

(a)	(b)
Circuit	Outage Cause
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	OTHER, OTHER, KNOWN CAUSE
4G1	WEATHER, SNOW, SLEET AND BLIZZARD
4G1	WEATHER, SNOW, SLEET AND BLIZZARD
4G1	PLANNED, EMERGENCY DAMAGE REPAIR
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT FAILURE, B/O EQUIPMENT
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	EQUIPMENT FAILURE, B/O EQUIPMENT, EQUIPMENT FAILURE, B/O EQUIPMENT
4G1	EQUIPMENT FAILURE, B/O EQUIPMENT
4G1	EQUIPMENT FAILURE, B/O EQUIPMENT
4G1	OTHER, OTHER, KNOWN CAUSE
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	INTERFERENCE, VEHICLE ACCIDENT
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
4G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G1	OTHER, OTHER, KNOWN CAUSE
5G1	OTHER, UNKNOWN
5G1	PLANNED, EMERGENCY DAMAGE REPAIR
5G1	EQUIPMENT FAILURE, B/O EQUIPMENT
5G1	OTHER, UNKNOWN
5G1	ANIMALS, ANIMALS
5G1	OTHER, OTHER, KNOWN CAUSE
5G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G1	TREES, TREE - NON-PREVENTABLE
5G1	PLANNED, INTENTIONAL TO CLEAR TROUBLE
5G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G1	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G1	OTHER, UNKNOWN
5G1	EQUIPMENT FAILURE, B/O EQUIPMENT, ENVIRONMENT, CONDENSATION / MOISTURE
5G1	ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)
5G14	TREES, TREE - NON-PREVENTABLE
5G149	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G149	EQUIPMENT FAILURE, B/O EQUIPMENT
5G149	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G149	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G149	EQUIPMENT FAILURE, B/O EQUIPMENT

5G149 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G149 OTHER, UNKNOWN
 5G149 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G149 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G149 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G149 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G149 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G149 EQUIPMENT FAILURE, POLE FIRE
 5G149 OTHER, UNKNOWN
 5G149 WEATHER, SNOW, SLEET AND BLIZZARD
 5G149 WEATHER, SNOW, SLEET AND BLIZZARD
 5G149 WEATHER, SNOW, SLEET AND BLIZZARD
 5G149 WEATHER, SNOW, SLEET AND BLIZZARD
 5G149 WEATHER, SNOW, SLEET AND BLIZZARD
 5G16 OTHER, UNKNOWN
 5G16 PLANNED, EMERGENCY DAMAGE REPAIR
 5G16 PLANNED, EMERGENCY DAMAGE REPAIR
 5G16 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G16 TREES, TREE - NON-PREVENTABLE, WEATHER, SNOW, SLEET
 AND BLIZZARD
 5G16 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G16 WEATHER, SNOW, SLEET AND BLIZZARD
 5G19 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G19 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G19 EQUIPMENT FAILURE, OVERLOAD
 5G19 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G19 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G19 OTHER, OTHER, KNOWN CAUSE
 5G19 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G19 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G19 LOSS OF SUPPLY, LOSS OF SUBSTATION
 5G19 ANIMALS, ANIMALS
 5G19 OTHER, UNKNOWN
 5G2 OTHER, UNKNOWN
 5G2 OTHER, UNKNOWN
 5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G2 EQUIPMENT FAILURE, B/O EQUIPMENT, EQUIPMENT
 FAILURE, B/O EQUIPMENT
 5G2 WEATHER, SNOW, SLEET AND BLIZZARD
 5G2 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G2 PLANNED, CONSTRUCTION
 5G2 OTHER, UNKNOWN
 5G2 OTHER, UNKNOWN
 5G2 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G2 TREES, TREE - NON-PREVENTABLE
 5G2 WEATHER, LIGHTNING
 5G2 PLANNED, EMERGENCY DAMAGE REPAIR

5G2 OTHER, OTHER, KNOWN CAUSE

5G2 ANIMALS, BIRD SUSPECTED, NO MORTALITY

5G2 WEATHER, LIGHTNING

5G2 OTHER, OTHER, KNOWN CAUSE

5G2 WEATHER, LIGHTNING

5G2 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
FAILURE, B/O EQUIPMENT

5G2 EQUIPMENT FAILURE, B/O EQUIPMENT

5G2 PLANNED, INTENTIONAL TO CLEAR TROUBLE

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 WEATHER, LIGHTNING

5G2 WEATHER, WIND

5G2 EQUIPMENT FAILURE, B/O EQUIPMENT, EQUIPMENT
FAILURE, B/O EQUIPMENT

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 INTERFERENCE, DIG-IN (NON-PACIFICORP PERSONNEL)

5G2 EQUIPMENT FAILURE, POLE FIRE

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 TREES, TREE - NON-PREVENTABLE

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 EQUIPMENT FAILURE, DETERIORATION OR ROTTING,
EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G2 PLANNED, EMERGENCY DAMAGE REPAIR, WEATHER, SNOW,
SLEET AND BLIZZARD

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G2 TREES, TREE - NON-PREVENTABLE

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G2 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G2 WEATHER, SNOW, SLEET AND BLIZZARD

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT

5G21 WEATHER, WIND

5G21 WEATHER, WIND

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT

5G21 PLANNED, INTENTIONAL TO CLEAR TROUBLE

5G21 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G21 OTHER, UNKNOWN

5G21 OTHER, OTHER, KNOWN CAUSE

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT

5G21 EQUIPMENT FAILURE, B/O EQUIPMENT
5G21 INTERFERENCE, OTHER INTERFERING OBJECT
5G21 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G21 EQUIPMENT FAILURE, B/O EQUIPMENT
5G21 EQUIPMENT FAILURE, B/O EQUIPMENT
5G21 EQUIPMENT FAILURE, B/O EQUIPMENT
5G21 OTHER, UNKNOWN
5G21 PLANNED, EMERGENCY DAMAGE REPAIR
5G21 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G21 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G21 EQUIPMENT FAILURE, B/O EQUIPMENT
5G21 PLANNED, EMERGENCY DAMAGE REPAIR
5G23 EQUIPMENT FAILURE, OVERLOAD
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G23 INTERFERENCE, VEHICLE ACCIDENT
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 WEATHER, SNOW, SLEET AND BLIZZARD
5G23 WEATHER, SNOW, SLEET AND BLIZZARD
5G23 WEATHER, SNOW, SLEET AND BLIZZARD
5G23 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G23 WEATHER, SNOW, SLEET AND BLIZZARD
5G23 WEATHER, SNOW, SLEET AND BLIZZARD
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT, WEATHER, SNOW,
SLEET AND BLIZZARD
5G23 PLANNED, EMERGENCY DAMAGE REPAIR, WEATHER, SNOW,
SLEET AND BLIZZARD
5G23 PLANNED, EMERGENCY DAMAGE REPAIR, WEATHER, SNOW,
SLEET AND BLIZZARD
5G23 OTHER, UNKNOWN
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 WEATHER, WIND, WEATHER, WIND
5G23 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G23 EQUIPMENT FAILURE, OVERLOAD
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 OTHER, UNKNOWN
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
5G23 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
FAILURE, B/O EQUIPMENT
5G23 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
FAILURE, B/O EQUIPMENT
5G23 PLANNED, INTENTIONAL TO CLEAR TROUBLE, ANIMALS,
ANIMALS
5G23 EQUIPMENT FAILURE, OVERLOAD
5G23 OTHER, UNKNOWN
5G23 EQUIPMENT FAILURE, B/O EQUIPMENT

5G23 EQUIPMENT FAILURE, POLE FIRE
 5G23 WEATHER, WIND
 5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G23 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G39 TREES, TREE - NON-PREVENTABLE
 5G39 TREES, TREE - NON-PREVENTABLE
 5G39 TREES, TREE - NON-PREVENTABLE
 5G39 LOSS OF SUPPLY, LOSS OF SUBSTATION, WEATHER, SNOW,
 SLEET AND BLIZZARD
 5G39 TREES, TREE - NON-PREVENTABLE, WEATHER, SNOW, SLEET
 AND BLIZZARD
 5G39 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G40 TREES, TREE - NON-PREVENTABLE
 5G40 TREES, TREE - NON-PREVENTABLE
 5G40 OTHER, UNKNOWN
 5G40 LOSS OF SUPPLY, LOSS OF SUBSTATION, WEATHER, SNOW,
 SLEET AND BLIZZARD
 5G40 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 PLANNED, EMERGENCY DAMAGE REPAIR
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G41 TREES, TREE - NON-PREVENTABLE
 5G41 OTHER, UNKNOWN
 5G41 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)
 5G41 ANIMALS, BIRD SUSPECTED, NO MORTALITY
 5G41 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)
 5G41 TREES, TREE - NON-PREVENTABLE
 5G41 ANIMALS, ANIMALS
 5G41 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G41 TREES, TREE - NON-PREVENTABLE
 5G41 OTHER, UNKNOWN
 5G41 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G41 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)
 5G41 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G41 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G41 WEATHER, LIGHTNING
 5G41 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G41 OTHER, UNKNOWN
 5G41 EQUIPMENT FAILURE, B/O EQUIPMENT, WEATHER,
 LIGHTNING
 5G41 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G41 OTHER, UNKNOWN
 5G41 OTHER, UNKNOWN
 5G41 OTHER, UNKNOWN

5G41 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G41 OTHER, UNKNOWN
 5G41 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G41 OTHER, UNKNOWN
 5G41 OTHER, UNKNOWN
 5G41 EQUIPMENT FAILURE, POLE FIRE
 5G41 TREES, TREE - NON-PREVENTABLE
 5G41 TREES, TREE - NON-PREVENTABLE

 5G41 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)

 5G41 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G41 WEATHER, SNOW, SLEET AND BLIZZARD
 5G45 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G45 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G45 WEATHER, WIND
 5G45 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G45 OTHER, UNKNOWN
 5G45 PLANNED, EMERGENCY DAMAGE REPAIR
 5G5 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G5 INTERFERENCE, VEHICLE ACCIDENT
 5G5 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G5 PLANNED, EMERGENCY DAMAGE REPAIR, INTERFERENCE,
 5G5 VEHICLE ACCIDENT
 5G5 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G5 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G5 OTHER, UNKNOWN
 5G5 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G5 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G5 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G5 PLANNED, EMERGENCY DAMAGE REPAIR
 5G5 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G5 OTHER, UNKNOWN
 5G5 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G5 OTHER, UNKNOWN
 5G5 WEATHER, SNOW, SLEET AND BLIZZARD
 5G6 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G6 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G6 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G6 WEATHER, WIND
 5G6 OTHER, UNKNOWN
 5G6 OTHER, UNKNOWN
 5G6 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G6 OTHER, UNKNOWN

5G6 ANIMALS, BIRD SUSPECTED, NO MORTALITY
 5G63 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G63 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
 FAILURE, DETERIORATION OR ROTTING
 5G63 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G63 OTHER, UNKNOWN
 5G63 WEATHER, LIGHTNING
 5G63 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G63 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G63 TREES, TREE - NON-PREVENTABLE
 5G63 TREES, TREE - NON-PREVENTABLE, WEATHER, WIND
 5G63 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G63 OTHER, UNKNOWN
 5G63 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G63 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G63 TREES, TREE - NON-PREVENTABLE
 5G69 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G69 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G69 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G69 ANIMALS, ANIMALS
 5G69 ANIMALS, ANIMALS
 5G69 OTHER, UNKNOWN

 5G69 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)

 5G69 OTHER, UNKNOWN
 5G69 OTHER, UNKNOWN
 5G69 TREES, TREE - NON-PREVENTABLE
 5G69 INTERFERENCE, OTHER UTILITY/CONTRACTOR
 5G69 INTERFERENCE, OTHER INTERFERING OBJECT
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING,
 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G7 PLANNED, EMERGENCY DAMAGE REPAIR
 5G7 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G7 PLANNED, CONSTRUCTION
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
 FAILURE, DETERIORATION OR ROTTING
 5G7 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G7 OTHER, UNKNOWN
 5G7 ANIMALS, ANIMALS
 5G7 PLANNED, INTENTIONAL TO CLEAR TROUBLE
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

 5G7 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)

5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 ANIMALS, ANIMALS
 5G7 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)
 5G7 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G7 TREES, TREE - NON-PREVENTABLE
 5G7 INTERFERENCE, DIG-IN (NON-PACIFICORP PERSONNEL)
 5G7 ANIMALS, ANIMALS
 5G7 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G7 EQUIPMENT FAILURE, OVERLOAD
 5G7 ANIMALS, BIRD MORTALITY (PROTECTED SPECIES) (BMTS)
 5G7 WEATHER, SNOW, SLEET AND BLIZZARD
 5G7 WEATHER, SNOW, SLEET AND BLIZZARD
 5G7 OTHER, UNKNOWN
 5G7 WEATHER, SNOW, SLEET AND BLIZZARD
 5G7 WEATHER, SNOW, SLEET AND BLIZZARD
 5G7 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 ANIMALS, ANIMALS
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 OTHER, OTHER, KNOWN CAUSE
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 ANIMALS, ANIMALS
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G79 PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT
 5G79 FAILURE, B/O EQUIPMENT
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 OTHER, UNKNOWN
 5G79 PLANNED, EMERGENCY DAMAGE REPAIR
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G79 TREES, TREE - NON-PREVENTABLE
 5G79 PLANNED, EMERGENCY DAMAGE REPAIR
 5G79 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
 5G79 EQUIPMENT FAILURE, B/O EQUIPMENT
 5G83 WEATHER, WIND
 5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 PLANNED, EMERGENCY DAMAGE REPAIR, WEATHER, WIND

5G83 PLANNED, ENERGY EMERGENCY INTERRUPTION, WEATHER,
WIND

5G83 PLANNED, EMERGENCY DAMAGE REPAIR

5G83 EQUIPMENT FAILURE, B/O EQUIPMENT

5G83 WEATHER, WIND

5G83 WEATHER, WIND

5G83 INTERFERENCE, VEHICLE ACCIDENT, WEATHER, WIND

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING,
WEATHER, WIND

5G83 WEATHER, WIND

5G83 EQUIPMENT FAILURE, B/O EQUIPMENT

5G83 ANIMALS, ANIMALS

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 ANIMALS, ANIMALS

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 OTHER, OTHER, KNOWN CAUSE

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G83 OTHER, UNKNOWN

5G83 EQUIPMENT FAILURE, B/O EQUIPMENT

5G83 EQUIPMENT FAILURE, OVERLOAD

5G83 OPERATIONAL, INTERNAL CONTRACTOR

5G83 WEATHER, WIND

5G83 INTERFERENCE, OTHER INTERFERING OBJECT, WEATHER,
WIND

5G83 WEATHER, WIND

5G83 OPERATIONAL, FAULTY INSTALL

5G83 EQUIPMENT FAILURE, B/O EQUIPMENT

5G83 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G93 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G93 OTHER, UNKNOWN

5G93 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5G93 ANIMALS, ANIMALS

5G93 TREES, TREE - NON-PREVENTABLE

5G93 EQUIPMENT FAILURE, B/O EQUIPMENT

5G93	OTHER, UNKNOWN
5G93	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G93	EQUIPMENT FAILURE, B/O EQUIPMENT
5G93	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G93	TREES, TREE - NON-PREVENTABLE
5G93	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5G97	PLANNED, INTENTIONAL TO CLEAR TROUBLE
5G97	LOSS OF SUPPLY, LOSS OF SUBSTATION
5G97	WEATHER, SNOW, SLEET AND BLIZZARD
5G97	TREES, TREE - NON-PREVENTABLE, WEATHER, WIND
5G97	TREES, TREE - NON-PREVENTABLE, WEATHER, SNOW, SLEET AND BLIZZARD
5G99	EQUIPMENT FAILURE, B/O EQUIPMENT
5G99	PLANNED, EMERGENCY DAMAGE REPAIR
5G99	PLANNED, EMERGENCY DAMAGE REPAIR, EQUIPMENT FAILURE, B/O EQUIPMENT
5G99	LOSS OF SUPPLY, LOSS OF SUBSTATION
5G99	WEATHER, SNOW, SLEET AND BLIZZARD
5G99	WEATHER, SNOW, SLEET AND BLIZZARD
5G99	WEATHER, SNOW, SLEET AND BLIZZARD
5G99	WEATHER, SNOW, SLEET AND BLIZZARD
5G99	WEATHER, SNOW, SLEET AND BLIZZARD
5G99	TREES, TREE - NON-PREVENTABLE
5R96	TREES, TREE - NON-PREVENTABLE
5R96	EQUIPMENT FAILURE, B/O EQUIPMENT
6G101	TREES, TREE - NON-PREVENTABLE
6R3	EQUIPMENT FAILURE, B/O EQUIPMENT
6R3	TREES, TREE - NON-PREVENTABLE
7G71	EQUIPMENT FAILURE, B/O EQUIPMENT
7G71	TREES, TREE - NON-PREVENTABLE
7G71	EQUIPMENT FAILURE, B/O EQUIPMENT
7G71	PLANNED, EMERGENCY DAMAGE REPAIR
7G73	TREES, TREE - NON-PREVENTABLE
7G73	TREES, TREE - NON-PREVENTABLE
7G73	INTERFERENCE, OTHER INTERFERING OBJECT
7G73	OTHER, UNKNOWN
7G73	OTHER, OTHER, KNOWN CAUSE
7G75	INTERFERENCE, VEHICLE ACCIDENT
7G75	PLANNED, EMERGENCY DAMAGE REPAIR
7G75	EQUIPMENT FAILURE, DETERIORATION OR ROTTING
7G75	EQUIPMENT FAILURE, B/O EQUIPMENT
8G103	EQUIPMENT FAILURE, OVERLOAD
8G103	LOSS OF SUPPLY, LOSS OF SUBSTATION
8G103	PLANNED, EMERGENCY DAMAGE REPAIR
8G27	WEATHER, SNOW, SLEET AND BLIZZARD
8G27	EQUIPMENT FAILURE, B/O EQUIPMENT
8G27	TREES, TREE - NON-PREVENTABLE

8G27 LOSS OF SUPPLY, LOSS OF SUBSTATION, WEATHER, SNOW,
SLEET AND BLIZZARD

8G65 PLANNED, EMERGENCY DAMAGE REPAIR, TREES, TREE -
NON-PREVENTABLE

8G65 PLANNED, EMERGENCY DAMAGE REPAIR

8G65 OTHER, UNKNOWN

8G65 WEATHER, SNOW, SLEET AND BLIZZARD

8G95 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)

8G95 ANIMALS, ANIMALS

8G95 TREES, TREE - NON-PREVENTABLE

8G95 OTHER, UNKNOWN

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

8G95 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 INTERFERENCE, VEHICLE ACCIDENT

4L3 OTHER, UNKNOWN

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 INTERFERENCE, OTHER INTERFERING OBJECT

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 WEATHER, LIGHTNING

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 OTHER, UNKNOWN

4L3 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

4L3 TREES, TREE - NON-PREVENTABLE

4L3 TREES, TREE - NON-PREVENTABLE

4L3 EQUIPMENT FAILURE, B/O EQUIPMENT

5L70 LOSS OF SUPPLY, LOSS OF SUBSTATION

5L70 LOSS OF SUPPLY, LOSS OF SUBSTATION

5L77 EQUIPMENT FAILURE, B/O EQUIPMENT

5L77 INTERFERENCE, OTHER INTERFERING OBJECT

5L77 WEATHER, LIGHTNING

5L77 INTERFERENCE, OTHER INTERFERING OBJECT

5L77 PLANNED, EMERGENCY DAMAGE REPAIR

5L77 OTHER, UNKNOWN

5L77 EQUIPMENT FAILURE, DETERIORATION OR ROTTING

5L77 OTHER, UNKNOWN
5L77 OTHER, UNKNOWN
5L77 ANIMALS, ANIMALS
5L78 EQUIPMENT FAILURE, B/O EQUIPMENT
5L78 PLANNED, EMERGENCY DAMAGE REPAIR
5L78 EQUIPMENT FAILURE, B/O EQUIPMENT
5L78 EQUIPMENT FAILURE, B/O EQUIPMENT
5L78 EQUIPMENT FAILURE, B/O EQUIPMENT
5L78 OTHER, UNKNOWN
5L78 OTHER, UNKNOWN
5L78 OTHER, UNKNOWN
5L87 EQUIPMENT FAILURE, DETERIORATION OR ROTTING
5L87 OTHER, UNKNOWN

5L87 ANIMALS, BIRD MORTALITY (NON-PROTECTED SPECIES)

5L87 OTHER, UNKNOWN
5L87 OTHER, UNKNOWN
5L87 EQUIPMENT FAILURE, B/O EQUIPMENT
5L87 OTHER, UNKNOWN
5L87 PLANNED, INTENTIONAL TO CLEAR TROUBLE
5L87 TREES, TREE - NON-PREVENTABLE
5L87 EQUIPMENT FAILURE, B/O EQUIPMENT
5L87 EQUIPMENT FAILURE, B/O EQUIPMENT
5L97 TREES, TREE - NON-PREVENTABLE
5L97 EQUIPMENT FAILURE, B/O EQUIPMENT, EQUIPMENT
FAILURE, B/O EQUIPMENT
5L97 EQUIPMENT FAILURE, B/O EQUIPMENT
5L97 EQUIPMENT FAILURE, B/O EQUIPMENT
5L97 EQUIPMENT FAILURE, B/O EQUIPMENT

(c) Asset ID number of the furthest upstream protective device that operated on the associated circuit.	(d) Latitude of outage location	(e) Longitude of outage location
UG366083_1910530848	41.5232820	-122.3679601
UG366083_1910530848	41.5232820	-122.3679601
OH_110000_1910096448	41.5809823	-122.3990189
OH_236500_1910328060	41.5593612	-122.3884788
OH_120901_1911192307	41.5959100	-122.3804323
N/A, Manual Operation	41.5640843	-122.3860081
N/A	41.5640245	-122.3858246
N/A, Manual Operation	41.5593612	-122.3884788
TR_130500_1910332766	41.5740861	-122.3806217
OH_120901_1911192307	41.5959100	-122.3804323
OH_258160_1910326067	41.5398032	-122.3651821
TR_121820_1910537254	41.5938485	-122.3777448
TR_010780_1910303563	41.5193215	-122.3808593
UG011385_1910448510	41.5135660	-122.3774230
TR_121581_1910309049	41.5019447	-122.3786583
TR_124180_1910309562	41.4965170	-122.3726045
UG365686_1910648455	41.5320022	-122.3693307
TR_139200_1910534281	41.4829737	-122.3626221
TR_253503_1910326511	41.5451757	-122.3733440
TR_120100_1910030317	41.5873564	-122.8390510
TR_232203_1910031393	41.5594649	-122.8529628
N/A, Manual Operation	41.6036004	-122.8445448
TR_023303_1910026281	41.6043443	-122.8506809
OH_231900_1911414850	41.5695561	-122.8545289
OH_236901_1910031061	41.5702125	-122.8465105
TR_104380_1910038166	41.5894897	-122.8719182
TR_158200_1910031644	41.5738907	-122.8605859
TR_246101_1910030952	41.5579297	-122.8269523
N/A, Manual Operation	41.6052906	-122.8499764
TR_117200_1910030231	41.5904928	-122.8438632
TR_026001_1910026848	41.5994089	-122.8450926
RC_116900_1911415921	41.5987056	-122.8447322
TR_024301_1910026260	41.6051257	-122.8498487
OH_214302_1910032154	41.5610159	-122.8890083
HPC_CB5G14	41.8036203	-123.3726696
TR_234284_1910141843	41.7320557	-122.6241758
TR_223805_1910154910	41.7405029	-122.6439349
TR_112200_1910171227	41.7621335	-122.6283161
UG235381_1910528484	41.7324942	-122.6226413
OH_235361_1910141786	41.7324540	-122.6214790

N/A, Manual Operation	41.7286225	-122.6313385
OH_014101_1910172253	41.7730384	-122.6047926
UG234383_1910400213	41.7326269	-122.6240665
OH_180003_1910131986	41.7425473	-122.5933643
OH_180003_1910131986	41.7425473	-122.5933643
YRK_CB5G149	41.7287920	-122.6313783
OH_180003_1910131986	41.7425473	-122.5933643
OH_113001_1910170843	41.7584988	-122.6253949
OH_113001_1910170843	41.7584988	-122.6253949
OH_142100_1911038548	41.7454774	-122.6270523
OH_014101_1910172253	41.7730384	-122.6047926
YRK_CB5G149	41.7287920	-122.6313783
OH_180004_1910131596	41.7424127	-122.5932829
YRK_CB5G149	41.7287920	-122.6313783
OH_104200_1910986080	41.7891653	-123.3955191
N/A, Manual Operation	41.7973527	-123.3744147
N/A, Manual Operation	41.7969882	-123.3742181
TR_020600_1910075018	41.8086713	-123.3828541
OH_021101_1910076023	41.8015143	-123.3815241
TR_302200_1910000186	41.9183777	-123.4546040
OH_135460_1910081529	41.8624117	-123.3544185
TR_364000_1910202173	41.8739467	-122.4894971
OH_328101_1910206303	41.9630197	-122.4441321
OH_328101_1910206303	41.9630197	-122.4441321
TR_015201_1910202506	41.9487492	-122.6025438
N/A, Manual Operation	41.8980468	-122.5400133
TR_369801_404610105	42.0534774	-122.6419417
OH_124000_22020036	42.0126682	-122.6513052
RC_211601_1910535233	41.9100628	-122.5525035
N/A	41.8977532	-122.5400521
TR_302000_1910188731	41.8873206	-122.4746326
TR_175300_1910180733	41.9224950	-122.4493002
OH_301000_1911340526	41.6258829	-122.8171151
TR_022201_1910040835	41.6035095	-122.9701415
OH_258505_1910054029	41.6375001	-122.9395274
TR_034500_1910040050	41.6070760	-122.9854923
OH_251200_1910054096	41.6327450	-122.9538788
TR_027505_1910027898	41.6067480	-122.8434984
N/A, Manual Operation	41.6206955	-122.8948918
TR_056900_1910025505	41.6089175	-122.7874407
TR_056900_1910025505	41.6089175	-122.7874407
OH_343800__6198865	41.6230695	-122.7592284
TR_362304_1910051266	41.6190289	-122.8342088
TR_339100_1910049931	41.6158480	-122.8790403
N/A, Manual Operation	41.6292843	-122.8874131

TR_271800_1910048037	41.6405575	-122.8746938
OH_021701_1910027182	41.6094283	-122.8551452
TR_327801_1910048700	41.6262423	-122.9023399
TR_270000_1910047844	41.6286909	-122.8762829
OH_329301__6838338	41.6192015	-122.8983139
N/A, Manual Operation	41.6192015	-122.8983139
OH_026702__6198811	41.6108763	-122.9616230
N/A, Manual Operation	41.6053155	-122.8501153
TR_028501_1910028611	41.6081075	-122.8418929
OH_297301_1910048612	41.6342477	-122.9027711
TR_365502_1910051530	41.6216129	-122.8289408
TR_362302_1910051274	41.6188535	-122.8344141
TR_039303_1910039863	41.6045761	-122.9762678
TR_305380_1910045201	41.6297529	-122.8113257
OH_026702_1910043283	41.6108403	-122.9615627
TR_027600_1910029000	41.6083546	-122.8438567
TR_128400_1910052864	41.6774925	-122.8233440
OH_344900__6198881	41.6285932	-122.9848146
TR_312563_1911099093	41.7073193	-122.8152280
TR_020401_1910027231	41.6055943	-122.8577779
TR_312563_1911099093	41.7073193	-122.8152280
N/A, Manual Operation	41.6196900	-122.8322996
OH_345402_1910055899	41.6208441	-122.9833574
OH_345402_1910055899	41.6208441	-122.9833574
OH_251200_1910054096	41.6327450	-122.9538788
OH_258505_1910054029	41.6375001	-122.9395274
TR_317840_1910045420	41.6230372	-122.8077486
OH_297301_1910048612	41.6342477	-122.9027711
OH_251200_1910054096	41.6327450	-122.9538788
OH_251200_1910054096	41.6327450	-122.9538788
TR_225404_1910340857	41.6459395	-122.5249743
TR_347001_1910337488	41.5239184	-122.5207861
OH_339902_1910338964	41.5380423	-122.5353859
OH_071600_1910321871	41.5032479	-122.5905091
TR_226003_1910339949	41.6408229	-122.5225232
N/A, Manual Operation	41.5189643	-122.5204793
TR_104600_1910333472	41.5908678	-122.5258975
TR_110400_1910320754	41.5010571	-122.5142606
TR_092401_1910321295	41.5008816	-122.5500840
TR_038400_1910320335	41.5152606	-122.5184647
TR_346660_1910207575	41.6207905	-122.5220307

OH_037561_1910333855	41.6036688	-122.5205929
OH_208000__6195203	41.5528079	-122.5566366
TR_345100_1910207507	41.6138446	-122.5246721
TR_105000_1910333679	41.5830153	-122.5237574
TR_035301_1910320238	41.5131758	-122.5254896
TR_110400_1910320754	41.5010571	-122.5142606
RC_036401_1910528426	41.6034777	-122.5228430
N/A, Manual Operation	41.6034777	-122.5228430
TR_342180_1911202289	41.6126075	-122.5309551
TR_110400_1910320754	41.5010571	-122.5142606
TR_110400_1910320754	41.5010571	-122.5142606
N/A, Manual Operation	41.6372157	-122.5320891
	41.5842443	-122.3449858
TR_353100_1910105315	41.6114510	-122.3924352
TR_064641_1910087825	41.6049676	-122.3519455
OH_081900_1910089243	41.5963209	-122.3373493
TR_264940_1911068769	41.6376937	-122.3913032
OH_235800_1911202059	41.6512176	-122.3878250
OH_214901_1911019077	41.5671802	-122.3115976
N/A	41.5888708	-122.3484642
TR_136102_1910091214	41.5665645	-122.2498582
OH_076401__6790885	41.5890543	-122.3485089
OH_235800_1911202059	41.6512176	-122.3878250
OH_099500_1910090027	41.5877456	-122.3017499
N/A, Manual Operation	41.6594711	-122.3878765
N/A, Manual Operation	41.6597665	-122.3868138
OH_349901_1910101008	41.6239142	-122.4003615
TR_283305_1910101553	41.6288149	-122.4320437
TR_227101_1910099120	41.6409342	-122.4051179
RC_350400_1911341877	41.6158454	-122.3995593
TR_105200_1910090759	41.5825477	-122.2904144
SB_044001__6020971	41.5957322	-122.4287759
TR_177402_1910089038	41.5743938	-122.3259969
TR_033401_1910095495	41.6014784	-122.4122653
OH_081900_1910089243	41.5963209	-122.3373493
N/A, Manual Operation	41.6092622	-122.4010265
N/A, Manual Operation	41.6066603	-122.3536844
N/A, Manual Operation	41.5977704	-122.3217050
TR_092800_1910089585	41.5917804	-122.3166843
OH_173902_1910088664	41.5819250	-122.3345032
TR_277000_1910101029	41.6245519	-122.4050197

OH_076401__6790885	41.5890543	-122.3485089
TR_228601_1910099028	41.6477650	-122.4025331
RC_350400_1911341877	41.6158454	-122.3995593
TR_213901_1910090352	41.5671496	-122.3140815
OH_064200_1910065256	41.8555604	-123.1659999
SEI_T2803	41.8407798	-123.1923359
TR_137501_1910067503	41.8307187	-123.1802036
SEI_CB5G39	41.8406398	-123.1923617
OH_064200_1910065256	41.8555604	-123.1659999
TR_114500_1910068464	41.8460583	-123.2053893
SCB_CB5G40	41.7421002	-122.9996828
SCB_T2820	41.7422131	-122.9995929
N/A	41.8387272	-122.8486284
SCB_CB5G40	41.7421002	-122.9996828
OH_087400_1910064634	41.8427538	-123.0281983
N/A, Manual Operation	41.4932073	-122.9001227
OH_366903_1910043834	41.5410391	-122.9432114
N/A, Manual Operation	41.4999282	-122.8731812
TR_293600_1910034306	41.5503952	-122.9100890
OH_065801__3486163	41.5243901	-122.9244970
TR_299006_1910013811	41.4542326	-122.8972375
TR_144000_1910020472	41.4821041	-122.8493116
TR_299006_1910013811	41.4542326	-122.8972375
TR_131300_1910041545	41.5760080	-122.9524289
TR_051901_1910019455	41.5266059	-122.9137096
TR_283200_1910035926	41.5455782	-122.8894368
OH_131100_1910041424	41.5720816	-122.9530642
TR_146700_1910041828	41.5815823	-122.9628495
N/A, Manual Operation	41.4930007	-122.9058522
OH_286360_1911123391	41.4587235	-122.8829012
OH_068902__6198705	41.5258893	-122.9193280
TR_248880_1910040275	41.5687565	-122.9390101
TR_290004_1910034395	41.5421536	-122.9139703
OH_324905_1911070276	41.5406909	-122.9070514
RC_175701_1911436410	41.4933950	-122.9051373
TR_326500_1910036941	41.5354336	-122.9046873
TR_056580_1910016492	41.5206453	-122.9031235
RC_175760_1911436438	41.4941630	-122.9062262
RC_175561_1911436380	41.4913594	-122.9056614
RC_175760_1911436438	41.4941630	-122.9062262

OH_254000_1910044434	41.5411883	-122.9471279
RC_296703_1911398503	41.5523796	-122.9032080
TR_058701_1910016795	41.5220923	-122.9000637
OH_362100__6198757	41.5292174	-122.9515578
OH_055204_1910016140	41.5153904	-122.9063606
OH_055701_1910016830	41.5231237	-122.9062446
TR_066200_1910017300	41.5149033	-122.9232953
OH_366903_1910043834	41.5410391	-122.9432114
OH_284560_1911087261	41.4615479	-122.8882330
OH_310901_1910957739	41.5411189	-122.9345636
OH_254000_1910044434	41.5411883	-122.9471279
OH_065801__3486163	41.5243901	-122.9244970
OH_221502__3654126	41.4756300	-122.8747937
OH_249701_1910639793	41.5666741	-122.9369627
OH_065801__3486163	41.5243901	-122.9244970
TR_029106_1910284718	41.4237096	-122.3827094
OH_131801_1910286226	41.4047750	-122.3795181
TR_029201_1910284678	41.4243838	-122.3830022
OH_149501_1911183691	41.4005529	-122.3822279
OH_149501_1911183691	41.4005529	-122.3822279
N/A, Manual Operation	41.4026611	-122.3839589
TR_272682_1910160901	41.7229946	-122.6471135
TR_270280_1910164115	41.7173847	-122.6503283
OH_342100_1910640207	41.7007442	-122.6467395
N/A, Manual Operation	41.7180012	-122.6517467
N/A, Manual Operation	41.7110611	-122.6490949
OH_045501_1910111512	41.6917622	-122.6587618
GRH_CB5G5	41.7112503	-122.6491366
OH_045501_1910111512	41.6917622	-122.6587618
TR_273480_1910162950	41.7199598	-122.6440484
TR_274880_1910162518	41.7261933	-122.6418958
N/A, Manual Operation	41.7258202	-122.6411026
OH_274440_1910640195	41.7201304	-122.6436698
GRH_CB5G5	41.7112503	-122.6491366
TR_272680_1910162318	41.7237318	-122.6466880
GRH_CB5G5	41.7112503	-122.6491366
TR_272680_1910162318	41.7237318	-122.6466880
TR_085440_1910179975	41.9398341	-122.3337923
TR_262000_1910187146	41.8895874	-122.3968095
OH_135200_1910186447	41.9215833	-122.3707020
TR_264001_1910187120	41.8890629	-122.3926298
OH_135200_1910186447	41.9215833	-122.3707020
OH_135200_1910186447	41.9215833	-122.3707020
OH_135200_1910186447	41.9215833	-122.3707020
OH_135200_1910186447	41.9215833	-122.3707020

OH_135200_1910186447	41.9215833	-122.3707020
OH_325501_1910008805	41.3591754	-122.9049224
N/A, Manual Operation	41.4807276	-122.8252667
TR_106100_1910004602	41.4118710	-122.8642735
UG328880_1910355320	41.3633955	-122.8993740
TR_127501_1910002711	41.3311580	-122.8275319
OH_259302_1910003404	41.3705041	-122.7123640
N/A, Manual Operation	41.3727885	-122.8329949
TR_299401_1910008520	41.3722977	-122.8966594
OH_107201_1910004583	41.4135883	-122.8622428
TR_022600_1910005235	41.4346835	-122.8531425
YUB_CB5G63	41.3729765	-122.8330267
OH_326402_1910008800	41.3580186	-122.9025494
OH_160001_1910000329	41.3088873	-122.7998812
OH_327900_1910009024	41.3649786	-122.9017895
TR_242940_1910233071	41.2308815	-122.2812576
SB_245305_1911192384	41.2224265	-122.2759695
OH_061561_1910228914	41.2541376	-122.2631207
TR_070604_1910229285	41.2416542	-122.2637379
TR_135400_1910231317	41.2381250	-122.2756642
NDU_CB5G69	41.2206045	-122.2765235
NDU_CB5G69	41.2206045	-122.2765235
NDU_CB5G69	41.2206045	-122.2765235
NDU_CB5G69	41.2206045	-122.2765235
TR_137201_1910231539	41.2358043	-122.2707687
NDU_CB5G69	41.2206045	-122.2765235
NDU_CB5G69	41.2206045	-122.2765235
TR_351205_1910169236	41.7020882	-122.6278158
TR_142101_1911037988	41.6561000	-122.6268690
N/A, Manual Operation	41.6582478	-122.5923641
TR_191001_1910156809	41.7275415	-122.7058386
N/A, Manual Operation	41.6655958	-122.6077573
OH_346704_1910613257	41.7092433	-122.6400246
TR_145780_1910116356	41.6659483	-122.6211738
N/A, Manual Operation	41.6659483	-122.6211738
TR_290500_1910156426	41.7209935	-122.6900163
TR_355900_1910167814	41.7122058	-122.6213786
TR_348000_1910168962	41.7001935	-122.6345378
N/A, Manual Operation	41.7110771	-122.6489483
OH_078900_1911413131	41.5950515	-122.5785236
TR_286004_1910169844	41.7148217	-122.6580331
TR_286004_1910169844	41.7148217	-122.6580331

OH_346704_1910613257	41.7092433	-122.6400246
TR_352100_1910169456	41.7011391	-122.6255134
OH_261005_1910158481	41.7148129	-122.6291124
OH_347800_1910166150	41.7114700	-122.6379313
OH_260760_1910172846	41.7230332	-122.7476385
OH_261200_1910640176	41.7168192	-122.6304151
TR_348002_1910168943	41.6995414	-122.6340762
TR_291580_1911069422	41.7221233	-122.6875263
TR_287300_1910172973	41.7176486	-122.7744120
TR_282203_1910170195	41.7166523	-122.6652967
TR_290500_1910156426	41.7209935	-122.6900163
OH_309500_1911338861	41.7204881	-122.6906244
GRH_CB5G7	41.7112499	-122.6489900
OH_345004_1910168834	41.6994962	-122.6399105
TR_287300_1910172973	41.7176486	-122.7744120
TR_282203_1910170195	41.7166523	-122.6652967
OH_225600_1910262418	41.2997084	-122.2957801
OH_272001_1911336422	41.2766100	-122.3025290
TR_298202_1910275579	41.2803007	-122.3288606
TR_150341_1910256419	41.3100653	-122.3062016
OH_169046_1910254821	41.3056349	-122.3065330
OH_165200__3583482	41.3088425	-122.3143523
OH_213543_1910260169	41.2979725	-122.3178045
TR_203401_1910258269	41.2981557	-122.3379866
OH_271801_1911019003	41.2881590	-122.3030812
TR_288581_1910273270	41.2850167	-122.3096919
TR_212480_1910260328	41.2977106	-122.3214301
TR_317800_1910275975	41.2749961	-122.3498920
SB_219806_1911182371	41.3031439	-122.3078839
N/A, Manual Operation	41.3031439	-122.3078839
TR_272040_1910274850	41.2771751	-122.3014366
MTS_CB5G79	41.3045019	-122.3216797
N/A, Manual Operation	41.3128745	-122.2794291
TR_144480__4645480	41.3125042	-122.2799649
MTS_CB5G79	41.3045019	-122.3216797
TR_272703_1910273821	41.2880549	-122.3026601
OH_316802__3583486	41.2740803	-122.3512089
N/A, Manual Operation	41.2780605	-122.3548127
OH_169046_1910254821	41.3056349	-122.3065330
OH_155400_1910257460	41.3123282	-122.2956507
TR_012641_1910283641	41.4304939	-122.3771476
TR_012641_1910283641	41.4304939	-122.3771476

N/A, Manual Operation	41.4310887	-122.3732243
N/A, Manual Operation	41.4337064	-122.3741656
N/A, Manual Operation	41.4142928	-122.3911894
TR_116380_1910279731	41.4126229	-122.3893207
TR_012402_1910283161	41.4277277	-122.3773638
TR_013800_1910284370	41.4337064	-122.3741656
RC_026762_1910528420	41.4320472	-122.3888082
TR_027941_1910281235	41.4349333	-122.3863316
TR_120103_1910285803	41.4093718	-122.3805076
TR_308502_1910319256	41.4583406	-122.4618724
TR_360140_1910316004	41.4387894	-122.3804432
TR_011703_1910283901	41.4317725	-122.3780073
TR_026942_1910281063	41.4353605	-122.3876665
TR_117780_1910280173	41.4177112	-122.3874165
TR_225801_1910291346	41.3898331	-122.4104860
TR_229280_1910292992	41.3816177	-122.4023511
N/A	41.4732600	-122.4492318
N/A	41.4732707	-122.4491696
OH_151301_1911070249	41.3972647	-122.4176498
OH_108700_1910289311	41.4183449	-122.4030720
OH_231300__3369725	41.3834491	-122.3983664
RC_334700_1910543046	41.4474261	-122.4307898
OH_158501_1910667025	41.4002854	-122.4043953
TR_116380_1910279731	41.4126229	-122.3893207
OH_117506_1910280325	41.4152301	-122.3866929
TR_118302_1910285602	41.4125015	-122.3845771
OH_108700_1910289311	41.4183449	-122.4030720
TR_349600_1910317898	41.4451773	-122.4015492
OH_151300_1911070244	41.3968977	-122.4170345
TR_167480_1910290825	41.3988621	-122.4249529
N/A	41.4246575	-122.3957774
TR_028243_1910282768	41.4247914	-122.3837534
OH_209600_1911323631	41.4746096	-122.4410750
TR_193642_1910301029	41.4743274	-122.3545991
TR_115646_1910279813	41.4157480	-122.3904840
TR_362103_1910315926	41.4383179	-122.3775325
TR_117480_1910280916	41.4126759	-122.3863734
TR_272600__6592633	41.1984517	-122.0727853
RC_316304_1911339728	41.2676708	-122.1236609
OH_245901__6196576	41.2182947	-122.1431692
OH_364061__6196582	41.2622351	-122.1452328
OH_059301_1910220085	41.2523372	-122.0969953
TR_016911_1910224338	41.2616071	-122.1406431

RC_129800_1911339890	41.2445806	-122.1357579
OH_019201_1910227250	41.2509145	-122.1360207
UG062280_1910422041	41.2504950	-122.1306657
OH_245901_1910227744	41.2182449	-122.1431187
TR_016702_1910225118	41.2574259	-122.1410471
OH_245901__6196576	41.2182947	-122.1431692
N/A, Manual Operation	41.0757603	-122.3634015
SHG_CB5G97	41.0540116	-122.3819791
N/A	41.0540347	-122.3817674
OH_171402_1910542516	41.0672323	-122.3620983
OH_057461_1910542486	41.0953736	-122.3487706
TR_165000_1910211414	40.9735239	-122.4479205
N/A, Manual Operation	41.0228289	-122.4063315
N/A, Manual Operation	41.0391258	-122.4168944
SHG_CB5G99	41.0540110	-122.3818703
OH_357361_1911087321	41.0223303	-122.4068659
N/A	41.0266515	-122.4014062
N/A	41.0541816	-122.3820199
OH_357461_1910214017	41.0228289	-122.4063315
N/A	41.0538075	-122.3818856
OH_355160_1911192123	41.0195737	-122.4099949
OH_203202_1900345932	41.8467129	-123.9767677
TR_209701_1900016000	41.8530075	-123.9643006
N/A	41.2677381	-122.2389842
TR_094100_1900018693	41.8760449	-123.8430013
OH_107700_1900018427	41.8858756	-123.8173932
TR_255144_1910235858	41.2042463	-122.2759434
TR_254142_1910235845	41.2042409	-122.2768305
TR_255245_1910235714	41.2050204	-122.2759239
N/A, Manual Operation	41.2050204	-122.2759239
TR_257703_1910234181	41.2130954	-122.2707374
N/A	41.2069189	-122.2722093
NDU_CB7G73	41.2206052	-122.2766326
N/A	41.2204021	-122.2765106
TR_256907_1910234970	41.2164380	-122.2731073
N/A	41.2020118	-122.2751392
N/A, Manual Operation	41.2020118	-122.2751392
TR_258006_1910238747	41.2029229	-122.2702905
TR_364803_1910237132	41.2002093	-122.2766531
TR_337800_1910211873	40.9415883	-122.4438740
DGC_CB8G103	40.9401872	-122.4313138
N/A, Manual Operation	40.9405702	-122.4326103
SMB_CB8G27	41.7802223	-123.0712574
TR_360461_1910066411	41.7861314	-123.0779620
Transmission Outage	41.7801812	-123.0711510

HMB_CB8G27	41.7800958	-123.0712090
N/A, Manual Operation	41.1302355	-122.3200393
N/A, Manual Operation	41.1288935	-122.3215437
TR_273702_1910481738	41.1283652	-122.3199460
TR_152203_1910481782	41.1490614	-122.3175855
OH_011900__6196594	41.1870193	-122.2836463
TR_010500_1910481844	41.1828859	-122.2843411
NUT_CB8G95	41.1782442	-122.2909401
TR_025161_1910481804	41.1766563	-122.2932465
TR_010980_1911025690	41.1871039	-122.2844660
TR_027360_1910481816	41.1799296	-122.2906639
TR_010500_1910481844	41.1828859	-122.2843411
OH_026202__5940058	41.1788559	-122.2912111
OH_011900__6196594	41.1870193	-122.2836463
OH_362001__6196604	41.1888465	-122.2825606
TR_027440_1910481818	41.1803168	-122.2902345
TR_029603_1910481829	41.1832192	-122.2871613
TR_027401_1910481817	41.1800837	-122.2893758
TR_022801_1910481839	41.1864960	-122.3003551
TR_011001_1890083988	41.7683032	-122.0254394
TR_127501_1890078372	41.5871532	-121.9094299
RC_204200__6037304	41.8113529	-122.0054469
RC_221402__5762255	41.8149478	-121.9737375
RC_221402__5762255	41.8149478	-121.9737375
OH_113001_1890086625	41.7539221	-122.0412214
TR_202302_1890091460	41.8125694	-122.0101601
TR_071400_1890083095	41.7626334	-122.0070706
TR_176402_1890089953	41.8283940	-122.0013825
OH_029400_1890003495	41.7707458	-121.8187968
RC_324000_1890144070	41.7790769	-122.0060901
OH_328500_1890095180	41.7872955	-121.9988214
TR_309900_1890094039	41.8078017	-122.0160200
TR_029302_1890003469	41.7692746	-121.8188175
OH_149603_1890138812	41.5748462	-121.9243235
TR_336500_1890093530	41.7870466	-121.9840764
N/A	41.6329564	-121.2265824
N/A	41.6329152	-121.2265835
TR_314402_1890094601	41.7860408	-122.0251451
MAC_CB5L77	41.8317842	-122.0048235
OH_305902_1890096004	41.8078561	-122.0237472
OH_264900_1890100053	41.8072352	-122.0636593
N/A, Manual Operation	41.8072352	-122.0636593
OH_366400_1890099271	41.7860069	-122.0412351
TR_317702_1890094470	41.7897376	-122.0201736

TR_317702_1890094470	41.7897376	-122.0201736
OH_042901_1890144962	41.7789278	-122.0826579
OH_042901_1890144962	41.7789278	-122.0826579
TR_365304_1890101608	41.8702733	-121.9280413
N/A, Manual Operation	41.8704221	-121.9280617
TR_017700_1890086790	41.8618950	-121.9230730
OH_014000_1890086776	41.8519229	-121.9279678
OH_319001_1890023747	41.8654767	-121.8991404
TR_024700_1890086907	41.8620019	-121.9473310
OH_084900_1890008872	41.8490702	-121.8913325
TR_104501_1890181784	41.8447210	-121.9670397
TR_144607_1880016167	41.4814734	-120.5546876
OH_102000_1880019263	41.4884283	-120.5780279
TR_134002_1880065841	41.4726506	-120.5359227
OH_144601_1880016544	41.4820061	-120.5552560
OH_102000_1880019263	41.4884283	-120.5780279
OH_102000_1880019263	41.4884283	-120.5780279
OH_102000_1880019263	41.4884283	-120.5780279
N/A, Manual Operation	41.4997871	-120.5337754
TR_110407_1880003636	41.4933196	-120.5633843
TR_119901_1880002156	41.5013980	-120.5451666
TR_147600_1880014180	41.4818981	-120.5491082
N/A	41.5314528	-120.1821492
TR_055503_1880114655	41.5365299	-120.1718196
TR_084803_1880027250	41.5267792	-120.1737057
TR_078800_1880024989	41.5276847	-120.1836388
TR_052002_1880025775	41.5303015	-120.1770702

(f) Fuse? Y/N	(g) Customers Interrupted	(h) Customer Minutes of Interruption	(i) Duration in Minutes
Y	36	10553.933	306.8
Y	36	4902	136.4
Y	8	1504.4	188.1
Y	5	1635.083	327
Y	5	2311	462.2
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N	2	467.3	233.7
N	5	176.917	35.4
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Y	8	2145.6	268.2
Y	18	4128	229.3
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N	1	116.55	116.6
N	20	5662.333	283.1
N	1	189.283	189.3
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Y	27	7527.284	279
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N	1	254.65	254.7
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N	3	258	86
Y	52	11465.133	220.5
Y	2	69.667	34.8
N	1	128.35	128.4
N	1	140.283	140.3
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N	1	125.733	125.7
N	1	86.483	86.5
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Y	88	18632.533	211.7

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Y	17	2617	170.9
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Y	17	2231.717	136.9
Y	14	2354.333	168.2
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Y	43	5493.25	127.8
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Y	21	7388.85	351.9
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Y	2	567.533	283.8
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N	2	592.033	296
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Y	10	4135.667	413.6
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Y	6	17390.6	2898.4
N	1	308.233	308.2
Y	6	1782.7	297.1
Y	6	7921.5	1320.3
N	1	274.55	274.6
N	857	12812.15	15
N	1	150.15	150.2
Y	7	4438.583	634.1
N	132	14674	111.2
N	858	167081.2	194.7
N	1	223.433	223.4
N	1	68.683	68.7
Y	133	20207.133	151.9
N	1	108.867	108.9
Y	11	2632.667	239.3
N	1	275	275
Y	61	15514.313	254.3
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N	1	263.033	263
N	1	89.267	89.3
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Y	1	255.833	255.8
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N	1	293.817	293.8
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Y	1	46.267	46.3
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N	6	1580.6	263.4
Y	43	7620.317	177.2
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Y	24	3391.6	141.3
Y	24	4214.4	175.6
Y	25	7449.167	298
Y	11	5663.533	514.9
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Y	44	21976.533	499.5
Y	20	2013.667	100.7
Y	41	4568.083	111.4
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N	1	34.083	34.1
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Y	1	148	148
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N	1	218.367	218.4

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Y	62	4490.083	114.4
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Y	17	3793.833	223.2
N	33	5320.15	161.2
N	1	129.15	129.2
Y	33	9143.2	277.1
Y	23	4785.533	208.1
Y	34	10484.466	308.5
N	28	1523.2	54.4
N	10	987.333	98.7
Y	18	2852.7	158.5
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N	1	61.217	61.2
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Y	32	4431.117	290.6
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N	55	8281.167	150.6
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Y	27	14363.1	532
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N	1	327	327
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Y	13	6911.233	531.6
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N	5	467.083	93.4
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N	1	66.333	66.3
N	1	138.833	138.8
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N	1	54.867	54.9
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Y	5	2039.833	408
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Y	3	511.45	170.5
Y	9	1091.1	121.2
Y	10	2670.833	267.1
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Y	28	7404.833	338.9
Y	30	7907.5	263.6
Y	90	14367	159.6
Y	33	1574.1	47.7
Y	41	6087.133	148.5
Y	11	3932.5	357.5
Y	1	451.55	451.6
Y	41	15403.7	375.7
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Y	28	2503.567	99.4
N	1	139.267	139.3
Y	83	21686.3	273.5
Y	84	4965.8	59.1
N	9	486.45	54.1
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Y	9	546.6	60.7
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N	1209	10820.55	9
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N	9	2998.5	333.2
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Y	5	2085.75	417.2
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N	1	124.7	124.7
N	1	122.067	122.1
N	1	41.75	41.8
Y	26	3205.367	123.3
N	1	182.15	182.2
Y	26	3765.233	144.8
Y	26	2848.3	109.6
Y	26	4579.467	176.1
Y	26	5603	215.5

Y	26	1769.733	68.1
Y	13	1990.733	153.1
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N	2	292.4	146.2
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N	1	371.883	371.9
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N	538	4815.1	9
N	1	272.733	272.7
Y	114	27349.217	517.4
N	1	161.717	161.7
N	539	47045.717	87.3
Y	3	834.7	278.2
Y	51	12006.25	235.4
Y	59	15624.183	264.8
N	1	246.05	246.1
N	303	61762.25	204.3
Y	2	133.433	66.7
N	1	85.267	85.3
N	1	182.533	182.5
N	0	0	1.9
N	520	224052.233	507
N	520	20314.667	39.1
N	520	10521.333	20.2
N	1	318.517	318.5
N	521	24096.25	46.3
N	491	16964.05	34.6
N	1	78.033	78
N	1	40.017	40
N	15	587.25	39.2
N	1	98.2	98.2
N	2	68.367	34.2
Y	15	2571	171.4
N	1	304.7	304.7
N	4	178.333	44.6
N	1	195.05	195.1
N	4	493.467	123.4
N	1	76.183	76.2
N	1599	14311.05	9
Y	3	1329.75	443.3
N	2	353.667	176.8
N	2	320.167	160.1

Y	1	68.033	68
N	1	171.5	171.5
Y	436	33252.267	76.3
Y	28	4464.599	170.4
Y	1	170.667	170.7
Y	8	1516	189.5
N	2	286.833	143.4
N	1	306.917	306.9
N	2	480.867	240.4
N	3	182.05	60.7
N	1	63.083	63.1
Y	8	599.2	74.9
N	0	0	0.1
Y	91	17966.433	197.4
N	1	793.033	793
N	1	142.95	143
Y	1	41.433	41.4
Y	21	1299.2	61.9
N	3	487.5	162.5
N	1	93.033	93
Y	394	44810.933	113.7
Y	25	9526.667	381.1
Y	22	4202.467	191.1
N	2	372.467	186.2
Y	7	2616.617	541.1
N	13	6420.917	493.9
N	1	285.167	285.2
N	1	149.25	149.3
N	423	69624.165	164.9
N	477	8053.35	16.9
N	1	168.233	168.2
N	1901	504876.35	438.3
N	2	31.9	16
N	1	205.25	205.3
N	1899	34973.25	18.4
N	3	219.75	73.3
Y	14	2817.038	201.2
N	13	2048.15	157.6
Y	316	43518.467	137.7
Y	1	333.8	333.8
N	8	733.2	91.7
N	9	811.8	90.2

N	1	65.367	65.4
N	1	152	152
N	2	176.933	88.5
N	1	121.3	121.3
N	2	168.667	84.3
N	1	76.083	76.1
N	563	49534.617	88
N	1	81.1	81.1
N	1	160.3	160.3
N	1	61.117	61.1
N	4	478.8	119.7
N	1	67.367	67.4
N	10	455.33	45.5
N	1	183	183
N	1	115.167	115.2
N	1	236.867	236.9
N	10	1543.667	154.4
N	10	1327.833	132.8
Y	37	7498.65	348.5
Y	6	2561.4	426.9
Y	25	2198.333	87.9
N	475	109273.633	573.1
Y	1	258.9	258.9
N	1	81.45	81.5
Y	6	2362.8	393.8
N	4	218.867	54.7
Y	6	3214.9	535.8
N	1	76.883	76.9
Y	216	26061.367	146
N	1	130.25	130.3
N	424	11645.867	27.5
N	1	257.783	257.8
Y	12	2304.6	192.1
N	1	246.85	246.9
N	1	154.783	154.8
N	1	119.817	119.8
N	1	173.717	173.7
N	1	135.95	136
N	14	3802.633	271.6
Y	51	15854.416	340.3
Y	6	759.3	126.6
Y	11	6900.85	627.4
N	1	117.683	117.7

N	172	38073.634	292.1
Y	7	2308.6	329.8
Y	1	357.45	357.5
Y	51	17966.917	362.7
N	1	216.15	216.2
Y	51	18762.05	367.9
N	9	295.65	32.9
N	35	1331.155	38
N	35	1295	37
Y	8	9674	1255
Y	4	1129.133	282.3
N	1	144.733	144.7
N	23	946.45	41.2
N	4	423.4	105.9
N	67	2548.233	38
Y	37	17393.7	470.1
N	6	2122.5	353.8
N	1	354.383	354.4
Y	23	8395.767	365
N	67	5937.317	88.6
Y	1	543.55	543.6
Y	123	9762.1	79.4
N	1	178.9	178.9
N	16	3551.733	222
N	1	149.317	149.3
Y	11	29187.4	2653.4
N	15	1795.75	119.7
N	1	161.4	161.4
N	7	467.483	66.8
N	7	810.95	115.9
N	4	658.2	164.6
N	10	3644.667	364.5
N	223	28876.8	163.9
N	643	44174.1	68.7
N	1	186.6	186.6
N	29	7246.607	249.9
N	1	73.683	73.7
N	1	115.817	115.8
N	6	563.9	94
N	1	314.333	314.3
N	57	2167.881	38
N	40	2290.667	57.3
N	51	877.2	17.2
N	1	162.65	162.7
N	0	0	3.1

N	52	330.2	6.4
N	1	27.8	27.8
N	0	0	4.1
N	1	274.633	274.6
N	1	350.15	350.2
Y	19	2605.533	137.1
N	3	320.65	106.9
N	292	58083.806	216.5
N	1	203.583	203.6
N	1	157.733	157.7
N	1	158.7	158.7
N	3	492.85	164.3
Y	124	22072	178
Y	20	3529.667	176.5
Y	26	4439.067	170.7
N	2	322.467	161.2
N	13	1798.983	138.4
N	5	115.333	23.1
N	1	155.55	155.6
N	1	172.183	172.2
N	2	435.767	217.9
N	297	89218.8	300.4
N	81	16450.166	227.4
N	81	10711.467	275.5
Y	1	681.083	681.1
N	3	743.6	247.9
N	1	311.283	311.3
N	1	266.467	266.5
Y	7	1953.65	384.8
N	197	51471.982	330.1
Y	3	281.45	93.8
N	1	184.283	184.3
N	1	296.683	296.7
Y	7	880.717	125.8
N	1	140.183	140.2
N	59	693.25	11.8
N	59	6667	113
N	2	85.3	42.7
N	231	26030.466	112.9
Y	4	256.733	64.2
Y	27	5141.25	306.2
N	23	341.167	14.8
Y	32	4686.933	146.5
N	1	185.483	185.5

N	4	200.8	50.2
Y	8	1022.267	127.8
Y	8	899.2	112.4
N	1	20.783	20.8
N	1	445.183	445.2
N	1	382.433	382.4
Y	14	2680.538	191.5
Y	3	275.4	91.8
N	1	142.533	142.5
Y	6	936	156
N	0	0	0.7
N	1	92.983	93
Y	13	3567.85	274.5
N	1	67.65	67.7
Y	37	3264.017	88.2
Y	12	2739	228.3
Y	12	3123.766	331
Y	15	4292.25	286.2
N	1388	20958.8	15.1
N	1	47.933	47.9
N	1	27.717	27.7
N	2	267.633	133.8
N	338	30408.846	90
N	1	198.883	198.9
N	5	1859.25	371.9
N	1	34.683	34.7
N	1	143.55	143.6

(a)	(b)	(c)	(d)	(e)
Unique ID	Device Type	Latitude	Longitude	Circuit
GAS_CB5R96	Relay	41.8480900	-123.9667724	5R96
RC_1259_6R3	Recloser	41.8812331	-123.8645281	6R3
CLA_CB8G65	Relay	41.1460808	-122.3198451	8G65
DGC_CB8G103	Relay	40.9401842	-122.4313132	8G103
MCX_CB5G93	Relay	41.2662091	-122.1259874	5G93
RC_2180_5G93	Recloser	41.2676748	-122.1236582	5G93
RC_2181_5G93	Recloser	41.2445766	-122.1357767	5G93
RC_2064_5G76	Recloser	41.3240163	-122.3181047	5G76
RC_1985_5G76	Recloser	41.3194376	-122.3324845	5G76
RC_2140_5G76	Recloser	41.3637180	-122.3688614	5G76
RC_1658 M 2418_5G79	Recloser	41.2985902	-122.2880599	5G79
RC_1663 7/107_5G79	Recloser	41.2980155	-122.3173209	5G79
RC_1657 2A/049_5G79	Recloser	41.2980589	-122.3159606	5G79
NDU_CB5G69	Relay	41.2206035	-122.2765255	5G69
NDU_CB7G71	Relay	41.2206037	-122.2767060	7G71
NDU_CB7G73	Relay	41.2206052	-122.2766192	7G73
NUT_CB8G95	Relay	41.1782422	-122.2909421	8G95
RC_A2_8G95	Recloser	41.1610438	-122.2960761	8G95
SHG_CB5G97	Relay	41.0540126	-122.3819811	5G97
SHG_CB5G99	Relay	41.0540049	-122.3818723	5G99
SNB_CB6G101	Relay	41.2679251	-122.2390241	6G101
SDS_CB7G75	Relay	41.2012746	-122.2765941	7G75
WEE_CB5G45	Relay	41.4313629	-122.3897645	5G45
RC_2216_5G45	Recloser	41.4000642	-122.3795897	5G45
WEE_CB5G56	Relay	41.4313645	-122.3899175	5G56
WEE_CB5G83	Relay	41.4313663	-122.3898401	5G83
RC_2217 E 8924_5G23	Recloser	41.6175003	-122.3995288	5G23
RC_2218 17/002_5G23	Recloser	41.6166221	-122.3985352	5G23
RC_2219 E 10978_5G23	Recloser	41.6158294	-122.3995674	5G23
CPC_CB5G6	Relay	41.9751608	-122.3585406	5G6
RC_2200_5G1	Recloser	41.6034384	-122.8541974	5G1
RC_2205_5G1	Recloser	41.6034384	-122.8541974	5G1
RC_650 B 6196_5G1	Recloser	41.5789953	-122.8345854	5G1
RC_1650 9/024_5G2	Recloser	41.6222628	-122.8622312	5G2
RC_1649 B 14525_5G2	Recloser	41.6196860	-122.8323184	5G2
RC_2193_5G5	Recloser	41.6915365	-122.6555661	5G5
RC_2190_5G7	Recloser	41.7123929	-122.6500318	5G7
RC_2196_5G7	Recloser	41.6841426	-122.6365917	5G7
RC_696_5G7	Recloser	41.6822164	-122.6308058	5G7
RC_700 E 7499_5G7	Recloser	41.6549043	-122.5831521	5G7
RC_2103 17/005_5G19	Recloser	41.8997369	-122.5359198	5G19
RC_2102 E 1125_5G19	Recloser	41.8968122	-122.5509275	5G19
RC_2104 E 17525_5G19	Recloser	41.9102272	-122.5526718	5G19

RC_1957_E 10164_5G21	Recloser	41.6034697	-122.5228617	5G21
RC_1958_13/030_5G21	Recloser	41.6173423	-122.5222738	5G21
FS_237202__4774214	Fuse Saver	41.5554621	-122.3851232	4G1
RC_1548 15/014_5G149	Recloser	41.7198609	-122.6134181	5G149
RC_1547 3X/009_5G149	Recloser	41.7452422	-122.6337082	5G149
YUB_CB5G63	Relay	41.3729785	-122.8330314	5G63
RC_636 B 8733_5G63	Recloser	41.3090373	-122.7726881	5G63
SEI_CB5G39	Relay	41.8406388	-123.1923637	5G39
RC_B2_5G39	Recloser	41.8438266	-123.2008256	5G39
HMB_CB8G27	Relay	41.7800928	-123.0712043	8G27
SCB_CB5G40	Relay	41.7421013	-122.9996874	5G40
RC_469 B 8051_5G40	Recloser	41.8261622	-122.9780845	5G40
RC_1067 B 3566_5G40	Recloser	41.8380669	-122.8488606	5G40
HPC_CB5G14	Relay	41.8036183	-123.3726676	5G14
RC_2035_5G16	Recloser	41.7999519	-123.3778669	5G16
RC_8959 B 8659_5G16	Recloser	41.7929203	-123.3787950	5G16
RC_181 B 4146_5G41	Recloser	41.4933950	-122.9051507	5G41
RC_906 17/034_5G41	Recloser	41.4941630	-122.9062235	5G41
RC_2182 4/035_5G41	Recloser	41.4913393	-122.9056695	5G41
RC_750 B 7214_5G41	Recloser	41.5523796	-122.9032268	5G41
RC_2818 4/056_5L87	Recloser	41.5015954	-120.5252849	5L87
CDV_CB5L97	Relay	41.5315277	-120.1820069	5L97
RC_2725 C 845_4L3	Recloser	41.7790849	-122.0061143	4L3
PER_CB5L70	Relay	41.6331070	-121.2265797	5L70
RC_SW 1165_4L3	Recloser	41.8149398	-121.9737402	4L3
RC_2508_5L77	Recloser	41.8224626	-122.0156534	5L77
RC_1644_5L78	Recloser	41.8946549	-121.9974990	5L78
RC_9370 C 4551_4L3	Recloser	41.6428323	-121.9925921	4L3

(h)

**The date and time when the
fast curve setting on this
device was disabled**

9/18/21 1724
9/18/21 1808
9/18/21 1709
9/18/21 1753
9/18/21 1535
9/18/21 1525
9/18/21 1502
9/18/21 1328
9/18/21 1138
9/18/21 1213
9/18/21 1425
9/18/21 1402
9/18/21 1400
9/18/21 1637
9/18/21 1637
9/18/21 1637
9/18/21 1656
9/18/21 1732
9/18/21 1731
9/18/21 1731
9/18/21 1614
9/18/21 1647
9/18/21 1622
9/18/21 1610
9/18/21 1622
9/18/2021
9/18/21 1715
9/18/21 1730
9/18/21 1725
9/18/21 1653
N/A
8/11/21 1132
9/18/21 1130
9/18/21 1120
9/18/21 1110
8/10/21 1716
9/18/21 1755
8/10/21 1655
8/10/21 1703
9/18/21 1044
9/18/21 1543
9/18/21 1536
9/18/21 1531

9/18/21 1630
8/10/21 1635
8/10/21 1615
8/10/21 1822
9/18/21 1810
9/18/21 1235
9/18/21 1325
9/18/21 1236
9/18/21 1242
9/18/21 1220
9/18/21 1205
9/18/21 1145
9/18/21 1130
9/18/21 1310
9/18/21 1315
9/18/21 1323
8/11/21 1115
9/18/21 1150
9/18/21 1155
9/18/21 1140
N/A
N/A
N/A
8/10/2021
8/10/2021
8/10/2021
8/10/2021
N/A

19 19 7 12

CalPA Data Request 16.1

2022 Wildfire Mitigation Plan - State how many customer accounts PacifiCorp has as of July 1, 2022, and disaggregate the total by HFTD tier.

Response to CalPA Data Request 16.1

Please refer to the table provided below which provides the required information by high-fire threat district (HFTD) tier:

California Customers	
In HFTD Tier 2	18,171
In HFTD Tier 3	1,107
Total in HFTD	19,278
Outside of HFTD	27,335
TOTAL	46,613

CalPA Data Request 16.2

2022 Wildfire Mitigation Plan

- (a) Do you use unusually sensitive protective device settings (i.e., “fast curve” or “fast trip” settings) during certain times of the year, during weather conditions that create high risk of wildfire, or on relatively high-risk circuits?
- (b) If the answer to subpart (a) of this question is yes, please describe when and where you implement these more sensitive protective device settings.
- (c) Please explain the reasoning supporting the choices described in subpart (b) of this question.

Response to CalPA Data Request 16.2

- (a) Yes, fast curve or fast trip settings are used during certain times of the year depending on the level of wildfire risk on particular circuits.
- (b) These settings will be implemented for circuits in the high fire threat district (HFTD) (or where fuels will allow for the ignition and spread of a wildfire) during periods of significant or extreme wildfire risk as determined by PacifiCorp Meteorology.
- (c) The reason is to reduce arc energy and fault interruption time and to cause the circuit to trip faster than what would typically be required for a fuse to operate. All of these consequences of fast trip or fast curve reduce the potential for a fault to cause an ignition and subsequent wildfire.

CalPA Data Request 16.3

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2022 - Please provide the protective device settings that PacifiCorp plans to use during high fire-risk weather in 2022, including the following parameters:

- (a) The minimum to trip current,
- (b) Definite time delay,
- (c) Time curve, and
- (d) Coordination parameters.

Response to CalPA Data Request 16.3

- (a) The fast curve settings for 2022 are to set the minimum trip current for the high fire-risk conditions is set to 200 percent of the maximum feeder demand based on the previous year one-year load profile, where available. Devices set prior to 2022 may have different settings, aligned with the setting guide revision at that time.
- (b) The definite time delay is set to 0.02 if there is no recloser downstream. If communication with the downstream device is available, the delay is set at 0.02 to 0.05 seconds to accommodate communications delays, otherwise the element is set to 0.1 seconds plus the 'fast' operate time of the downstream recloser to a maximum of 0.2 seconds.
- (c) Coordinate time overcurrent curves are not the primary protection used during times of elevated fire risk. At the substation time overcurrent curves are only used as backup elements once the decision has been made to implement sensitive protective settings. For line reclosers, a very fast fuse saving curve is used.
- (d) When operating under sensitive protective settings definite time elements are used to provide coordinated tripping on the feeder. Time overcurrent curves are active to provide backup protection.

CalPA Data Request 16.4

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2022 - If any of the parameters identified in question 3 depend on the normal operating parameters for its protective devices (i.e., device settings such as the minimum to trip during ordinary weather or outside of HFTD areas), please describe how PacifiCorp determines those normal operating parameters.

Response to CalPA Data Request 16.4

The Company assumes that the reference to “question 3” is intended to be a reference to CalPA Data Request 16.3. Based on the foregoing assumption, the Company responds as follows:

There are no direct dependencies established between the normal operating parameters and those used for sensitive protection.

CalPA Data Request 16.5

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2022

- (a) Please state whether PacifiCorp plans to coordinate protective devices with fuses' time overcurrent curves, or plans to operate protective devices in a fuse-saving mode (i.e. the recloser/circuit breaker trips before the fuse operates) while fast curve settings are in effect.
- (b) Please explain the reasoning for PacifiCorp's choice(s) in subpart (a) of this question.

Response to CalPA Data Request 16.5

- (a) PacifiCorp does not plan to coordinate with fuses where sensitive protective settings are enabled.
- (b) The coordination of timer overcurrent elements such as fuses requires inherent delay, which must be reduced to minimize the risk of sustained ignition during a fault.

CalPA Data Request 16.6

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2022 - Please provide:

- (a) Any studies that show how PacifiCorp determined that the protective device settings identified in question 3 are the best settings to use during high fire-risk weather; and
- (b) Any studies of the expected impact to reliability due to the settings identified in question 3.

Response to CalPA Data Request 16.6

The Company assumes that the reference to “question 3” is intended to be a reference to CalPA Data Request 16.3. Based on the foregoing assumption, the Company responds as follows:

- (a) PacifiCorp has reviewed the “Probability of Bushfire Ignition from Electric Arc Faults” study, and Avista Corporation’s “What’s the Risk? One Utility’s Approach to Strengthening its Wildfire Resiliency” to learn about and influence protective device settings.
- (b) PacifiCorp generally understands that recloser settings have an impact on reliability and seeks to find a balance between wildfire safety and providing reliable power to customers however, no formal studies have been conducted by PacifiCorp.

CalPA Data Request 16.7

2022 Wildfire Mitigation Plan - Regular Settings for 2022 - Please provide the protective device settings that PacifiCorp normally uses (i.e., outside of HFTD areas or outside of high fire-risk weather) in 2022, including the following parameters:

- (a) The minimum to trip current;
- (b) Definite time delay;
- (c) Time curve; and
- (d) Coordination parameters.

Response to CalPA Data Request 16.7

- (a) Set pickup to 200 percent of the highest forecasted feeder demand for the next five years, aligned with the setting guide revision at that time.
- (b) Set to 0.02 seconds unless there are line reclosers downstream. If there are line reclosers downstream set to 0.1 seconds plus the ‘fast’ operate time of the downstream recloser. These elements are active for the first trip only when using a fuse saving schemes.
- (c) Set pickup to 200 percent of the highest forecasted feeder demand for the next five years. Very inverse and extremely inverse time curves are preferred for both the substation breaker and the line recloser.
- (d) A coordination margin of 0.35 seconds is used between time-overcurrent elements.

CalPA Data Request 16.8

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021 - Please provide the protective device settings that PacifiCorp used during high fire-risk weather in 2021, including the following parameters:

- (a) The minimum to trip current,
- (b) Definite time delay,
- (c) Time curve, and
- (d) Coordination parameters.

Response to CalPA Data Request 16.8

- (a) Set pickup to 200 percent of the highest forecasted feeder demand for the next five years, Devices set prior to 2020 may have different settings, aligned with the setting guide revision at that time.
- (b) Set to 0.02 seconds unless there are line reclosers downstream. If there are line reclosers downstream, set to 0.1 seconds plus the 'fast' operate time of the downstream recloser.
- (c) Coordinated time overcurrent curves were not the primary protection used during times of elevated fire risk. At the substation time overcurrent curves are only used as backup elements once the decision has been made to implement sensitive protective settings. For line reclosers a very fast fuse saving curve is used.
- (d) When operating under sensitive protective settings, definite time elements are used to provide coordinated tripping on the feeder. Time overcurrent curves are active to provide backup protection.

CalPA Data Request 16.9

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021 - If any of the parameters identified in question 8 depended on the normal operating parameters for its protective devices (i.e., device settings such as the minimum to trip during ordinary weather or outside of HFTD areas), please describe how PacifiCorp determined those normal operating parameters.

Response to CalPA Data Request 16.9

The Company assumes that the reference to “question 8” is intended to be a reference to CalPA Data Request 16.8. Based on the foregoing assumption, the Company responds as follows:

There are no direct dependencies established between the normal operating parameters and those used for sensitive protection.

CalPA Data Request 16.10

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021

- (a) Please state whether, in 2021, PacifiCorp coordinated protective devices with fuses' time overcurrent curves, or operated protective devices in a fuse-saving mode (i.e. the recloser/circuit breaker trips before the fuse operates) while fast curve settings were in effect.
- (b) Please explain the reasoning for PacifiCorp's choice(s) in subpart (a) of this question.

Response to CalPA Data Request 16.10

- (a) PacifiCorp did not coordinate with fuses in circumstances where sensitive protective settings were enabled.
- (b) The coordination of timer overcurrent elements such as fuses requires inherent delay which must be reduced to minimize the risk of sustained ignition during a fault.

2022 WMPs/ PacifiCorp

July 19, 2022

CalAdvocates-PacifiCorp-2022WMP-16 – 16.11

CalPA Data Request 16.11

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021 - Please provide any studies that show how PacifiCorp determined that the protective device settings identified in question 8 were the best settings to use during high fire-risk weather.

Response to CalPA Data Request 16.11

The Company assumes that the reference to “question 8” is intended to be a reference to CalPA Data Request 16.8. Based on the foregoing assumption, the Company responds as follows:

Please refer to the Company’s response to CalPA Data Request 16.6.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

CalPA Data Request 16.12

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021 - Please provide a spreadsheet listing (as rows) each outage that occurred in 2021 on a PacifiCorp circuit that had fast curve settings at any point during 2021, including the following information as columns:

- (a) The circuit ID number of the circuit involved in the outage (associated circuit);
- (b) The cause of the outage;
- (c) The asset ID number of the furthest upstream protective device that operated on the associated circuit;
- (d) The geographic latitude (in decimal degrees, truncated to seven decimal places) of the furthest upstream protective device that operated on the associated circuit;
- (e) The geographic longitude (in decimal degrees, truncated to seven decimal places) of the furthest upstream protective device that operated on the associated circuit;
- (f) Whether the furthest upstream protective device on the associated circuit was a fuse;
- (g) The number of customers interrupted as a result of the outage;
- (h) The total customer minutes of interruption as a result of the outage; and
- (i) The duration of the outage (in minutes).

Response to CalPA Data Request 16.12

Please refer to Attachment CalPA 16.12. Note: some missing data is due to not having a formal system to record recloser settings as it is done manually. Some of this data is available as it was recorded in operational notes throughout the process.

CalPA Data Request 16.13

2022 Wildfire Mitigation Plan - Fast Curve Settings for 2021 - Please provide a spreadsheet listing (as rows) each protective devices that had fast curve settings enabled in 2021, including the following information as columns:

- (a) The device number of the protective device;
- (b) The type of device (e.g., recloser);
- (c) The geographic latitude of the device (in decimal degrees, truncated to seven decimal places);
- (d) The geographic longitude of the device (in decimal degrees, truncated to seven decimal places);
- (e) The ID number of the circuit the device was on;
- (f) The number of times that the fast curve setting was enabled on this device in 2021;
- (g) The date and time when the fast curve setting on this device was enabled;
- (h) The date and time when then the fast curve setting on this device was disabled;
- (i) The reason why the fast curve setting on this device was enabled in this instance (e.g., Red Flag Warning, or Fire Weather Threat Declaration); and
- (j) If fast curve settings were enabled more than once on a particular device, please replicate columns G, H and I as needed to provide a start and end date for each instance in which was the fast curve setting was enabled.

Response to CalPA Data Request 16.13

For the Company's responses to subparts (a) through (h), please refer to Attachment CalPA 16.13. Note: some missing data is due to not having a formal system to record recloser settings as it is done manually. Some of this data is available as it was recorded in operational notes throughout the process.

Please refer below to for Company's responses to subparts (i) and (j):

- (i) Fuel dryness was at or near record levels owing to extreme to exceptional drought conditions and highly anomalous summer heat. The extreme fuels and drought conditions contributed to a much higher than normal risk of large wildfires and extreme fire behavior even in the absence of critical fire weather conditions, particularly in mountainous terrain. As a result, the National Geographic Area Coordination Center (GACC) issued a Fuels and Fire Behavior Advisory which was in effect for much of the summer. During this time, there were numerous very large wildfires burning across the region, including the Bootleg Fire (413,717 acres) in southern Oregon, and the Dixie Fire (963,309 acres) in northern California.
- (j) Not applicable.

CalPA Data Request 16.14

2022 Wildfire Mitigation Plan - Regular Settings for 2021 - Please provide the protective device settings that PacifiCorp normally used (i.e., outside of HFTD areas or outside of high fire-risk weather) in 2021, including the following parameters:

- (a) The minimum to trip current;
- (b) Definite time delay;
- (c) Time curve; and
- (d) Coordination parameters.

Response to CalPA Data Request 16.14

- (a) Set pickup to 200 percent of the highest forecasted feeder demand for the next five years.
- (b) Set to 0.02 seconds unless there are line reclosers downstream. If there are line reclosers downstream, set to 0.1 seconds plus the 'fast' operate time of the downstream recloser. These elements are active for the first trip only when using a fuse saving schemes.
- (c) Set pickup to 200 percent of the highest forecasted feeder demand for the next five years. Very inverse and extremely inverse time curves are preferred for both the substation breaker and the line recloser.
- (d) A coordination margin of 0.35 seconds is used between time-overcurrent elements.