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)

**SCENARIO 1**

13.8 kV Feeder 1

Medium Voltage Primary Switch

Medium Voltage Drawout Fuse

Medium Voltage Transformer

480 Volt Circuit Breaker

Distribution to building lighting panels, motors and MCCs

**GENERAL NOTES:**

1. "NO" indicates normally open.

2. Items shown above the dashed line are the responsibility of and operated by the university high voltage electric crew.

3. Electric loads (lighting panels, MCC, etc.) shown below the dashed line are the responsibility of the district(s).
Redundant Feeds & Single Transformer
(more energy critical facilities)

SCENARIO 2

13.8 kV
FEEDER 1

MEDIUM VOLTAGE
PRIMARY SWITCH

MEDIUM VOLTAGE
DRAWOUT FUSE

MEDIUM VOLTAGE
TRANSFORMER

480 VOLT
CIRCUIT BREAKER

DISTRIBUTION TO BUILDING LIGHTING PANELS, MOTORS AND MCCs

GENERAL NOTES:
1. "NO" INDICATES NORMALLY OPEN.
2. ITEMS SHOWN ABOVE THE DASHED LINE ARE THE RESPONSIBILITY OF AND OPERATED BY THE UNIVERSITY HIGH VOLTAGE ELECTRIC CREW.
3. ELECTRIC LOADS (LIGHTING PANELS, MCC, ETC.) SHOWN BELOW THE DASHED LINE ARE THE RESPONSIBILITY OF THE DISTRICT(S).
Redundant Feed, Transformers & Switches
(highly energy critical/sensitive facilities)

SCENARIO 3

GENERAL NOTES:
1. "NO" INDICATES NORMALLY OPEN.
2. ITEMS SHOWN ABOVE THE DASHED LINE ARE THE RESPONSIBILITY OF AND OPERATED BY THE UNIVERSITY HIGH VOLTAGE ELECTRIC DIVISION.
3. ELECTRIC LOADS (LIGHTING PANELS, MCC, ETC.) SHOWN BELOW THE DASHED LINE ARE THE RESPONSIBILITY OF THE DISTRICT(S).
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!