

Substation Intelligent Infrastructure Monitoring

Challenge

- **Inspections** - Reduce current quarterly inspections of all substations
- **Infrastructure** - Aging infrastructure without capability to support individual monitors
- **Data** - Current pace provides data on a quarterly basis
- **Maintenance** - Transition from time based to preventative maintenance
- **Safety** - Allow operators to avoid most dangerous situations and track intruders

Solution

- **Remote Monitoring** – Monitor substation by utilizing network video, thermal equipment, and data center applications
- **Remote Inspection** - Perform inspection checklist items by a remote operator through camera presets that show in greater detail the components and items that are under inspection.
- **Autonomous Data Collection** - With predefined camera presets and tasks, an orchestrator application enables cameras to collect data autonomously
- **Autonomous Monitoring** - Through perfected AI models, the system performs image validation, updates the KPIs, and identifies trends defined in visualization dashboards

Outcome

(Pilot Transitioned to Production – Plan to Rollout to 100 Substations)

- **Inspection Reduction** - Inspection frequency reduced from 4x/year to 1x/year.
- **Gauge Digitalization** - Any gauge can be digitized using a CCTV Camera. Real-time gauge and indicator digitization
- **Temperature Threshold Detection** - Generate alerts when temperature exceed thresholds using thermal images & sensors
- **Asset Condition & Structural Health Monitoring** - Real Time monitoring of Asset, Equipment ID Plate Recognizer, Structural Integrity Monitoring

Evergy is an electric utility company headquartered in Kansas City, Missouri, serving over 1.7 million customers in Kansas and Missouri. The company generates, transmits, and distributes electricity, providing essential energy services to residential, commercial, and industrial customers.