



# PQDashboard

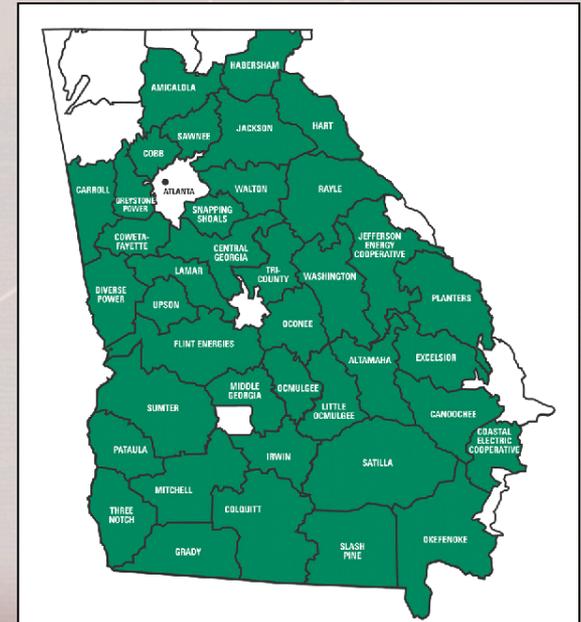
## User's Group Meeting

May 12, 2021

Presented by: Lori Hartzog

# About Georgia Transmission Corporation (GTC)

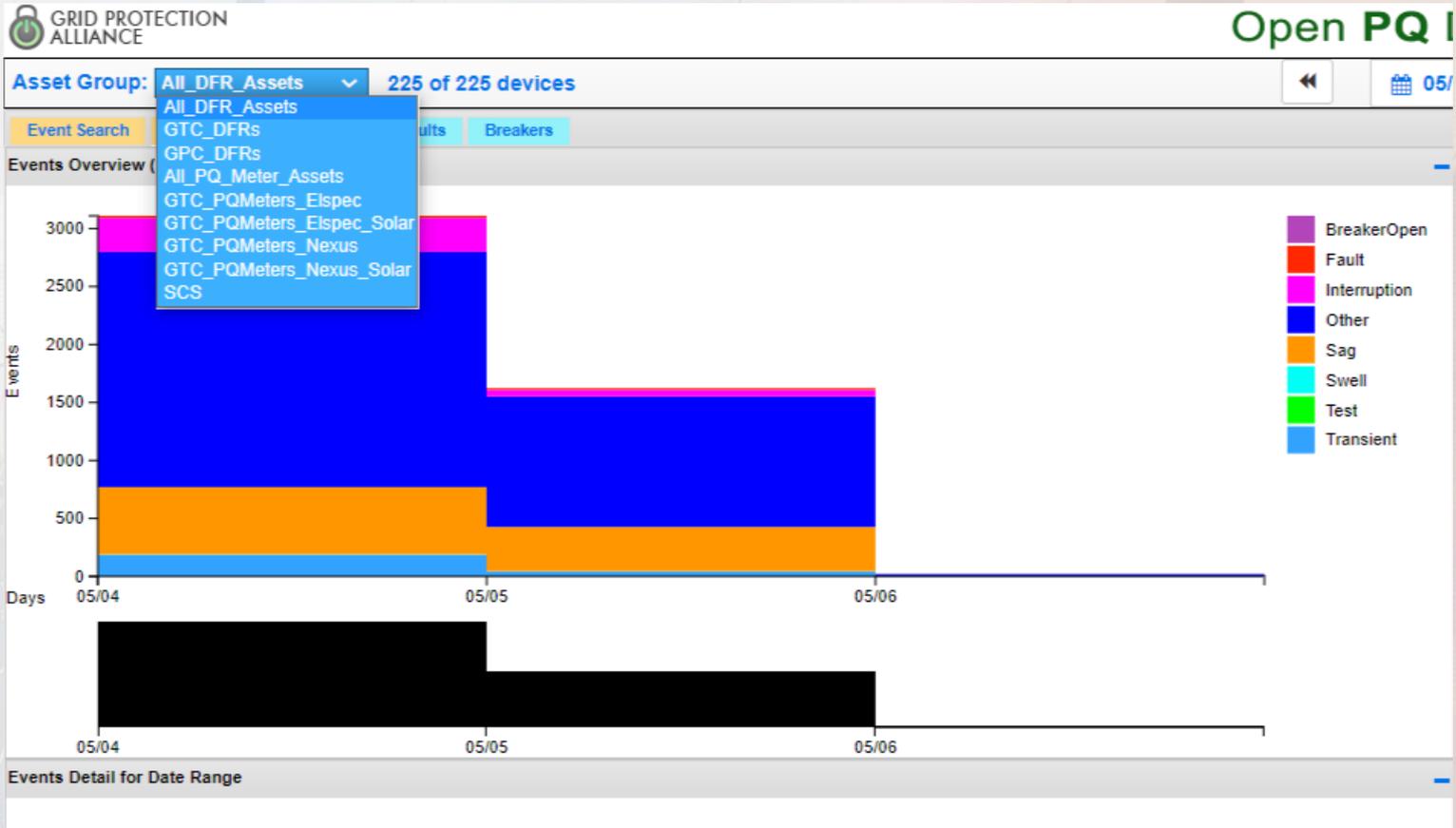
- Transmission-only, not-for-profit cooperative
- Formed in March 1997 from the restructuring of Oglethorpe Power Corporation (OPC)
  - GTC provides network transmission services to 38 Member EMCs in Georgia
  - GTC provides point-to-point service to other customers



# GTC PQ Dashboard Overview

- GTC DFR Assets - Stations and DFRs owned by Georgia Transmission Corporation (92 DFRs)
- GPC DFR Assets - Stations and DFRs owned by Georgia Power Company displayed in GTC PQ Dashboard (133 DFRs)
- GTC PQ Meter Assets - Stations and Power Quality Meters owned by Georgia Transmission Corporation (41 PQMs)

# GTC PQ Dashboard Overview



# GTC Fault Trace Tool (FTT) Overview

- Existing tools (rolled out in 2020):
  - Fault location map in GTC fault email
  - Manual tool to measure GTC/GPC fault distance
  - Manual double ended analysis
  - Measurement from structure to substation
- New tools (rolled out in 2021)
  - Lightning on fault map in GTC fault email
  - Manual tool to measure lightning
  - GPC DFR fault emails
- Coming tools (Summer 2021):
  - Fault indicator status

# FTT Email Examples

Wed 5/5/2021 1:15 AM

PQDashboard@gasoc.com

Fault detected on DORSETT - FORREST ROAD 115kV LINE (00003011)

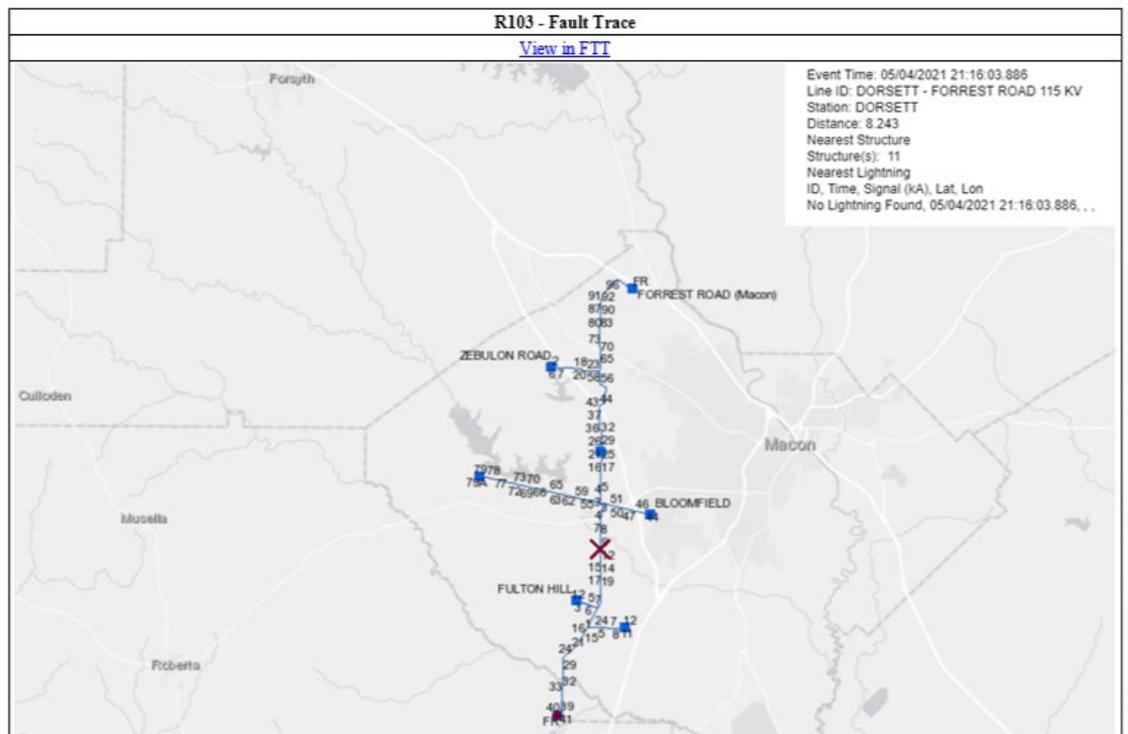
**Fault 1** - 2021-05-04 21:16:03.8862496

DFRs: R103 at Dorsett 230/115 KV triggered at 21:16:03.7335413 ([click for waveform](#))

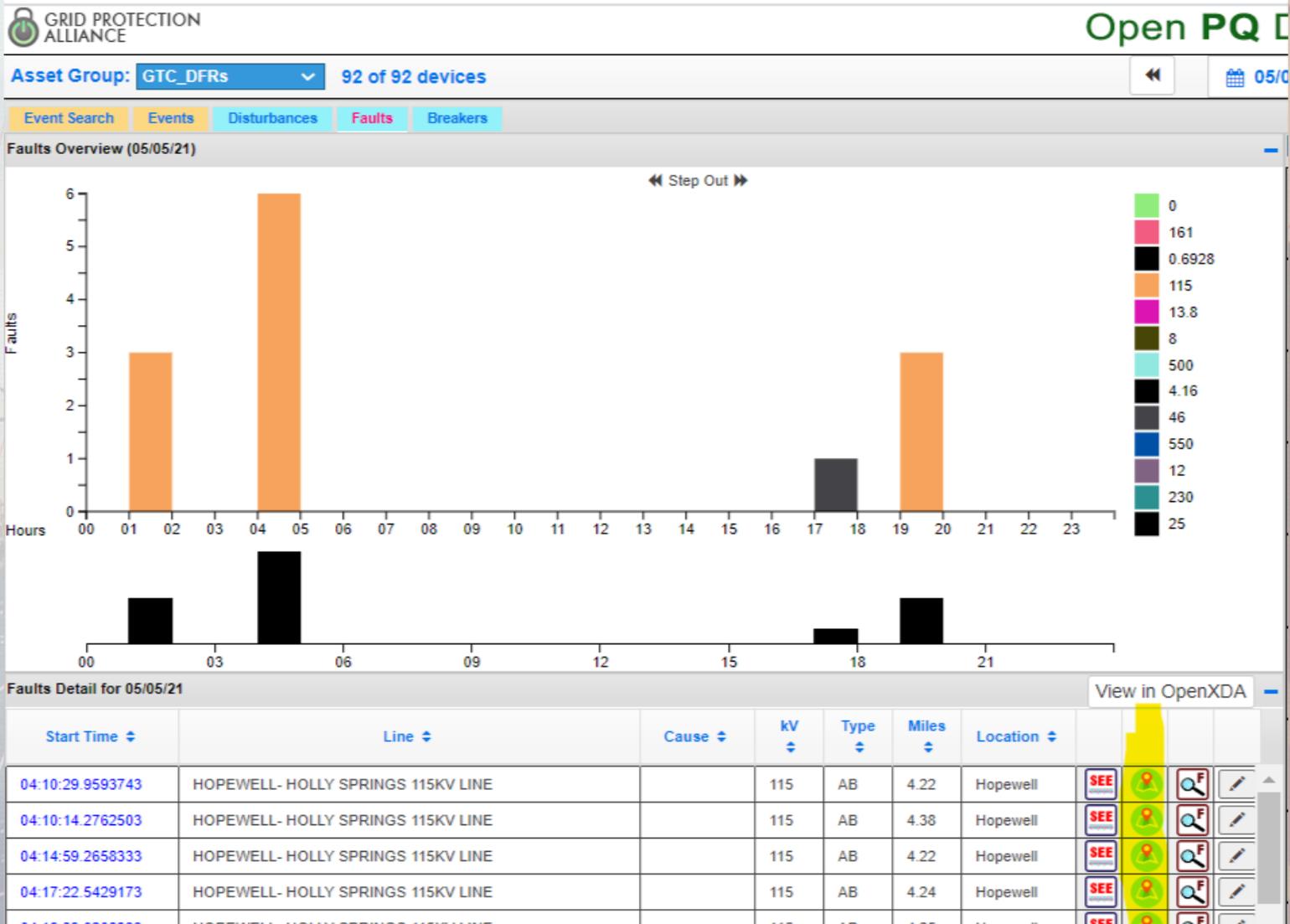
Files: 210504,211603833,-5t,Dorsett\_230\_115 DF\_SE GPC,USI\_2002 R103,Georgia Transmission Corporation,R103F4640.dat

Line: DORSETT - FORREST ROAD 115kV LINE (19.57 miles)

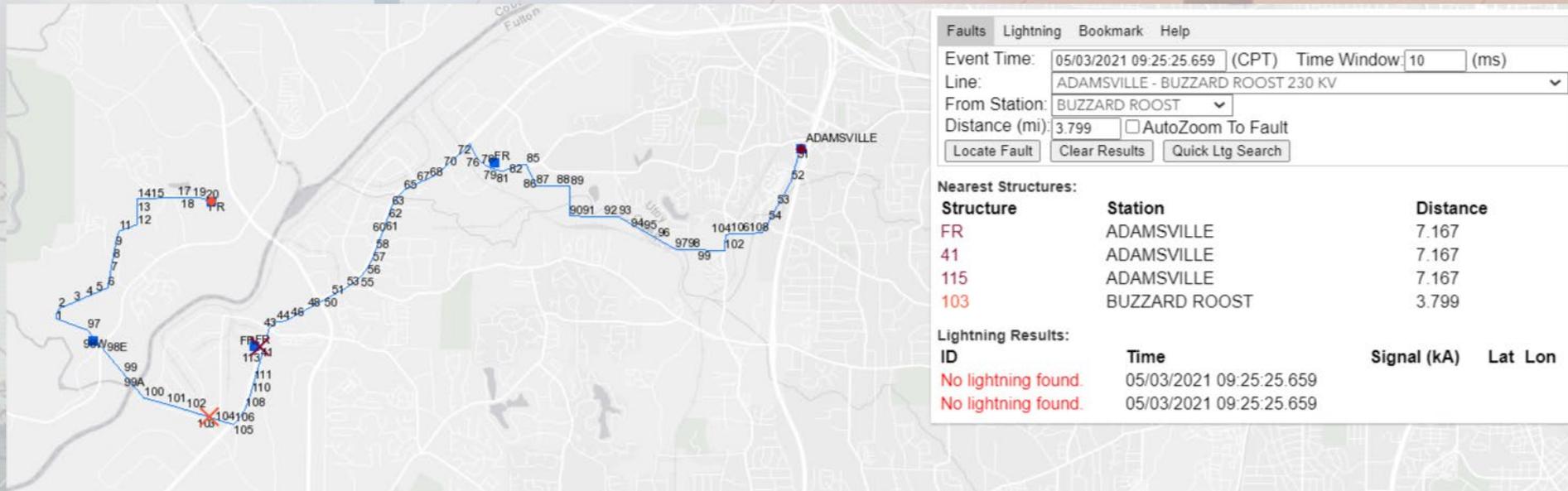
	Dorsett 230/115 KV - R103
Fault Type:	AN
Inception Time:	21:16:03.8862496
Fault Duration:	133.750 msec (8.03 cycles)
Fault Current:	1331.6 Amps (RMS)
Prefault Current:	235.3 Amps (RMS)
Postfault Current:	18.8 Amps (RMS)
Distance Method:	ModifiedTakagi
Single-ended Distance:	8.243 miles
Is Breaker Restrict?:	N/A
Short file name:	R103F4640.dat
openXDA Event ID:	1534220



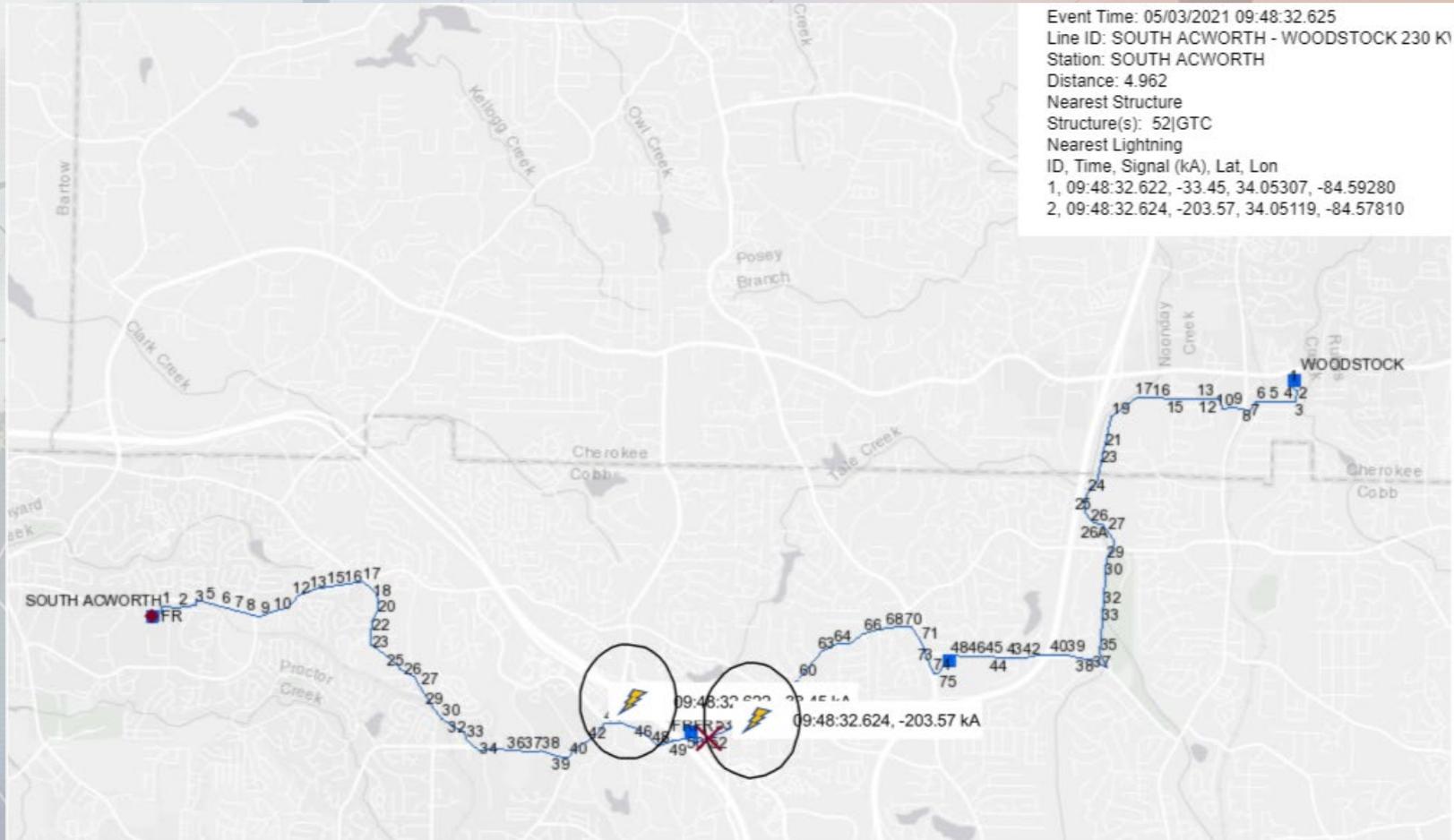
# FTT Link from PQ Dashboard



# FTT Examples – Double Ended Fault

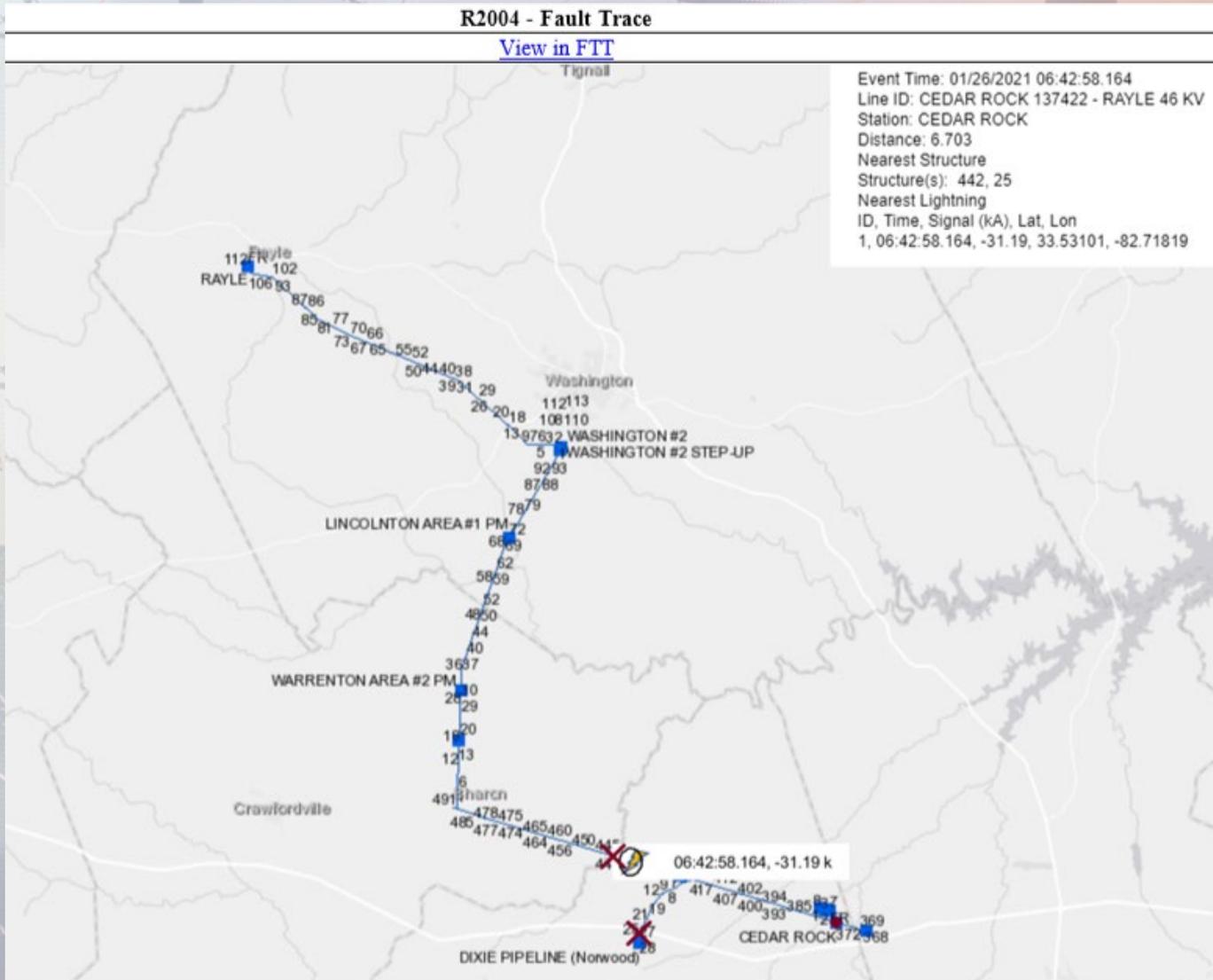


# FTT Examples – Email Multiple Lightning

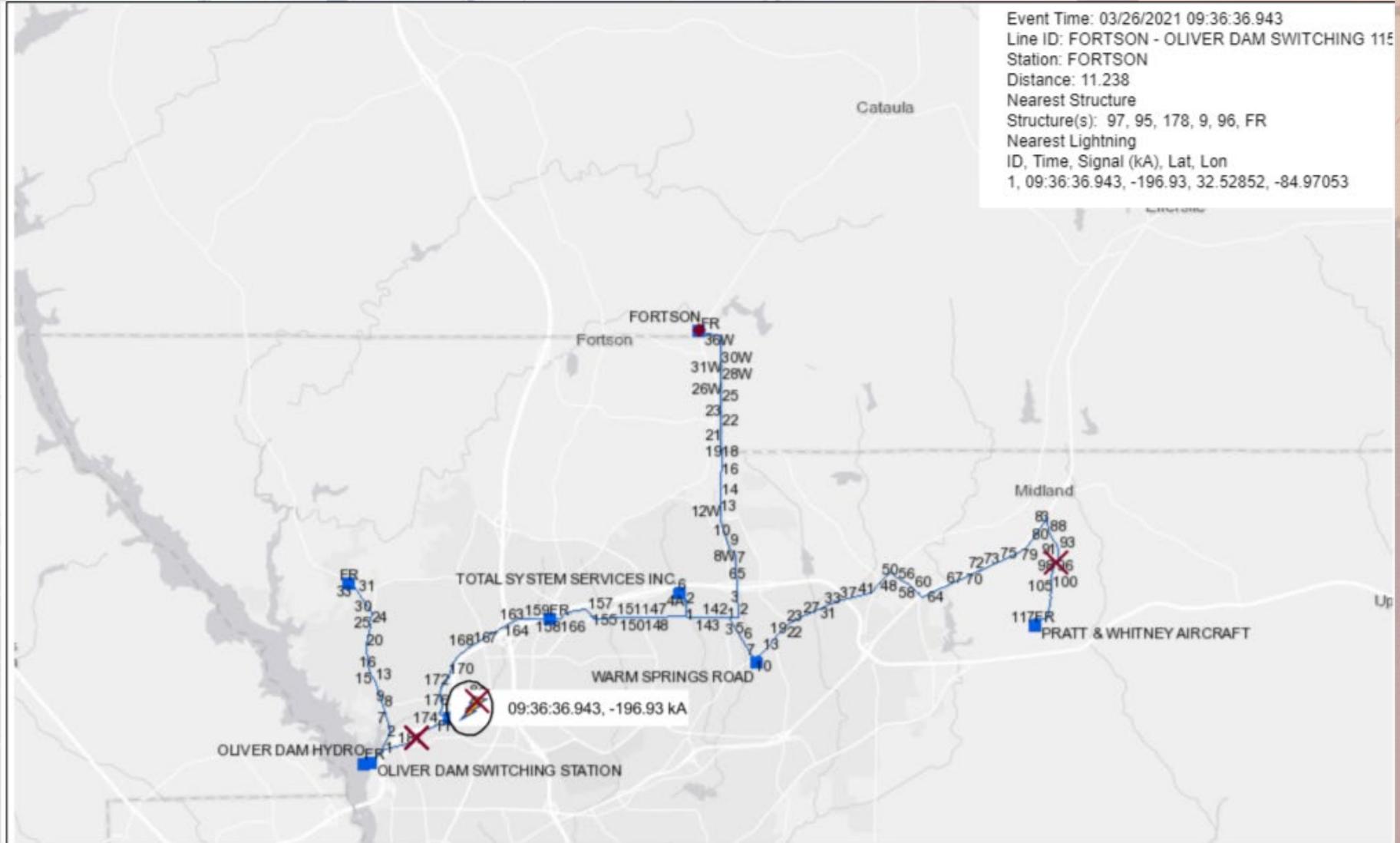




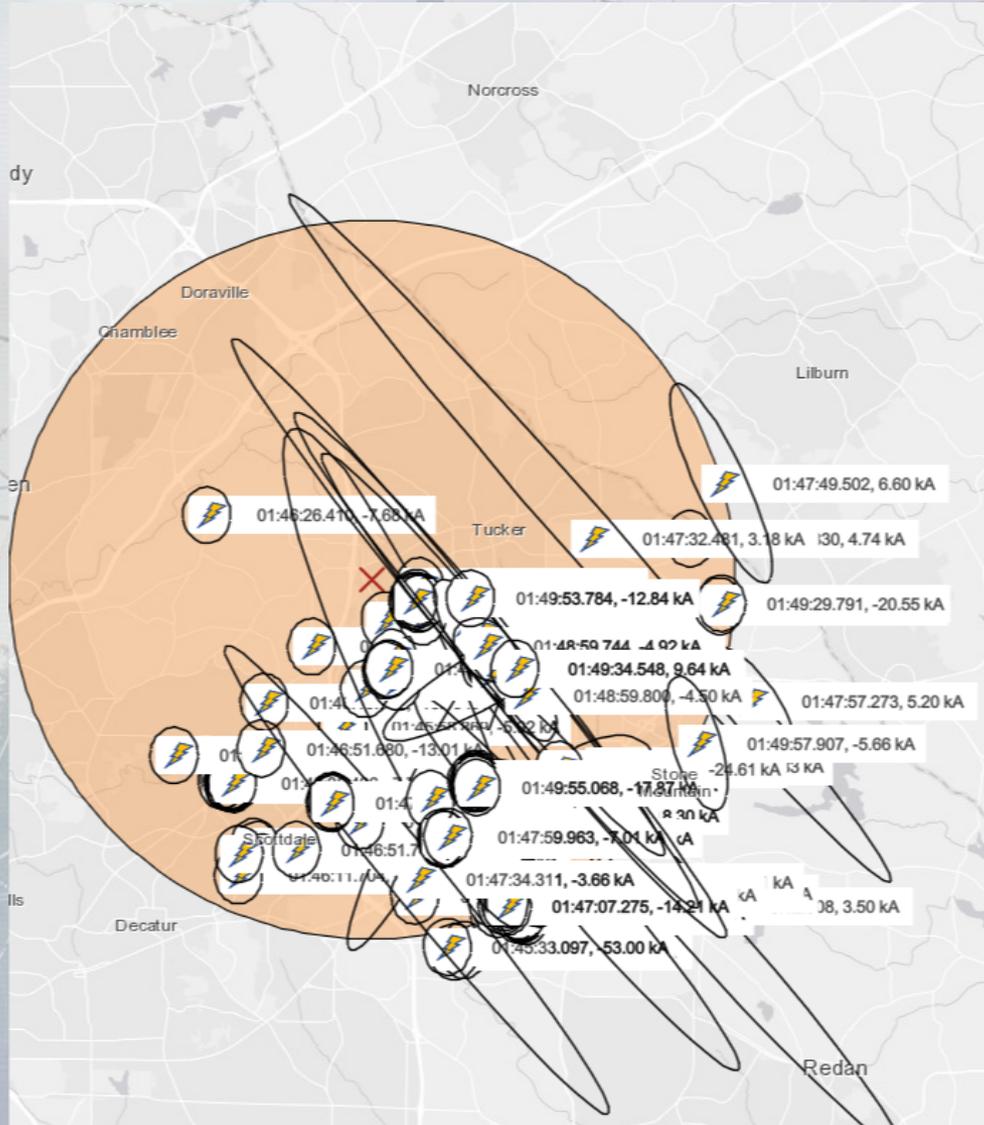
# FTT Examples – Multi Tap Lightning



# FTT Examples – Multi Tap Lightning



# FTT Examples – Manual Lightning Tool

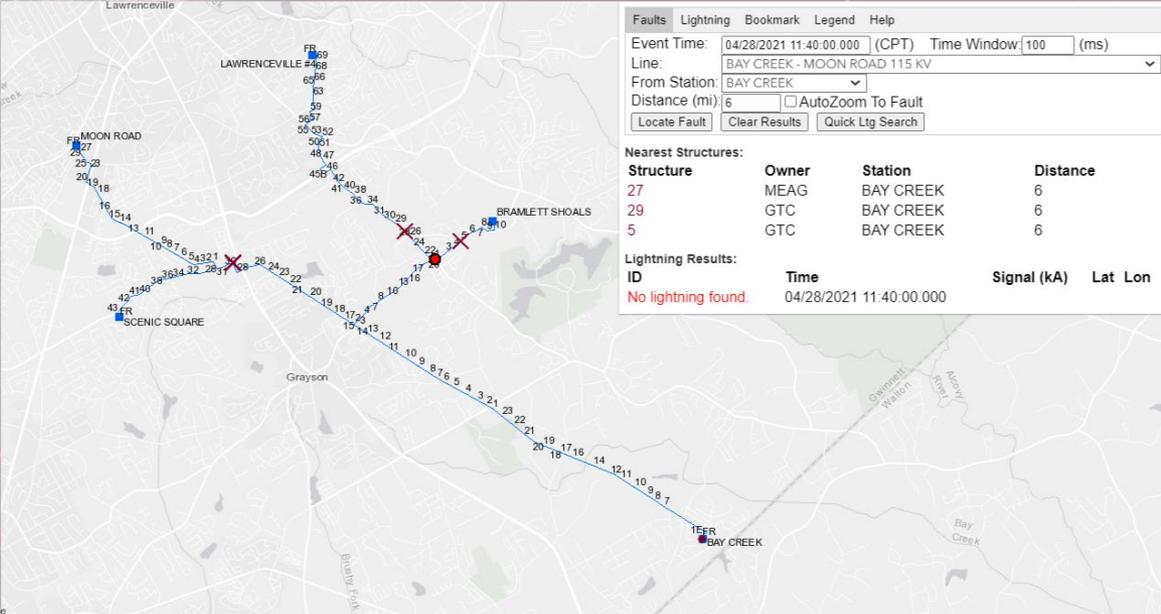
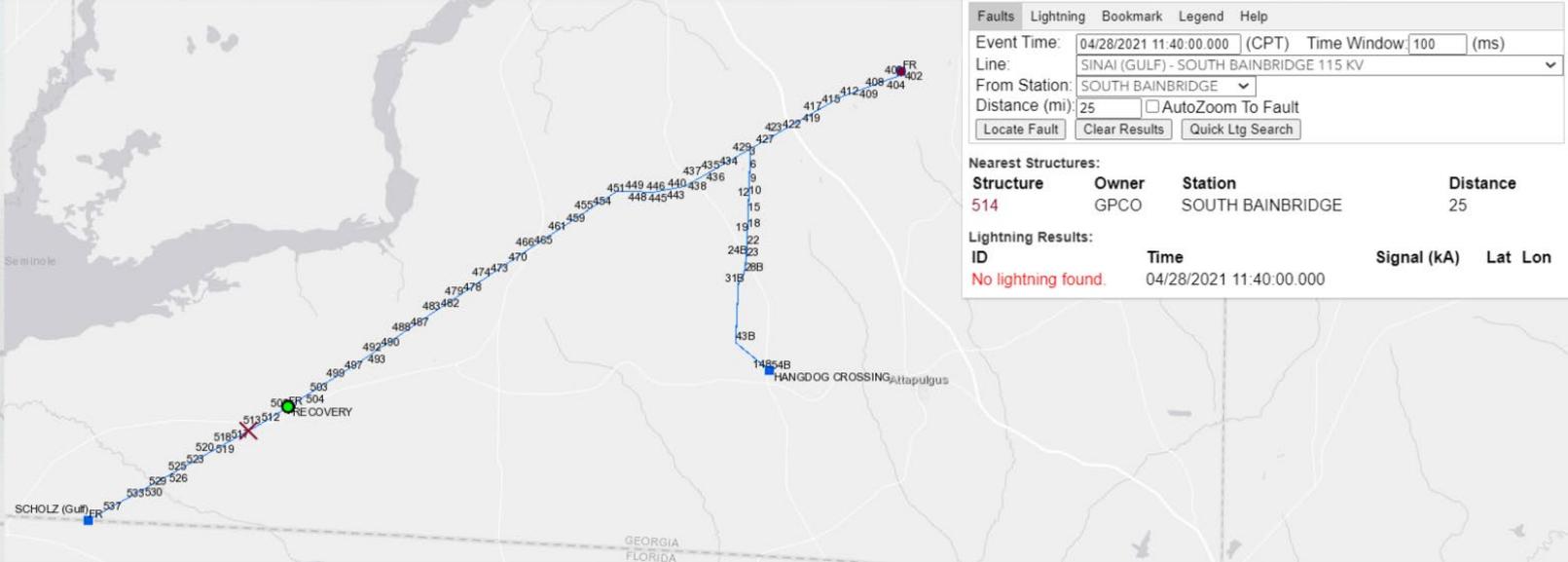


Faults Lightning Bookmark Help  
 Start Time: 03/26/2021 01:45:00.000 Stop Time: 03/26/2021 01:50:00.000 (CPT)  
 Address: 2100 east exchange place, 30084 Get Coords  
 Lat: 33.84413416614851 Lon: -84.24252925203103  
 Distance (mi): 5  AutoZoom To Lightning  
 Locate Lightning Clear Results

Lightning Results:

ID	Time	Signal (kA)	Lat	Lon
1	01:45:06.911	5.75	33.777130126953125	-84.21327209472656
2	01:45:09.936	7.36	33.78825759887695	-84.24983978271483
3	01:45:13.930	-6.68	33.76947784423829	-84.22041320800783
4	01:45:14.621	-24.20	33.7690544128418	-84.22288513183594
5	01:45:15.439	-8.95	33.802757263183594	-84.21197509765625
6	01:45:27.830	4.74	33.852447509765625	-84.16634368896484
7	01:45:32.294	18.30	33.79651641845703	-84.2120590209961
8	01:45:32.294	18.50	33.79194641113281	-84.21825408935547
9	01:45:33.097	-53.00	33.77009963989258	-84.22447967529298
10	01:45:34.673	-13.25	33.803970336914055	-84.27776336669923
11	01:45:34.709	-10.82	33.80363082885742	-84.27835845947266
12	01:45:34.881	-7.42	33.803348541259766	-84.27632141113281
13	01:45:34.987	-13.82	33.80328369140625	-84.27701568603516
14	01:45:35.056	-7.44	33.80295181274414	-84.27559661865234
15	01:45:35.080	-8.45	33.80325698852539	-84.27573394775392
16	01:45:35.118	-11.34	33.80313491821289	-84.27658081054688
17	01:45:35.176	-8.92	33.8034324645996	-84.27639770507812
18	01:45:35.204	-5.57	33.803657531738274	-84.27597045898438
19	01:45:35.253	-16.08	33.80357360839844	-84.27678680419922
20	01:45:35.324	-7.21	33.80348205566406	-84.2761001586914
21	01:45:35.426	-7.70	33.803245544433594	-84.27607727050783
22	01:45:49.825	11.41	33.83065414428711	-84.25695037841797
23	01:45:58.869	-5.92	33.81443786621094	-84.24951934814452
24	01:46:10.972	-16.19	33.819515228271484	-84.26830291748047
25	01:46:10.996	-11.56	33.8087158203125	-84.28987884521486
26	01:46:11.075	-46.34	33.78963088989258	-84.27023315429686
27	01:46:11.436	-26.84	33.79026794433594	-84.27081298828124

# FTT Examples – Future FI



# FTT Examples – Future FI

**Faults** Lightning Bookmark Legend Help

Event Time: 04/28/2021 11:40:00.000 (CPT) Time Window: 100 (ms)

Line: EASTMAN PRIMARY 166632 - TELFAIR LINE ROAD 46 KV

From Station: EASTMAN PRIMARY

Distance (mi): 3  AutoZoom To Fault

[Locate Fault](#) [Clear Results](#) [Quick Ltg Search](#)

**Nearest Structures:**

Structure	Owner	Station	Distance
21	GTC	EASTMAN PRIMARY	3
22	GTC	EASTMAN PRIMARY	3
20	GTC	EASTMAN PRIMARY	3

**Lightning Results:**

ID	Time	Signal (kA)	Lat Lon
No lightning found.			

# FTT Examples – Future FI

**Fault Indicator: Willacoochee**

Point	Time	Value	Status
P1	04/24/2021 20:00:02	0	OK - NOT SET
P1	04/24/2021 20:16:40	0	OK - NOT SET
P2	04/24/2021 20:00:02	0	OK - NOT SET
P2	04/24/2021 20:16:40	0	OK - NOT SET
P3	04/24/2021 20:00:02	0	OK - NOT SET
P3	04/24/2021 20:16:40	0	OK - NOT SET
LINE	04/24/2021 20:00:02	0	OK - NOT SET
LINE	04/24/2021 20:16:40	0	OK - NOT SET
LOAD	04/24/2021 20:00:02	0	OK - NOT SET

Zoom to | 1 of 7

**Fault Indicator: Willacoochee**

Point	Time	Value	Status
P1	04/28/2021 11:31:12	0	OK - NOT SET
P1	04/28/2021 11:32:08	0	OK - NOT SET
P1	04/28/2021 11:40:54	0	OK - NOT SET
P1	04/28/2021 11:40:54	1	WARNING
P1	04/28/2021 11:40:56	0	OK - NOT SET
P1	04/28/2021 11:40:56	1	WARNING
P1	04/28/2021 11:40:56	1	WARNING
P1	04/28/2021 11:40:56	1	WARNING
P1	04/28/2021 11:43:16	0	OK - NOT SET

Zoom to | 1 of 9

# Engineering Data Diagnostic Center (EDDC)

- Project Goals:
  - Alert engineering to research equipment issues
  - Creation of conditional maintenance work orders
  - Feed an Asset Health Program

# Engineering Data Diagnostic Center (EDDC)

Stations -

Douglasville

Stations

230 kV

115 kV

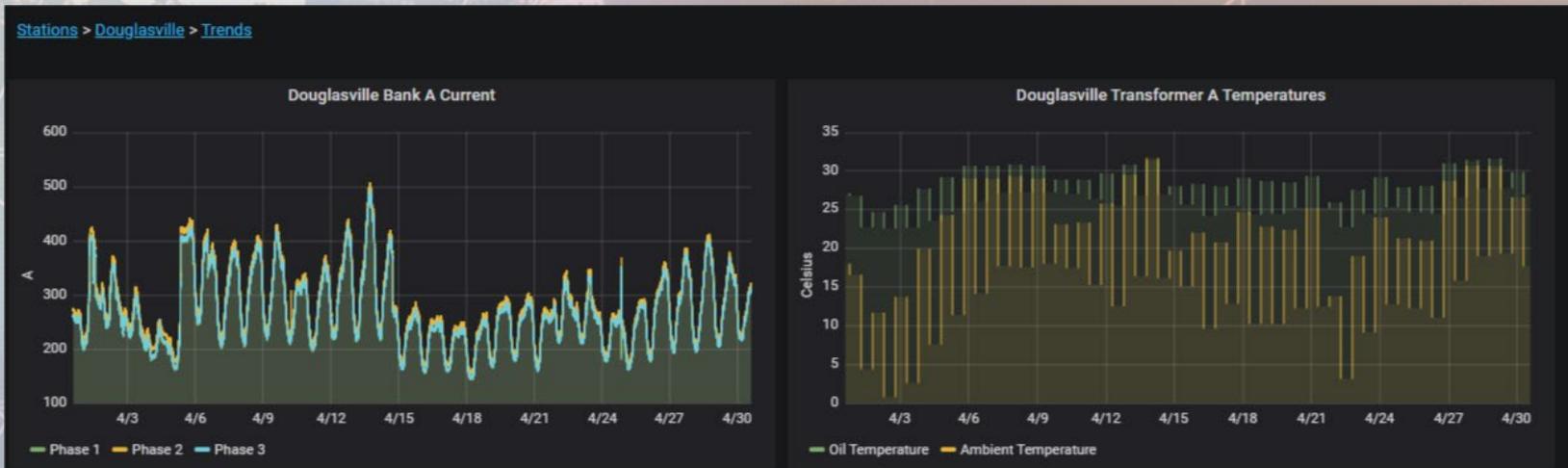
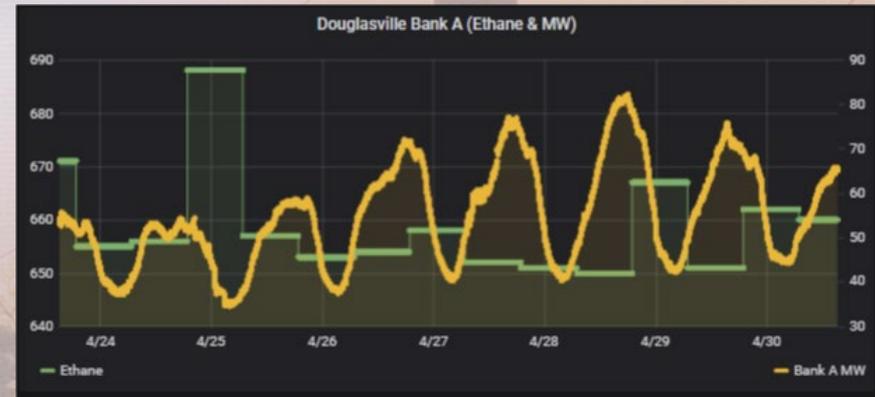
Stations > Douglasville

PCB 118	PCB 128
118 Closed	128 Closed

# Engineering Data Diagnostic Center (EDDC)

PCB 118 CLOSED	CTIP ALARM	
	LOSS OF COMMUNICATION SEL-451	
	LOSS OF COMMUNICATION SEL-311C	
<small>- Major Alarms</small>		
PRI CARRIER RADIO FAIL	SEL-451 Relay Fail	BRK FAILURE LOCKOUT
PRI TRIP COIL MON	PRI PROT RELAY FAILED	PRI DC FAILED
SEC TRIP COIL MON	SEC PROT RELAY FAIL	SEC DC FAILED
LOW GAS LOCKOUT	EXCESS MOTOR RUN	LOSS OF CLOSE POTENTIAL
<small>- Minor Alarms</small>		
HOT LINE TAG DISABLED	RECLOSER	DEAD LINE SW
RECLOSER LOCKOUT	SUPR CONTROL SW	SEL-451 PSWD FAIL
PRI RELAY 321 CO SW	SEL RELAY 311C C/O SW	TROUBLE ALARM
LOW GAS ALARM	PRIMARY CARRIER C/O	
<small>- Power</small>		
SEL-451	 -171 MW	 -17 Mvar
SEL-311C	 -171 MW	 -17 Mvar

# Engineering Data Diagnostic Center (EDDC)





Questions?