EPE Grid Modernization

Utility Overview

– EPE –

• Privately owned (Infrastructure Investment Fund)
• 10,000 miles²
• 438k Meters
• SE corner of WECC
• Transmission 345kV, 115kV, 69kV
• Distribution 24kV, 14V, 4kV
  NM – 24kV & 4kV
• Summer Peaking 2198 MW (2020)

– EPE tech –

• Residential Solar DGs
  Total Systems: 21,040
  NM total: 6,252
  Avg Monthly Additions: 308

SMART GRID BASICS

• OMS
• GIS (T&D)
• AMS/AMI
• Distribution Automation
• D-SCADA
• Asset Mgt System
EPE Grid Modernization
Strategic Plan and Roadmap

1. Standards-Based Approach
   - Modernize the standards EPE uses to drive projects, equipment, planning so that projects and work-orders going forward adhere to these new standards
   - Slowly transforms the EPE grid over time through regular work pace
   - Doesn’t directly address transformative change like AMI, ADMS, DERMS, DERs, Storage, etc.

2. Worst-Performing Circuits Approach
   - Modernize Standards
   - Identify and prioritize projects to proactively modernize the grid but proactively only focused on overhauling the areas of greatest need
   - Identify complementary transformative projects to accompany grid investments such as AMI, ADMS, DERs, etc.

3. Comprehensive Grid Mod Investment Approach
   - Modernize Standards
   - Establish a comprehensive investment plan to addresses modernization of all aspects of the Distribution, Substation, and possibly Transmission systems that includes enterprise projects for AMI, ADMS, Work Management, Inspections, Grid Infrastructure, etc. and lays out a long-term (10-20 years) investment Roadmap to present to board and regulators for approval
EPE Grid Modernization
Strategic Plan and Roadmap

Full-system investment plan developed to modernize EPE’s infrastructure and operations

Establish new standards and identify prioritized projects across the system coordinated with modernized operational systems such as AMI, ADMS, & WFMS

EPE’s strategy may not focus on every area
EPE Grid Modernization
Strategic Plan and Roadmap

“With all thy getting, get first understanding”

- Vision definition
- Gap Assessment
- Technology
- Communications
- Training
- Organization

The Evolution Begins
- Master Plan & Roadmap
  - Define systems, sequence & integration plan
  - Define milestones of capabilities
  - Define competency and training requirements
  - Define CIP/Cyber requirements
  - Define Organizational changes
  - Identify impacted systems and procedures

Distribution Automation
- Deployment
- Distribution Automation
  - Remote monitoring & control
  - Line sensing and line loading data
  - Automated/remote sectionalizing
  - DER state data
  - AMS/AMI – Customer specific data
  - Enhanced OMS data and outage notification.
  - Grid ready EV, ES, DMS integration

Fly
- Functional Micro-Grids

Crawl
- Where we are

Walk
- The Evolution Begins

Run
- Distribution Automation

Fly
- Functional Micro-Grids

Crawl
- Where we are

Walk
- The Evolution Begins

Run
- Distribution Automation

Fly
- Functional Micro-Grids

Capability: Support multiple, concurrent, islanded microgrids

- Fully deployed OT (information & control)
- Fully deployed AI control systems
- Trained & Competent Controllers
- Fully developed CIP/Cyber protocols and systems
- New technology VIL, integration, version control, and deployment protocols.
EPE Grid Modernization
Strategic Plan and Roadmap

2021

Q1: Organization, Planning, Discovery
Q2: RFP/Selection Process

2022

Q1: Grid-Mod Plan Development
Q2: Grid-Mod Plan Review/Approval
Q3: Execution/Implementation

- Master Plan submitted for review, approval, budgeting.
- Consultant/Team work: Gap analysis, industry best practices, systems analysis, master plan development
- Process RFP responses, select consultant, hammer out contract (6 weeks)

- Define internal Grid Modernization Working Group to establish project charter, scope, and milestones for Master Plan and roadmap.
- Identify and qualify potential consultants to help define Master Plan and Roadmap.
- Prepare and issue RFP
EPE Grid Modernization
Active Technology and Data Analytic Deployment Projects

• Eastside (El paso) 24 kV Distribution Automation:
  First demonstration of Grid Mod capability will be the automation of the Eastside 24 kV, enabling data a control capability of sectionalizing devices – (Montwood, Pelicano & Triumph Subs).

  - Phase 1: Montwood feeders Q2, 2021
  - Phase 2: Triumph feeder Q4, 2021
  - Phase 3: Pellicano feeder Q1, 2022
“Future-Grid” infrastructure

- Working with subdivision developers to plan, and install, non-electrical infrastructure in anticipation of future micro-grid capability.

- Future-Grid plan will pre-define: Space for future battery storage, additional transformation to accommodate high density electric vehicles and distributed generation (solar), space for localized micro-grid control systems, public EV charging, 5G ready street lighting, etc.

- Restrictive covenants for all single-family homes in the subdivisions will require EV charging circuits to the garage or carport.
EPE Grid Modernization

Questions / Comments?