2) reliability in general.

Response:

Please see attached document.

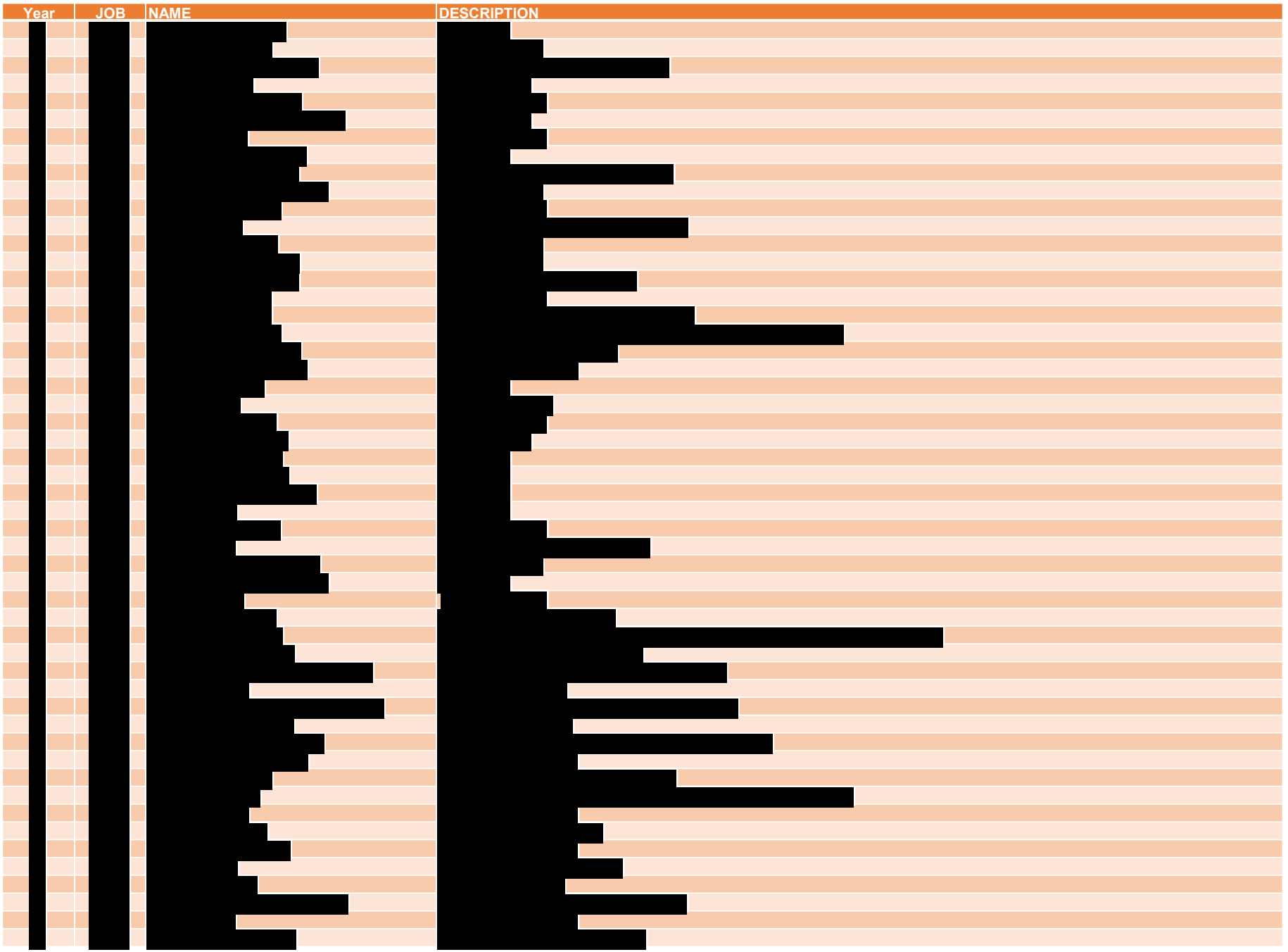
Year	Circuit	JOB	NAME	DESCRIPTION
[redacted]				

Reliability Jobs for "Worst Performing Circuits"

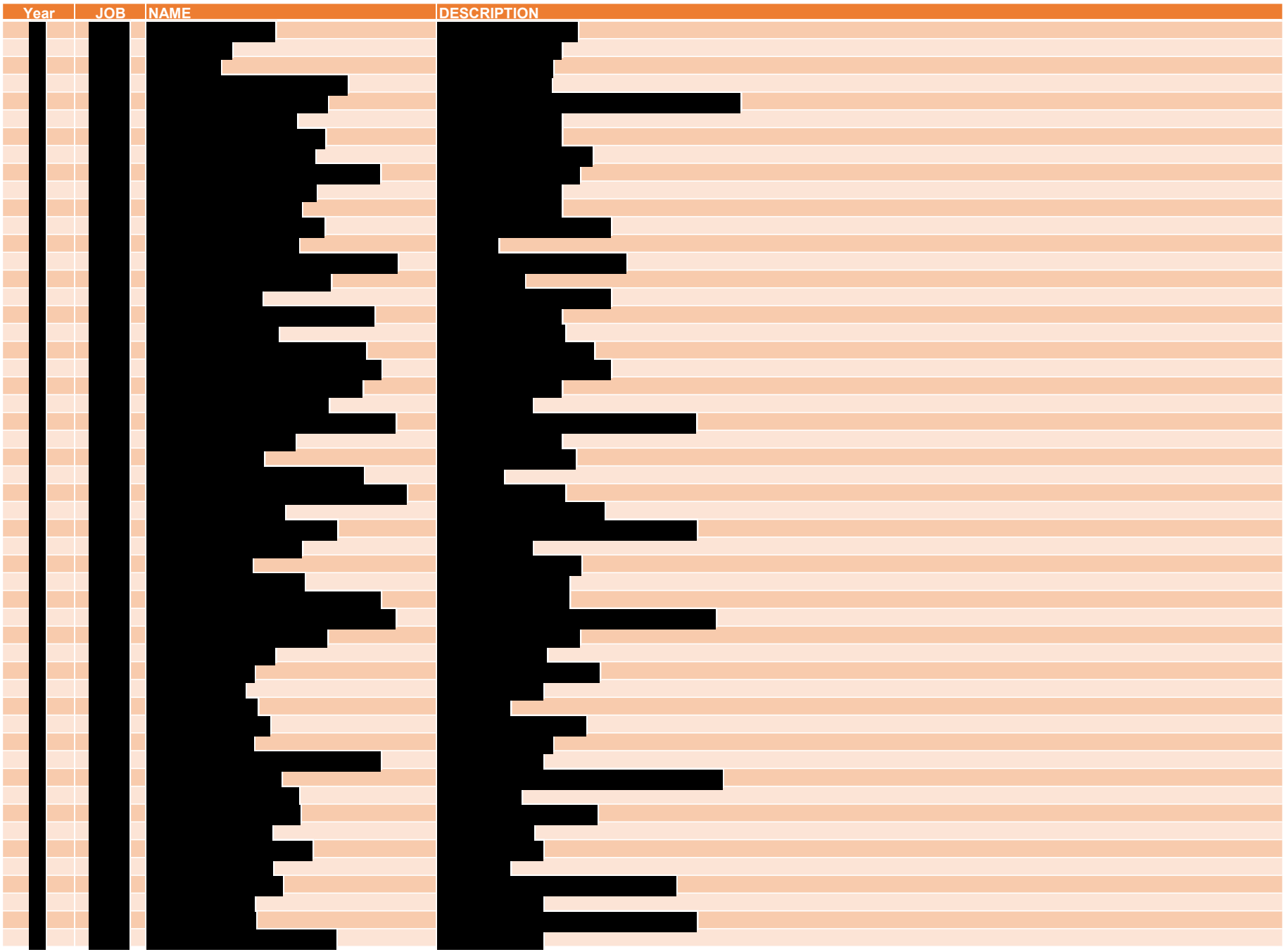
Year	Circuit	JOB	NAME	DESCRIPTION
[redacted]				

Reliability Jobs in General

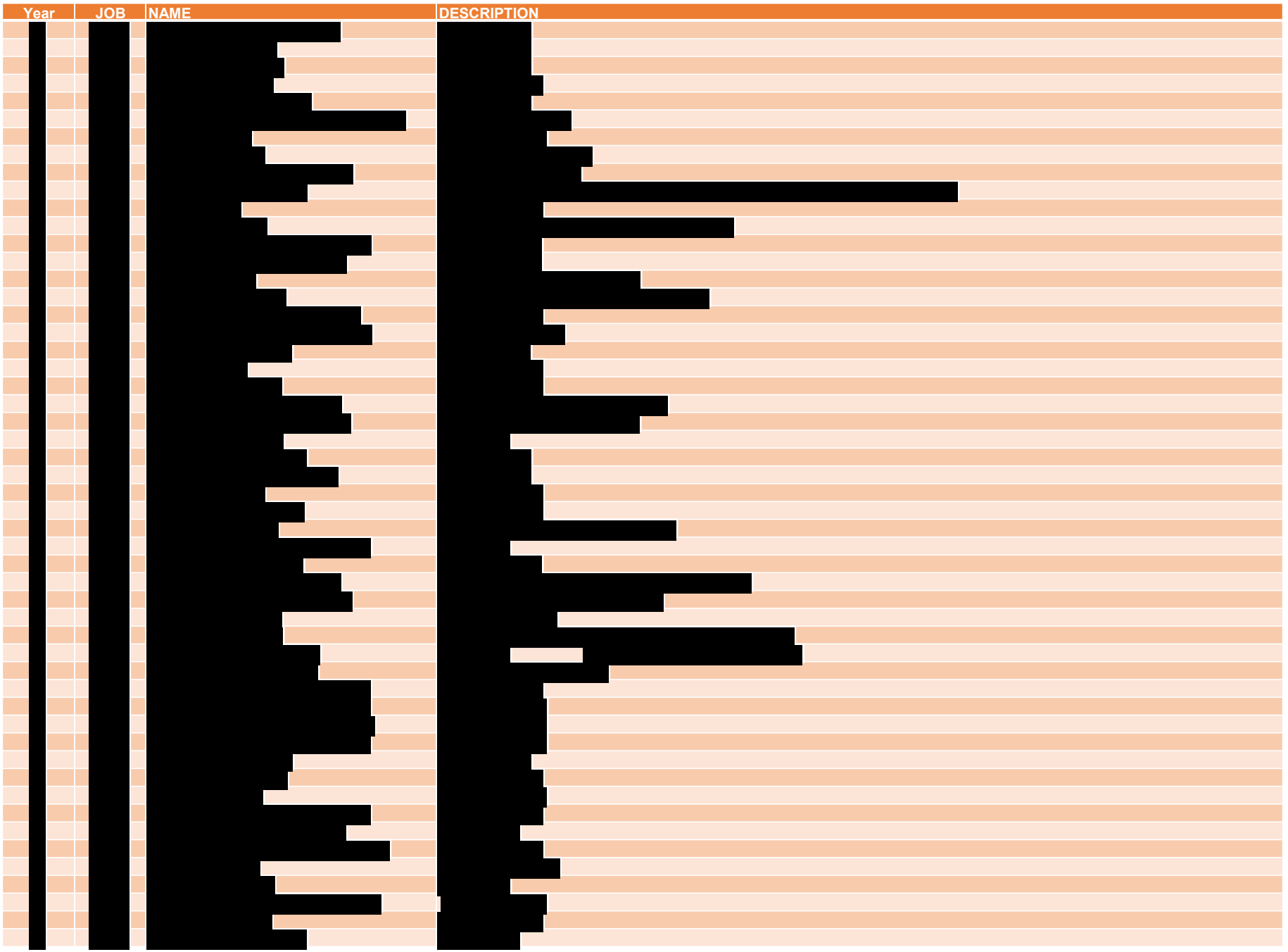
Reliability Jobs in General



Reliability Jobs in General

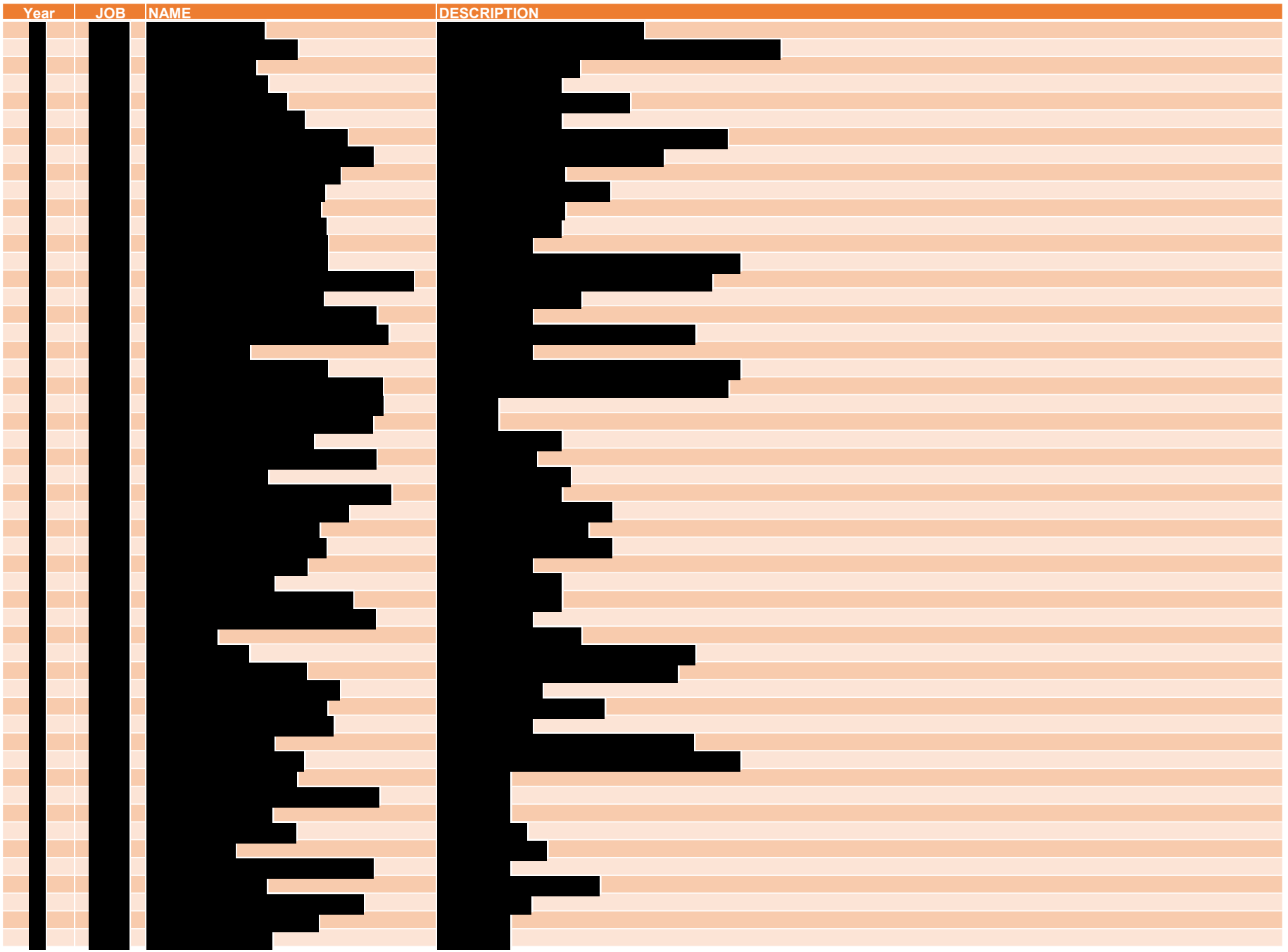


Reliability Jobs in General

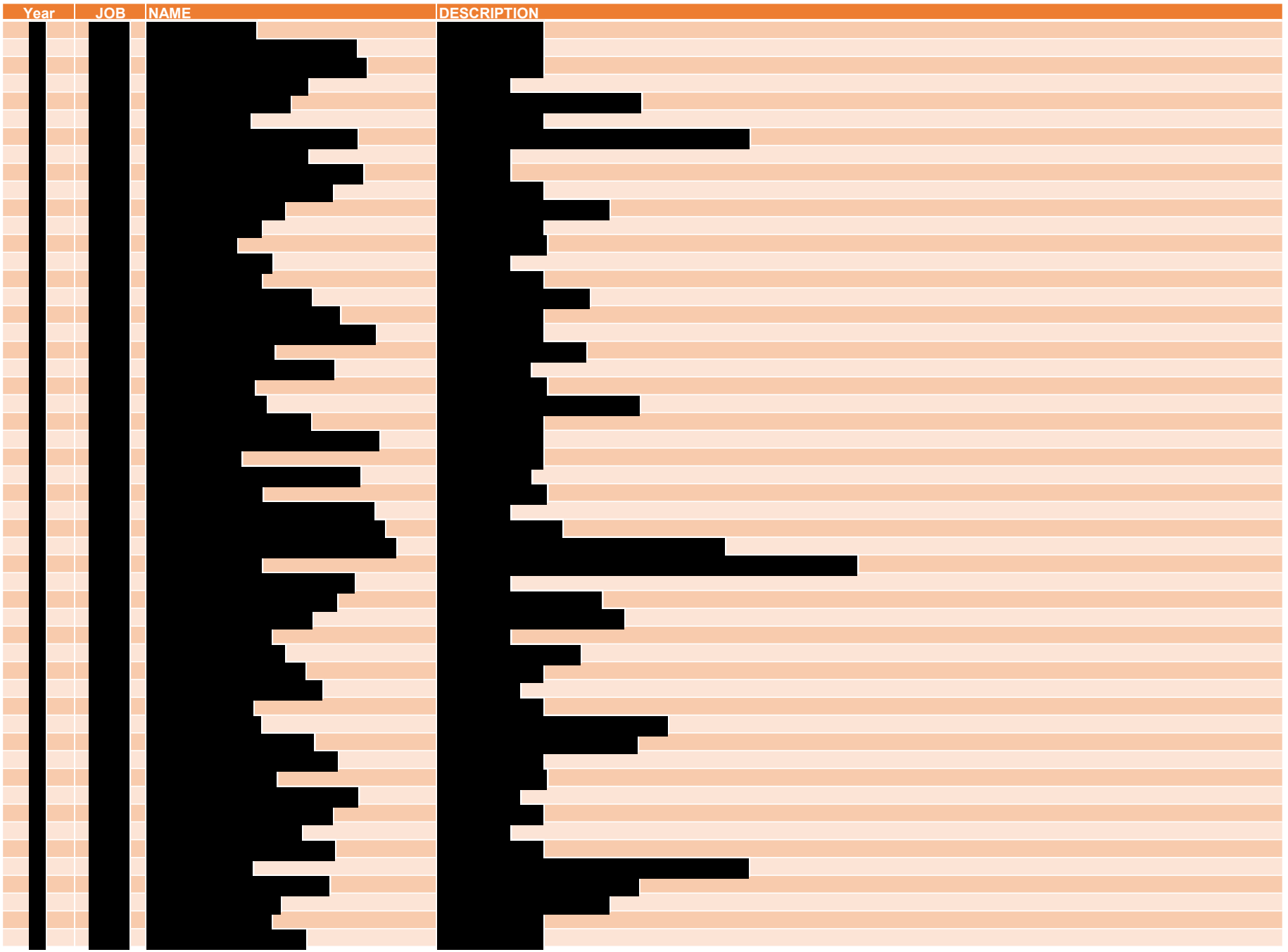



Year
JOB
NAME
DESCRIPTION

Reliability Jobs in General



Reliability Jobs in General


Year
JOB
NAME
DESCRIPTION

Reliability Jobs in General

Year	JOB	NAME	DESCRIPTION
[redacted]			

Request 55: Please:

a. Provide the number of safety-related activities, other than tail-gate safety meetings, provided to non-line personnel and to line construction and maintenance personnel.

b. Complete the accompanying table and include a separate discussion indicating the types of activities included in the count

Response:

a.

DR 55 Table		
Activity Period	**Non-line Personnel Safety Training**	**Line Construction and Maintenance Personnel Safety Training**
Weekly	52	52
Monthly	12	13
Quarterly	0	0
Annual	9	13
Other	2	2

b.

Weekly – Safety meetings, reading of safety manuals and safety and information presentations by staff.

Monthly – Meeting With KAEC and field inspections

Annual – Online Safety Courses, Test grounds, Lock out tag out, Hurt man and Bucket rescue.

Other – Chainsaw safety and First Aid/CPR/AED Certification (every 2 years)

Request 56: Please describe all injuries due to falls while climbing poles, or from a bucket; and any electrical contact injuries, since 2010.

Response:

Grayson has had zero accidents since 2010 that have involved climbing, using a bucket, or electrical contact.

Request 57: Please provide the numbers of circuit inspections and pad mount transformer inspections completed in each year using the accompanying table.

Response:

DR 57 Table		
Year	**Number of circuit inspections completed**	**Number of Pad Mount Transformer Inspections Completed**
2015	23	
2016	18	83/91 = 174
2017	23	81/94=175
2018	18	96/104=200
2019	23	109/111=210
2020 to date	12	113/108=221

January/June = Total

Pad Mount Transformer Inspections data is not available for 2015.

Request 58: Please provide the average amount, in dollars, paid to the construction linemen and then to the maintenance linemen for overtime work in 2018 and 2019.

Response:

DR 58 Table			
Vehicle	**Year Purchased**	**Capital Cost of Chassis and Installed Equipment**	**O&M Vehicle and Equipment Maintenance Cost in 2019**
North Crew Derrick/Digger	2012	$230,937.62	$45,214.61
South Crew Derrick/Digger	2010	$210,324.00	$22,565.71
North Crew Line Construction Bucket Truck	2015	$170,496.00	$47,243.28
South Crew Bucket Truck	2016	$193,083.25	$56,698.98
Spare Derrick or Bucket Truck	2012	$85,325.97	$27,275.21
No. 1 Maintenance Bucket Truck	2020	$115,186.71	$0.00
No. 2 Maintenance Bucket Truck	2019	$129,379.00	$19,123.19 *
No. 3 Maintenance Bucket Truck	2018	$124,583.00	$37,149.04
No. 4 Maintenance Bucket Truck	2017	$120,312.00	$43,555.48
No. 5 Maintenance Bucket Truck	2014	$107,994.00	$46,142.28
No. 6 Maintenance Bucket Truck	2014	$113,155.00	$42,286.36
Truck #130 (Old No. 1 Maint. Truck)	2013	$113,155.00	$38,236.74

Truck #130 was replaced this year by No.1 Maintenance Bucket Truck

* No. 2 Maintenance Bucket Truck replaced the truck listed as the Spare Derrick or Bucket Truck.

Request 59: Please:

a. State whether Grayson has compared the cost of a full-time mechanic to that of contracting out vehicle maintenance to local garages.

b. If so, provide the results of the comparison?

Response:

a. Grayson has not formally compared the cost of a full-time mechanic to that of contracting out vehicle maintenance to local garages. In the past, Grayson has experienced issues when trucks have been sent to local garages for repair. These include: longer downtime and vehicles being out of service, limited availability of skilled mechanics, repairs that were not completed to satisfactory conditions and others.
b. N/A

Request 60: Provide system-wide SAIFI, CAIDI and SAIDI for years 2015, 2016, and 2017.

Response:

Excluding T_{MED}			
Year	SAIFI	CAIDI	SAIDI
2015	3.13	135.4	423.7
2016	3.23	136.3	440.2
2017	3.68	148.1	545.1

Including T_{MED}			
Year	SAIFI	CAIDI	SAIDI
2015	3.13	524.6	1642.0
2016	3.66	184.2	674.3
2017	3.71	146.9	545.1

Request 61: Please describe Grayson's OMS in terms of when originally installed, the dates and types of enhancements since then, the current functions of the OMS, the server backup method, the original and upgrade costs, and the annual operating and maintenance costs.

Response:

Our Outage Management System (OMS) is Milsoft Utility Solution's "DisSpatch" and it was originally installed in 2011. The only system upgrades have been maintenance upgrades from Milsoft as part of the annual service agreement. The maps that are imported into OMS were upgraded in 2018 when we implemented our GIS system giving us more accurate outage prediction capabilities.

The OMS system currently functions as outage tracking and queries are created from the maps to notify our consumers of planned outages. We are currently working with Landis+Gyr (our AMI vendor) and Milsoft to get the interface working to allow meters to be pinged during and after an outage to ensure all consumers are on before the crew(s) leave the area. We do not have an AVL system, SCADA system and do not subscribe to a weather service.

The installation, training and purchase cost was $90,708 (including software, licenses and training) and we pay $18,232 annually for support.

The server is backed up daily to a backup server on-site. At night the server data is then sent to a backup server in Lexington owned by NetGain Technologies.

Request 62: Please:

a. State whether and if not to what degree the GIS is fully integrated with the OMS.

Response:

Our GIS system is not 'fully integrated' with our OMS system. The GIS does have an export process that helps prepare the data for our OMS but they do not fully integrate. Maps are exported from GIS and modified then imported into OMS for map updates.

b. Provide an estimate of the cost for integrating the AMI with the OMS.

Response:

Unless we find an anomaly (which we don't expect), there should be no cost to integrate AMI with our OMS.

Request 63: Please indicate actual winter peak loads (the summation peak substation loads) each year since winter of 2014/2015.

Response:

Winter	Peak (MW) (non-coincident)
2014/2015	86.039
2015/2016	65.541
2016/2017	60.599
2017/2018	74.502
2018/2019	72.638

Request 64: Please provide best estimate of miles of primary lines, in off road ROWs, inaccessible to the derrick/digger trucks.

Response:

Grayson estimates 1,285 miles of primary line in off road ROW that would be inaccessible to digger derrick trucks.

Request 65: Please identify the organization and resources responsible for maintaining the two-way radio communications equipment.

Response:

We utilize East Kentucky Power Cooperative's radio system. They own and operate the system and licensing. They currently contract with AMK Services out of Lexington, KY to maintain the mobile units and we pay for the labor on our own equipment.

Request 66: Please provide the level of college education, and years and type of COOP-related experience, of the CEO, the Manager of Operations, the Manager of Technology, the Interim Manager of Finance and Accounting, and the GIS Technician.

Response: **President & CEO:**

- University of Kentucky – Bachelor of Business Administration in Decision Science and Information Systems; Minor in Economics
- University of Kentucky – Masters of Business Administration in Business Administration
- MIP Graduate – University of Wisconsin/NRECA
- 10 Years Experience at Cooperative
    - 2 Years – Purchasing
    - 2 Years – Financial Analyst
    - 5 Years – Manager of Finance & Accounting
    - < 1 Year – President & CEO

Manager of Operations:

- 31 Years Experience at Cooperative
    - 4 Years – Apprentice Lineman
    - 12 Years – Construction Crew Foreman
    - 7 Years – Assistant Manager of Operations
    - 8 Years – Manager of Operations

Interim Manager of Finance & Accounting:

- 32 Years Experience at Cooperative
    - 1 Year – Customer Service/Billing
    - 5 Years – Payroll/Capital Credits
    - 5 Years – Accountant/Bookkeeper
    - 15 Years – General Accounting Supervisor
    - 6 Years – Manager of Accounting & HR

Manager of Technical Services:

- University of Kentucky – Bachelors of Science in Electrical Engineering
- 35 Years Experience at Cooperative
    - 6 Years – Member Services
    - 7 Years – Engineering and Metering
    - 22 Years – Manager of Technical Services

GIS Technician:

- Morehead State University – Bachelor of Arts in University Studies/Electricity, Electronics Minor
- Keller Graduate School of Management – Master of Arts in Business Administration and Management
- MIP Graduate – University of Wisconsin/NRECA
- 12 Years at Cooperative
    - 6 Years – Lineman
    - 1 Years – Purchasing Agent
    - 5 Years – GIS Technician

Request 67: Please indicate whether Grayson's annual capital budget planning meetings and its annual O&M budget planning meetings are done together, or as separate planning meetings.

Response: Grayson completes its annual capital budget and O&M budget planning meetings together.

Request 68: Please:

a. Describe in more detail how capital projects, once commenced, are managed.

b. Confirm or if not correct that the Manager of Operations has responsibility to monitor the projects

c. State whether the engineering firm also monitors progress

d. Describe the nature and magnitude of any of these capital projects performed on a "turn-key" basis.

e. State whether engineering costs are captured separately for turn-key projects.

Response:

a. The process for our larger capital projects has been as follows: Leidos determines the project need from our construction work plan (CWP) analysis and estimates the cost of the project, which is then added to the CWP. When we decide to start that project, we determine if we need to contact a firm to stake the project or use in-house stakers based on the projects size and the in-house stakers availability at that time. The project is staked and assigned to our line contractor that is under contract at that time. The materials for the project are purchased and accounted for through our warehouse and issued by our warehouseman. We do not build capital projects as 'turn-key'. Once the project has been completed, we contract a professional engineer to inspect the line. Once the line is up to RUS specifications, he signs off on the project. The entire project, from start to end, is monitored by the Manager of Operations.

b. Confirmed

c. An engineering firm does not monitor the progress of the job

d. Grayson RECC does not utilize 'turn-key' projects.

e. This is not applicable to our capital projects.

Request 69: Please provide the total mileage of primary circuit, including lateral taps, for each of the 5 longest circuits.

Response:

Substation & Circuit	Miles
Elliottville Circuit 3	98.60
Mazie Circuit 2	93.34
Warnock Circuit 4	80.65
Airport Road Circuit 1	78.46
Newfoundland Circuit 1	75.19

Request 70: Please:

a. Describe any Grayson re-use of malfunctioning voltage regulators and reclosers.

b. If so used, identify who repairs or rebuilds them.

Response:

a. Unless there has been catastrophic damage to the equipment, we send all regulators and OCRs to be rebuilt.

b. We currently utilize Solomon Corporation or MS TN Transformers, Inc. to rebuild our regulators and OCRs.

Request 71: Describe how Grayson handles failed pole-mounted and pad-mounted transformers.

Response:

All pole mount transformers are purchased from United Utility Supply (UUS) and have a 10 year manufacturer warranty. If a pole-mounted transformer fails in the first 10 years, UUS takes the transformer for analysis and determines if a replacement will be issued. If outside the 10 year timeframe, we send them off to see if they can be repaired or need to be disposed of. Currently, we use either Solomon Corporation or MS TN Transformers, Inc. to repair or dispose of failed transformers that are not within UUS warranty timeframe.

Request 72: Please:

a. Provide the names of suppliers form which Grayson purchases poles, transformers, voltage regulators, conductor, and reclosers.

b. Describe the methods for assuring best prices for these items.

Response:

a. Poles – Brownwood (Thru UUS)

Transformers – UUS is primary. Solomon and MS TN Transformer

Voltage Regulators – Solomon and MS TN Transformer

Conductor – Brownstown, Stuart C Irby, Cape Electric

Reclosers – Solomon, MS TN Transformer

b. Periodic quoting on material, no less than once a year. Delivery and stock are important factors when evaluating vendors before choosing.

Request 73: Please describe how Grayson would manage a major storm restoration, if it lost the use of its main building, including the OMS, due to a fire, tornado, or other major event.

Response:

If Grayson was to lose the main building in a disaster, Grayson would utilize its Disaster Recovery Plan to assist in resuming operations.

If the main building was lost, including the OMS, and the warehouse/garage was not compromised, we would move our operations to that location until we could get our office building in service. If both locations were also damaged, we would depend on one of the three temporary locations that we have established in an area of our territory that was not affected by the disaster.

CRC would dispatch our linemen and take outage calls as we transition into our temporary location. We anticipate accessing our OMS remotely through CRC was our remote location was running.

We would work with Unified Technologies to implement a cloud base system to utilize our phone system offsite.

SEDC, our CIS/GIS system, keeps a near real-time backup of our system in Atlanta and we could have our CIS/GIS functioning as soon as they were able to create a remote server or we could travel and obtain a physical server.

Our remaining applications would be utilized through Netgain and our remote backup service.