

*Focusing on our core utility businesses*

# CenterPoint Energy Monitoring System Overview

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# Outline

- **Why Build A Communication Network?**
- Fiber Installation
- Challenges
- Equipment
- New Benefits
- **Future Growth**
- Live Demo

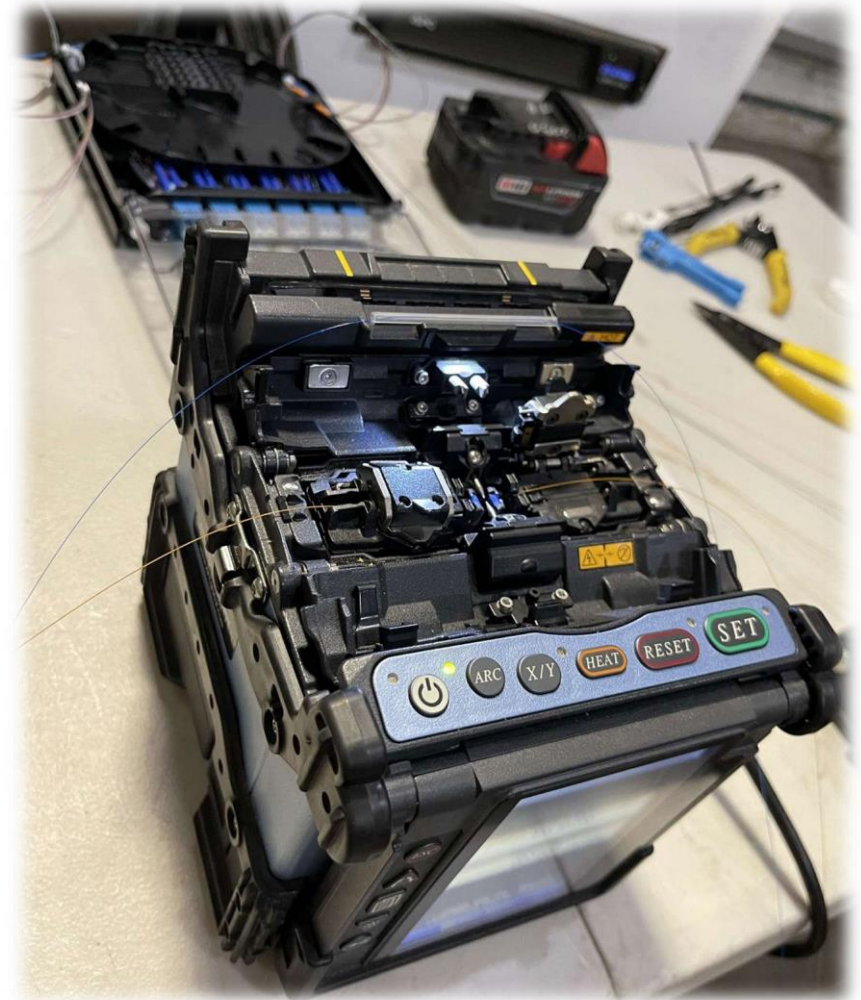
# Why Build A Communication Network?

- Previous communication network deployed:
  - Texas Medical Center
  - Galveston Medical Center
- Real Time Current & Voltage Readings.
- Remote Retrieval of Settings, Events & Sequential Event Records (SERs).



# Fiber Installation

- Over 100 Communication Boxes Designed & Built In-House.
- Completed Using Only CenterPoint Energy Operations Personnel:
  - Pulled Over 100,000 Feet of Fiber-Optic Cable
  - Fiber Splices
  - Device Configurations



# Challenges

- SARS-CoV-2
- Physical Installation
- Router/Switch Configuration Files
- Access
- Vendor/Supply

# Equipment



**Satec Meter**



**Eaton VaultGard**



**Siemens Ruggedcom RX1500**



**SEL-451**



**SEL-751**



**Eaton CM52 Network Protector**

## New Benefits

- Ability to Monitor Transformers Utilizing Smart Gauges.
- Prevention of Transformer Explosion/Rupture with Gas Monitoring Probe.
- Monitor Ambient Temperature at each Location.
- Water Level Monitoring Saving Valuable Manpower During Flooding Events.



## New Benefits

- Increased Personnel Protection:
  - Eaton Arcflash Reduction Maintenance System (A.R.M.S.)
  - Schweitzer Engineering Laboratories (SEL) 751 Feeder Protection Relay with Bare Fiber Loops Installed Exposed Secondary Bus

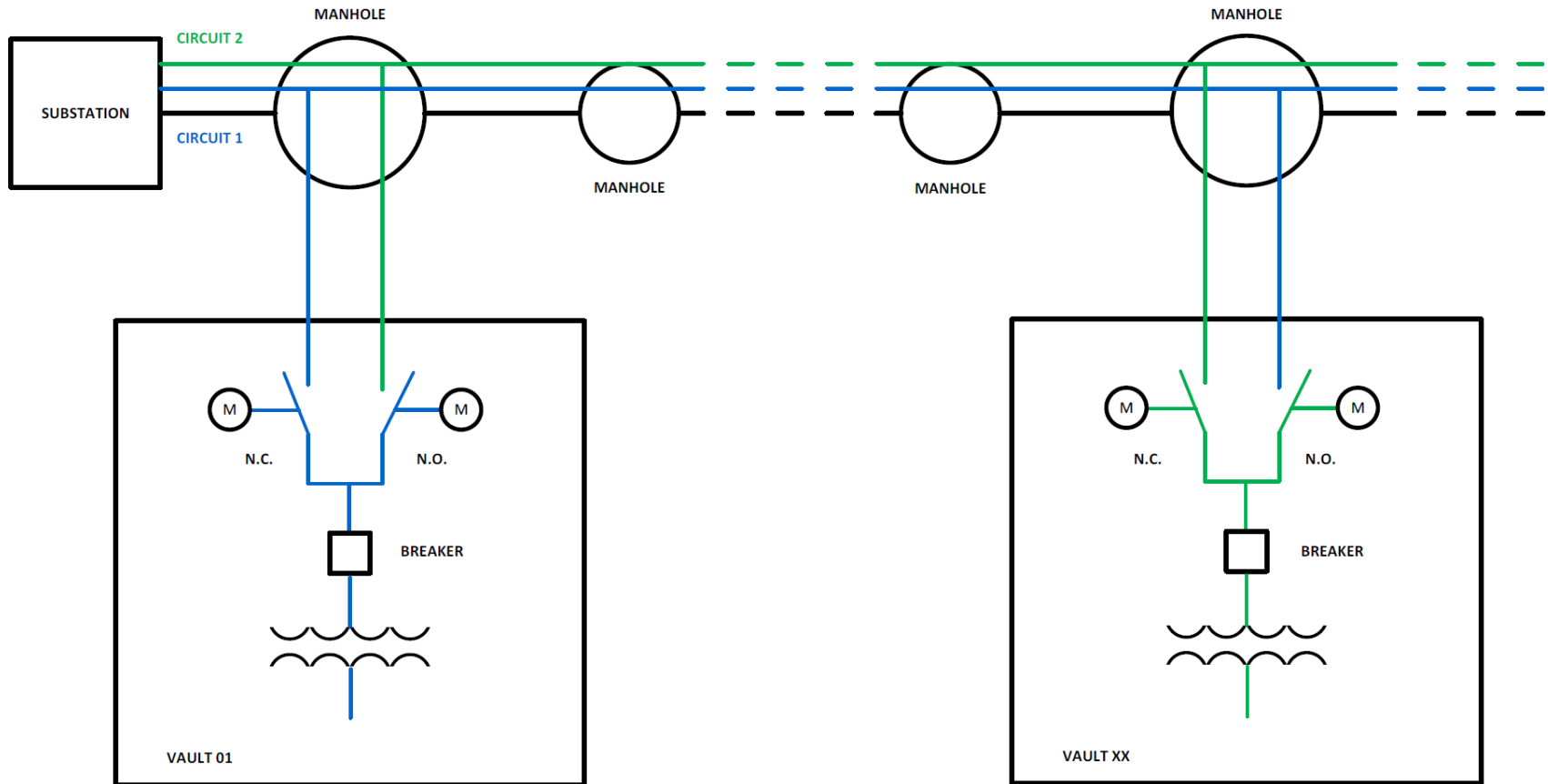




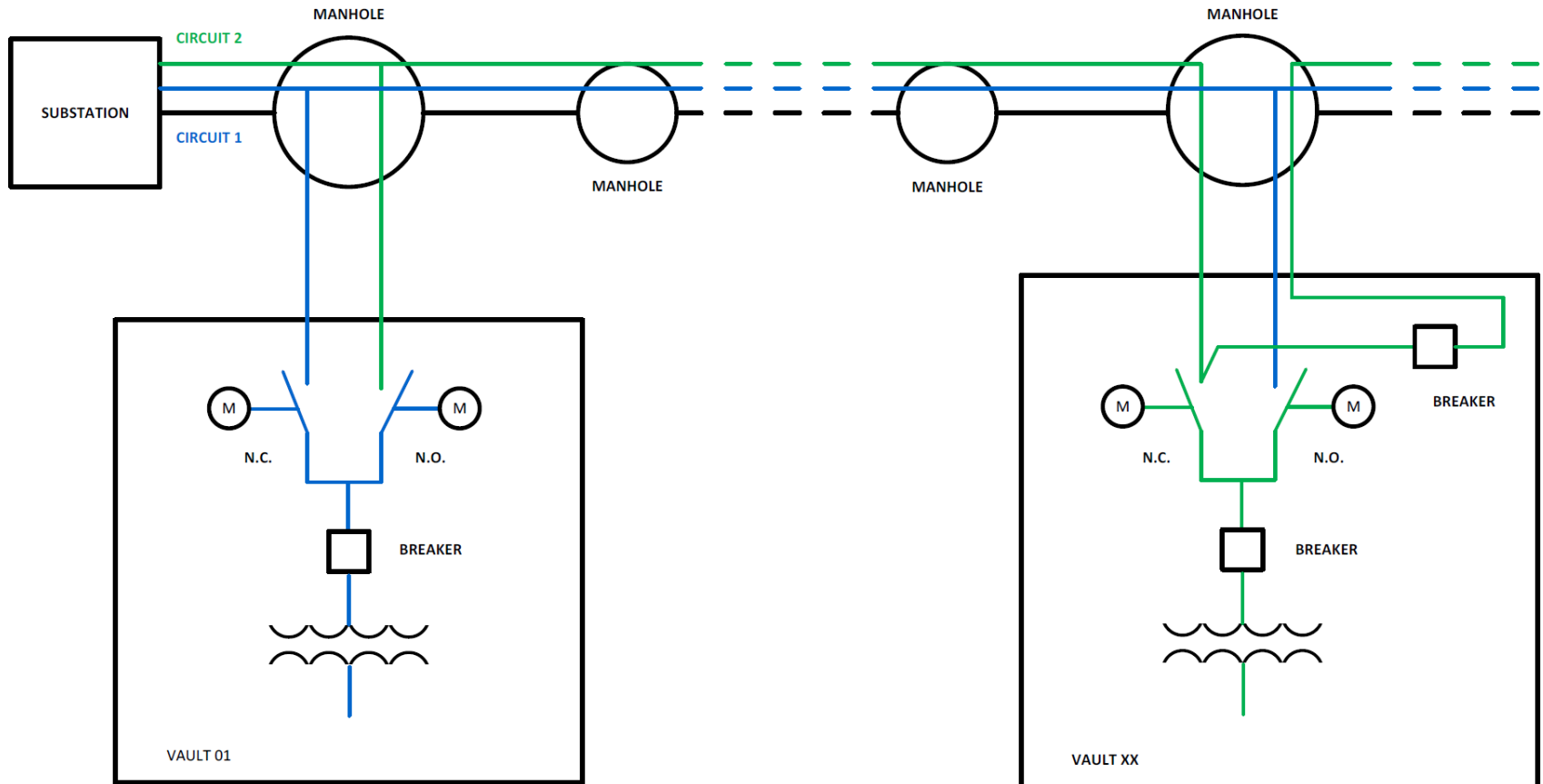
## New Benefits

- Circuit Sectionalizer:
  - Split Existing Downtown Houston Circuit into Two Sections with 20kA Breaker.
  - Add Current Transformers (C.T.'s) and Microprocessor Relay on the Line Side of the Breaker to Measure Incoming Current.
  - Substation Breaker & Sectionalizer Breaker Simultaneously Trip on Instantaneous Overcurrent (ANSI 50).
  - Isolate Faulted Section and Restore Unfaulted Section.

# New Benefits

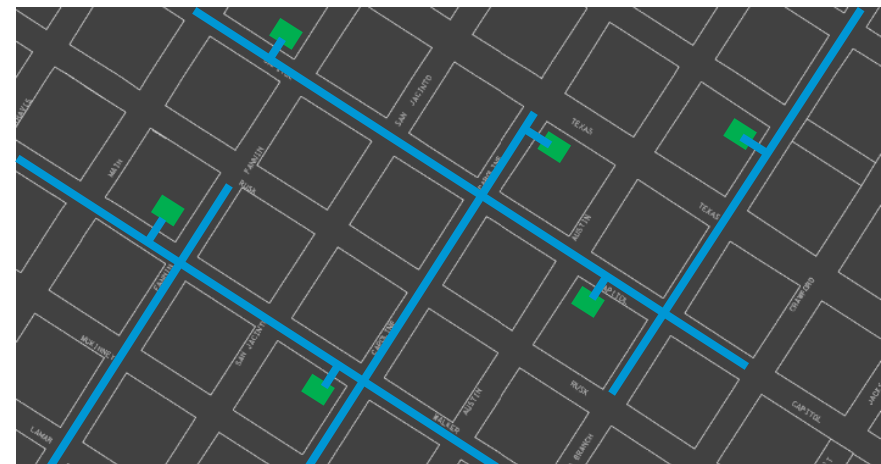
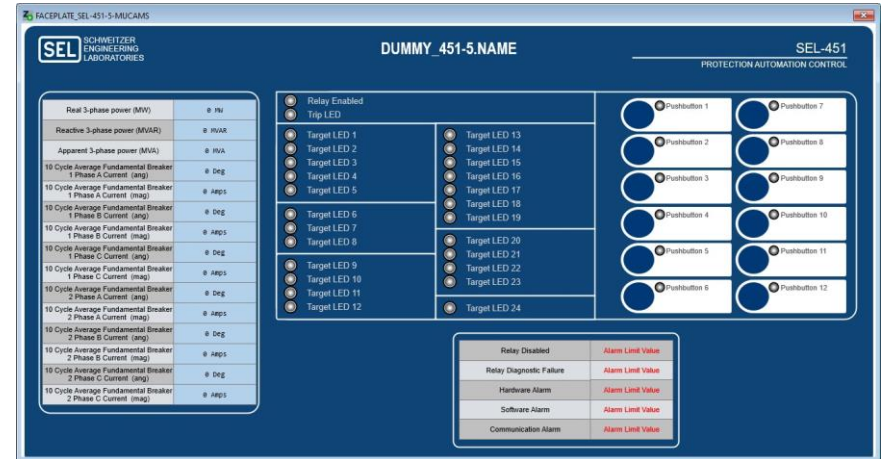


# New Benefits



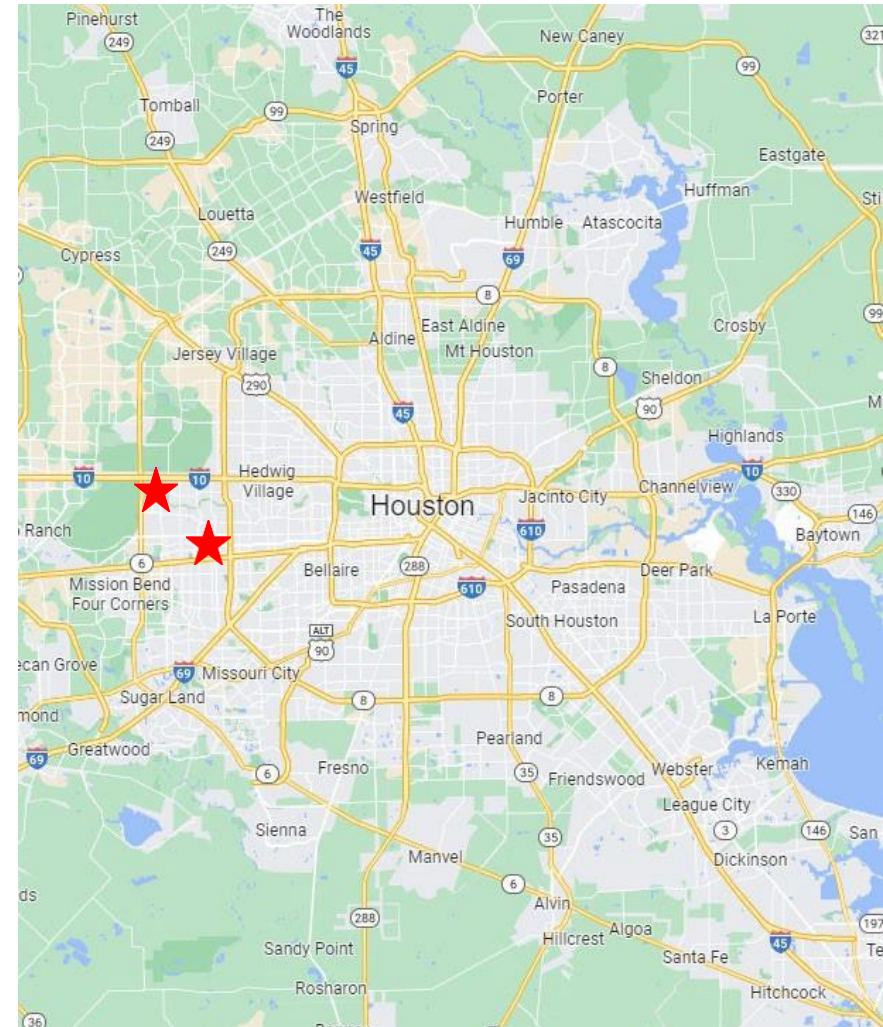
# New Benefits

- Remote visibility providing immediate status of breakers, switches and essential functions.
- Remote operation during emergency events (includes lockout-tagout).
- Secondary Network Monitoring:
  - Total Consumption
  - Available Ampacity






# Future Growth

- Due to the Benefits Already Realized in CenterPoint Energy's Current and New Fiber Deployments Further Expansion Includes:
  - Energy Corridor
  - Galleria



# Live Demo

	Geographical	Comm. Diags.	Alarms	Historian	Trending	User Manuals	Legends	Unmute Alarm	Login	<b>Administrator</b>	8:47:37 AM 8/1/2022	Runtime Exit	 Reload	
	One Lines	Search	Reports			Back	System Logs	Admin Tools	LogOut					

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# Questions & Answers

