



ENMAX DA Update

Dean Craig, P. Eng.



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About ENMAX

- 1,054 square km
- 280 feeders
- 25kV and 13.2kV Distribution
- ~ 400,000 customers
- Peak demand: >1,600 MW



DA Program Overview

- **Automation of worst-performing feeders continues**
- **Will have a total of 91 out of 280 feeders automated in 2009 (33% of system)**
- **Conversion from Utilinet to SpeedNet radios in progress, will have 19 of 25 substations converted in 2009**
- **11 million customer minutes of interruption (CMI) averted to date**
- **159,000 customer interruptions (CI) averted**

PowerMax Initiative

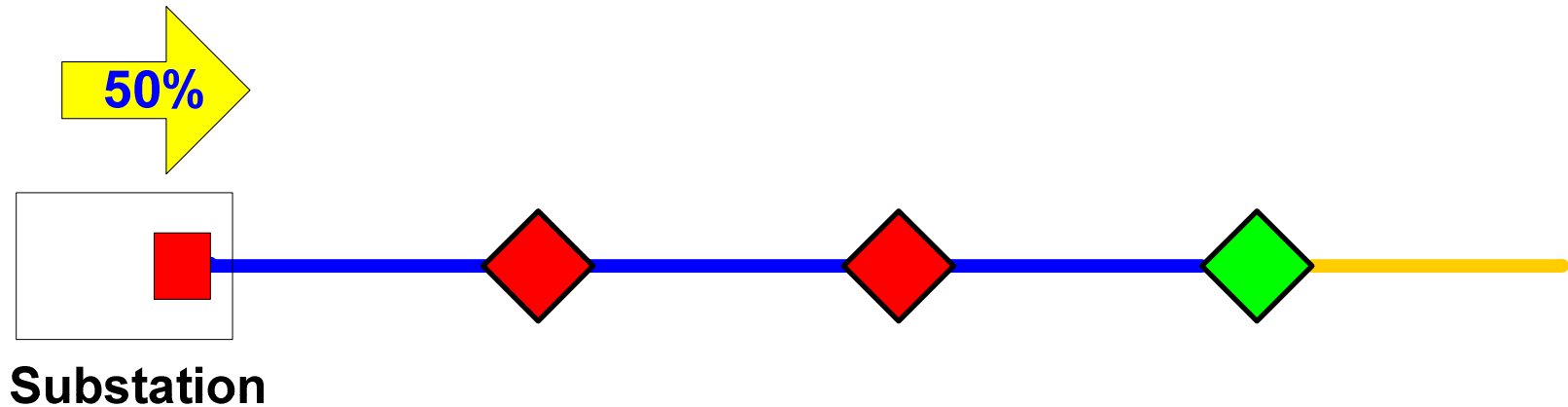
PowerMax will:

- Improve asset utilization by increasing planned distribution feeder loading.
- Improve field staff efficiency and safety by reducing requirement for manual switching and hot-stick work.
- Improve reliability of distribution circuits through automatic restoration.



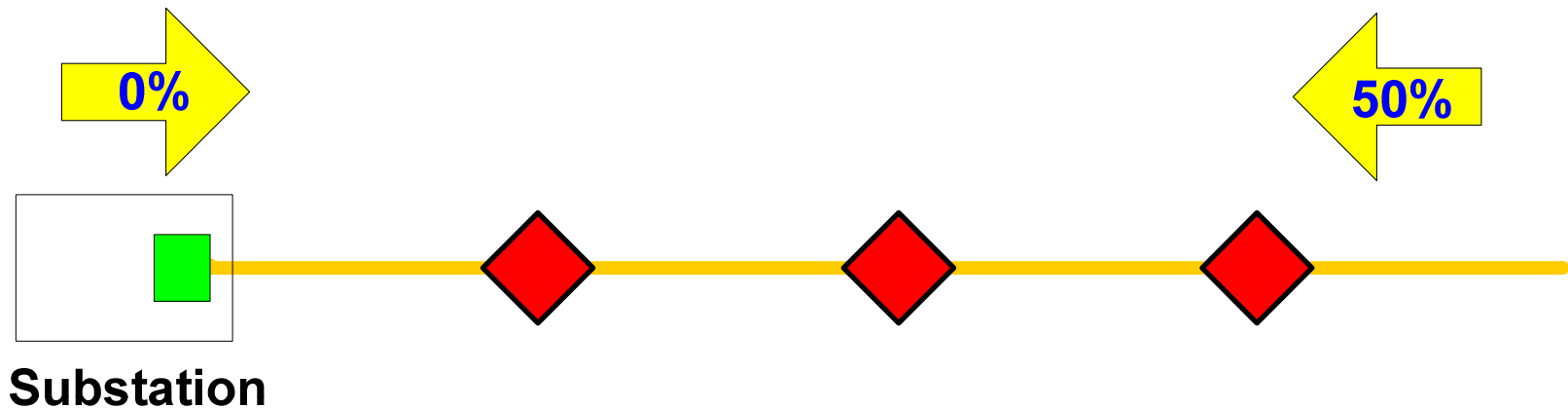
PowerMax: Improved Asset Utilization

Conventional Feeder Feeder Loading Level: 50%



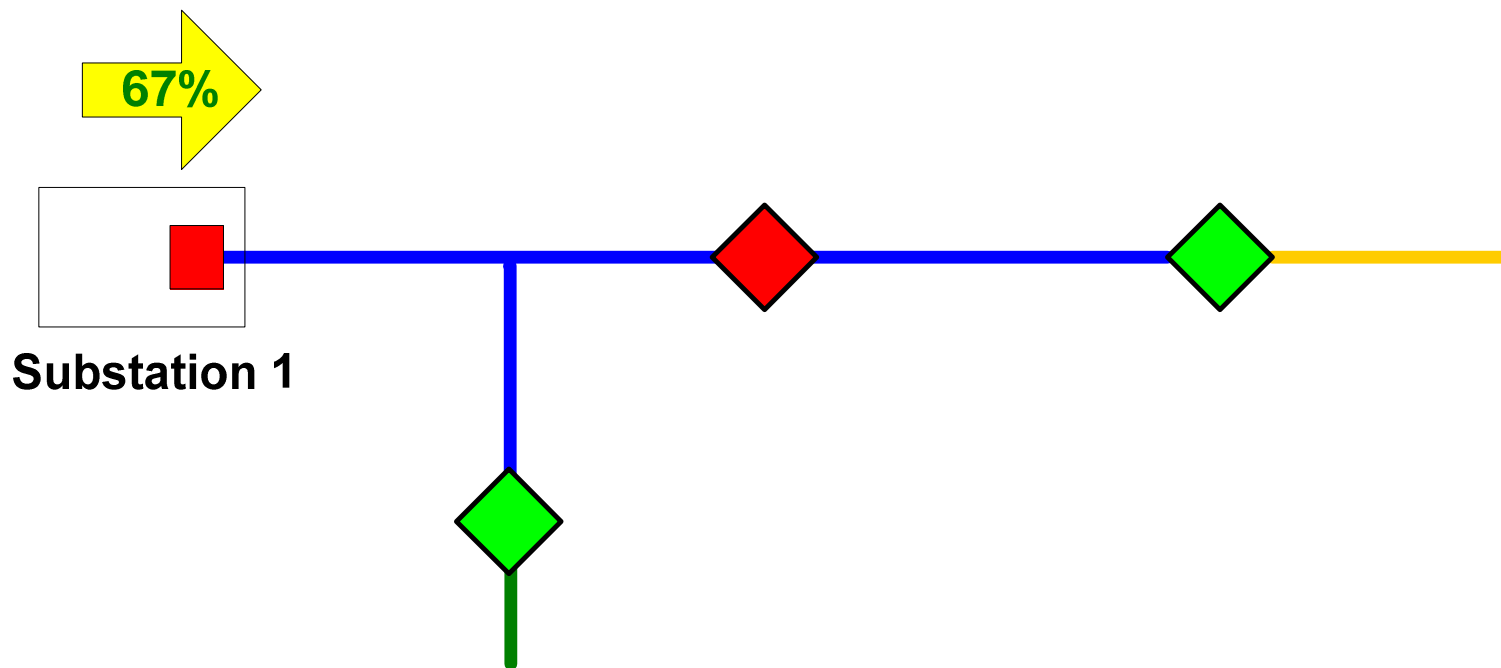
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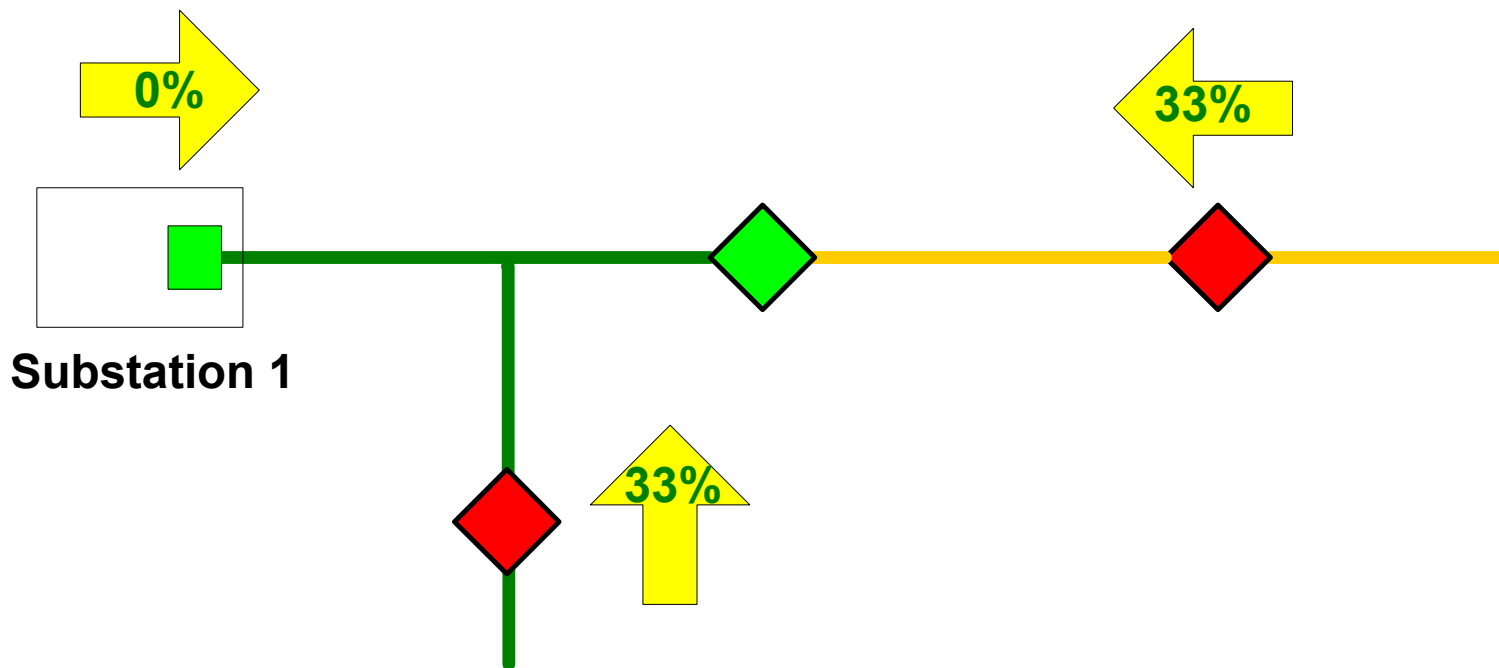
PowerMax: Improved Asset Utilization

Optimized Feeder
Feeder Loading Level: **67%**



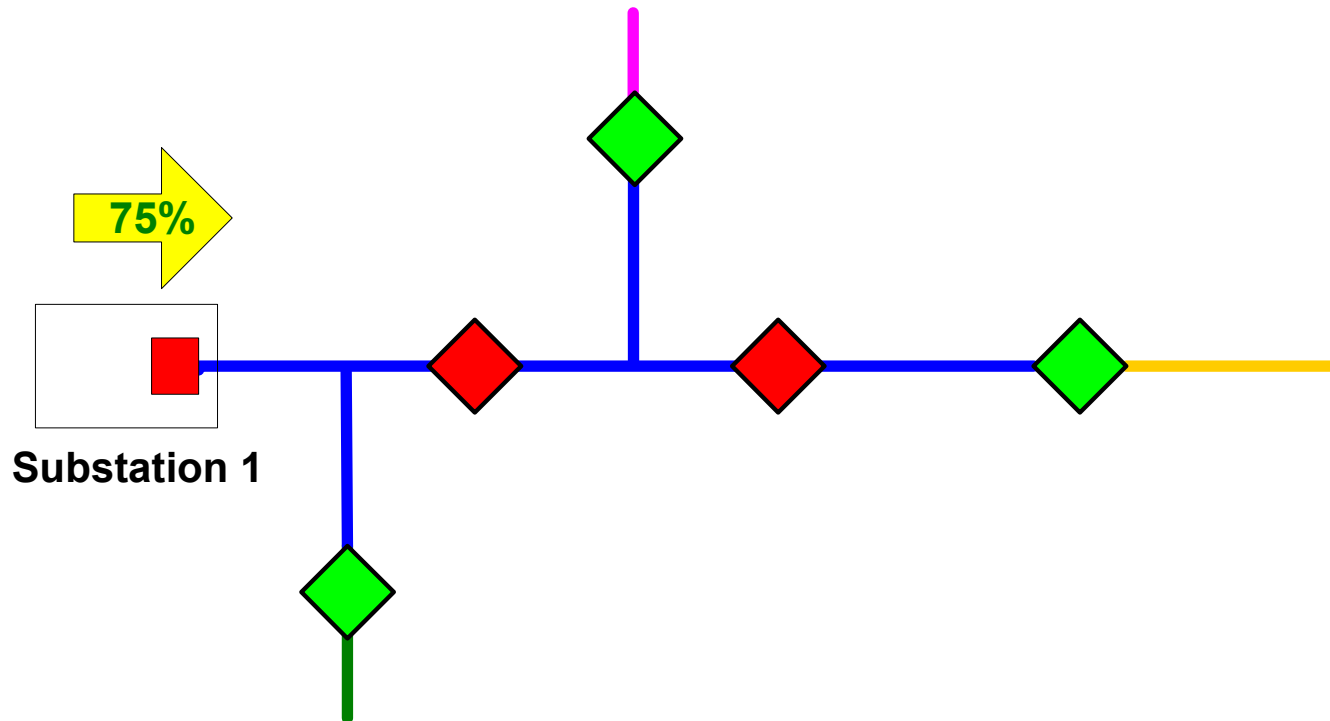
PowerMax: Improved Asset Utilization

Optimized Feeder
Feeder Loading Level: **67%**



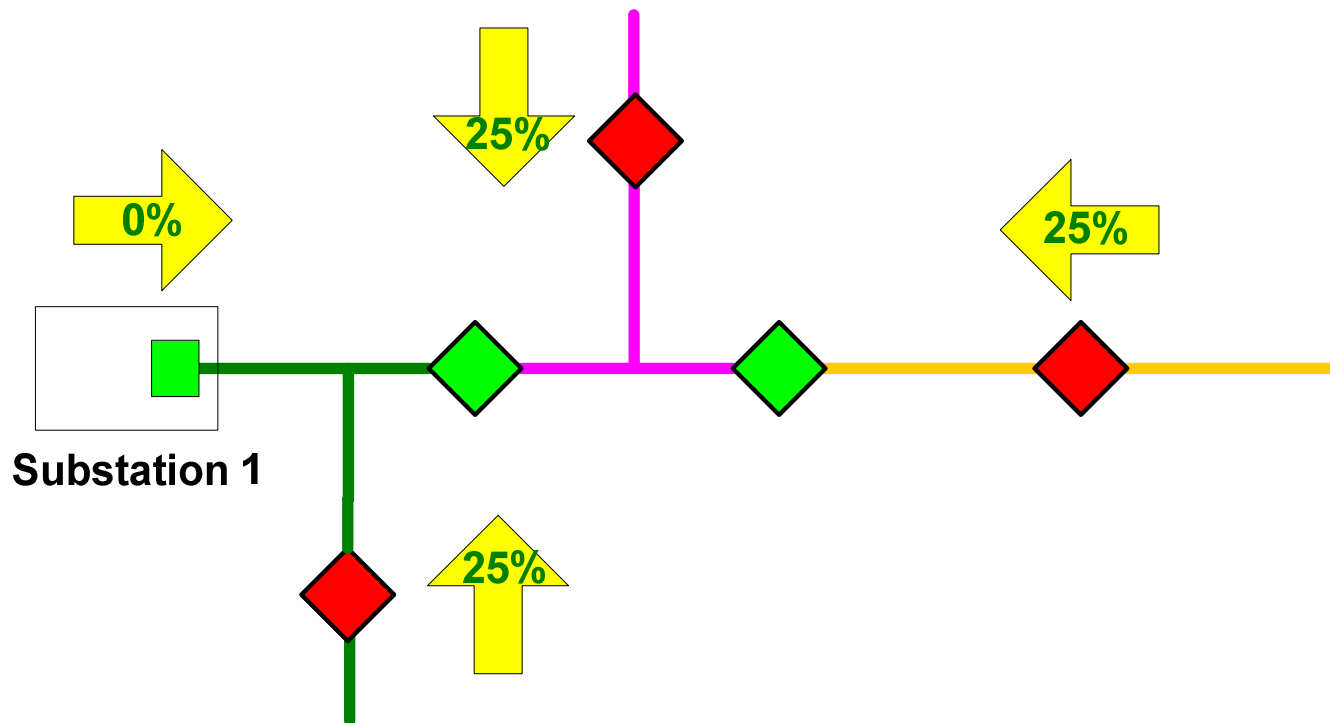
PowerMax: Improved Asset Utilization

Optimized Feeder
Feeder Loading Level: **75%**



PowerMax: Improved Asset Utilization

Optimized Feeder Feeder Loading Level: 75%

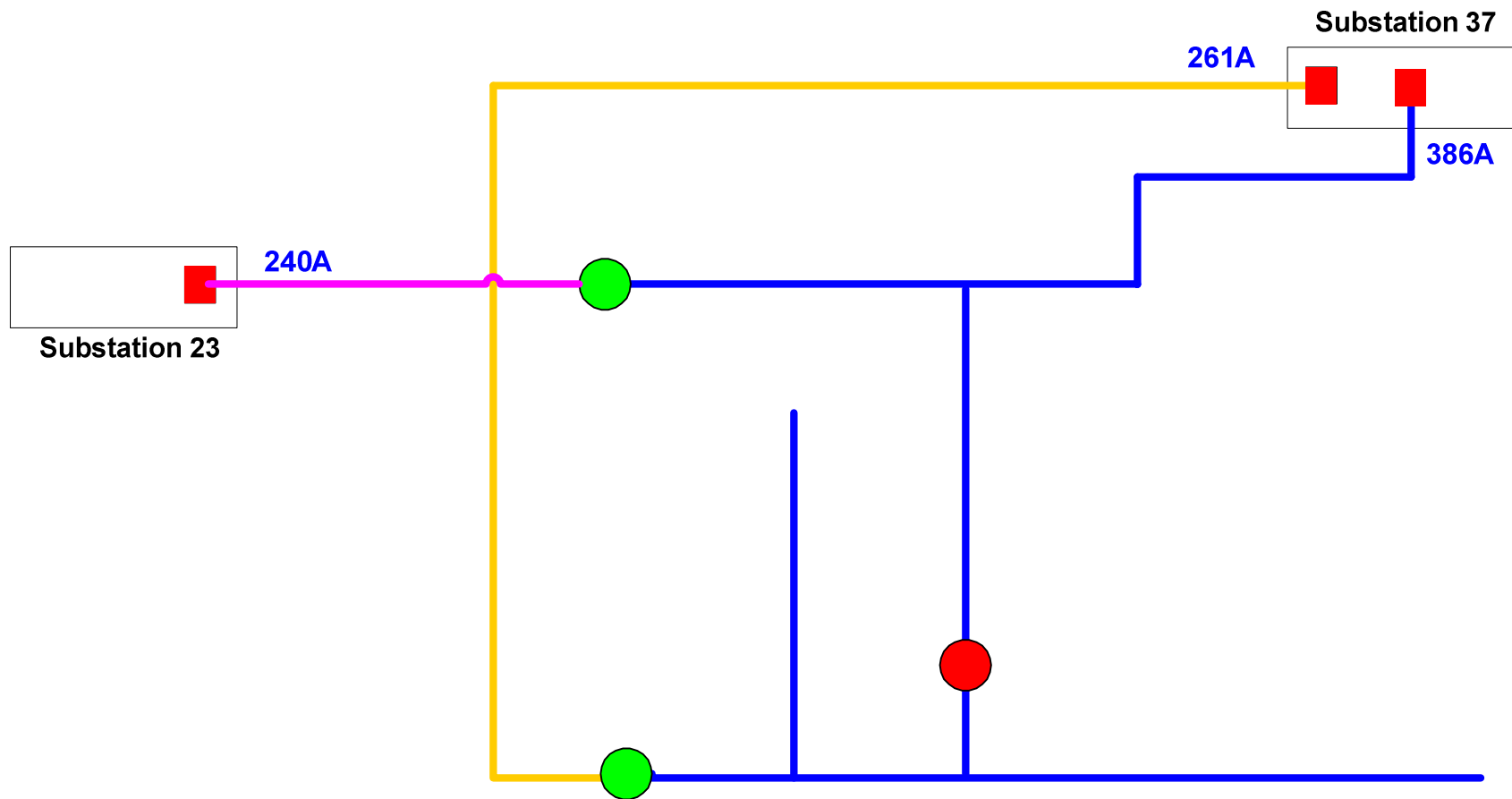


Asset Utilization: Existing Circuits

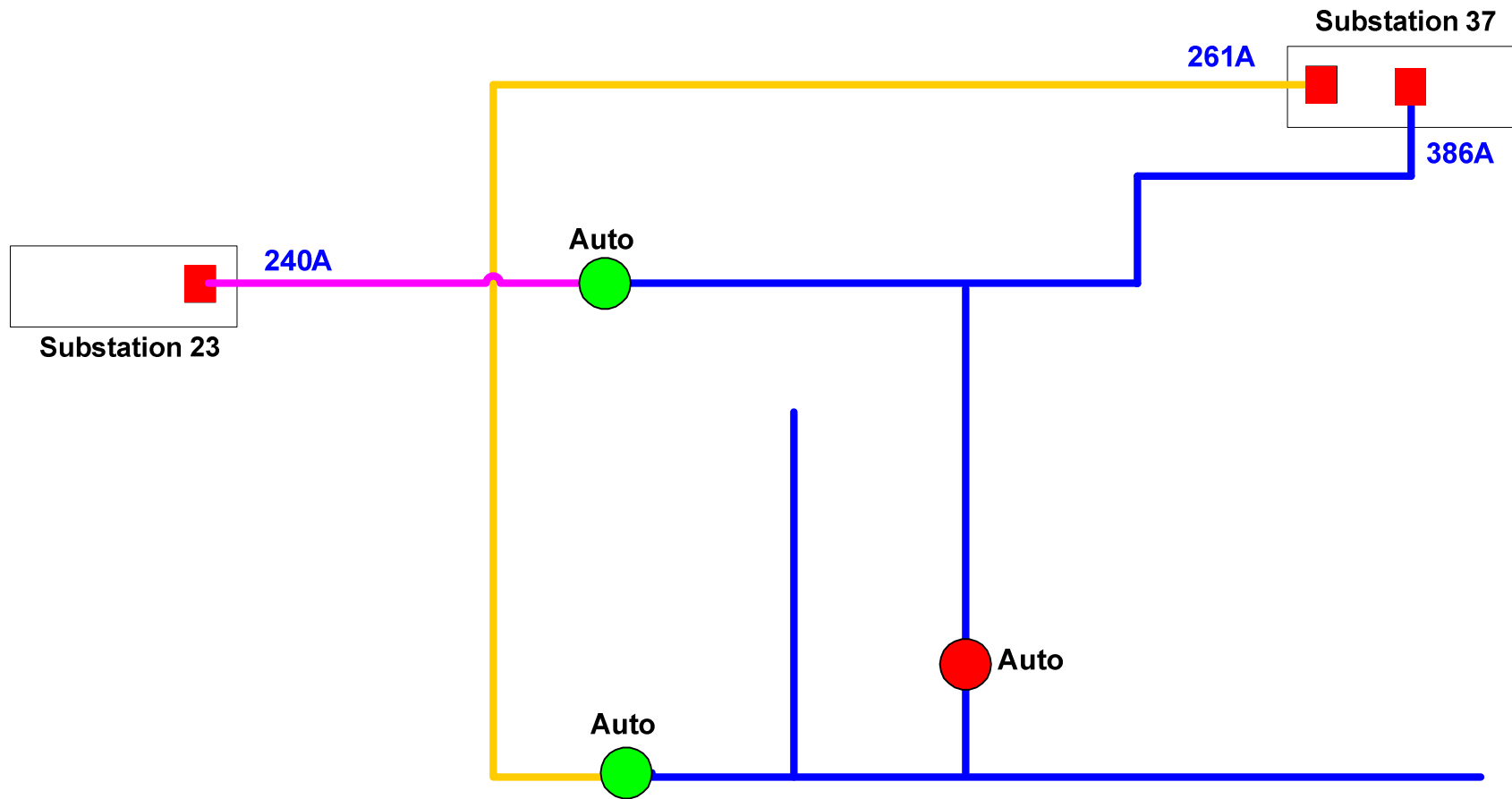
Survey of existing circuits:

- Circuits with >50% loading surveyed
- Sixteen existing feeders and one new feeder identified as candidates for double-tie automated restoration

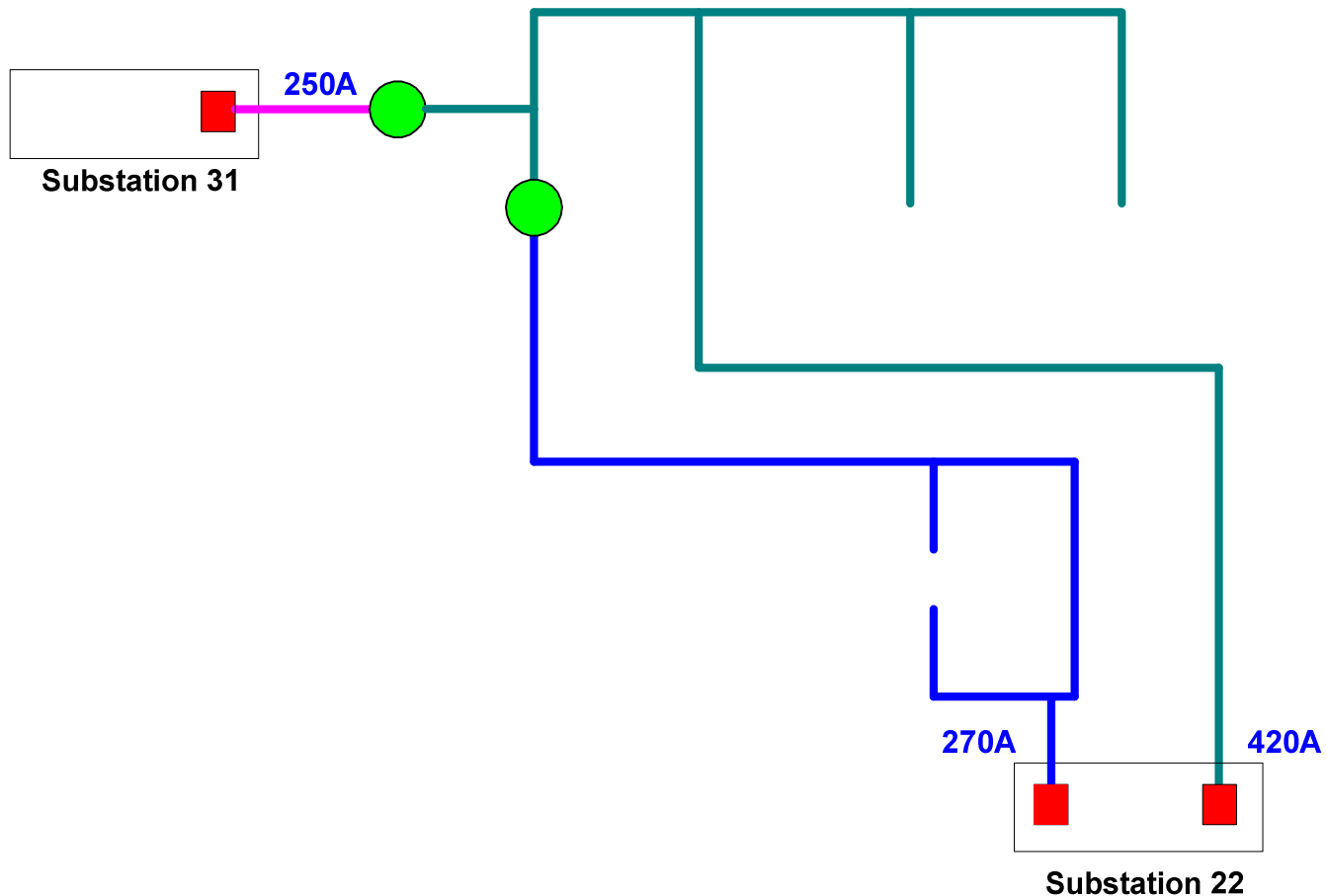
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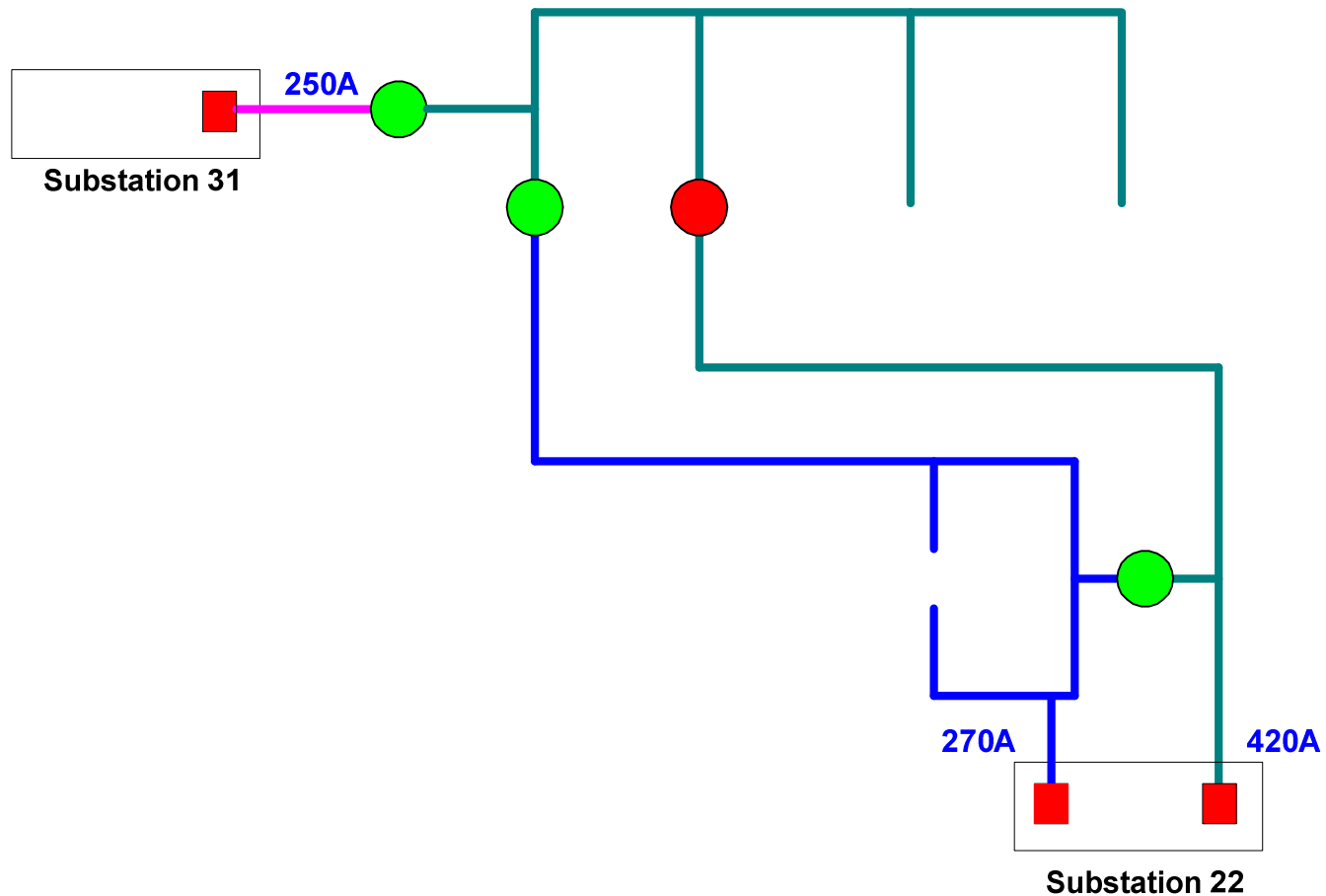
Asset Utilization: Existing Circuits



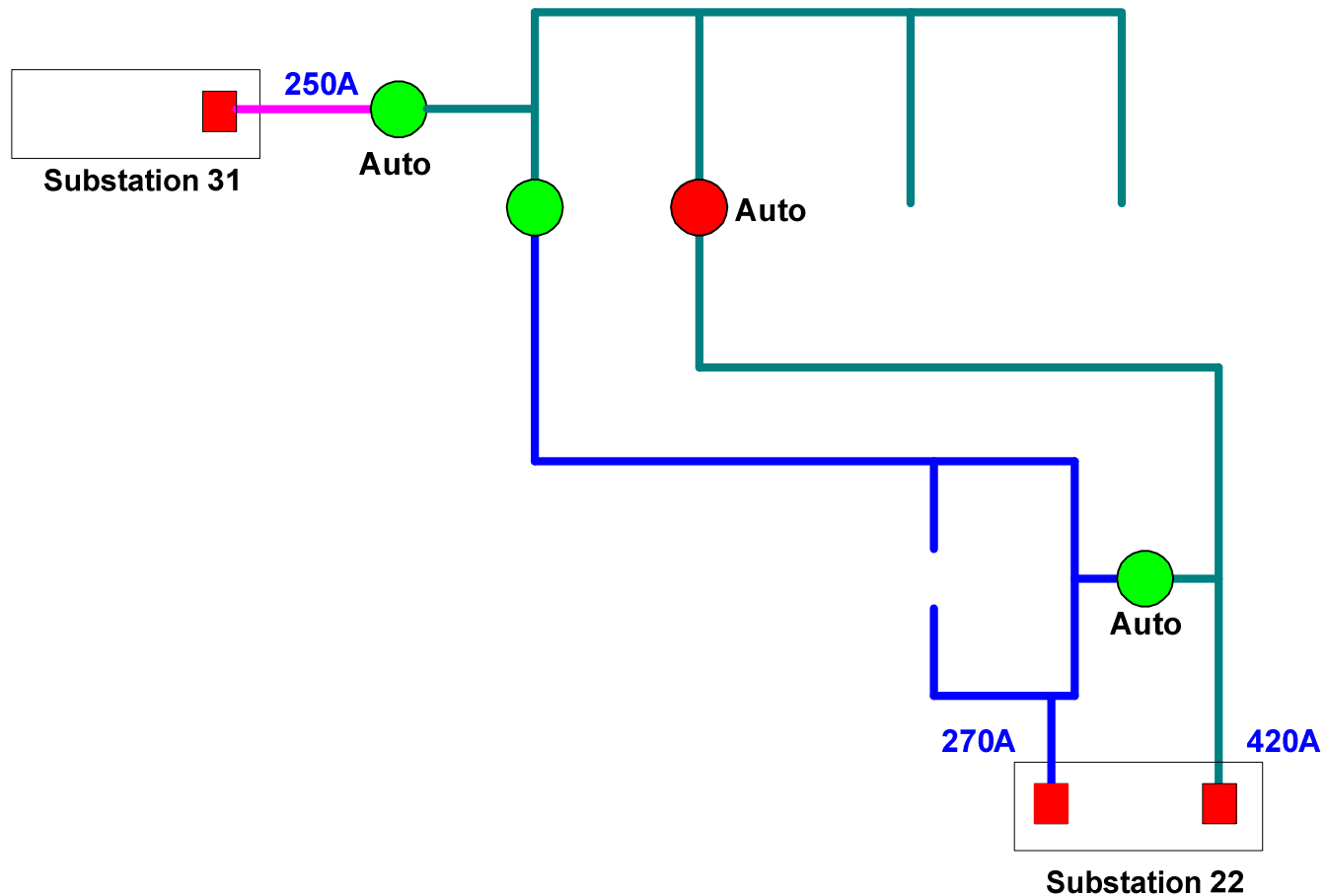
Asset Utilization: Existing Circuits



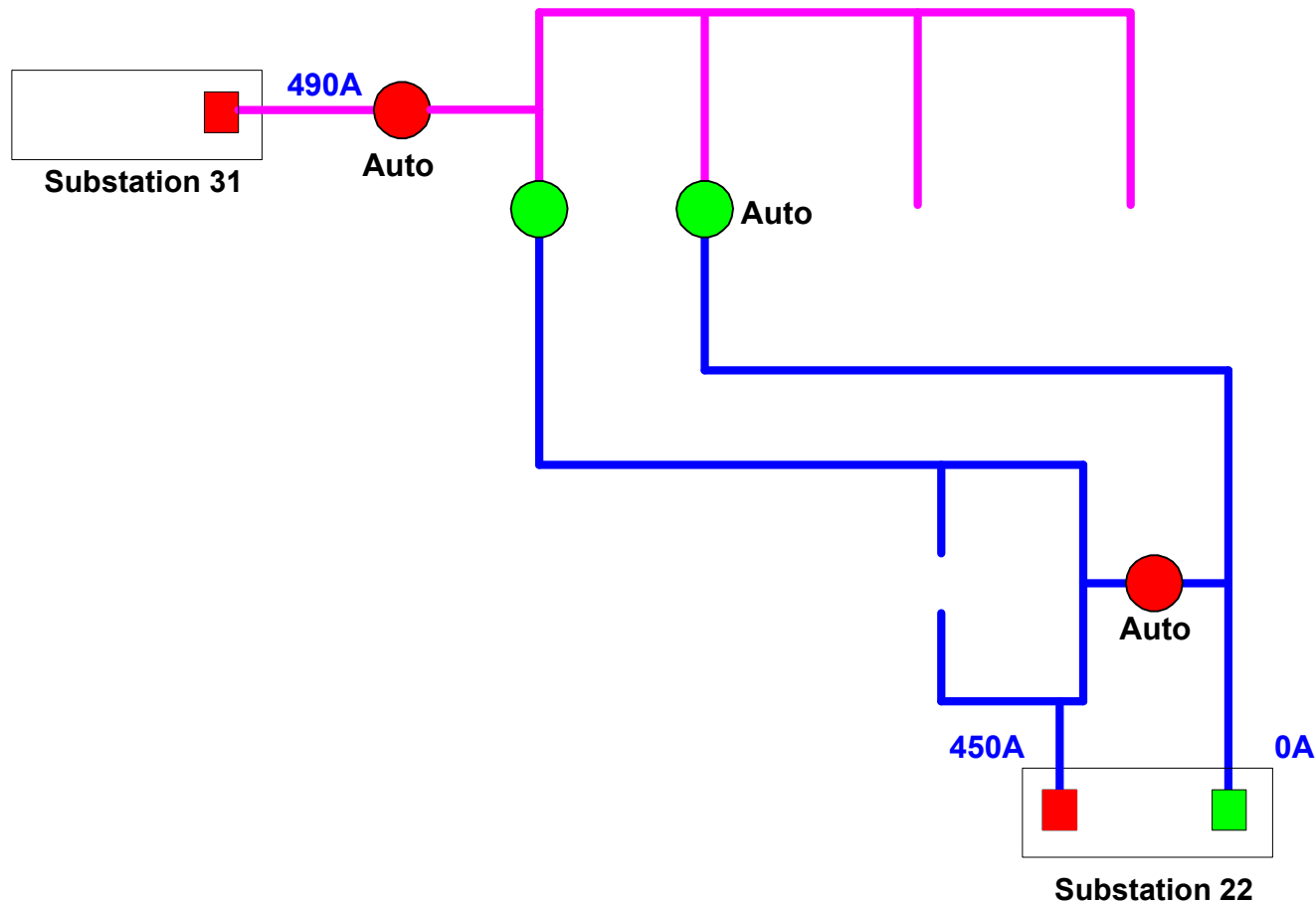
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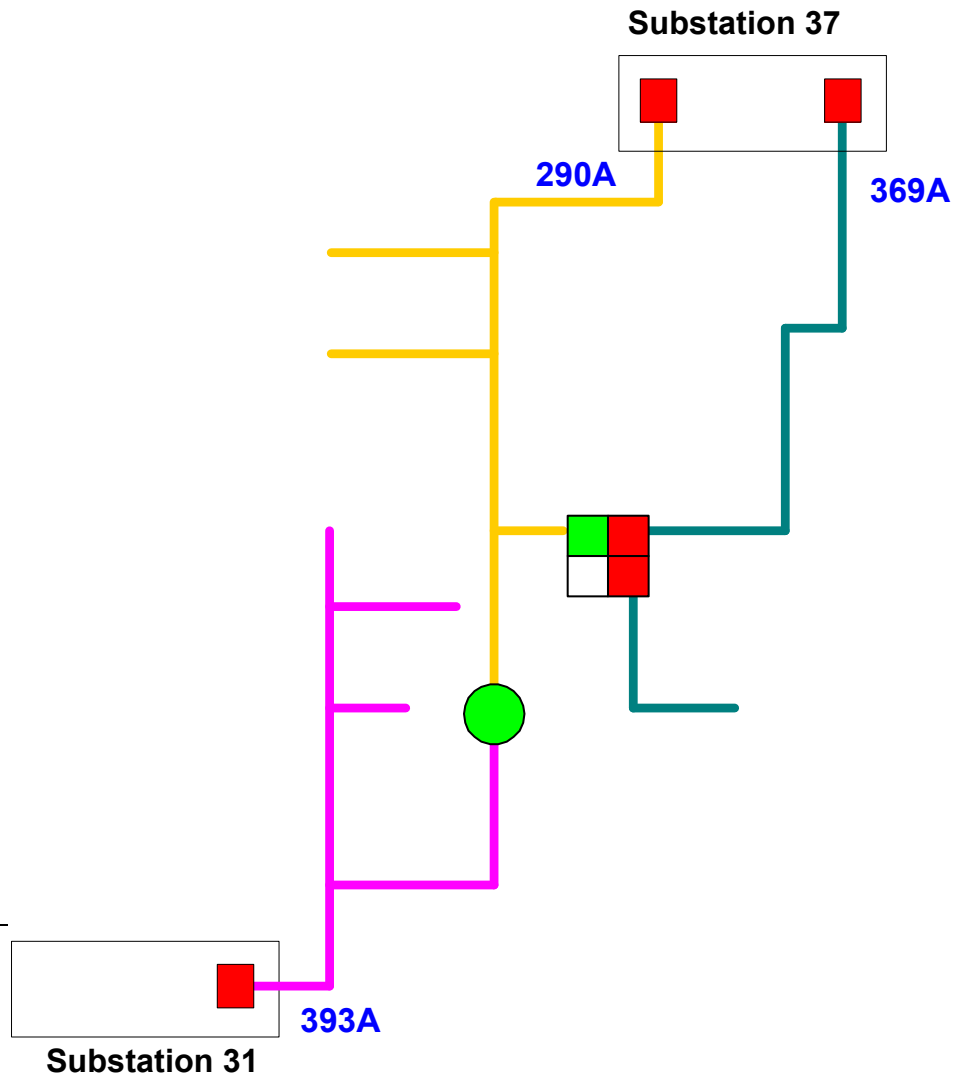
Asset Utilization: Existing Circuits



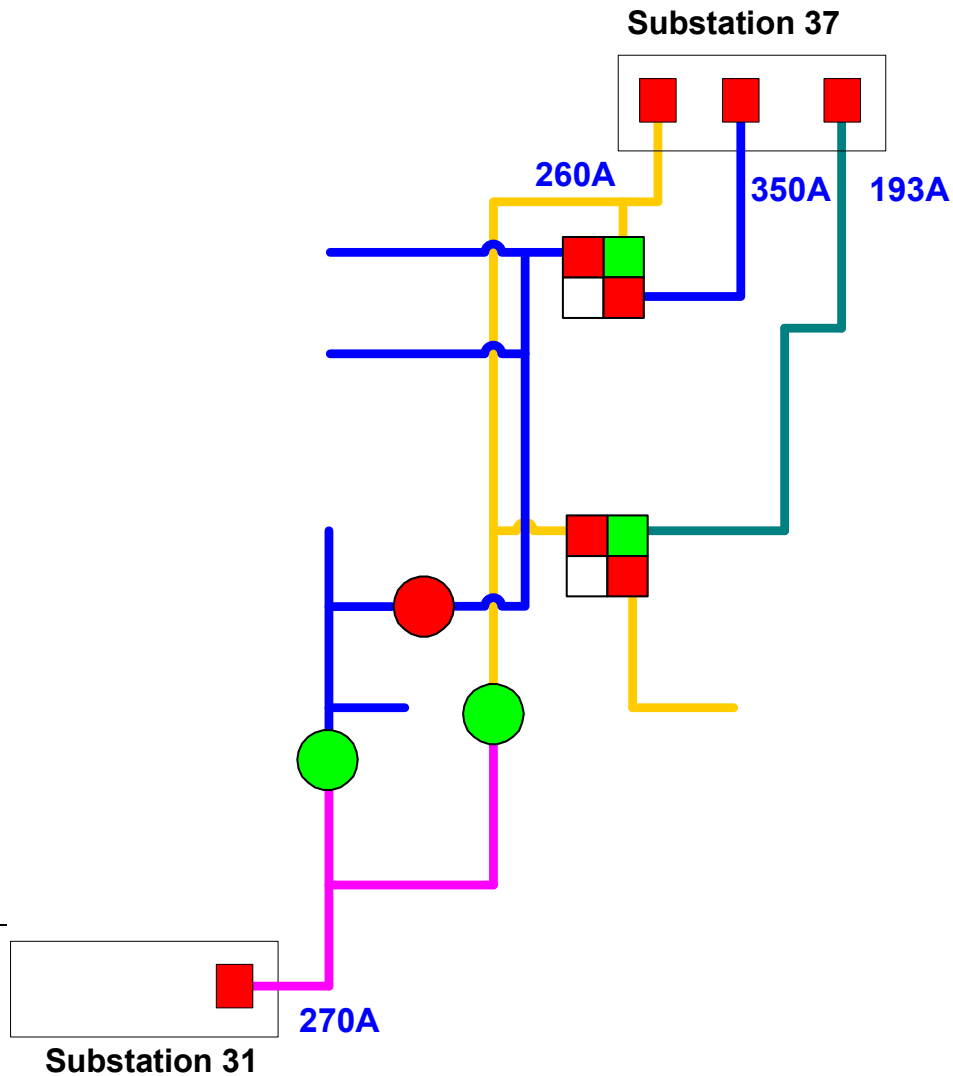
Asset Utilization: Existing Circuits



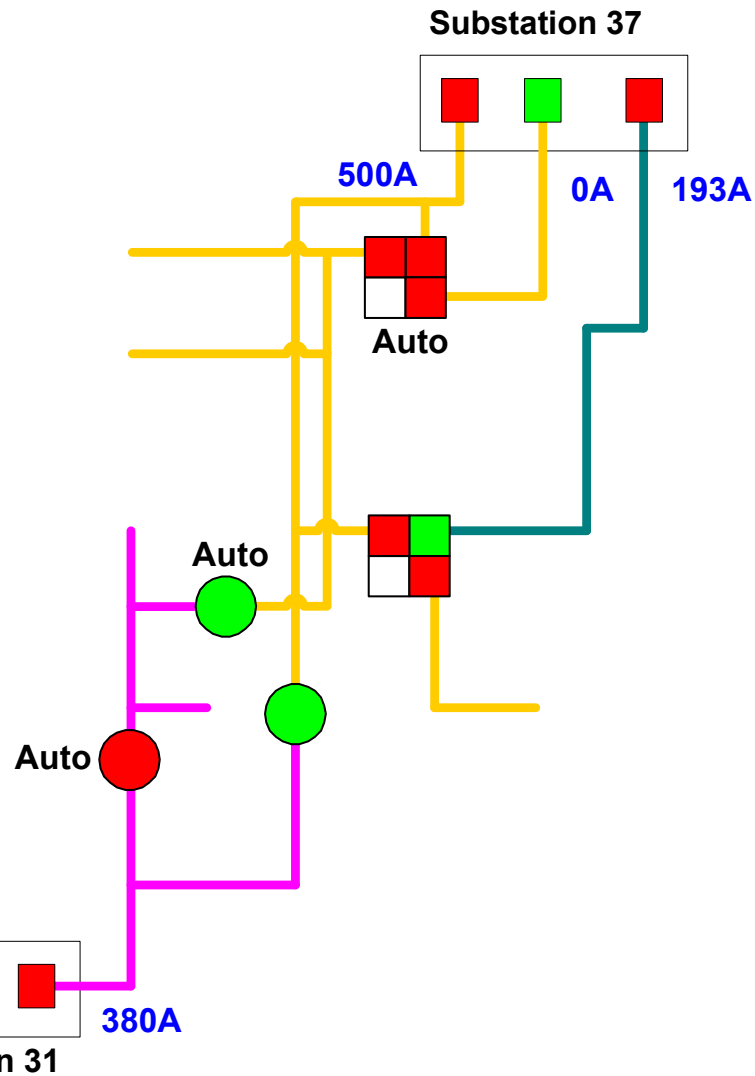
Asset Utilization: Existing Circuits



Asset Utilization: Existing Circuits



Asset Utilization: Existing Circuits



Asset Utilization: New Circuits

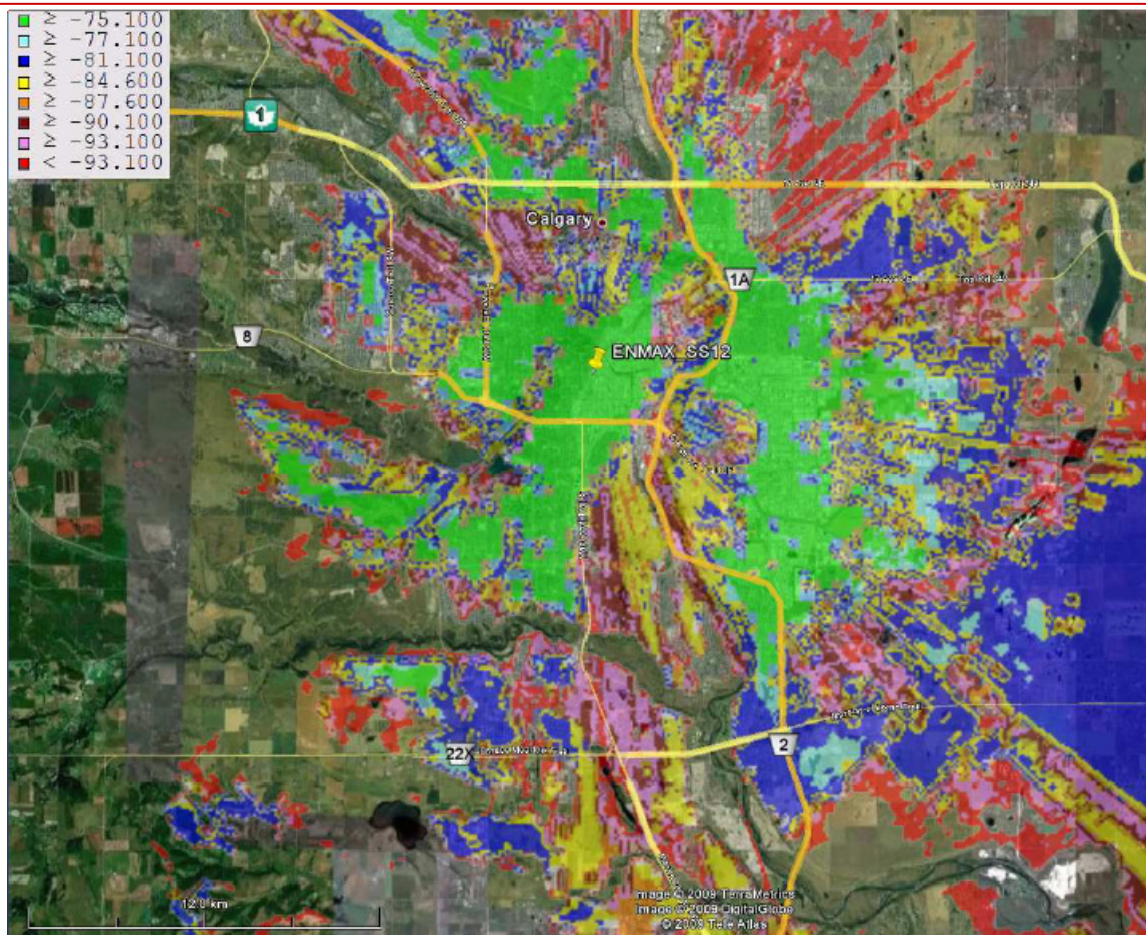
- Will perform feasibility study on implementing increased feeder loading in new service areas

PowerMax: Improve Efficiency and Safety

- New pad-mount switch standard:
 - Dead-front
 - Minimize/eliminate hot-stick work
 - Fault Interrupting, (no fuses)
 - Visual open, visual ground
 - Minimize/eliminate maintenance
 - Automated, compatible with Intelliteam II



1.8 GHz Licenced Radio Frequencies



1.8 GHz Licenced Radio Frequencies

- Developmental license for Calgary area obtained
- Plan to install one trial master site
 - Back-haul DA data to gain experience with technology
 - Possible future application for AMI

Questions?

