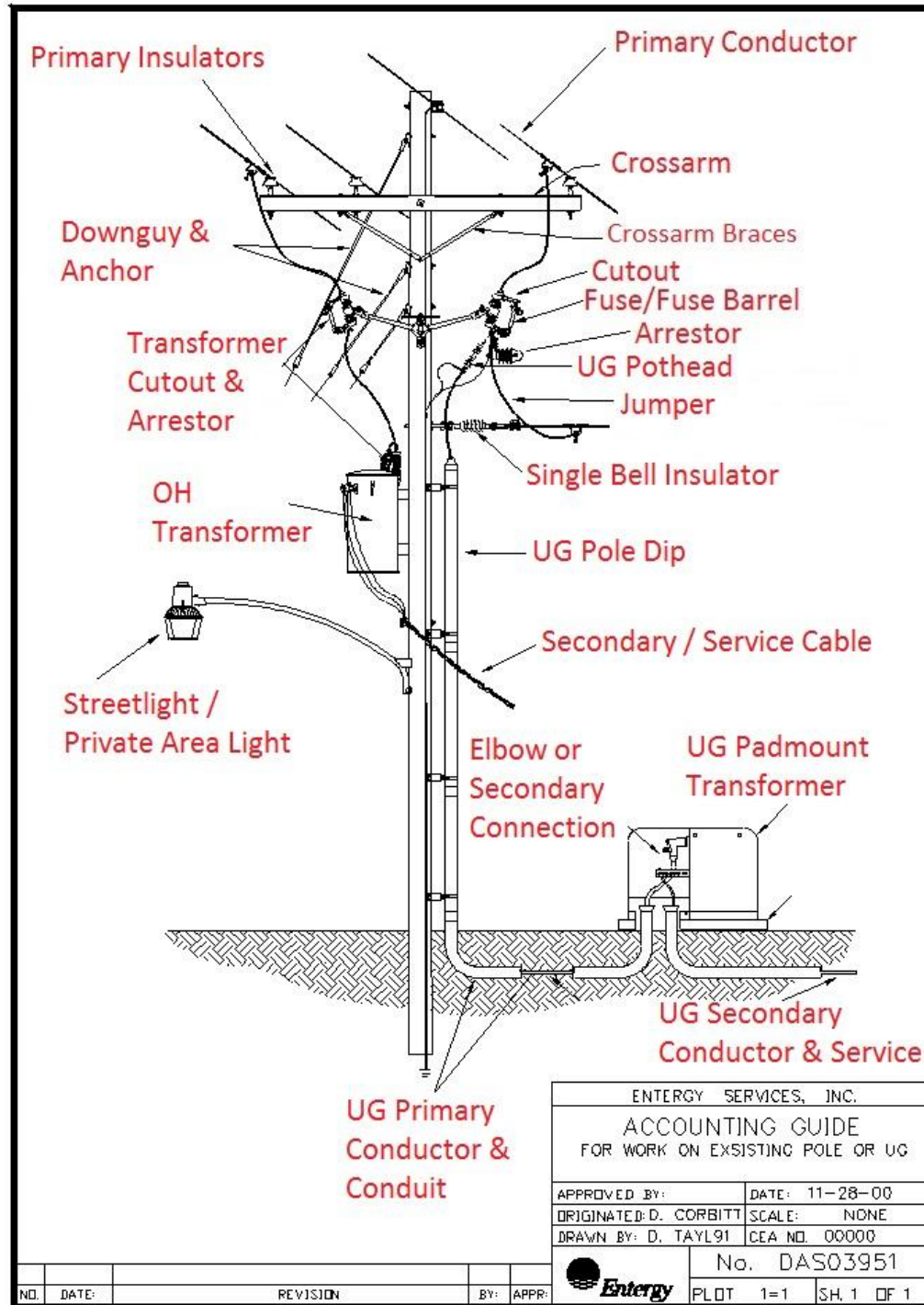
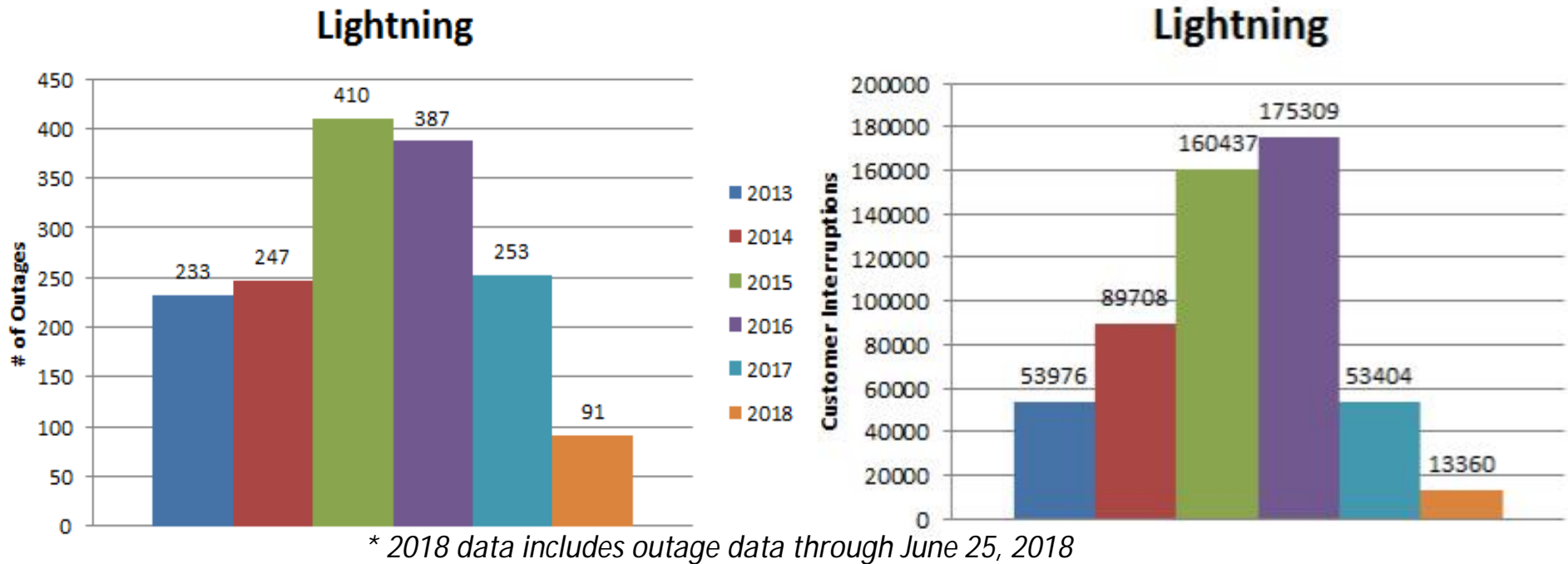


* 2018 data includes outage data through June 25, 2018



Lightning affects the distribution system either through a direct strike or indirect strike. A direct strike will severely damage the facility that is hit. An indirect strike will cause a flashover on nearby distribution facilities. Indirect strikes typically damage facilities with low Basic Impulse Level (BIL) Insulation values.



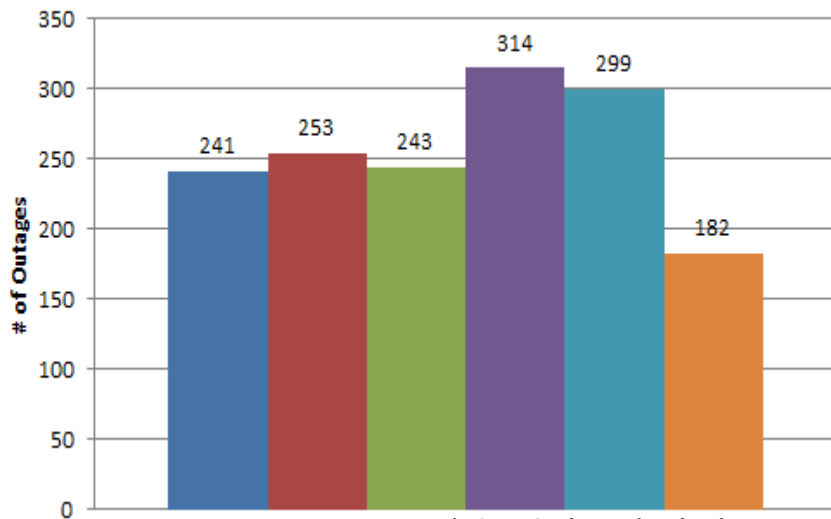
Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
1,621	105	6%	546,194	12,652	2%

Transformer failures are typically the result of being exposed to conditions outside the design specifications for the transformer or external influences. These include but are not limited to excess voltage due to lightning, excess current through unusual load spikes, and external flashovers due to lightning, animals, and mechanical damage.

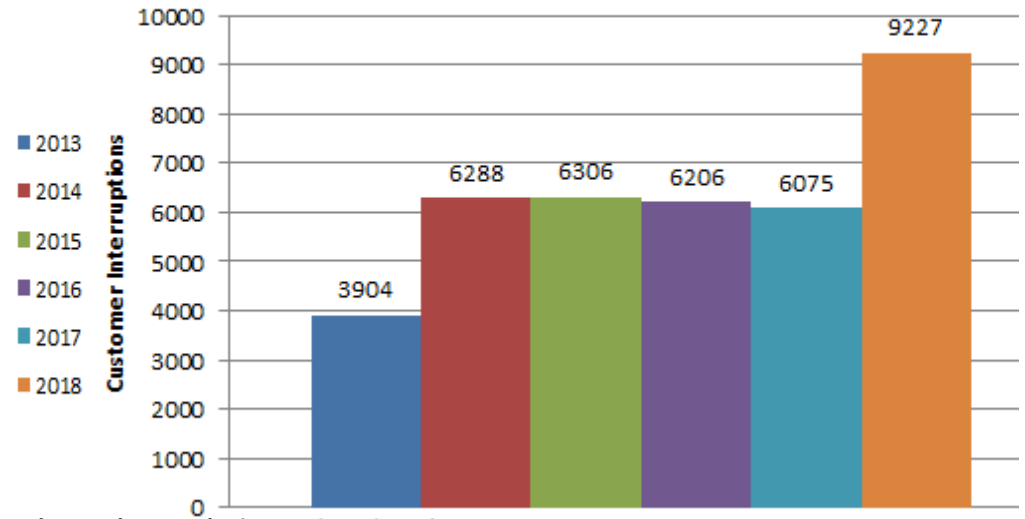
Summation

- Over Voltage (I.E. Lightning)
- Over Current (I.E. Winter Cold Snap, Summer Heat Wave, Unusual Peak Loading)
- External Flashovers (I.E. Animals, Lightning, Mechanical Damage)

Equipment Failure - Transformer

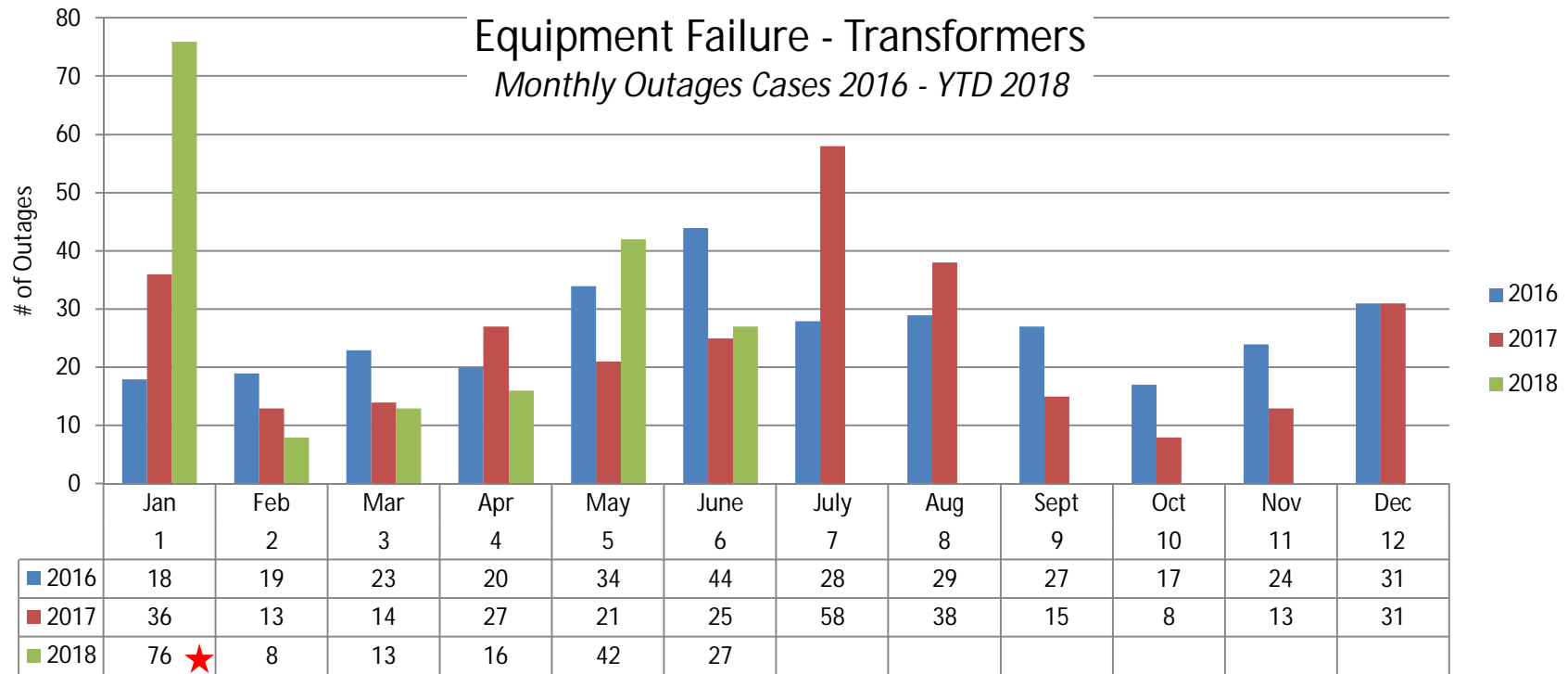


Equipment Failure - Transformer



* 2018 data includes outage data through June 25, 2018

Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
1,532	939	61%	38,006	21,588	57%



* 2018 data includes outage data through June 25, 2018

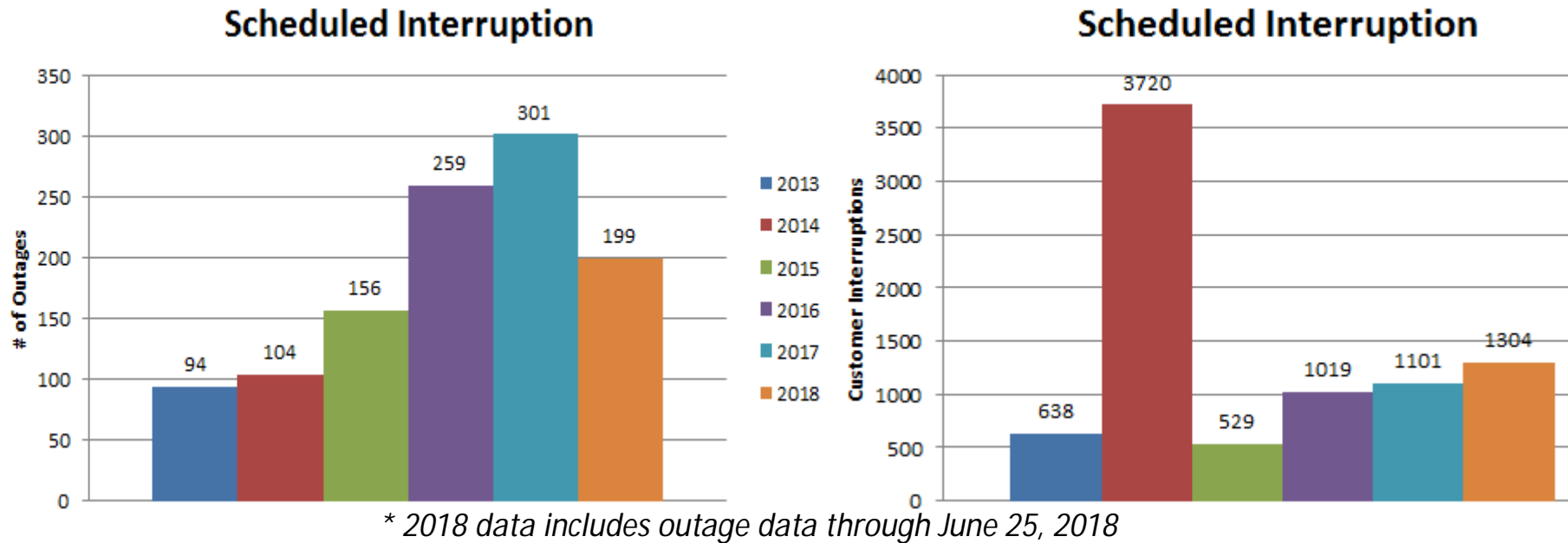
★ Transformer Failures had a significant increase in January 2018 due to extreme freezing temperature days. Customer's Electric Water Heaters/Heaters consume higher loads than historically expected. When these overload failures occur the replacement transformer is upgraded in size capacity to prevent future failures.

DATE	VALUE	RANK	DEPARTURE FROM MEAN (52.8°F) 1948-2000 BASE PERIOD
201601	53.9°F	2	1.1°F
201701	60.2°F	3	7.4°F
201801	48.8°F	1	-4.0°F

Scheduled Interruptions are typically taken when the work being performed cannot be safely executed while the line is energized. Customers are notified in advance of the scheduled outage via Outbound Calling, Text Notification, etc. Scheduled Interruptions are Non-Controllable Outages.

Summation:

- *Non-Controllable due to safety conditions*



Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
1,113	1,011	91%	8,311	7,577	91%

Primary Conductor becomes structurally weakened over time when exposed to the elements and constant current. Overloaded conductor may sag to the point of structural failure. Mechanical damage from prior events (I.E. Storm, Vegetation, vehicles, etc) may lead to structural failure from the structural deficiencies that were introduced that did not result in a failure at that time.

Contributing Factors:

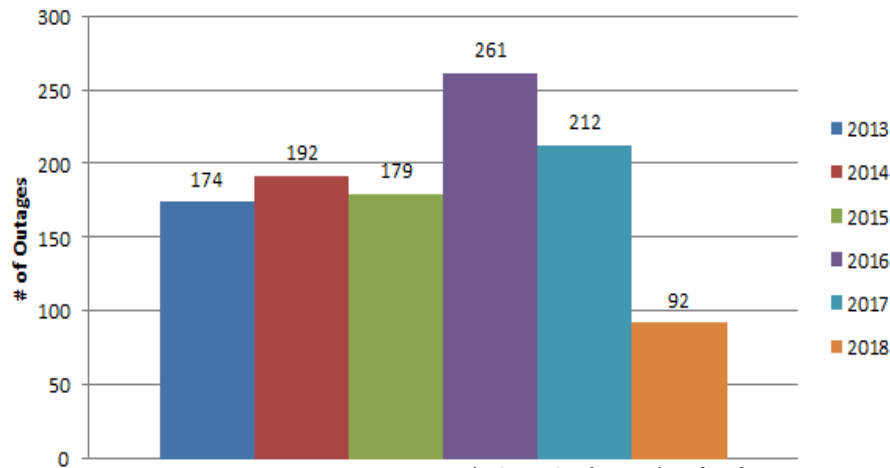
Overhead

- Exposure to the elements and constant current over time reduces structural integrity which may lead to structural failure
- Overloaded Conductor in terms of ampacity may lead to structural failure
- Mechanical damage from prior events may lead to structural failure (I.E. Storm, Vegetation, Vehicles, etc)

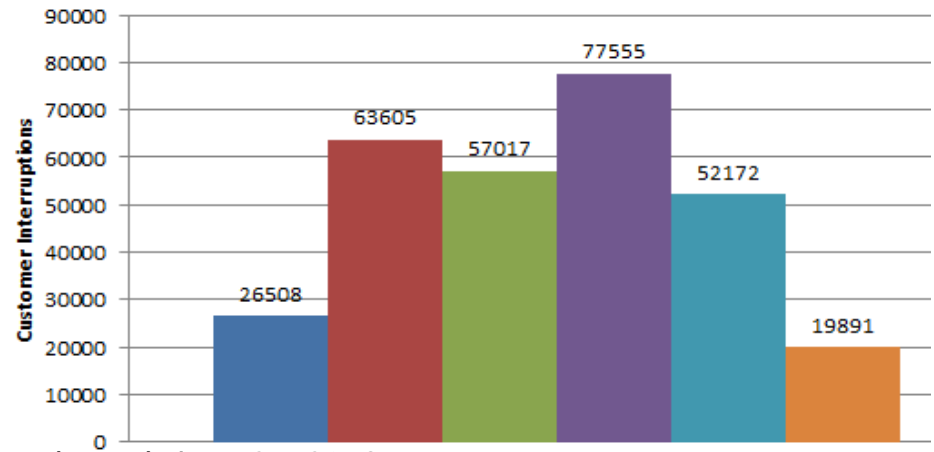
Underground

- Defects in conductor insulation
- Overloaded Conductor in terms of ampacity may lead to insulation failure
- Insulation nicks due to dig-ins that lead to failure over time

Equipment Failure - Primary Conductor



Equipment Failure - Primary Conductor



* 2018 data includes outage data through June 25, 2018

Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
1,110	636	57%	296,748	161,179	54%

Failure of the conductor/ wire that is usually at 120/240v that runs between poles or from the pole to the house.

Contributing Factors:

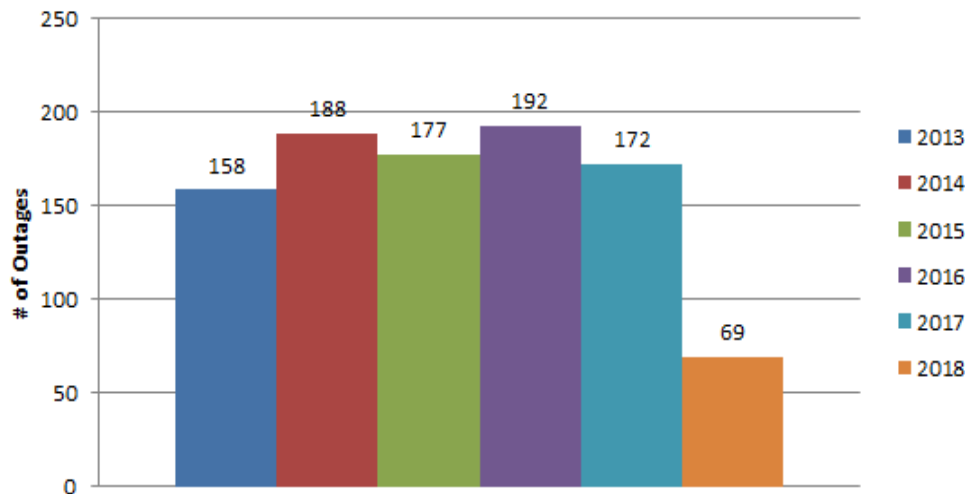
Overhead

- Connector corrosion on either the source connection or load connection may lead to electrical and/or structural failure
- Insulation breakdown due to mechanical damage while in service which may lead to electrical failure (I.E. trees/limbs, wind borne debris, public inflicted damages)
- Squirrels chewing the conductor or neutral may lead to structural or electrical failure

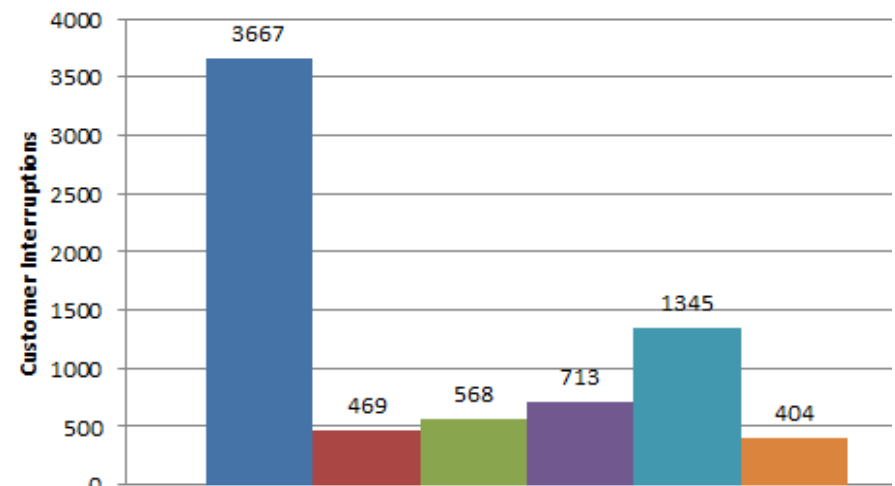
Underground

- Connector corrosion on either the source connection or load connection may lead to electrical and/or structural failure
- Insulation breakdown due to defects present in the conductor which may lead to electrical failure
- Insulation nicks due to dig-ins that lead to failure over time

Secondary/Service Conductor



Secondary/Service Conductor



* 2018 data includes outage data through June 25, 2018

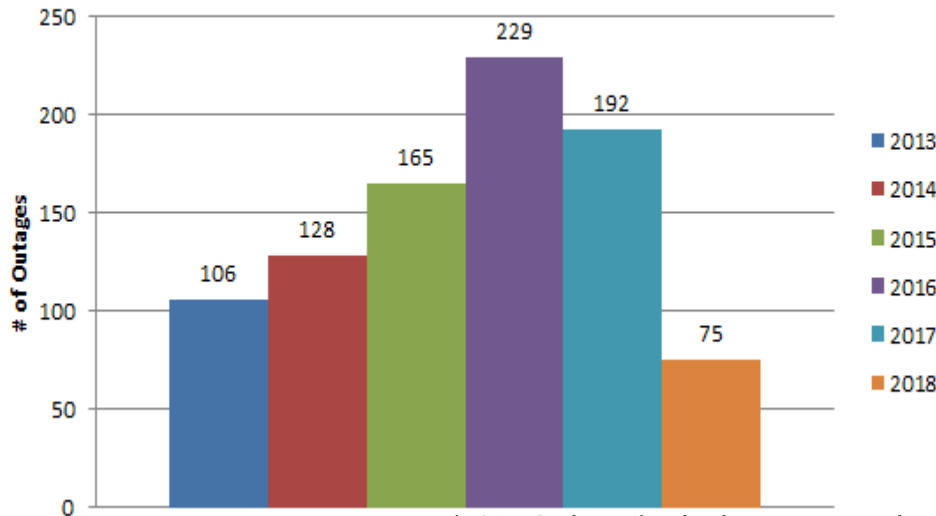
Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
956	660	69%	7,166	2,432	34%

Crossarms are typically Douglas Fir treated with Pentachlorophenol (Penta) as a wood preservative. New Orleans is in the highest wood deterioration zone (zone 5) as defined by the NESC. Over time the wood preservative becomes less effective against fungal and insect decay which will eventually lead to structural failure.

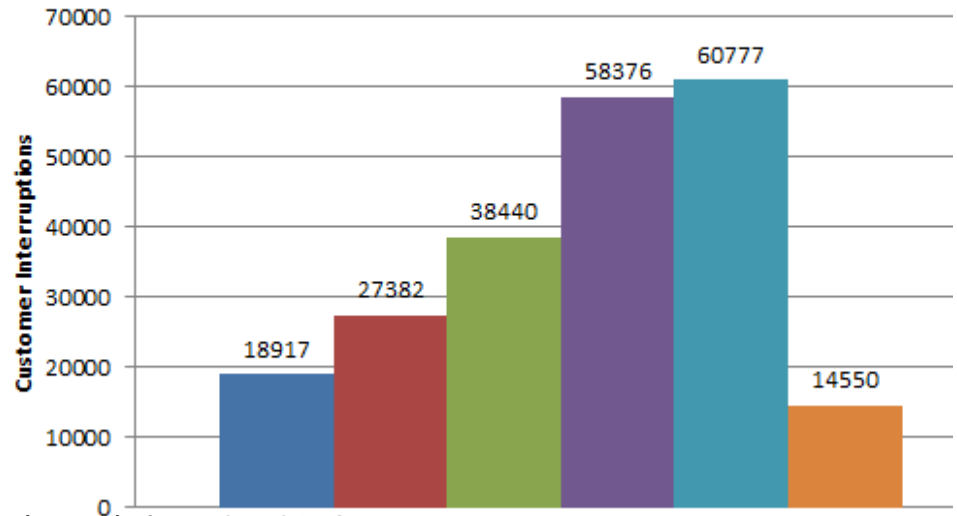
Summation:

- *Inherently high levels of fungal decay due to geography and climate resulting in rapid wood decay*

Equipment Failure - Crossarm



Equipment Failure - Crossarm



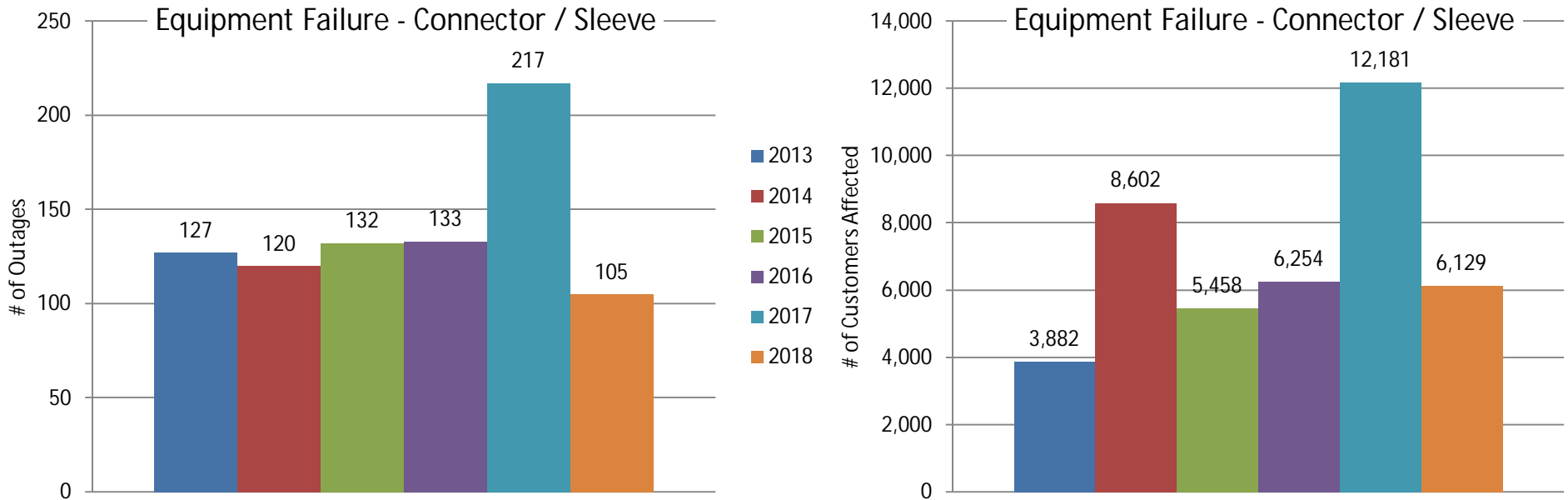
* 2018 data includes outage data through June 25, 2018

Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
895	531	59%	218,442	120,179	55%

Connections may deteriorate over time due to wind vibration shaking the connections loose. If contamination defects are introduced during installation, resistance can build up which will initiate corrosion issues. These issues may eventually lead to a connection failure.

Contributing Factors:

- Vibration due to wind may cause components to loosen over time
- Metals expand and contract as temperatures change and the current in the conductor changes. This expansion and contraction may result in components loosening over years or decades of service.
- Contamination defects may be introduced during installation which may lead to enhanced levels of corrosion over time



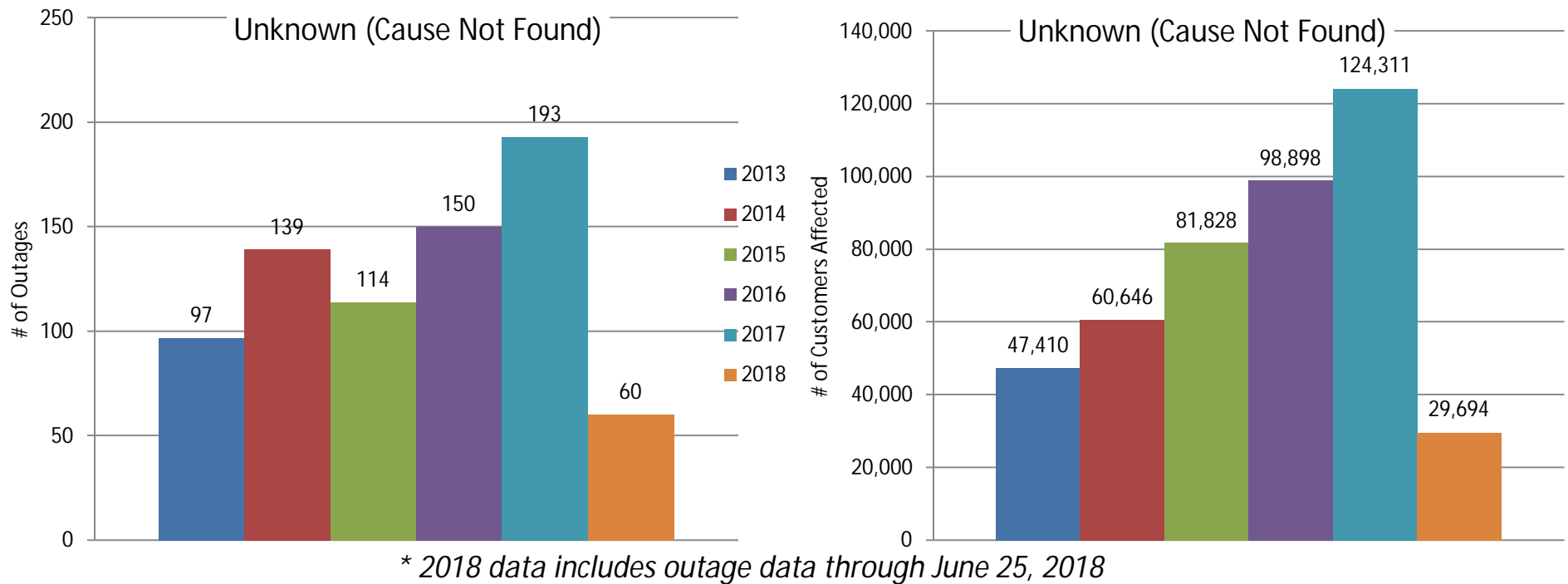
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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
834	657	79%	42,506	27,372	64%

Typically Unknown outages have a temporary nature that is not easily identified during storm restoration. These issues include but are not limited to lightning damage, vegetation (I.E. Limb passing through conductor), animals, and conductor slap

Contributing Factors:

- *Includes but not limited to Lightning damage, Vegetation, Animals, and Conductor Slap*



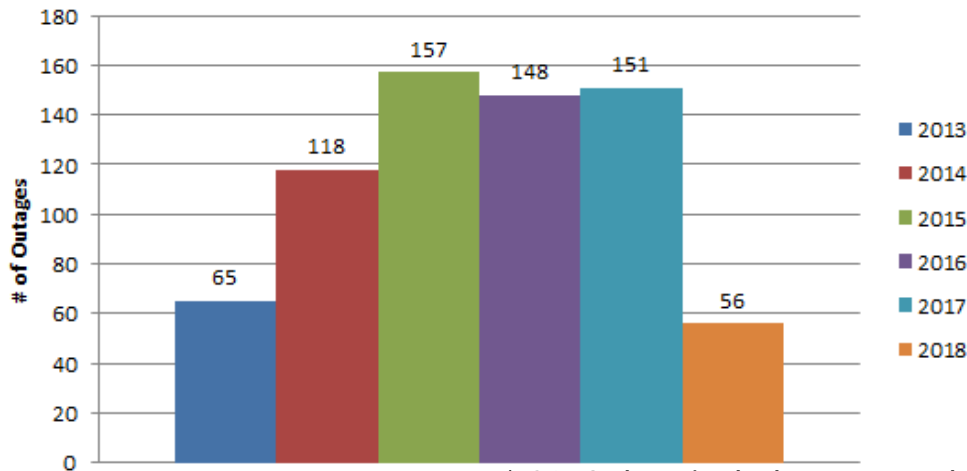
Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
753	489	65%	442,787	243,490	55%

A fuse link is a replaceable element that is a portion of the Fuse Switch. The fuse link extinguishes due to higher than normal current transfers. This overcurrent protection device isolate faulted feeder branches and/or equipment on the distribution system.

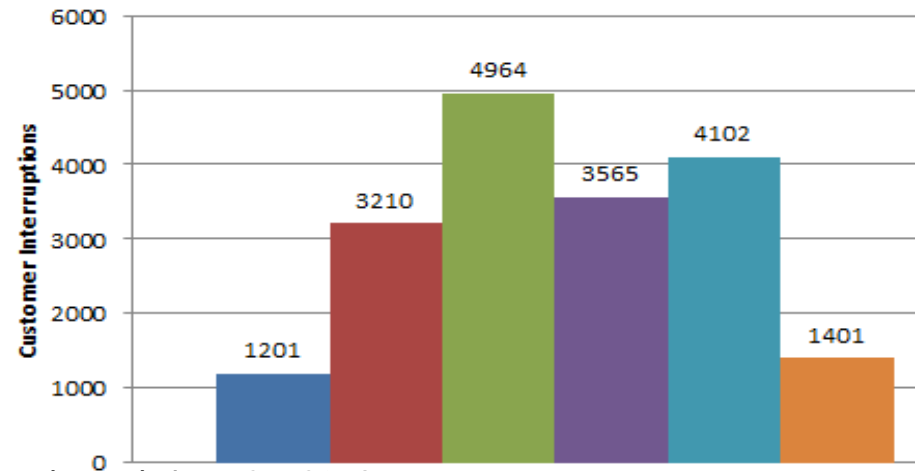
Contributing Factors:

- Normal fuse operation as a result of other causes (I.E. Lightning, Vegetation, Wind Borne Debris, Animals, etc) miscoded as a fuse link failure. Fuse links are meant to blow open when a fault occurs downstream.*
- Miss-coordination between other protective devices due to replacement with an improperly sized fuse on a major storm may result in an undesired fuse link operation.*
- Fuse Barrels may deteriorate over time through normal weathering and contamination resulting in an inability to open during a fault.*

Equipment Failure - Fuse Link



Equipment Failure - Fuse Link



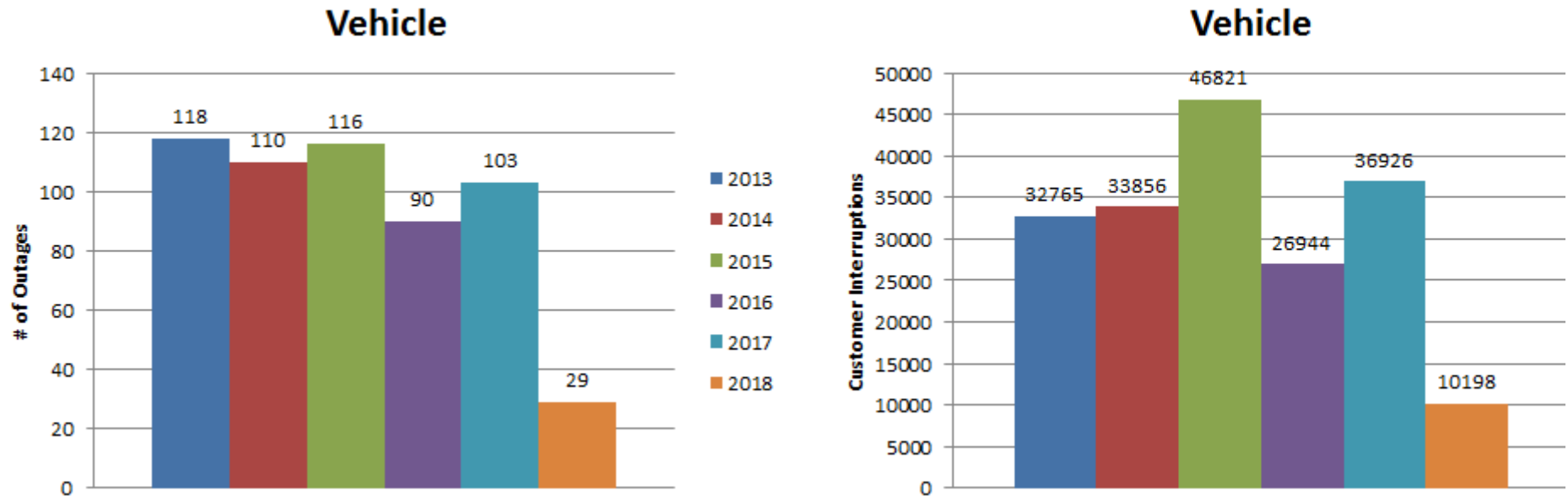
** 2018 data includes outage data through June 25, 2018*

Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
695	438	63%	18,443	9,440	51%

Vehicle outages are caused from vehicles causing mechanical damage to our facilities. Vehicle outages are non-controllable.

Contributing Factors:

- *Non-Controllable Public Inflicted Damage*



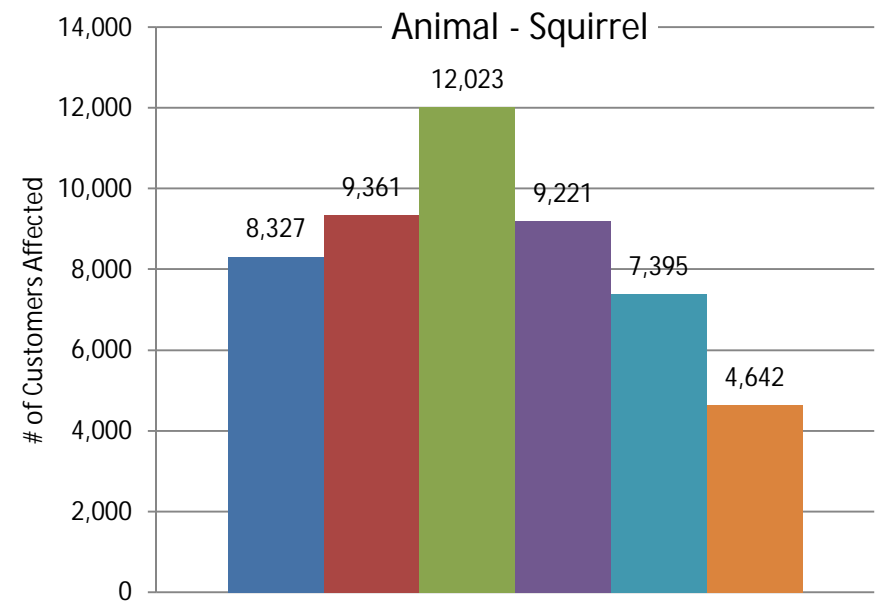
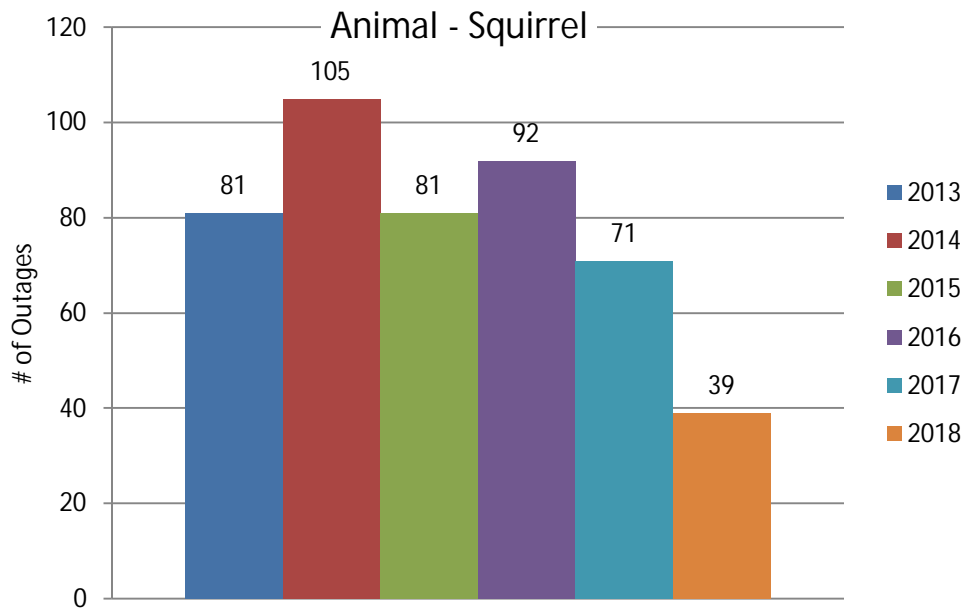
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566	447	79%	187,510	140,585	75%

Squirrels use Entergy’s poles, wires, and transformers the same as they do tress and limbs. Entergy’s wire is sometimes a safe way to cross a street and the top of the transformer may be viewed as a safe place to store food. Any space between two different voltage potentials large enough for a squirrel to make a connection may result in an outage.

Contributing Factors:

- Inadequate spacing/insulation between conductors or grounded hardware may result in a squirrel making contact between two voltage potentials.*
- Increased population of squirrels in an urban environment.*



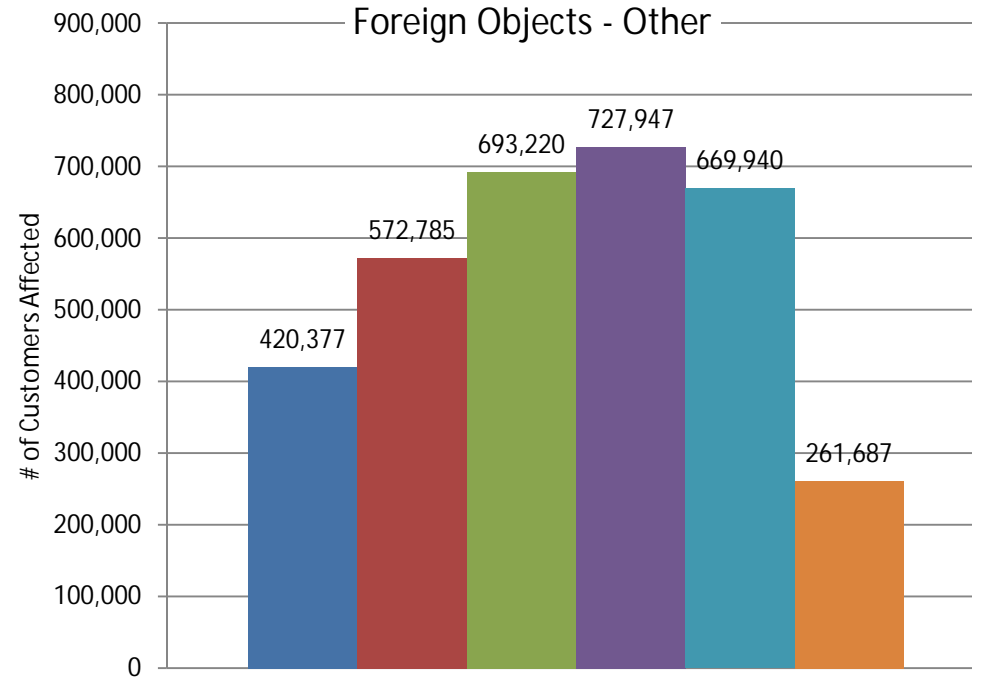
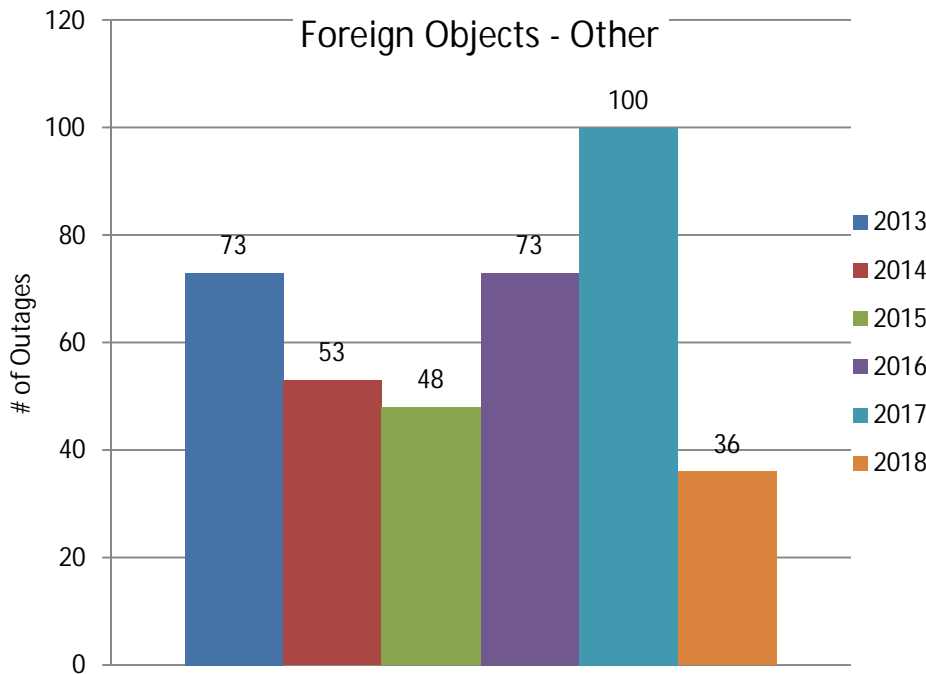
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469	396	84%	50,969	42,045	82%

Foreign objects such as Mylar balloons, signs, metal rooftops, and other wind borne debris may become entangled in overhead facilities and result in an outage. These types of outages are non-controllable.

Contributing Factors:

- Non-Controllable Public Inflicted Damages
- Non-Controllable Wind Bourne Debris



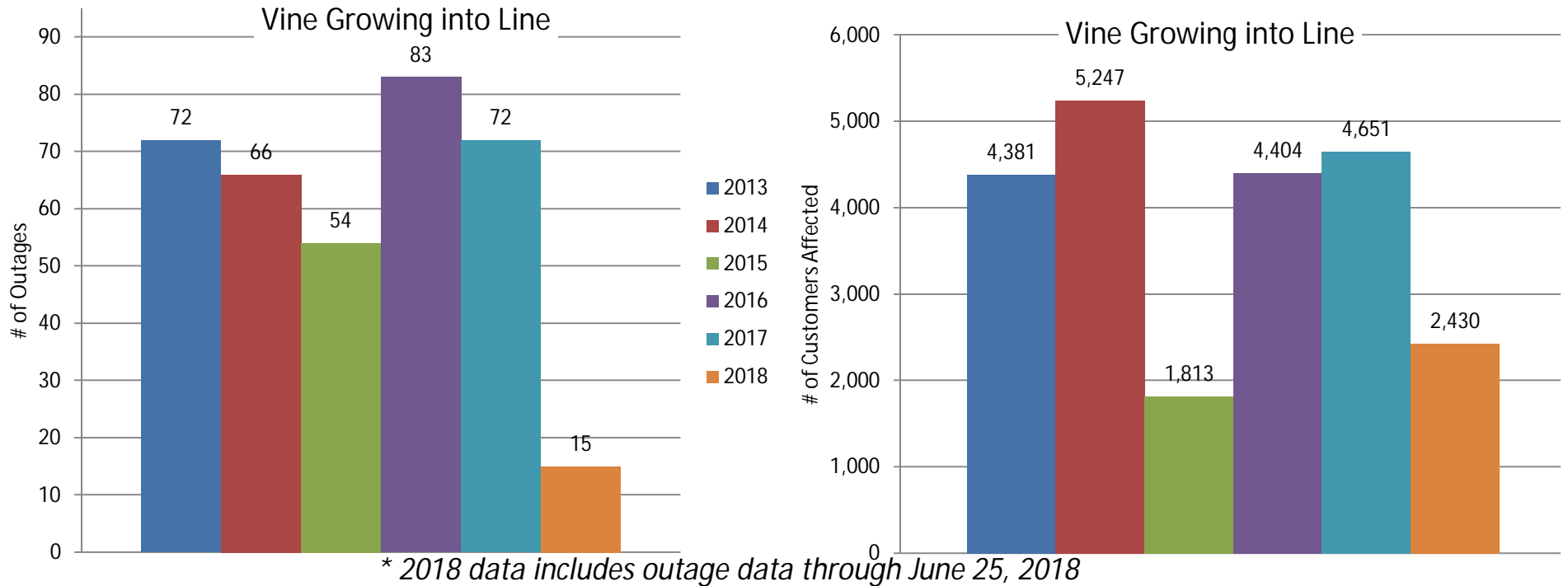
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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions		Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
383	231	60%		131,622	96,071	73%

Vines grow very quickly and require constant attention to keep them out of power lines.

Contributing Factors:

- *Rapid vine growth combined with a long growing season and ideal growing conditions increase the probability of vines growing into conductors*

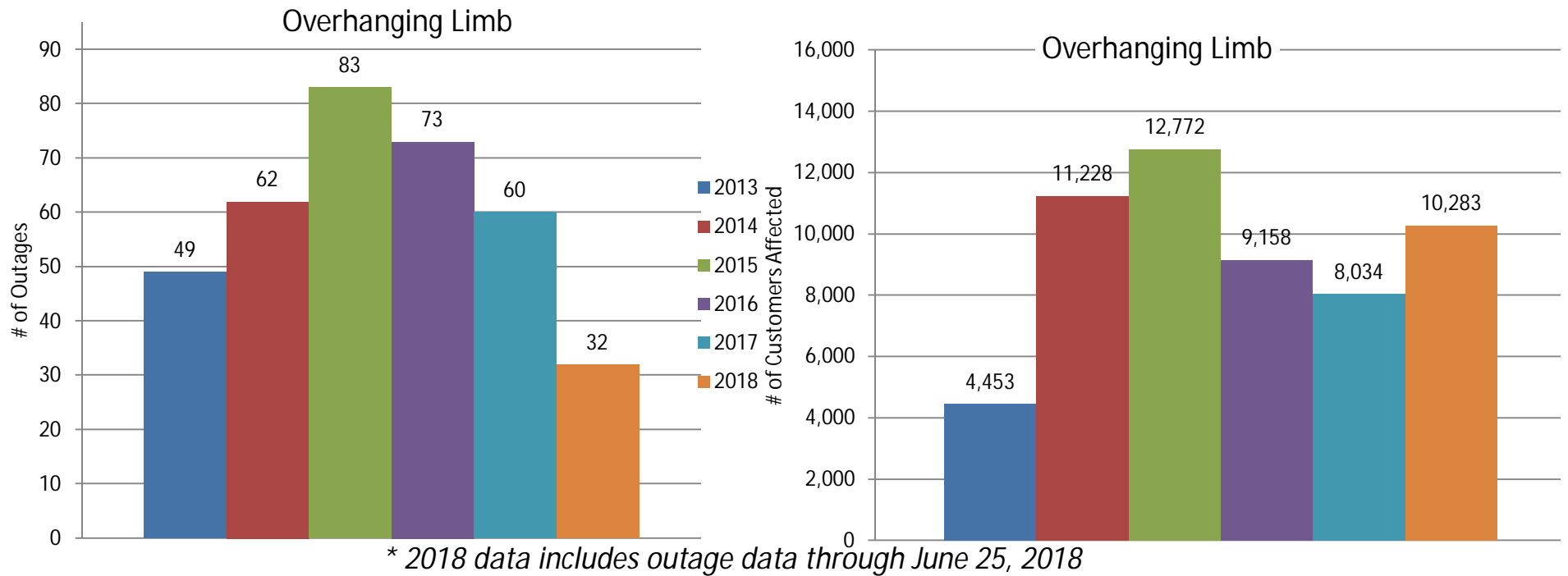


Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
362	190	52%	22,926	14,244	62%

Overhanging Limbs are limbs above the conductors that may fall to damage the facilities below. Typically the contributing factor is a lack of adequate sky line trimming in a vegetation management plan. New Orleans has mandated that Entergy a confined trim radius around conductors which eliminates Entergy's ability to prevent outages from overhanging limbs. Entergy and the city have worked closely around dealing with individual issues as they present themselves and look forward to continuing that working partnership.

Contributing Factors:

- Mandated trim scope limitations reduces the effectiveness of a vegetation management plan in regards to overhanging limbs
- High tree density throughout the area increases the likelihood of an overhanging limb event.

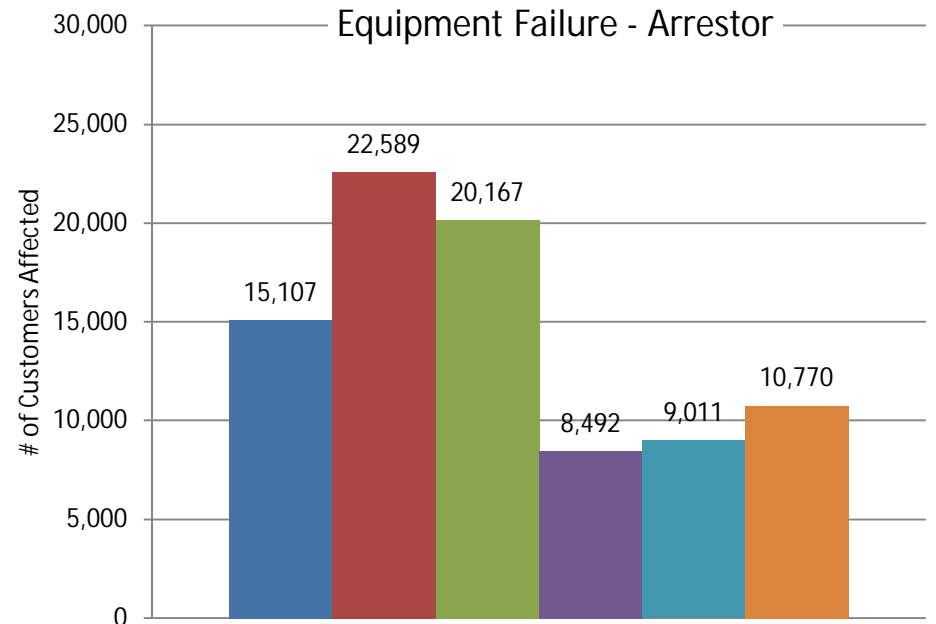
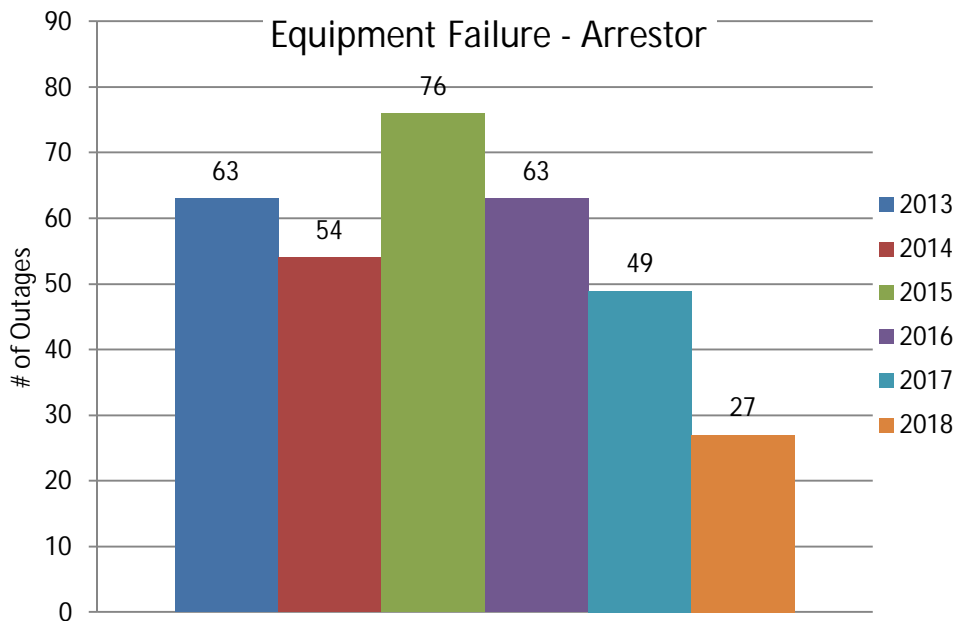


Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
359	153	43%	55,928	22,883	41%

Lightning Arrestors have an inherent failure rate chance that the arrestor will open during the course of interrupting a lightning event which is how arrestors are designed to operate when they fail. Damage may occur to hardware in the immediate proximity during the event. Arrestors can also cause a permanent fault if exposed to conditions outside their design parameters. These conditions are but not limited to greater lightning voltage than designed, greater lightning current than designed or improper ground resistance due to copper ground wire theft or other grounding conditions.

Contributing Factors:

- There is a chance that an arrestor may open and become inoperable after each event
- There is a possibility that damage to surrounding hardware in close proximity may occur during a normal arrestor failure
- Conditions outside design parameters may result in a permanent fault occurring



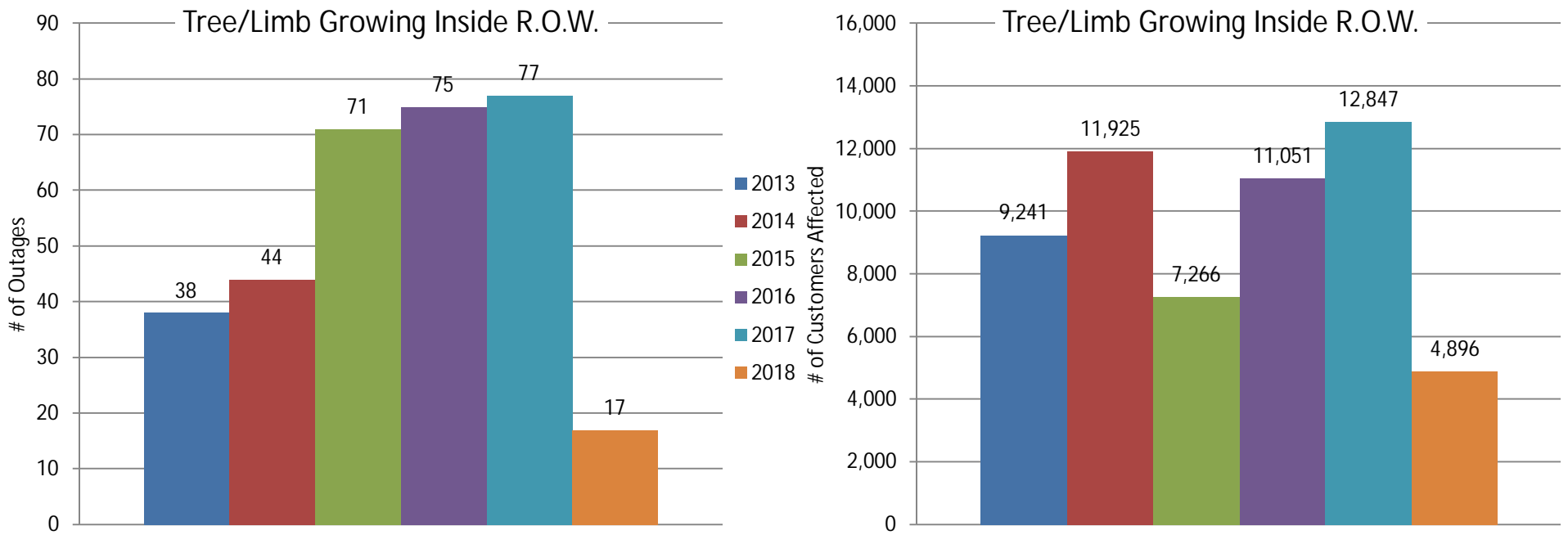
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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
332	227	68%	86,136	61,212	71%

Trees and/or limbs can grow very quickly. New growth is typically flexible and susceptible to bending during wind or vertical weight. A combination of the high tree density, limited R.O.W. widths, and trimming restrictions reduces the effectiveness of a vegetation management plan.

Contributing Factors:

- Limited R.O.W. widths in some cases reduce the spacing between trees and conductors*
- Protected trees can't be cut down or trimmed unless they are dead*
- High tree density throughout the area increases the likelihood of limbs and trees being blow into conductors*



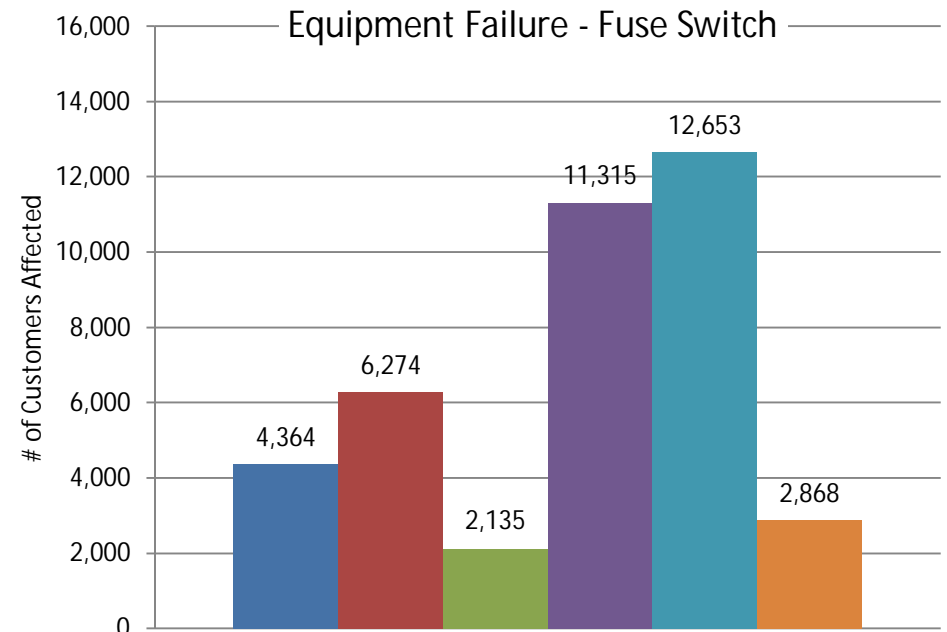
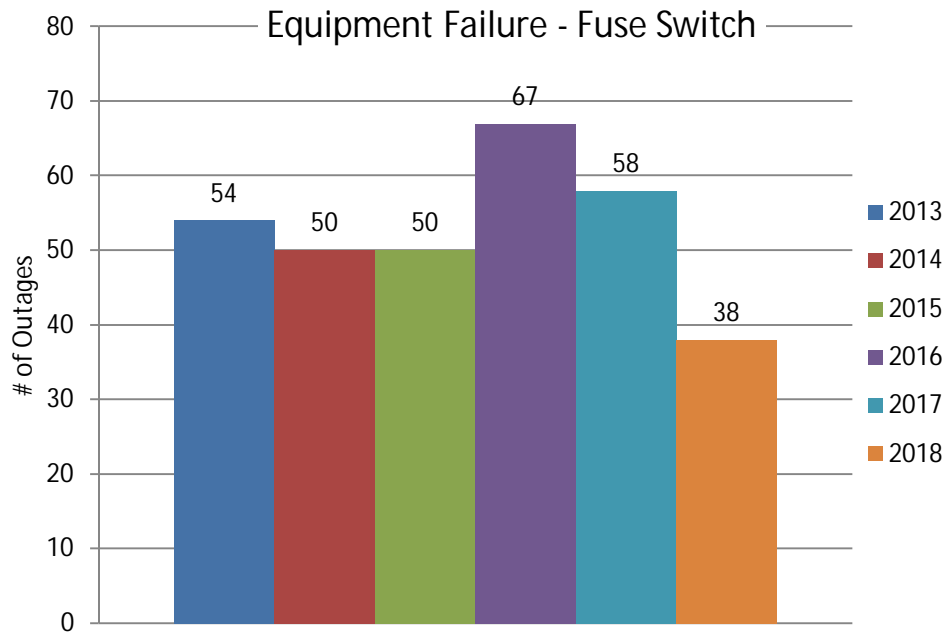
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322	124	39%	57,226	13,141	23%

The fuse itself inside a fuse cutout switch. Blown due to a downstream fault or overload.

Contributing Factors:

- *Normal fuse operation as a result of other causes (I.E. Lightning, Vegetation, Wind Borne Debris, Animals, etc) miscoded as a fuse link failure. Fuse links are meant to blow open when a fault occurs downstream.*
- *Miss-coordination between other protective devices due to human error in sizing or replacement with an improperly sized fuse on a major storm may result in an undesired fuse link operation.*
- *Fuse Barrels may deteriorate over time through normal weathering and contamination resulting in an inability to open during a fault.*



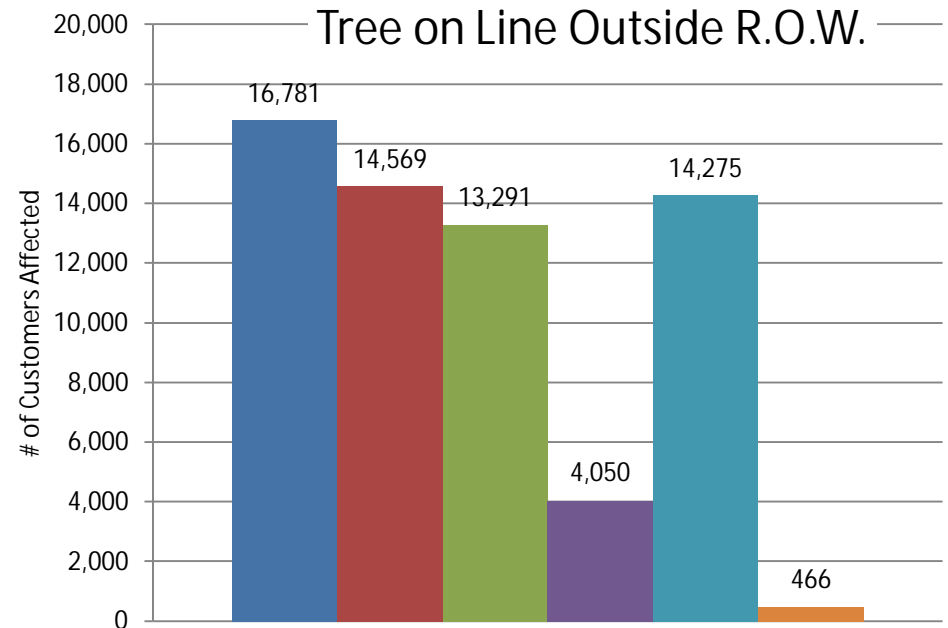
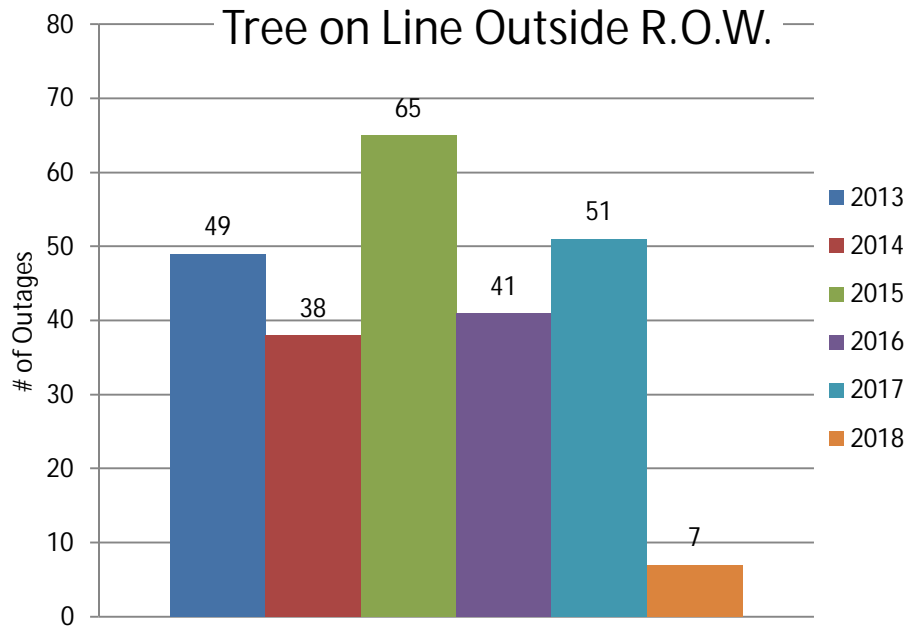
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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
317	209	66%	39,609	24,475	62%

Trees growing outside of the R.O.W. are non-controllable outage events.

Contributing Factors:

- Trees growing outside the R.O.W. are non-controllable events.



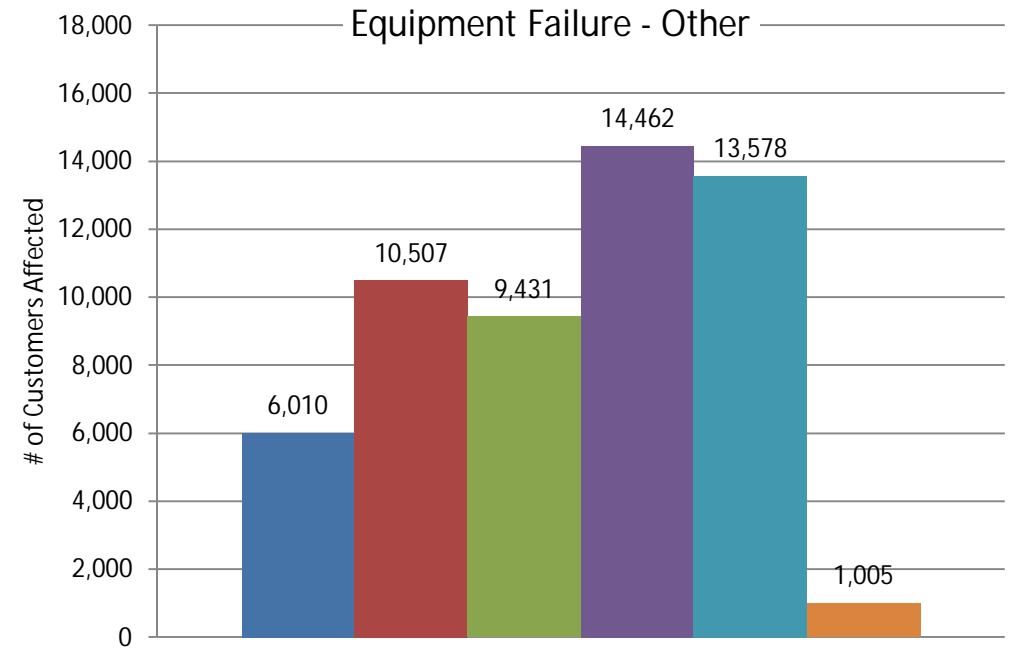
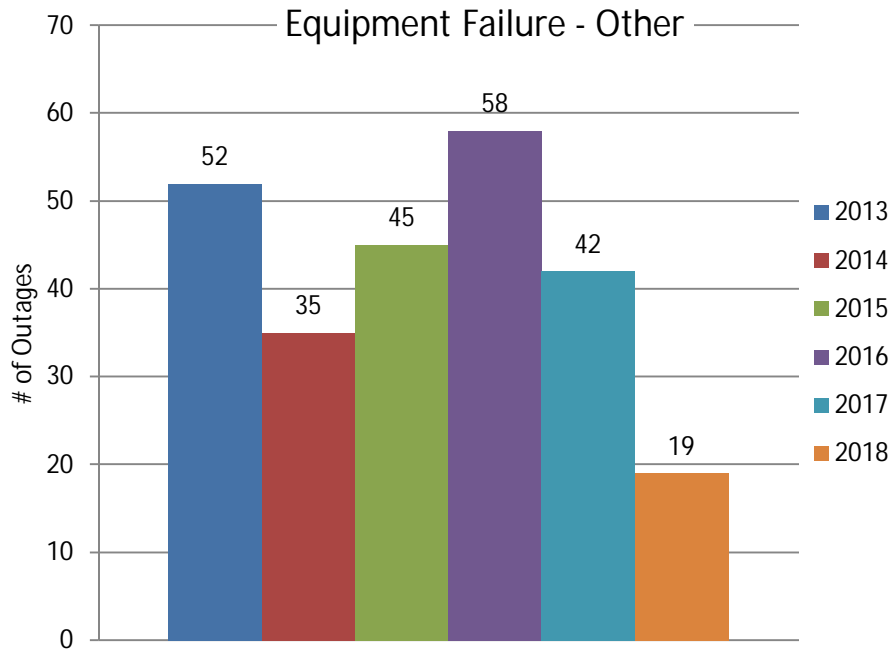
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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
251	109	43%	63,432	25,440	40%

This field describes any outage caused by hardware that is otherwise not listed as an individual cause code. Typically this cause code is reserved for minor or unique hardware.

Contributing Factors:

- *Connector Corrosion may lead to electrical failure*
- *Lightning damage from either prior or current events may lead to electrical failure*



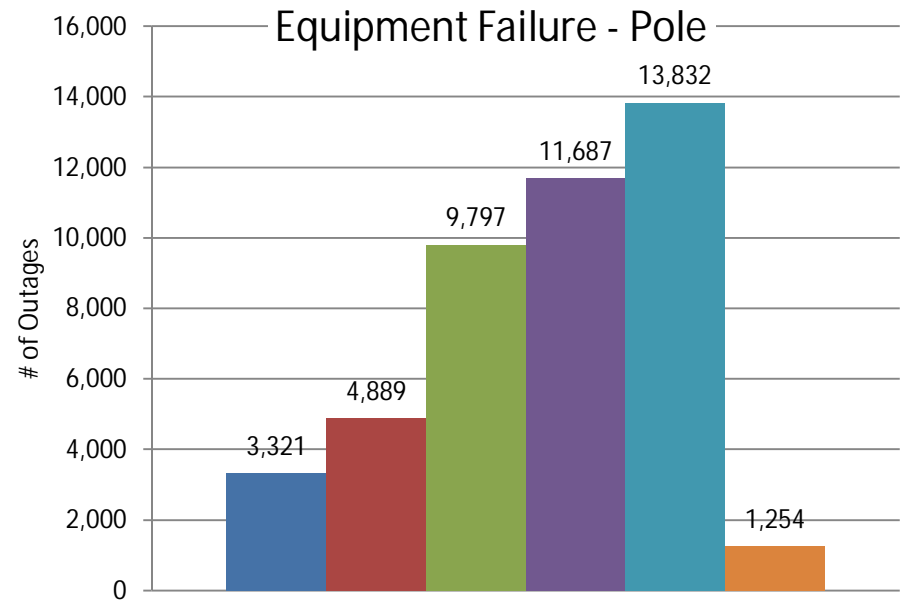
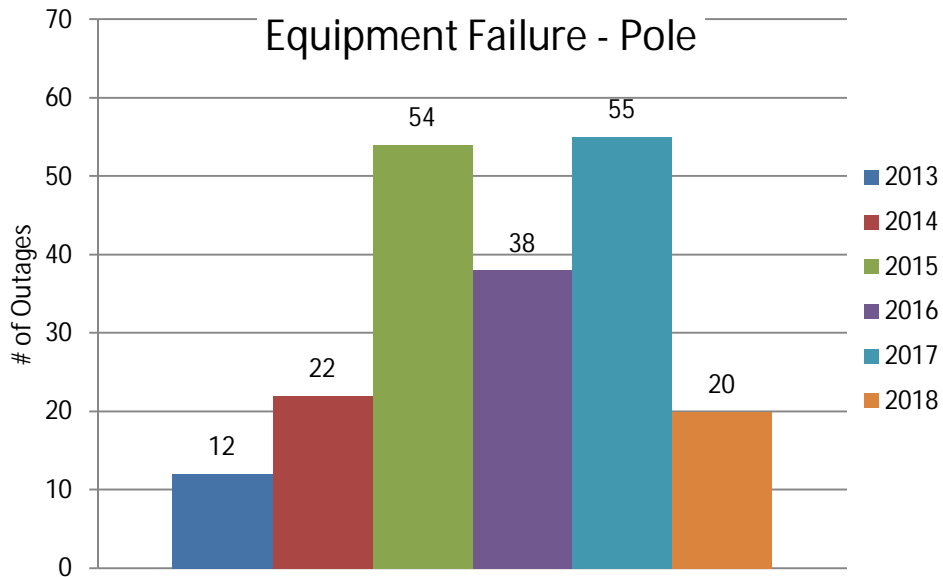
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251	128	51%	54,993	47,989	87%

The majority of poles in New Orleans are southern pine with creosote as the wood preservative. New Orleans is in the highest wood deterioration zone(zone 5) as defined by the NESC. Over time the wood preservative becomes less effective against fungal and insect decay which will eventually lead to structural failure. All new poles are treated with Chromated Copper Arsenate (CCA) which is chemically bonded to the wood which greatly increases the wood preservative longevity.

Contributing Factors:

- Inherently high levels of fungal decay due to geography and climate resulting in rapid wood decay
- Structural damage due to other factors (I.E. Vehicles, Trees, Limbs, Public Inflicted Damages, etc) structurally weaken poles over time which may result in structural failure



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Outage Cases	# of Outage Cases on FAIR WEATHER Conditions	% of Outage Cases on FAIR WEATHER Conditions	Total CUSTOMERS AFFECTED	# of Customers Affected on FAIR WEATHER Conditions	% of Customers Affected on FAIR WEATHER Conditions
201	100	50%	44,780	13,349	30%