



Planned Maintenance Building Electrical Outages

Planned Outages -vs.- Unplanned outages

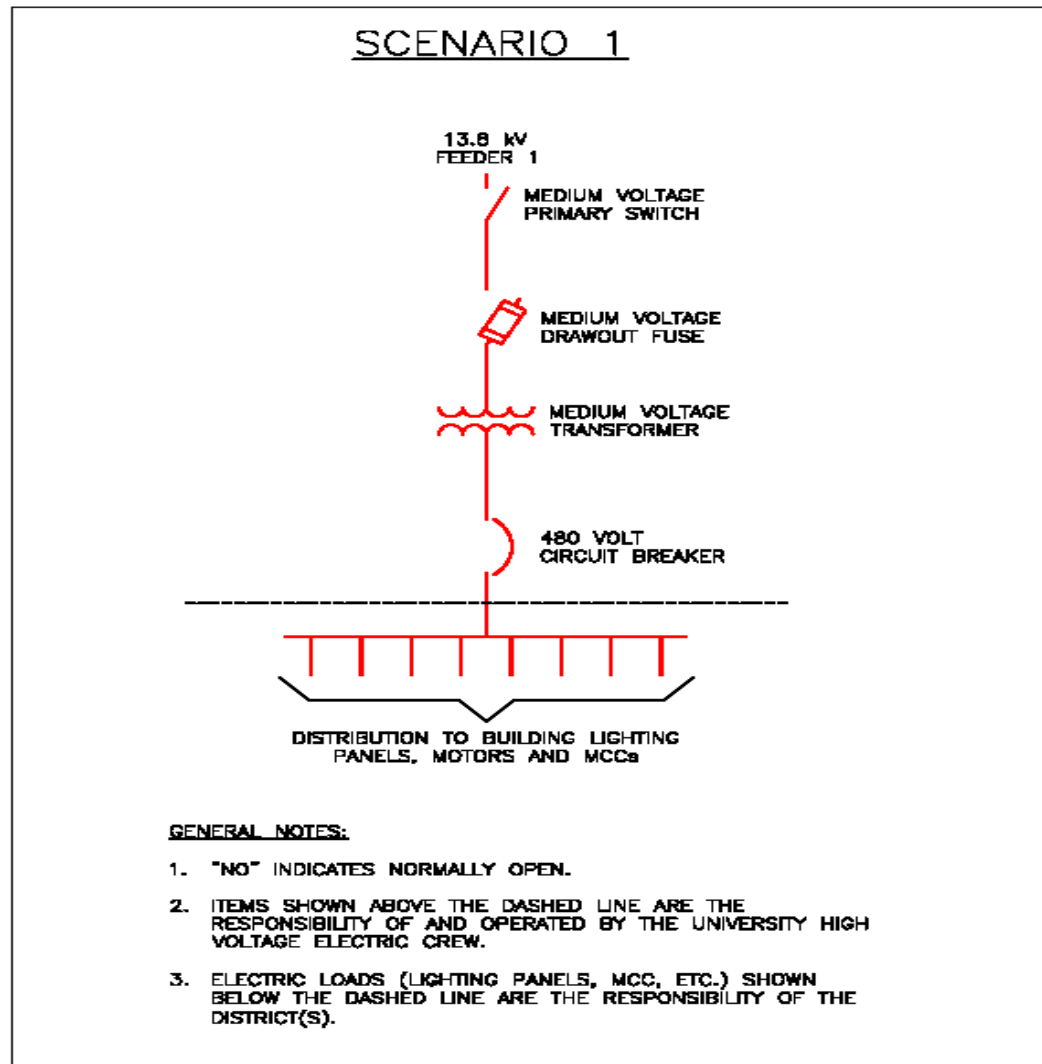
Building service/design matters to inconvenience

One size and impact doesn't fit all

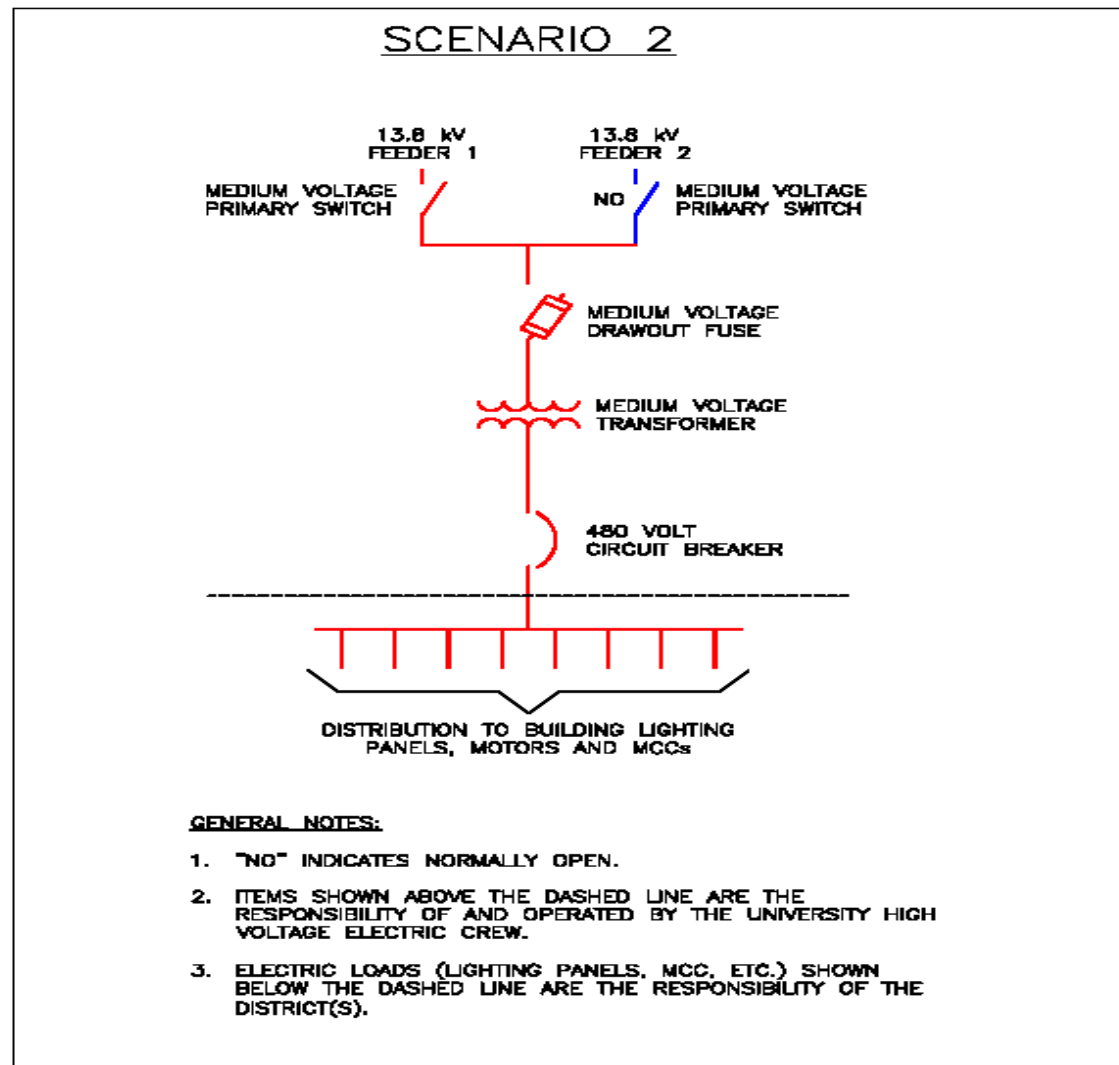
Building Primary HV Gear Maintenance

- EU Step-up in Planned Maintenance
- BMP - Cleaning/lubrication/testing every 6 Years
- Twins Cities has much primary building level gear (switches, breakers, switches & etc.) which hasn't been serviced in 10+ years. Some ever since installation!
- Why? – Challenges in Scheduling

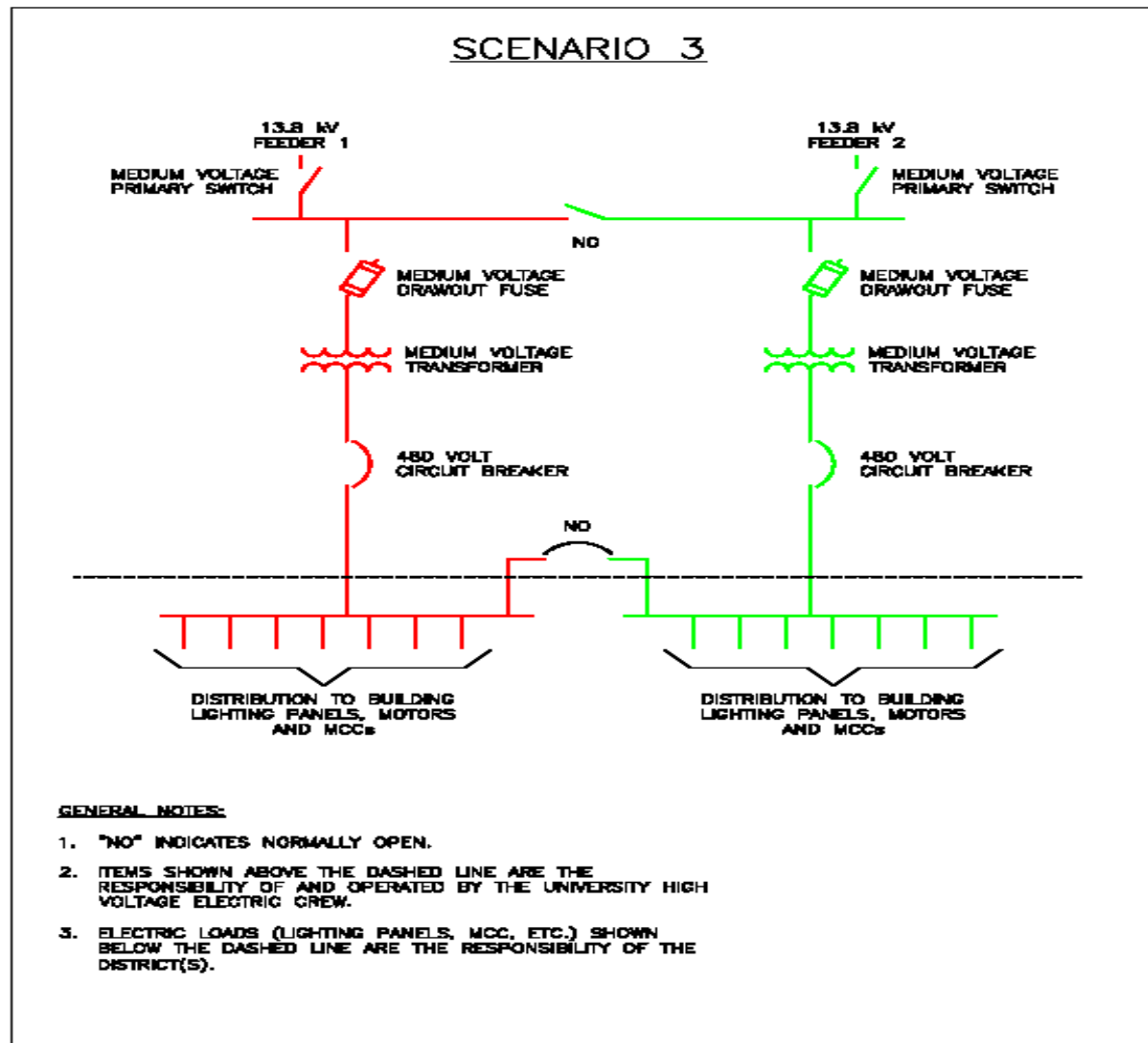
Single Feed Switches Transformer (less energy critical facilities)



Redundant Feeds & Single Transformer (more energy critical facilities)



Redundant Feed, Transformers & Switches (highly energy critical/sensitive facilities)





Building Service Types

“Outage Recovery & Maintenance Advantages”

➤ Service Type 1

- Customer outage required to service any building gear

➤ Service Type 2

- Customer outage required to service any building gear
- Redundant feeder for quick building power return

➤ Service Type 3

- Provided all switches and gear work properly no customer outage required for gear maintenance
- Redundant feeder for quick building power return

What Should Customer Expect?

- Reach out from District and Electric Utilities team asking for scheduling cooperation.
“6 months in advance of targeting PM outage”
- Large Scale Outage Seasons (multi-buildings)
 - Late Spring –to- Early Summer
 - Late Fall –to- Early Winter
- Discrete Individual Building Outages
 - Anytime during year most convenient to customer and feasible due to weather limitations

Thank You for your Cooperation!