



1407 W. North Temple, Suite 330
Salt Lake City, UT 84116

February 15, 2024

VIA ELECTRONIC FILING

Public Service Commission of Utah
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City, UT 84114

Attn: Gary Widerburg
Commission Administrator

Re: Docket 24-035-06 – Rocky Mountain Power’s Power Quality Report for 2023

PacifiCorp d/b/a Rocky Mountain Power (“the Company”) hereby submits for filing its Power Quality Report (“PQ Report”) to the Public Service Commission of Utah (“Commission”). The report attached herein contains power quality data that was approved in correspondence from the Commission dated November 1, 2022 in Docket No. 22-035-34. The reporting period is January through December 2023.

Questions may be directed to Jana Saba at (801) 220-2823.

Very truly yours,

Joelle Steward
Senior Vice President, Regulation and Customer & Community Solutions

cc: Service List: Docket No. 23-035-05

CERTIFICATE OF SERVICE

Docket No. 23-035-05

I hereby certify that on February 15, 2024, a true and correct copy of the foregoing was served by electronic mail to the following:

Utah Office of Consumer Services

Michele Beck mbeck@utah.gov
ocs@utah.gov

Division of Public Utilities

dpudatarequest@utah.gov

Assistant Attorney General

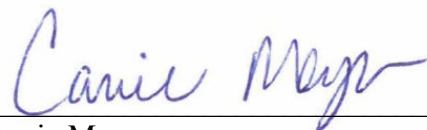
Patricia Schmid pschmid@agutah.gov
Robert Moore rmoore@agutah.gov
Patrick Grecu pgrecu@agutah.gov

Rocky Mountain Power

Data Request Response Center datarequest@pacificorp.com
Jana Saba jana.saba@pacificorp.com
utahdockets@pacificorp.com
Carla Scarsella Carla.scarsella@pacificorp.com

Utah Petroleum Association

Rikki Hrenko-Browning rhrenko-browning@utahpetroleum.org



Carrie Meyer
Adviser, Regulatory Operations



Rocky Mountain Power

2023 Utah Power Quality Report

Voltage Sag Analysis for Utah's Transmission System

PacifiCorp Power Quality Engineering
2-15-2024

Contents

Glossary	2
Power Quality Introduction.....	3
Report Scope.....	3
Customer Ride-Through Capability.....	3
Power Quality Monitor Locations	4
Site Map	5
Voltage Sag Event Summary	6
Utah SEMI-F47 2023 Trend.....	6
Voltage Sag Event Site Index	7
Voltage Sag Event Density Map.....	9
Voltage Sag Event Categorization	10
Appendix.....	11
Site Index	11
Regional Site Maps.....	13
Event Information	17
SEMI-F47 Plots	25

Glossary

CE – Product marking indicating Conformité Européenne, conforming to European Union standards for health and safety of electrical components.

Company – Represents the entity PacifiCorp d.b.a Rocky Mountain Power

IEC – International Electrotechnical Commission

IEEE – Institute of Electrical and Electronics Engineers

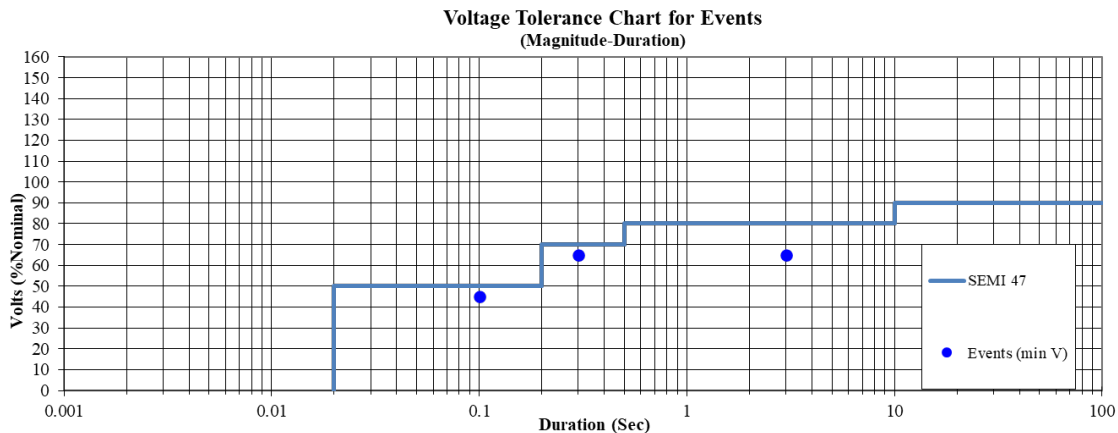
ITE – Information technology equipment

kV – kilovolt

Monitor – Device with a primary purpose to measure system values at an increased sampling rate to determine utility and customer compliance with Company power quality standards.

Meter – Device with a primary purpose of recording energy use by a customer with ancillary power quality monitoring capabilities.

SEMI-F47 Curve – A voltage sag ride-through curve developed by the semiconductor manufacturing industry to ensure that control and manufacturing equipment would not require operator intervention in the event of a voltage sag. Implementation of the ride-through curve requirements to applicable control equipment ensures that equipment drop-off is not a result of control terminal sensitivity but determined by the equipment’s operational limitations and safety requirements of the attached load.



UL – Underwriters Laboratories certification of safety for electrical equipment

Voltage sag – A short duration reduction in voltage. The severity of a voltage sag is defined by how deep the voltage is reduced as a percentage of its normal operating value, and the duration of the voltage reduction. Voltage sags are typically caused by short-circuit or fault conditions on the electric power system.

VFD – Variable Frequency Drive

Power Quality Introduction

Report Scope

This report identifies the quantity and sources of voltage disturbances, primarily voltage sags, observed at 46-345 kV Company substations. This report includes data collected during 2023. Subsequent reports will be provided on an annual basis and include the prior year's data. The report utilizes existing power quality monitors located within transmission substations in various locations throughout Utah. The future deployment of power quality monitoring devices will be incorporated into subsequent reports.

Customer Ride-Through Capability

Customers are encouraged to ride through less severe voltage sags. The Company recommends customers utilize the SEMI-F47 curve as a guideline to determine the voltage sag ride-through parameters of their equipment. Events below the SEMI-F47 curve will likely cause customers' equipment to shut off, whereas customers are encouraged to design systems to ride through events occurring above the curve. Voltage sag events occurring below the SEMI-F47 curve during the data collection period are included in this report.

The Company has found the items in the bullet list below are common methods customers have utilized to mitigate the impact of voltage sags. These identified methods are examples of actions taken by customers; however, a detailed analysis of a customer's systems and processes is typically required to enable voltage sag resilience.

- **UL & CE Listed** – Equipment with both markings are tested to IEC power quality standards and have improved ride-through capabilities
- **Update Ice Cube Relays** – Update from electromechanical styled relays to solid state
- **Ferroresonant Transformer** – Low voltage transformers that can maintain voltage during sags
- **Static Transfer Switch** – Provides an unaffected source in the event of an outage
- **VFD Settings** – Configuration of the VFD controllers can expand the allowable operation window

Power Quality Monitor Locations

Monitoring locations selected for this report are located at Company transmission substations. Monitor data availability at each location is not guaranteed as power quality monitors may have communication issues, hardware/software reset needs, or monitor failure. Voltage levels reported from Company monitors may vary from customer monitoring systems due to variables that include the distance of the fault from the customers' monitors as compared to the distance to the Company's monitors.

Company power quality monitor models:

- Nexus 1500 & 1252
- Shark 250
- ION 8650
- GE KV2C
- PMI Revolution

Power quality monitor locations:

- See Appendix – Site Index
- See Site Map (see page 5)
 - Monitor regions
 - Appendix – Regional Site Maps (see page 13)
 - North: service area north of Salt Lake County line
 - Central: service area between Salt Lake and Provo Counties
 - West: service area west of Salt Lake County
 - South: service area south of Provo County
 - Monitor voltage range identification

The 2022 Utah power quality report included 24 monitoring points, 18 of these monitoring points have been retained in the 2023 reporting period and 23 new monitoring points have been added to the report.

Year	Count of Monitoring Locations
2022	18
2023	23
Total	41

Site Map

Regional maps can be found in the Appendix under Regional Site Maps_(see page 13).

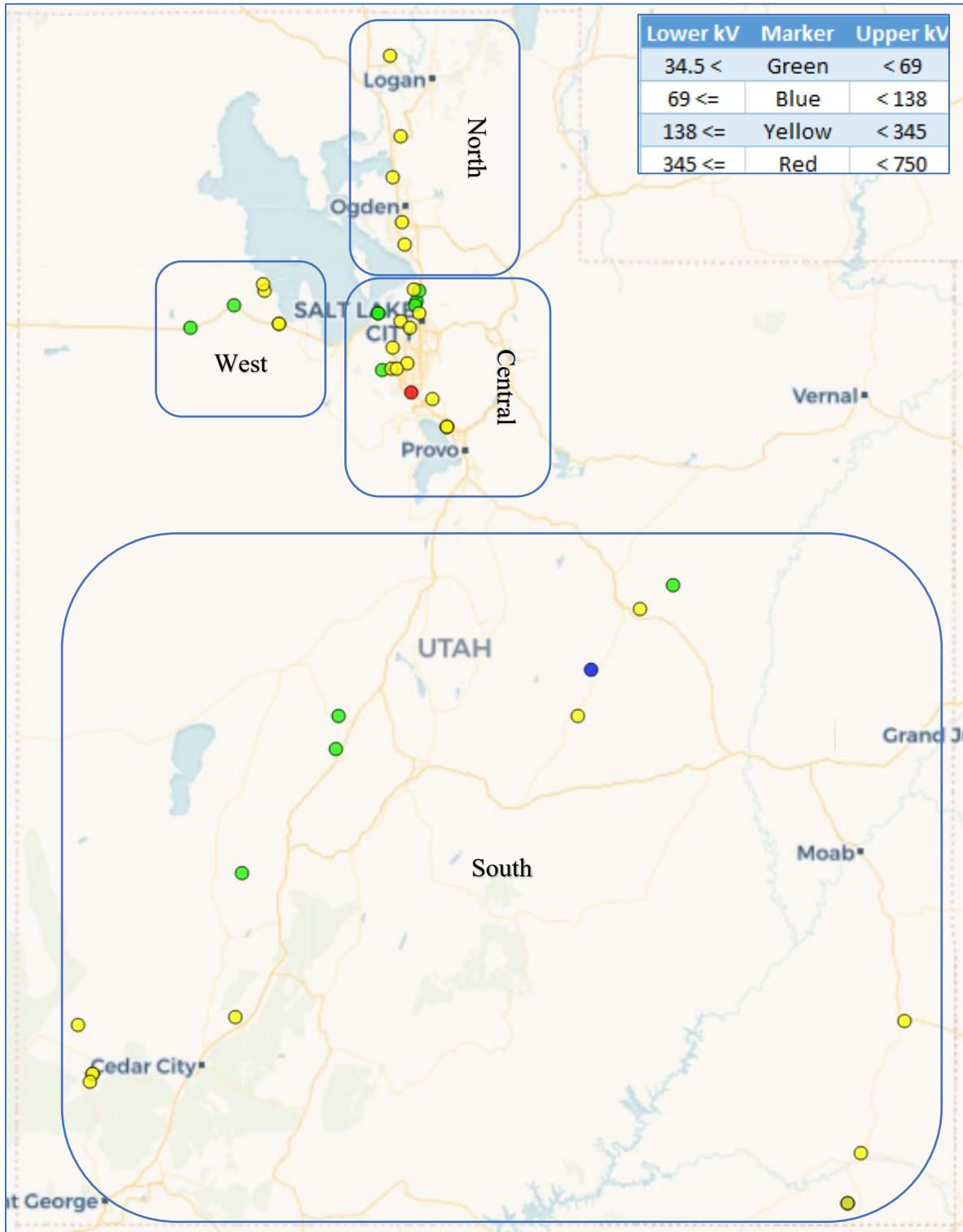


Figure 1 Site map of power quality monitors on the Company transmission network.

Voltage Sag Event Summary

Voltage sags below the SEMI-F47 curve captured by monitoring devices for the calendar year 2023 are included in this report. Company monitors are configured to capture system voltage events when voltage deviates less than 90 percent of the monitoring point's normal voltage. The report's dataset only includes events below the SEMI-F47 curve.

Utah SEMI-F47 2023 Trend

The 2023 year included new monitoring locations that are located at transmission interconnections. Power quality monitors captured and increased number of shallower voltage sags with longer durations. For individual sites, the respective SEMI-F47 plot can be found in the Appendix -[SEMI-F47](#) Plots (see page 23).

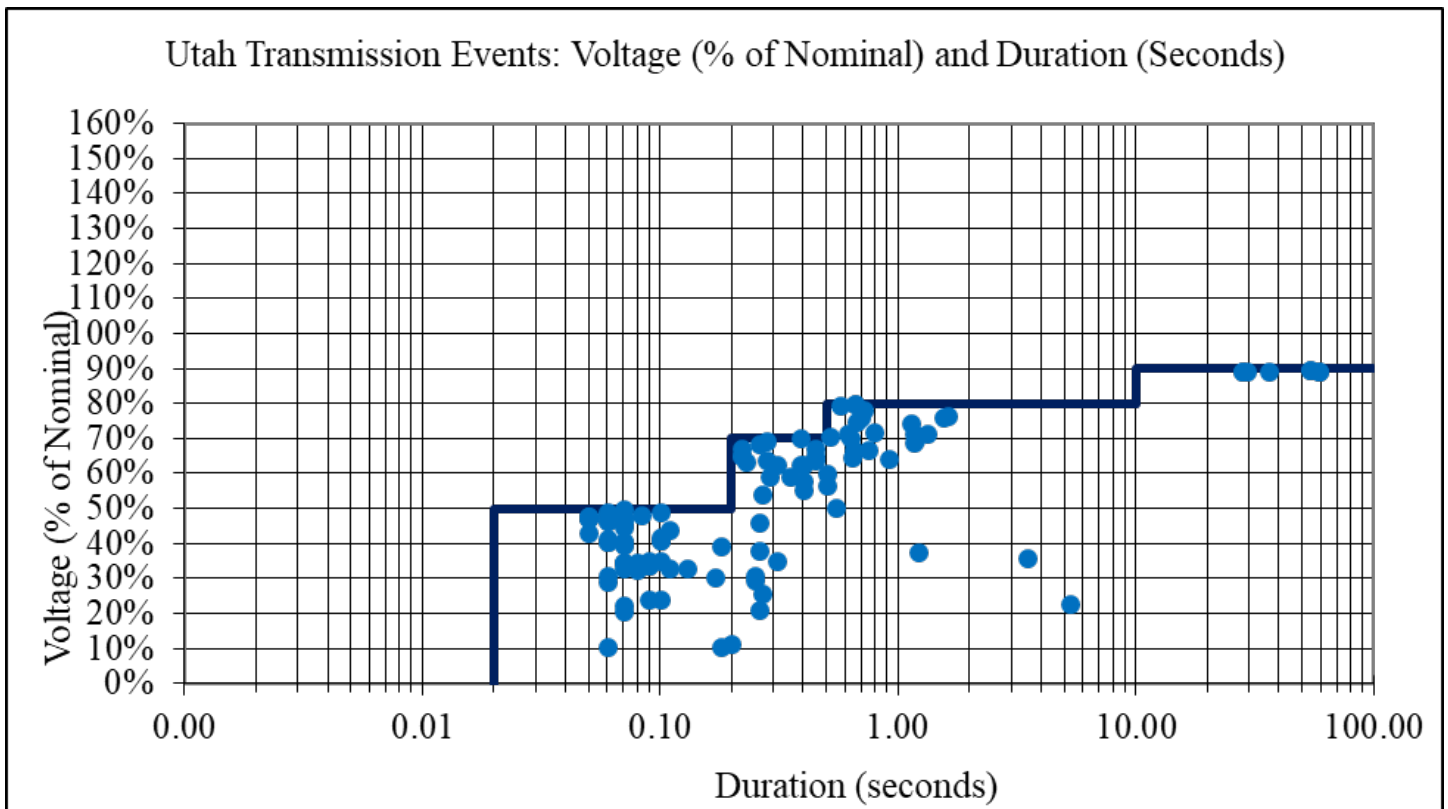


Figure 2 Utah Transmission SEMI-F47 Plot

Voltage Sag Event Site Index

Monitors captured 116 total events. 74 unique voltage sag events were captured on multiple meters, a 50% increase of recorded events over 2022. The increase of unique events is significant; however, 41.37% of events were captured by new monitoring points for the year 2023.

Table 1 Site Event Index

Total Events		Unique Events		Events From New Meters
116		74		48
Substation	Kilovolt	2022	2023	Event Count Change
Abajo	138	1	7	6
Angel	138	0	9	New Monitor
Arapaho Solar	46	0	0	New Monitor
Beck Street	138	0	2	New Monitor
Ben Lomond	138	0	2	2
Blundell	46	0	1	1
Brigham City	138	0	1	1
Camp Williams	345	3	1	-2
Clawson	138	0	0	New Monitor
Clive	46	0	0	New Monitor
Cove Mountain	138	0	0	New Monitor
Craner Flat	138	0	1	New Monitor
Dugout	46	0	5	New Monitor
Dynamo	138	13	2	-11
Enterprise Solar	138	0	0	New Monitor
Enterprise Valley	138	0	0	0
Homestead Knoll	138	11	5	-6
Horseshoe	138	2	3	New Monitor
Kennecott	46	0	1	New Monitor
Lone Peak	138	0	1	New Monitor
Magna	46	0	1	New Monitor
Mathington	138	0	2	New Monitor
McCracken	69	2	8	6
McFadden	69	0	3	New Monitor
Mountain View	138	3	2	-1
North Salt Lake	46	0	3	New Monitor
Old Field	46	0	1	1
Onion	138	0	1	New Monitor
Oquirrh	138	3	5	2
Parowan	138	0	0	New Monitor
Pinto	138	0	4	New Monitor

Remington	138	0	2	New Monitor
Riverdale	138	0	0	0
San Juan	138	1	12	11
Skunk Ridge	46	11	9	-2
Terminal	138	4	2	-2
Topaz	138	0	0	New Monitor
Wasatch Springs	46	3	3	0
Wheelon	138	0	7	7
Wights Fort	138	0	3	New Monitor
Woods Cross	46	0	3	New Monitor

Voltage Sag Event Density Map

The Voltage Sag Density Map provides a hotspot view of voltage sags on the Utah transmission system.

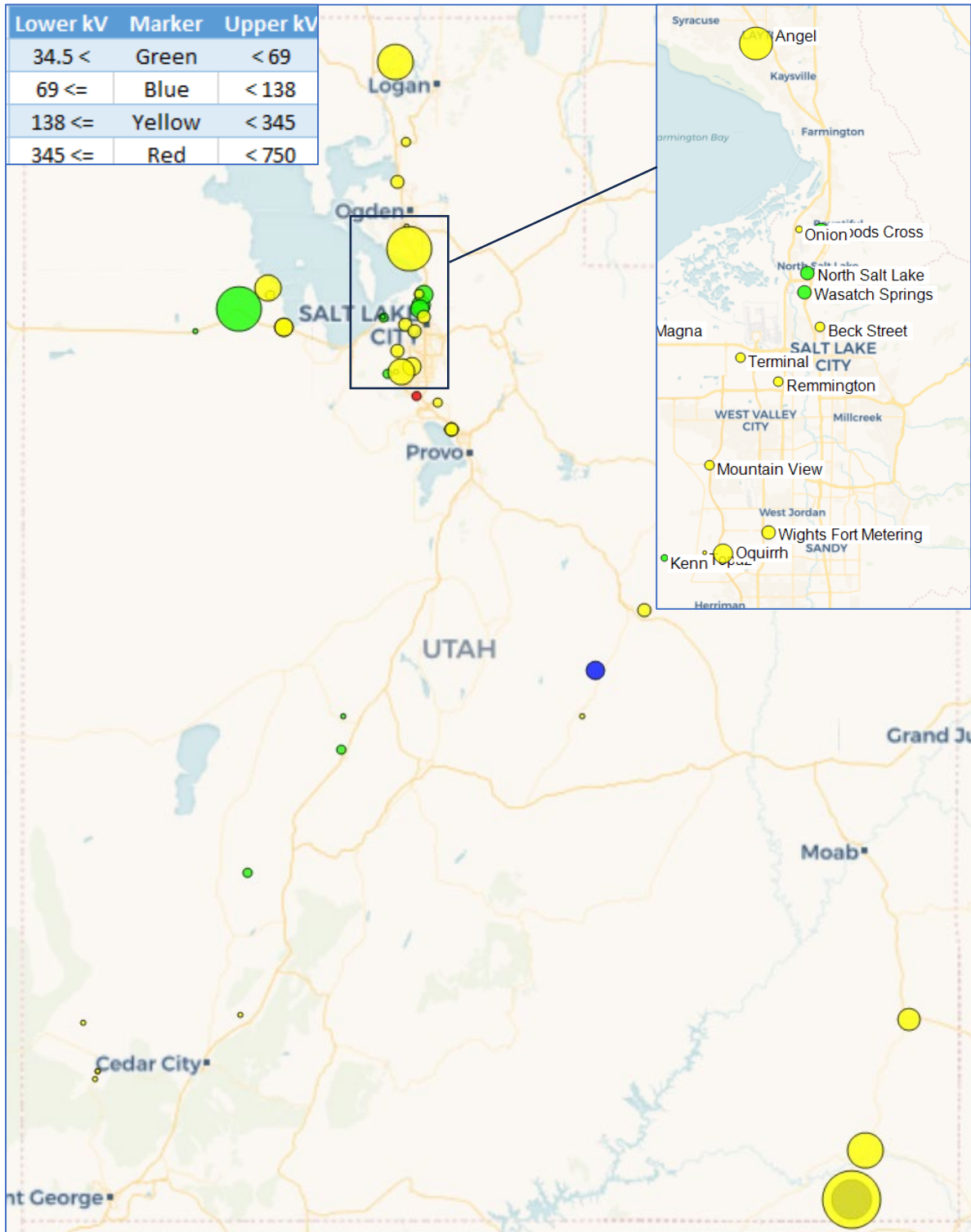


Figure 3 Voltage Sag Density Map

Voltage Sag Event Categorization

Power quality events captured by the Company are typically associated with faults (short circuit) on the transmission network. Tracking events to identify patterns in system issues can provide preventative maintenance and system improvement recommendations. If a Company system fault occurred at the time of a recorded event, it is assigned a category and short description in Table 2. 33 “Other” events were also captured by monitors but removed from the table to improve other category readability. Other events are caused by an unknown or directly unidentifiable cause of a fault. Description and corrective actions taken for individual events are in the Appendix - [Event Information](#) (see page 17).

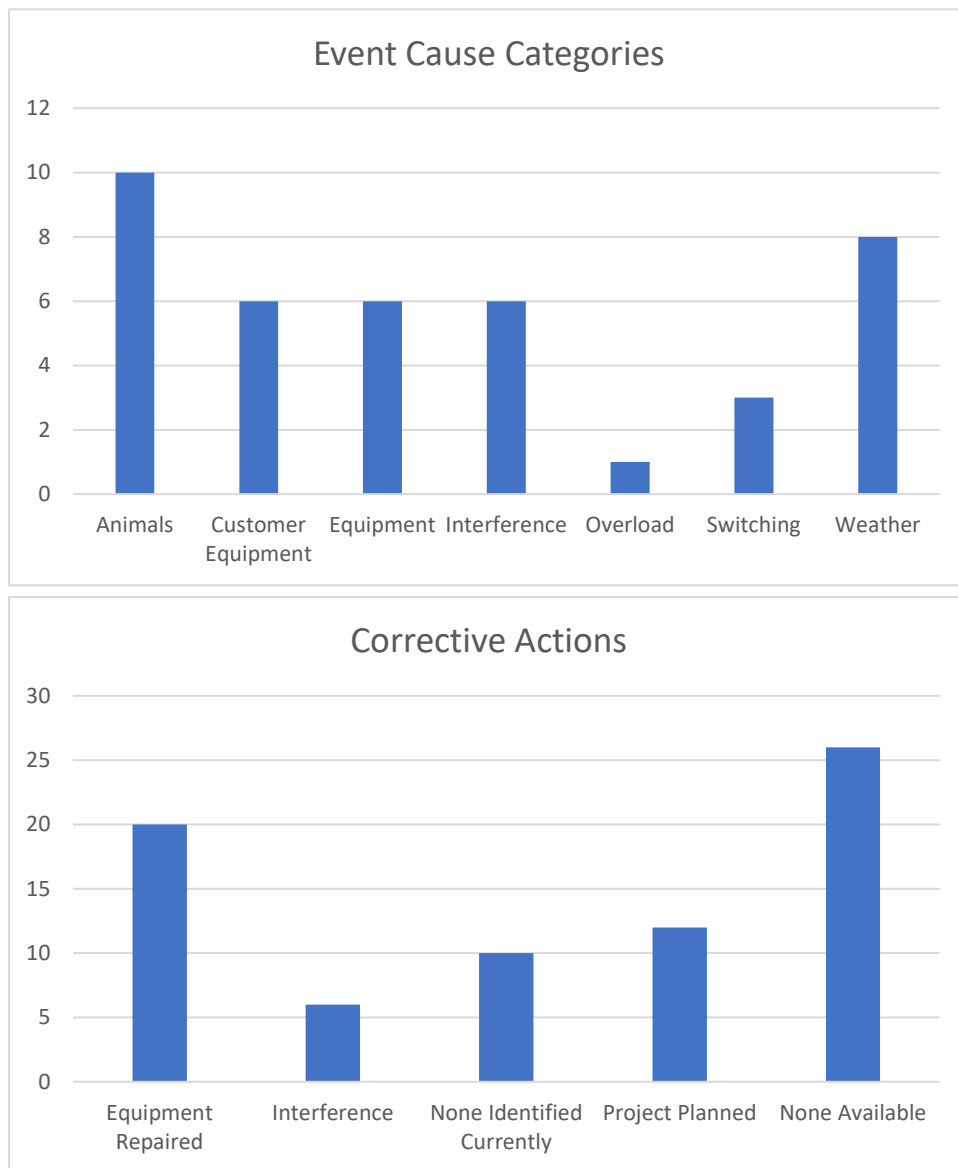


Figure 4 Event Cause Categories & Corrective Actions

Appendix

Site Index

Table 2 Site Information

Monitor Type	Substation	Area	kV	Year Added to Report
ION 8650	Abajo (Navajo Utility)	Bluff	138	2022
ION 8650	Angel	Layton	138	2023
ION 8650	Arapaho Solar	Millard County	46	2023
ION 8650	Beck Street	Salt Lake City	138	2023
Nexus 1500	Ben Lomond	Ogden	138	2022
ION 8650	Blundell	Milford	46	2022
ION 8650	Brigham City	Brigham City	138	2022
Nexus 1252	Camp Williams	Jordan Valley	345	2022
ION 8650	Clawson	Price	138	2023
Nexus 1252	Clive	Tooele	46	2023
ION 8650	Cove Mountain	Enterprise	138	2023
ION 8650	Craner Flat	Grantsville	138	2023
ION 8650	Dugout	Wellington	46	2023
ION 8650	Dynamo (Lakeside 1,2,3)	Provo	138	2022
ION 8650	Enterprise Solar	Newcastle	138	2023
ION 8650	Enterprise Valley	Enterprise	138	2022
Nexus 1500	Homestead Knoll	SLC Metro	138	2022
ION 8650	Horseshoe	Grantsville	138	2023
ION 8650	Kennecott	Salt Lake City	46	2023
ION 8650	Lone Peak	LEHI	138	2023
ION 8650	Magna	Magna	46	2023
ION 8650	Mathington	Price	138	2023
ION 8650	McCracken	Moab	69	2022
ION 8650	McFadden	Price	69	2023
Nexus 1500	Mountain View	Jordan Valley	138	2022
KV2C	North Salt Lake	SLC Metro	46	2023
ION 8650	Old Field	Holden	46	2023
ION 8650	Onion	West Bountiful	138	2023
Nexus 1500	Oquirrh	Jordan Valley	138	2022
ION 8650	Parowan	Cedar City	138	2023
ION 8650	Pinto	Monticello	138	2023
ION 8650	Remington	Salt Lake City	138	2023
Nexus 1252	Riverdale	Ogden	138	2022
ION 8650	San Juan (Resolute)	Bluff	138	2022
Nexus 1500	Skunk Ridge	Tooele	46	2022
Nexus 1500	Terminal	SLC Metro	138	2022

ION 8650	Topaz	South Jordan	138	2023
ION 8650	Wasatch Springs	Salt Lake City	46	2022
Nexus 1500	Wheelon	Tremonton	138	2022
ION 8650	Wights Fort	West Jordan	138	2023
KV2C	Woods Cross	SLC Metro	46	2023

Regional Site Maps

North



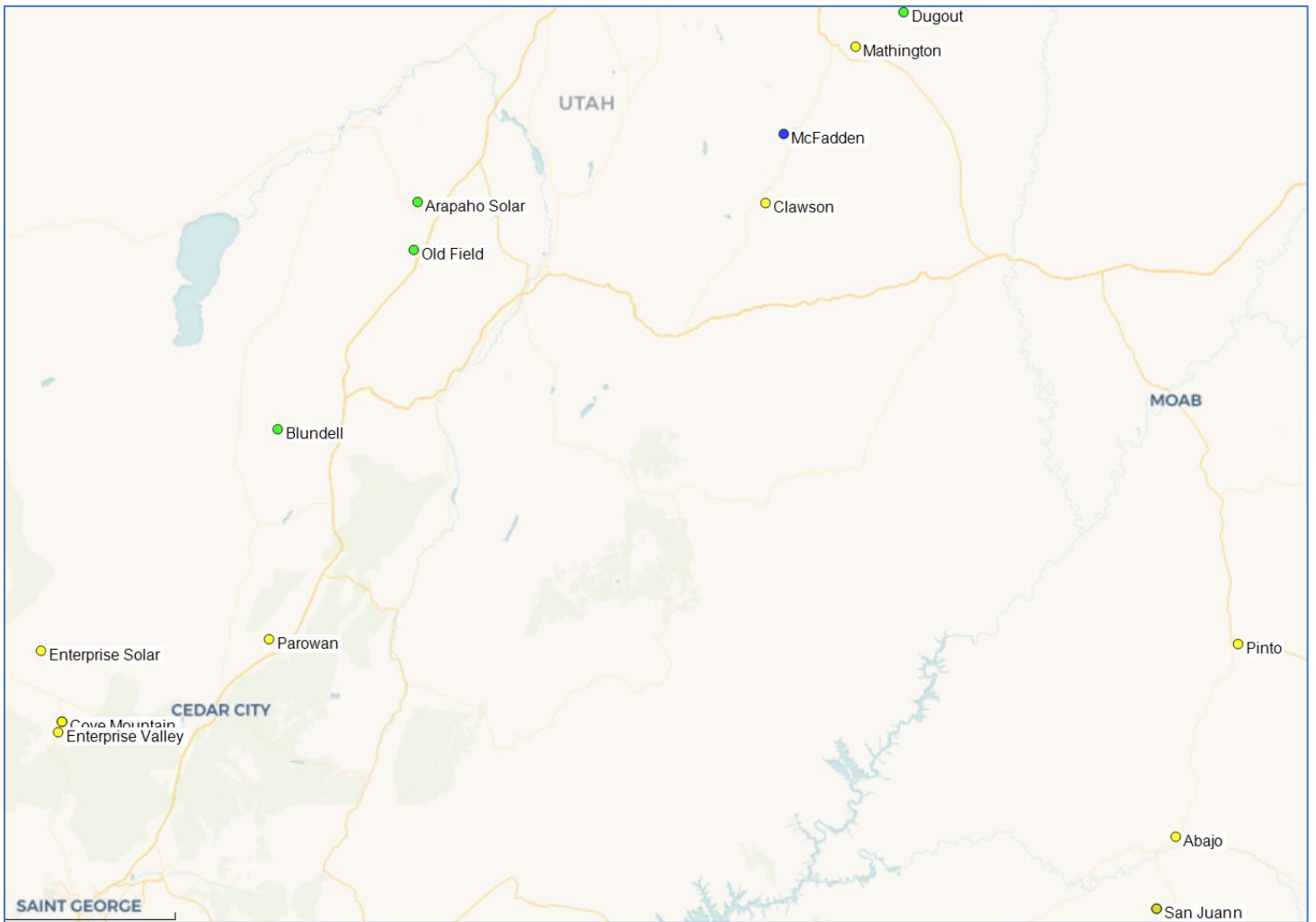
Central



West



South



Event Information

Substations	Meter Date	Duration (s)	Circuit	Cause Code	Equipment Impacted	Description	KV	Corrective Action
Woods Cross, North Salt Lake, Wasatch Springs	1/3/23 2:00 PM	0.27	Gadsby Bus	Equipment	Transformer	XFMR #10 Lockout, Major inspection completed Oct 2022 - Minor inspection completed Dec 2022	138	Project Planned
Skunk Ridge	1/20/23 9:16 PM	5.32	Horseshoe-Lakeside-Skunkridge	Other	Unknown	Trip and reclose. Patrol did not find cause	46.00	None Available
Dynamo	1/30/23 4:15 AM	0.06	Hale-Timp	Other	Unknown	Patrolled, 1.52 miles A-G.	138.00	None Available
Lone Peak, Dynamo	2/18/23 12:50 PM	0.31	Dynamo-Tri City	Other	Breaker	Patrolled, fault targets of 1.03 miles. Breaker held open by control equipment	138.00	Equipment Repaired
Homestead Knoll	2/21/23 8:14 PM	1.63	Homestead Knoll	Weather	Unknown	A phase sag occurring at the end of load startup. Current magnitudes and duration within breaker settings.	138.00	None Available
Homestead Knoll	2/21/23 9:02 PM	1.55	Homestead Knoll	Weather	Unknown	A phase sag occurring at the end of load startup. Current magnitudes and duration within breaker settings.	138.00	None Available
Mountain View, Oquirrh, Terminal	3/10/23 4:00 PM	0.13	Taylorville-Kearns	Interference	Structure	Vehicle pole strike	138.00	Equipment Repaired
McCracken	3/12/23 7:28 PM	0.22	McCracken-Saneth	Other	Unknown	Current inrush from other utility/contractor. Breakers did not operate but within limits	69.00	None Available

McCracken	3/12/23 7:43 PM	0.22	McCracken-Saneth	Other	Unknown	Current inrush from other utility/contractor. Breakers did not operate but within limits	69.00	None Available
Wheelon	3/24/23 10:07 PM	0.05	Bridgerland-Cache	Interference	Structure	Car hit pole	138.00	Equipment Repaired
Emery	3/27/23 8:13 PM	0.52	F1757 Emery Tap	Other	Unknown	Large current	69.00	None Identified Currently
Angel	3/27/23 9:29 PM	0.05	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Angel	3/28/23 3:34 AM	0.05	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Angel	3/31/23 3:44 PM	0.06	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Angel	4/2/23 6:28 AM	0.07	Terminal-Syracuse	Animals	Insulator	Flashed insulator 4/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
North Salt Lake,	4/3/23 7:24 AM	1.13	Parrish-Woods Cross	Weather	Conductor	Marking of snow unloading	46.00	Equipment Repaired

Woods Cross						and kit found on pole 271.		
McCracken	4/3/23 5:17 PM	0.07	Abajo-Mexican Hat	Other	Unknown	Patrolled, no findings	69.00	None Available
Angel	4/7/23 4:19 PM	0.05	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Angel	4/8/23 8:43 PM	0.05	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Angel	4/9/23 8:16 AM	0.06	Terminal-Syracuse	Animals	Insulator	Flashed insulator 3/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
Homestead Knoll	4/9/23 9:37 AM	0.18	Homestead Knoll-Rowley	Customer Equipment	Insulator	Insulator on customer's substation primary faulted.	138.00	Interference
Angel	4/14/23 11:27 AM	0.05	Terminal-Syracuse	Animals	Insulator	Flashed insulator 4/30. Herons perching. Longer insulators 6/1/23 with nest removal and tower guards Q1 2024. WITS 12229	345.00	Project Planned
San Juan, Abajo	4/19/23 9:24 AM	53.77	Abajo XFMR	Overload	Customer Equipment	Solar generation contacted to curtail generation	69.00	Interference

						to prevent trip on MW		
San Juan, Abajo	4/28/23 1:05 AM	0.66	Unknown	Other	Unknown	MW output drop at both meters. Cause and effect is not definitive		None Available
Skunk Ridge	5/7/23 1:28 AM	3.52	Aragonite-Clive	Other	Unknown	Patrolled, bird activity observed but not confirmed.	46.00	None Available
Abajo, San Juan	5/10/23 1:04 PM	29.25	Unknown	Other	Unknown	Undervoltage event with cause not due to a system fault resulting in a breaker operation.		None Identified Currently
Abajo, San Juan	5/10/23 6:18 PM	59.21	Unknown	Other	Unknown	Undervoltage event with cause not due to a system fault resulting in a breaker operation.		None Identified Currently
Abajo, San Juan	5/11/23 8:26 AM	28.03	Unknown	Other	Unknown	Undervoltage event with cause not due to a system fault resulting in a breaker operation.		None Identified Currently
Abajo, San Juan	5/11/23 8:49 AM	397.3	Unknown	Other	Unknown	Undervoltage event with cause not due to a system fault resulting in a breaker operation.		None Identified Currently
Mathington	5/12/23 8:26 PM	0.07	Carbon-Spanish Fork #1	Other	Insulator	Flashed glass on structure 664.	138.00	Equipment Repaired
Camp Williams, Oquirrh, Wights Fort	5/13/23 5:41 AM	0.07	90th South-Terminal	Interference	Insulator	Mylar balloon markings on structure 94.	345.00	Equipment Repaired
Wheelon	5/14/23 12:08 AM	0.28	Green Canyon-Wheelon	Weather	Structure	2 structures damaged.	138.00	Equipment Repaired
Wheelon	5/18/23 4:24 AM	0.08	Plymouth-Wheelon	Other	Unknown	Patrolled no findings	138.00	None Available
San Juan, Abajo	5/20/23 3:45 PM	0.07	Abajo-San Juan	Interference	Unknown	Power restored to NTUA grid with coordination	69.00	None Available
Old Field	6/3/23 11:38 PM	0.11	Unknown	Other	Unknown	No correlating utility event	-	None Available

Emery	6/4/23 5:16 AM	0.45	Emery CB 66	Other	Unknown	Patrolled no findings	69.00	None Available
Pinto	6/4/23 6:30 AM	0.06	Abajo-Pinto	Other	Unknown	Patrolled no findings	138.00	None Available
Dugout	6/15/23 1:56 PM	0.22	Coal Creek-Columbia #1	Other	Unknown	Patrolled no findings, thunderstorms	46	None Available
McCracken, San Juan	6/22/23 9:29 AM	0.64	Abajo-Westwater	Equipment	Breaker	Transmission line patrolled no findings. 6/26 event identified distribution cause.	69.00	Equipment Repaired
McCracken, San Juan	6/26/23 6:57 PM	0.61	Abajo-Westwater	Equipment	Pole	Pole damage on Westwater CB 11 caused transmission to clear.	69.00	Equipment Repaired
Emery	7/7/23 7:42 AM	0.45	Emery-Sufco	Other	Unknown	B-G fault 17.1 miles from Emery. Patrolled	69.00	None Available
San Juan, McCracken	7/15/23 7:26 AM	0.26	Unknown	Other	Unknown	No correlating utility event, voltage gradient indicates from interconnecting system.	-	None Identified Currently
Wheelon	7/23/23 2:35 AM	0.5	Green Canyon-Wheelon	Other	Insulator	Flashed insulator structure 62 center phase	138.00	Equipment Repaired
Wheelon	7/24/23 1:02 AM	0.5	Green Canyon-Wheelon	Other	Insulator	Flashed insulator structure 82, possible bird cause	138.00	Equipment Repaired
Skunk Ridge	7/24/23 2:58 PM	0.57	Skunk Ridge CB41	Other	Unknown	Waveform indicates downstream event. Breaker operated correctly, possible event on customer secondary.	46.00	None Available
McFadden	7/25/23 6:00 PM	0.72	McFadden-Orangeville	Other	Unknown	Patrolled, weather in area.	69.00	None Available
Dugout	7/26/23 4:06 PM	0.91	Helper-Mathington	Other	Unknown	Patrolled, weather in area, trip and reclose	46.00	None Available
Skunk Ridge	8/1/23 7:02 PM	0.35	Skunk Ridge CB44	Customer Equipment	Jumper	Jumper in transmission customer substation failed and contacted	46	Interference

						conductor entering the sub.		
Mathington	8/2/23 9:14 AM	1.32	Mathington-Graphite Solar	Switching	Reactor	SVC removed from service.	138.00	Project Planned
McCracken, San Juan	8/2/23 5:25 PM	0.17	Unknown	Other	Unknown	Voltage sag on interconnection monitor	-	None Identified Currently
McFadden	8/3/23 12:11 AM	0.67	McFadden-Orangeville	Other	Unknown	Patrolled, targets C-G 12 miles	69.00	None Available
Skunk Ridge	8/3/23 8:40 PM	0.55	Skunk Ridge CB41	Animals	Insulator	WITS 24764 golden eagle mortality. Structures to be reframed.	46	Project Planned
Wheelon	8/6/23 12:18 PM	0.08	Treasureton-Wheelon	Animals	Insulator	Animal contamination on structure 681.	138.00	Equipment Repaired
Homestead Knoll	8/8/23 12:45 AM	0.20	Horseshoe-Homestead Knoll	Customer Equipment	Insulator	Insulator on customer's substation primary faulted.	138.00	Interference
Dugout	8/18/23 4:13 PM	0.28	Coal Creek-Columbia #1	Weather	Cross Arm	Cross arm broken by storm	46.00	Equipment Repaired
Dugout	8/21/23 11:18 AM	0.27	Carbon-Spanish Fork #2	Equipment	Structure	Downed structure	138.00	Equipment Repaired
McFadden	8/22/23 5:45 PM	0.65	Huntington City-McFadden	Other	Unknown	Patrolled no findings, thunderstorms.	69.00	None Available
Emery	8/25/23 7:45 AM	0.45	Emery-Sufco	Other	Unknown	Fault targets 14.62 miles B-G.	69.00	None Available
Pinto	8/27/23 12:56 PM	0.06	Abajo-pinto	Other	Unknown	Operation not Identified	138.00	None Identified Currently
Wheelon	9/3/23 6:42 PM	0.1	Green Canyon-Wheelon	Weather	Unknown	High winds and lightning reported	138.00	None Identified Currently
Dugout	9/13/23 4:08 PM	0.23	Coal Creek-Columbia #2	Weather	Unknown	Lightning strike reported	46.00	None Available
San Juan, McCracken	9/18/23 6:31 AM	0.29	-	Other	Unknown	No correlating utility operation.	-	None Identified Currently
Pinto	9/18/23 8:26 AM	0.79	Abajo-Pinto	Weather	Unknown	Lightning strike reported	138.00	None Available
Pinto	9/20/23 12:50 PM	0.07	Abajo-Pinto	Other	Unknown	High winds reported	138.00	None Available
Kennecott, Magna	9/21/23 2:19 AM	0.09	Goggin-Terminal	Interference	Conductor	Tarp at pole 9/001	138.00	Equipment Repaired

North Salt Lake, Remington, Beck Street, Wasatch Springs	9/24/23 11:32 PM	0.4	McClelland-University	Customer Equipment	Breaker	Arc from faulted customer underbuild faulted transmission line. Breaker operation delayed and replaced.	138.00	Equipment Repaired
Brigham City, Ben Lomond	10/21/23 3:48 AM	0.07	Ben Lomond-Warren	Interference	Pole	Car hit pole	138.00	Equipment Repaired
Mountain View, Beck Street, Ben Lomond, Terminal, Wasatch Springs, Oquirrh, Skunk Ridge, Woods Cross, Onion, Remington, Angel, Wights Fort	11/11/23 6:47 AM	0.07	Terminal Reactor	Equipment	Reactor	Terminal 345kV south bus locked out due to reactor breaker.	345.00	Project Planned
Oquirrh	11/14/23 5:38 PM	0.10	90th South-Oquirrh	Customer Equipment	Insulator	Transmission customer primary insulator faulted and cleared by utility protection.	138.00	Interference
Horseshoe, Skunk Ridge	11/23/23 5:02 PM	0.11	Horseshoe-Homestead Knoll	Customer Equipment	Lightning Arrester	Transmission customer lightning arrester faulted. System behavior reviewed for possible overvoltage, no findings.	138.00	Interference
Horseshoe, Skunk Ridge	11/23/23 5:27 PM	0.09	Horseshoe-Homestead Knoll	Switching	Lightning Arrester	Intentional operation to identify fault location due to no findings at fault targets.	138.00	Equipment Repaired
Horseshoe, Skunk Ridge	11/24/23 12:13 AM	0.1	Horseshoe-Homestead Knoll	Switching		Restoration of Homestead Knoll	138.00	Equipment Repaired
Craner Flat, Homestead Knoll	11/24/23 10:24 AM	0.07	Horseshoe-Homestead Knoll	Other	Unknown	Fault current down stream of Homestead Knoll. Cause not confirmed.	138.00	None Available

Oquirrh, Wights Fort	11/25/23 2:52 PM	0.1	90th South Bank #3	Equipment	Lightning Arrester	Lightning arrester faulted to presumed moisture intrusion. Set replaced.	345.00	Equipment Repaired
-------------------------------------	---------------------	-----	-----------------------	-----------	-----------------------	---	--------	-----------------------

SEMI-F47 Plots

