

1 PARTIAL ELECTRICAL ONE-LINE DIAGRAM - 34.5kV MEDIUM VOLTAGE DISTRIBUTION - PP1
SCALE: NOT TO SCALE

GROUNDING SWITCH INTERLOCK SEQUENCE OF OPERATION BETWEEN MVS FEEDER BREAKER AND DSG SWITCH:

NORMAL ARRANGEMENT

1. UTILITY MAIN BREAKER IS IN THE CLOSED POSITION.

2. TIE BREAKER IS OPEN POSITION.

3. ALL FEEDER BREAKERS ARE IN CLOSED POSITION.

4. DSG INPUT SWITCHES CLOSE.

5. TURN KEY 1 EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 ARE TRAPPED AND BOLT IS RETRACTED.

6. DSG SWITCH INTERLOCK KEY IS CAPTURED IN DSG SWITCH INTERLOCK.

MVS0B120

1. UTILITY MAIN BREAKER IS IN THE CLOSED POSITION.

2. TIE BREAKER IS IN OPEN POSITION.

3. ALL FEEDER BREAKERS ARE IN CLOSED POSITION.

4. DSG INPUT SWITCHES CLOSE.

5. TURN KEY 1 EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 ARE TRAPPED AND BOLT IS RETRACTED.

6. DSG SWITCH INTERLOCK KEY IS CAPTURED IN DSG SWITCH INTERLOCK.

POWER MVS0B120 FROM MVS0A110 VIA THE BREAKERS:

1. SEQUENCE IS A BREAK BEFORE MAKE TRANSITION TO AVOID PARALLELING THE TWO UTILITY CIRCUITS.

2. AT MVS0B120, OPEN TIE BREAKER.

3. OPEN FEEDER BREAKERS.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. CLOSE TIE BREAKER.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

10. MVS0B120 IS NOW ED FROM MVS0A110 VIA THE BREAKERS.

DE-ENERGIZE BREAKER AND CLOSE GROUNDING SWITCH AT LOOP FEED BREAKER PAIR

1. OPEN FIRST DOWNSTREAM DSG SWITCH. KEY IS RELEASED WHEN SWITCH IS OPENED.

2. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

3. OPEN FEEDER BREAKERS.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

10. MVS0B120 IS NOW ED FROM MVS0A110 VIA THE BREAKERS.

POWER MVS0A110 FROM MVS0B120 VIA THE BREAKERS:

1. SEQUENCE IS A BREAK BEFORE MAKE TRANSITION TO AVOID PARALLELING THE TWO UTILITY CIRCUITS.

2. AT MVS0B120, OPEN TIE BREAKER.

3. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

10. MVS0B120 IS NOW ED FROM MVS0A110 VIA THE BREAKERS.

ENERGIZE AND OPEN GROUNDING SWITCH AT LOOP FEED BREAKER PAIR

1. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

2. TURN THE SELECTOR SWITCH TO OPEN THE GROUNDING WINDOW. USE THE TOOL HANDLE TO PLACE THE SWITCH INTO THE OPEN POSITION AND REMOVE BREAKER FROM THE BREAKER BUS. THE BREAKER IS NOW CONNECTED TO THE BUS (RAKED IN).

3. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. CLOSE TIE BREAKER.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

10. MVS0B120 IS NOW ED FROM MVS0A110 VIA THE BREAKERS.

POWER MVS0B110 FROM MVS0B120 VIA THE BREAKERS:

1. SEQUENCE IS A BREAK BEFORE MAKE TRANSITION TO AVOID PARALLELING THE TWO UTILITY CIRCUITS.

2. AT MVS0B120, OPEN TIE BREAKER.

3. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

10. MVS0B120 IS NOW ED FROM MVS0B110 VIA THE BREAKERS.

POWER MVS0B110 FROM MVS0B120 VIA THE BREAKERS:

1. SEQUENCE IS A BREAK BEFORE MAKE TRANSITION TO AVOID PARALLELING THE TWO UTILITY CIRCUITS.

2. AT MVS0B120, OPEN TIE BREAKER.

3. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

4. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

5. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

6. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

7. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

8. TURN KEY 1 TO EXTEND BOLT AND RELEASE KEY 1 AND KEY 2 REMOVE KEY.

9. KEY Y WILL BE TRAPPED IN THE BREAKER CYLINDER WHILE BOLT IS RETRACTED.

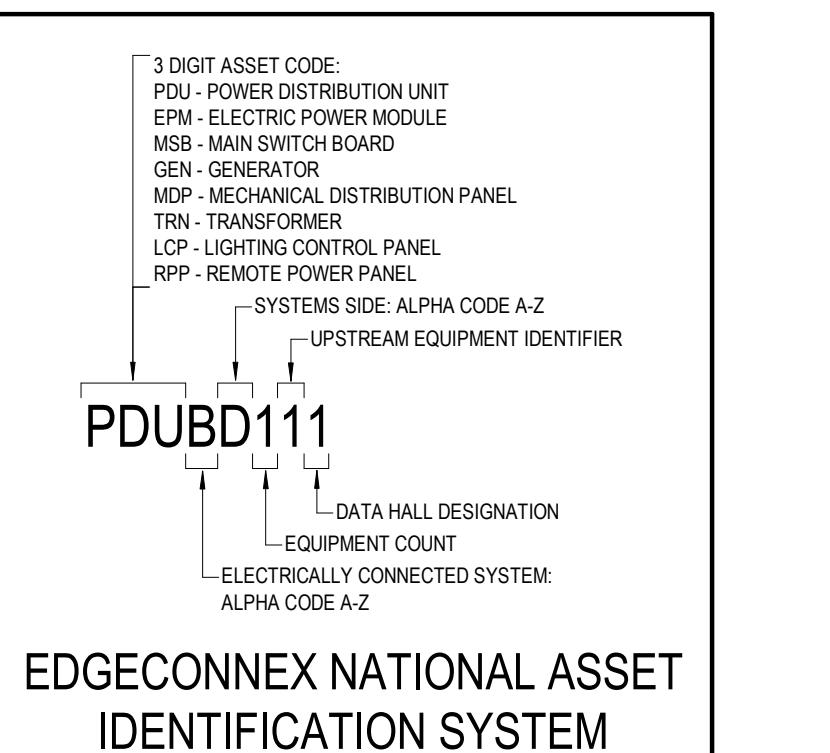
10. MVS0B120 IS NOW ED FROM MVS0B110 VIA THE BREAKERS.

ONE-LINE GENERAL NOTES:

- REFER TO GENERAL ELECTRICAL NOTES, SYMBOLS, AND ABBREVIATIONS SHEET E000001 FOR ALL SYMBOLS ON THIS SHEET.
- REFER TO BOOK SPEC'S FOR ELECTRICAL EQUIPMENT.
- REFER TO E00000 SERIES SHEETS FOR FEEDER SCHEDULES, LOAD ANALYSIS, AND FAULT CURRENT SCHEDULES.
- PHASE ROTATION SHOULD BE A-B-C CLOCKWISE THROUGHOUT SYSTEM.
- POWER CIRCUITS INDICATE SCHNEIDER ELECTRIC POWER QUALITY METER PM4000 INDICATES SCHNEIDER ELECTRIC PM4000 SERIES.
- PROVIDE ALL MEDIUM VOLTAGE CONDUCTOR TERMINATIONS PER DUV-08 SPECIFICATIONS AND MANUFACTURER REQUIREMENTS.

LINETYPE LEGEND:

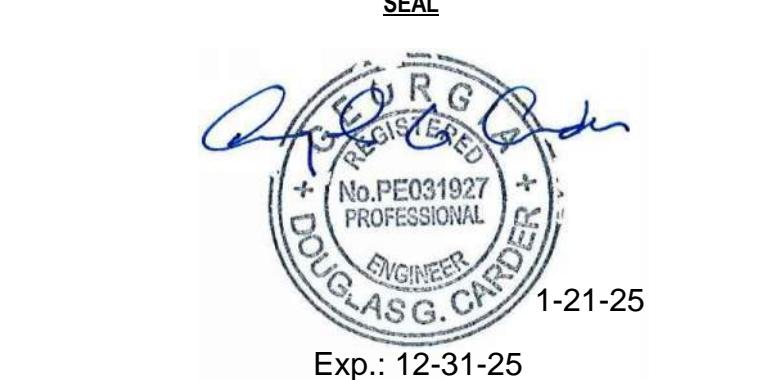
NEW EQUIPMENT/FEEDERS
FUTURE EQUIPMENT/FEEDERS
EQUIPMENT/FEEDERS BY OTHERS



KEYED NOTES:

E109 PROVIDE GROUND SWITCH INTERLOCK CONNECTION AS REQUIRED.
PROVIDE CONDUCTOR TYPE AND CONDUIT SIZE PER EQUIPMENT ADDENDUM 01.
E111 PROVIDE LEAD BREAK ELBOWS AT TRANSFORMER PER SPECIFICATIONS.
TYPICAL FOR ALL PAD MOUNTED TRANSFORMERS.
E112 REFER TO DETAILS PM-000001 FOR MORE SERVICE GROUNDING INFORMATION.
E127 PROVIDE MV CONNECTION TO METER FROM BIM PART. PROVIDE CABLING AND CONDUIT AS REQUIRED.
E128 CONTRACTOR PROVIDED DISTRIBUTION CLASS SURGE ARRESTORS. SUBMIT FOR APPROVAL PRIOR TO INSTALLATION.

ISSUES & REVISIONS		
NO	DATE	DESCRIPTION
1	06.21.2024	ISSUE FOR PERMIT
2	07.24.2024	CITY COMMENTS
3	09.06.2024	ADDENDUM 01
4	01.21.2025	ADDENDUM 02



**ELECTRICAL ONE-LINE
DIAGRAM - 34.5kV MEDIUM
VOLTAGE DISTRIBUTION - PP1**

DRAWN: LIS
REVIEWED: DDC
PROJECT NO.: C220
SHEET NO.
E0P0101

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