Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Napa Tayavibul
Job Title: Senior Advisor, Compliance
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 01:
Regarding Vegetation Management Targets:
a. In Table 8-15, SCE sometimes uses "plans to inspect" and other times uses "will inspect" when setting VM targets. For example, "SCE plans to inspect 1,900 grids" versus "SCE will inspect at least 1,020 HFRA circuit miles."
i. Explain if and how these terms, "plans to" and "will," differ to SCE as it relates to its vegetation management targets.

Response to Question 01:
The terms "will inspect" and "plans to inspect" as they relate to SCE's vegetation management targets can be interpreted as having an equivalent meaning of "will inspect" in Table 8-15.

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To: Energy Safety
Prepared by: Kevin Arlic
Job Title: Senior Manager
Received Date: 5/25/2023

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Question 02. a:
Regarding SCE's Asset Inspection Program
a. Provide the inspection checklists used for both SCE's patrols and detailed inspections.

Response to Question 02. a:

Regarding detailed inspections, please refer to the inspection checklist "*Distribution Ground InspectApp Survey Approved 2022-05-20*."

Regarding patrols, SCE's Annual Grid Patrol program follows GO 165 guidance in which it states: "Patrol inspection" shall be defined as a simple visual inspection, of applicable utility equipment and structures, that is designed to identify obvious structural problems and hazards. Although a checklist is neither required nor completed, further details regarding methods and procedures for the patrol can be referenced within the file: "*Distribution Inspection and Maintenance Program (DIMP)."*

ATTACHMENT

Inspect App Survey Question Updates for Combo Pole Urgent Issues and 360 MVP

APPROVED: MAY 20, 2022

EFFECTIVE: JULY 2022

DATA CAPTURE QUESTIONS FOR INSPECTION –

Approvals

Department, Title	Name	Date of Approval
[redacted]	[redacted]	5/11/2022
[redacted]	[redacted]	5/20/2022
[redacted]	[redacted]	5/18/2022
[redacted]	[redacted]	5/18/2022
[redacted]	[redacted]	3/3/2022
[redacted]	[redacted]	5/20/2022

Transmission Level

(Enabled by SV003 [B])

MAT_TRAN

Default material selection to EZ Pole equipment record from SAP

T001 Were any conditions identified at the Transmission level that require immediate attention (e.g. Priority 1 notification)? (Enabled by SV003 [B])

A. Yes, issues requiring immediate attention were identified (Enables T002, T003)
B. No, issues requiring immediate attention were not identified

T002 What type of components or condition(s) at the transmission level require immediate attention? Select all that apply. (Enabled by T001 [A])

A. Vegetation (arcing, contact, signs of contact, or potential to contact energized conductors or equipment)
B. Crossarm (broken, damaged, burned or deteriorated)
C. Conductor (damage, inadequate clearances, signs of burn, tracking or arcing)
D. Insulator (loose, broken, damaged or missing)
E. Guy (damage, inadequate clearances, signs of burn, tracking or arcing)
F. Leaking oil from potheads (66kV or 115kV)
G. Excessive corrosion (loss of material or holes in equipment)
H. Other

T003 Confirm Transmission Operations was notified of conditions requiring immediate attention? (Enabled by T001 [A])

A. Yes, Transmission Operations was notified of issues requiring immediate attention

Structure Verification

SV001 This survey is being completed by:

A. An SCE employee
B. Contractor – NO Veg (Disables 0.016, 8.002A, 9.003, 10.006, 10.007[E], 0.022, 0.027 [A], 15.004 [A])
C. Contractor - with Veg

SV002 Are you able to complete the data capture survey?

A. Yes (Disables SV002A)
B. No (Enables SV002A, Disables SV003, SV004, SV005, SV006, SV007)

SV002A Indicate why the survey is unable to be completed:

A. Access/Obstruction Issue
B. Structure not in field (Note: if user picks survey stops)

SV003 What is the structure type?

A. Distribution Pole – ED
B. Transmission / Distribution Pole – EZ
C. Hydro Pole – ED
D. Communication Only Pole (Note: if user picks survey stops)
E. Streetlight Only Pole – EDSL (Disables SV004 [A,B,C,D]; SV005 [A,C]; MAT_PRI [A-R]; MAT_SEC [A,B,C,D,F,I,N,O]; MAT_COMM [A,B,C,D,E]; 0.014M; 0.014N; 1.002; 2.008; 0.014O; 6.001; 0.014I; 9.006; 9.007A; 9.007B; 11.004) (Enables SV004 [E,F,G]; 11.005)
F. Transmission Pole – ET (Note: if user picks survey stops)
G. Trans-Telecom Pole – ER (Note: if user picks survey stops)
H. Guy Stub Pole (Disables MAT_PRI [C,D,E,F,G,H,L,O,P,Q,R]; MAT_SEC [E,F,G,H,I,M,N,O,S]; MAT_COMM [E]; MAT_PUB [F])
I. Push Pole (Disables MAT_PRI [C,D,E,F,G,H,L,O,P,Q,R]; MAT_SEC [E,F,G,H,I,M,N,O,S]; MAT_COMM [E]; MAT_PUB [F])
J. None of the above (Note: if user picks survey stops)

SV004 What is the structure material?

A. Poles - Wood (Disabled by SV003 [E])
B. Poles - Composite (Disabled by SV003 [E])
C. Poles - Steel (Enables SV010) (Disabled by SV003 [E])
D. Poles - Tree (Disabled by SV003 [E])
E. Streetlight Only Pole – Concrete (Enabled by SV003 [E])
F. Streetlight Only Pole – Wood (Enabled by SV003 [E])
G. Streetlight Only Pole – Steel (Enabled by SV003 [E])
H. None of the above (Note: if user picks survey stops)

SV005 What levels exist on this structure?

NOTE: For guy stub and push poles indicate the level in which structure or attachments are connected to the associated structure

A. Primary level (Enables MAT_PRI) (Disabled by SV003 [E])
B. Secondary level (Enables MAT_SEC)
C. Communication level (Enables MAT_COMM) (Disabled by SV003 [E])
D. Public level (Enables MAT_PUB)

SV006 Is this structure located in a High Fire Area?
A. Yes (Enables 8.002A [D], 0.021A, 0.021B, 0.021C, 0.021D, 0.021E)
B. No (Enables 8.002A [E])

SV007 Is the structure one of these multi-pole configurations?
A. H-Frame (Enables SV008, SV009)
B. Platform Rack (Enables SV008, SV009)
C. No

SV008 How many poles does the structure contain? (Enabled by SV007 [A,B])
A. 2
B. 3
C. 4

SV009 Record the structure numbers for the other poles that make up the structure (Enabled by SV007 [A,B])
A. Structure 1
B. Structure 2
C. Structure 3

SV010 What type of Steel pole is the structure? (Enabled by SV004 [C])
A. Light Weight Steel
B. Tubular Steel Pole

FOR REFERENCE ONLY
Take the following photos, vertically and no zoom
- ✓ Take a photo of the entire structure
- ✓ Take a photo of the TOP HALF of the structure
- ✓ Take a photo of the BOTTOM HALF of the structure
- ✓ Take a photo of the structure number

Primary Level (Disabled by SV003 [E])

MAT_PRI Select all the equipment you see at the primary level:

A. Poles - Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Overhead Transformers (Enabled by SAP)
D. Overhead Capacitors (Enabled by SAP)
E. Crossarms – Wood (Disabled by SV003 [E,H,I])
F. Insulators (Disabled by SV003 [E,H,I])
G. Conductors – Primary (Disabled by SV003 [E,H,I])
H. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])
I. Hardware/Framing (Disabled by SV003 [E])
J. Span Guys (Disabled by SV003 [E])
K. Down Guys (Disabled by SV003 [E])
L. Risers/Terminations (Disabled by SV003 [E,H,I])
M. Poles – Tree (Disabled by SV003 [E])
N. Poles – Steel (Disabled by SV003 [E])
O. Crossarms – Composite (Disabled by SV003 [E,H,I])
P. Crossarms - Steel (Disabled by SV003 [E,H,I])
Q. Lightning Arresters (Disabled by SV003 [E,H,I])
R. Fuses (Disabled by SV003 [E,H,I])

POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

OVERHEAD TRANSFORMERS (0.014C, 3.001, 3.002, 3.003, 3.004, 3.005)

0.014C How many overhead transformers are installed on this structure? (Disabled by SV003 [E,H,I])

A. Answer choices will be 1, 2, 3

3.005 (AERIAL/GROUND) Are any of the following transformer conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Oil leakage (Enables 3.001)
B. Damage (damaged, missing or loose hardware, bushings or wire) or Operational issues (blown fuse, nests, swelling, burn marks, bare leads, humming, fault indicator) (Enables 3.002)
C. Rust/Corrosion (Enables 3.003)
D. No abnormal conditions

3.001 (AERIAL/GROUND) Indicate if any of the following signs of transformer oil leakage or weepage are observed. Select all that apply. (Enabled by 3.005 [A])

A. Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area (Notification Required)
B. Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area (Notification Required)
C. Oil weepage indicated by oily film on tank surface

3.002 (AERIAL/GROUND) Indicate if transformer has any of the following conditions at the time of inspection. Select all that apply. (Enabled by 3.005 [B])

A. Brackets damaged (Notification Required)
B. Scott brackets fiberglass pads present (Notification Required)
C. Visibly loose hardware (Notification Required)
D. Secondary leads in contact with the case (Notification Required)
E. Blown fuse (Notification Required)
F. Improperly connected (loose) wire (Notification Required)
G. In contact with animal nest (Notification Required)
H. One fuse is open/down (Notification Required)
I. Bushings damaged (Notification Required)
J. Signs of burn (Notification Required)
K. Signs of swelling (Notification Required)
L. Red flag fault indicator is visible
M. Secondary leads are bare
N. Transformers are humming

3.003 Is the transformer showing any of the following signs of rust or corrosion? (Enabled by 3.005 [C])

A. Rust or corrosion compromising equipment integrity (Notification Required)
B. Light surface rust or corrosion

3.004 (AERIAL/GROUND) Are animal guards installed, intact, and adequately covering the transformer? (Disabled by SV003 [E,H,I])

A. Yes
B. No

OVERHEAD CAPACITORS (0.014D, 4.001, 4.002. 4.003, 4.004)

0.014D How many overhead capacitor banks are installed on this structure? (Disabled by SV003 [E,H,I])
*NOTE: Only count entire **capacitor bank** and **NOT** individual capacitor units.*
A. Answer choices will be 1, 2, 3

4.004 (AERIAL/GROUND) Are any of the following capacitor conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Damage (damaged, missing or loose unit, controller, switch, PT transformer, bushing, hardware or wire) or Operational Issues (switch malfunction, nests, swelling, burn marks, bare leads, humming) (Enables 4.001)
B. Oil leakage (Enables 4.002)
C. Single phase condition (Enables 4.003)
D. No abnormal conditions

4.001 (AERIAL/GROUND) Indicate if any capacitor bank, or associated equipment, shows any of the following conditions. Select all that apply. (Enabled by 4.004 [A])
A. Ruptured or severely bulged capacitor units (Notification Required)
B. Capacitor bank damaged, not functioning (Notification Required)
C. Capacitor switches not secure, damaged, not functioning (Notification Required)
D. Capacitor controller damaged (Notification Required)
E. One fuse is open/down (Notification Required)
F. Bushings damaged (Notification Required)
G. Blown fuse (Notification Required)
H. Signs of burn (Notification Required)
I. Signs of swelling (Notification Required)
J. Improperly Connected (loose) Wire (Notification Required)
K. PT Transformer damaged or severely rusted (Notification Required)
L. In contact with animal nest (Notification Required)
M. Capacitor controller missing or enclosure damaged (exposed meter socket) (Notification Required)
N. Capacitor is humming

4.002 Indicate if any of the following types of capacitor bank oil leakage or weepage are observed. Select all that apply (Enabled by 4.004 [B])
A. Capacitor units leaking, oil reaches ground or public access or environmentally sensitive area (Notification Required)
B. Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area (Notification Required)
C. Oil weepage indicated by oily film on capacitor unit surface (not capacitor switches)

4.003 Has the capacitor equipment (i.e. fuses) broken down to a single phase condition with bank still energized? (Enabled by 4.004 [C])
A. Yes (Notification Required)
B. No

CROSSARMS - WOOD (0.014H, 0.014J, 0.014K, 2.003A, 2.003C, 2.004A, 2.005B, 2.006A, 2.007A, 2.003B, 2.006B, 2.008)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A single crossarm is when only one crossarm piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.008 **(AERIAL/GROUND)** Are any of the following primary wood crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Bowing/twisting (Enables 2.003A, 2.003B)
B. Deterioration (Enables 2.003C)
C. Canting (Enables 2.004A)
D. Tracking (Enables 2.005B)
E. Brace Damage (Enables 2.006A, 2.006B)
F. Damaged bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
G. Missing bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
H. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.008 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003B Are any crossarms of this material type showing any of the following signs of bowing/twisting at this level and need to be replaced? Select all that apply (Enabled by 2.008 [A])
A. Crossarm bowed approximately >5 inches and splintering (Notification Required)

B. Crossarm bowed approximately >5 inches without splintering (Notification Required)
C. Significant damage at a bolt (Notification Required)

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? (Enabled by 2.008 [B])
A. Answer choices will be 1-20 (Notification Required)

2.004A How many crossarms of this material type at this level are canted and need to be replaced? (Enabled by 2.008 [C])
A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.008 [D])
A. Answer choices will be 1-20 (Notification Required)

2.006A How many crossarms of this material type at this level have damaged braces and need to be replaced? (Enabled by 2.008 [E])
A. Answer choices will be 1-20 (Notification Required)

2.006B Do any crossarms of this material type have any of the following brace damage at this level and need to be replaced? (Enabled by 2.008 [E])
Select all that apply.
A. Braces broken (Notification Required)
B. Braces loose (Notification Required)
C. Braces missing (Notification Required)

CROSSARMS - COMPOSITE (0.014H, 0.014J, 0.014K, 2.003C, 7.002A, 7.002B, 7.004A, 7.006)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.

NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

7.006 (AERIAL/GROUND) Are any of the following primary composite crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Deterioration (Enables 2.003C)
B. Bending (Enables 7.002A, 7.002B)
C. Damage (Enables 7.004A)
D. Damaged bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
E. Missing bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
F. No abnormal conditions

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? Enabled by 7.006 [A])

A. Answer choices will be 1-20 (Notification Required)

7.002A How many crossarms of this material type at this level show signs of bending and need to be replaced? (Enabled by 7.006 [B])

A. Answer choices will be 1-20 (Notification Required)

7.002B Do any crossarms of this material type have any of the following conditions of bending and need to be replaced? Select all that apply (Enabled by 7.006 [B])

A. Visual fracturing (Notification Required)
B. Significant visual buckling (Notification Required)
C. Significantly unbalanced due to tension (Notification Required)
D. Bent mounting bracket and associated hardware (Notification Required)

7.004A How many crossarms of this material type at this level are physically damaged and need to be replaced? (Enabled by 7.006 [C])

A. Answer choices will be 1-20 (Notification Required)

CROSSARMS – STEEL (0.014H, 0.014J, 0.014K, 2.003A, 2.003D, 2.005B, 2.007A)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.

NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.

A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
B. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.009 (AERIAL/GROUND) Are any of the following steel crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Bowing/twisting (Enables 2.003A)
B. Rusting/Corrosion (Enables 2.003D)
C. Tracking (Enables 2.005B)
D. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.009 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003D How many crossarms of this material type at this level are excessively rusted or corroded and need to be replaced? (Enabled by 2.009 [B])
A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.009 [C])
A. Answer choices will be 1-20 (Notification Required)

INSULATORS (0.014A, 6.001, 6.002, 6.003, 6.004, 6.005, 6.006)

0.014A How many insulators are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Dead-end insulators count as 1; Count primary polymer insulators if applicable, count 3 phase bank delta insulators and/or all primary tap supporting insulators.
A. Answer choices will be 1-30

6.001 What types of insulators are installed at this level? Select all that apply. (Disabled by SV003 [E,H,I])
A. Porcelain
B. Polymer
C. Hendrix Universal
D. Hendrix (vice-top)
E. Other

6.006 (AERIAL/GROUND) Are any of the following insulator conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Missing parts (Notification Required)
B. Insulator damage (broken, cracked, loose, floating, squatting, chipped), Tie wire damaged, missing, loose), Upward Strain (Enables 6.003)
C. Top/Side tie insulator touching crossarm (Notification Required)
D. No abnormal conditions

6.003 (AERIAL/GROUND) Indicate if any of the following types of damage are observed on any portion of any insulator, or its associated hardware, at this level. Select all that apply. (Enabled by 6.006 [B])

A. Insulator broken (Notification Required)
B. Insulator cracked, damaged or loose (Notification Required)
C. Insulator floating (Notification Required)
D. Insulator squatting (Notification Required)
E. Tie wire broken/missing/damaged or loose (Notification Required)
F. Upward strain (lift) on pin in tangent configuration (Notification Required)
G. Insulator chipped (Notification Required)
H. Improper angle on pin insulator (Notification Required)

6.005 Do the insulators connect to the structure using a hook? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No

6.007 Is there visible wear on the hook or structure where it attaches? (Enabled by 6.005 [A])

A. Yes, visible wear on the hook or structure exists (Notification Required)
B. No, visible wear on the hook or structure does not exist

CONDUCTORS - PRIMARY (0.014B, 0.016, 0.026A, 0.026B, 0.026C, 8.009, 8.006, 8.007A, 8.007B, 8.011, 8.012, 8.013, 8.014, 8.015, 8.005, 8.008, 8.001, 8.002A, 8.002B, 8.016, 8.010, 8.017, 8.018, 8.019, 8.020)

0.014B How many line/high side conductors are installed at this level? (Disabled by SV003 [E,H,I])
*NOTE: This is **NOT** load-side primary. **DO NOT COUNT** buck arm primary or primary fed from same circuit/tap-line – only different circuits/voltages.*

A. Answer choices will be 1-20

0.016 What is the clearance between trees/foliage and primary conductors? (Disabled by SV003 [E,H,I])

A. 2 feet or less (Notification Required)
B. Between 2 feet and 6 feet (Notification Required)
C. 6 feet to 10 feet
D. Greater than 10 feet
E. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.026A Is the primary circuit horizontal or vertical construction? (Disabled by SV003 [E,H,I])
NOTE: If a double circuit and/or both types of construction exist on the pole, select both options. On multi-arm and triangular construction, only select "Vertical" if primary conductors roll/transpose mid-span; otherwise select "Horizontal".
A. Horizontal construction
B. Vertical construction

0.026B Is there any indication of the primary conductor rolling/transposing from vertical-to-horizontal or horizontal-to-vertical? (Disabled by SV003 [E,H,I])
A. Yes and clearance between conductors appears to be greater than 12 inches
B. Yes and clearance between conductors appears to be less than 12 inches (Notification Required)
C. No

0.021D (AERIAL/GROUND) Indicate if any of the following types of non-exempt CONNECTOR material are present at this level. Select all that apply or select "No non-exempt connector present". (Enabled by SV006 [A])
A. Split bolt connector (Enables 0.022)
B. Copper vise connector (Enables 0.022)
C. No non-exempt connector present

8.009 What type(s) of primary conductors are installed? Select all that apply. (Disabled by SV003 [E,H,I])
NOTE: Only select primary conductor sizes and NOT taps/jumpers. Covered is tree wire. Aerial cable is bundled cable.
A. Covered (Enables 8.010, 8.014, 8.015, 8.017, 8.018)
B. Copper (Enables 8.007A)
C. Aluminum (Enables 8.007B)
D. Aerial cable

8.006 Which of the following estimated sizes of primary conductors are on the span? Select all that apply. (Disabled by SV003 [E,H,I])
NOTE: Only select primary conductor/phase sizes and NOT taps/jumpers.
A. #4 Aluminum
B. 1/0 Aluminum
C. #2 Aluminum
D. 336 Aluminum
E. 653 Aluminum
F. 4/0 Aluminum
G. 4/0 Copper
H. 2/0 Copper
I. #2 Copper
J. #4 Copper
K. #6 Copper
L. One or more conductors are sizes not listed

8.007A Is any copper primary conductor span length in any direction greater than 240 feet, and are line spacers installed (Enabled by 8.009 [B])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select one of the

"Yes" responses.
NOTE: If one span has line spacers and the other does not, select one of the"… and line spacers are not installed" responses.
A. No, and line spacers are installed
B. No, and line spacers are not installed
C. Yes, and line spacers are installed.
D. Yes, and line spacers are not installed.

8.007B Is any Aluminum primary conductor span length in any direction greater than 240 feet and are line spacers installed? (Enabled by 8.009 [C])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select one of the "Yes" responses.
NOTE: If one span has line spacers and the other does not, select one of the"… and line spacers are not installed" responses.
A. No, and line spacers are installed
B. No, and line spacers are not installed
C. Yes, and line spacers are installed.
D. Yes, and line spacers are not installed.

8.019 Are there any splices on the conductors? (Disabled by SV003 [E,H,I])
NOTE: Check all conductors in all directions from pole to mid-span.
A. Yes (Enables 8.011, 8.012, 8.013)
B. No

8.011 How many automatic (bump) splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.012 How many preform splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.013 How many compression splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.008 For slack spans only – Do ALL slack spans in ALL directions have primary conductor spacers? (Disabled by SV003 [E,H,I])
NOTE: If one slack span has line spacers and the other does not, select "No"
A. Yes
B. No
C. No slack span present

8.020 (AERIAL/GROUND) Are any of the following conductor conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Metal or Non-Metal Debris (Enables 8.001)
B. Clearance issues with vegetation (Enables 8.002A)
C. Clearance issues with structures (Enables 8.002B)

D. Guy wire or conductor issues that may lead to conductor clash (Enables 8.016)
E. No abnormal conditions

8.001 (AERIAL/GROUND) Indicate if any of the following types of foreign objects are observed. Select all that apply. (Enabled by 8.020 [A])
A. Metal debris in conductors (Notification Required)
B. Non-metal debris in conductors

8.002A (AERIAL/GROUND) Are there inadequate clearance distances observed? Select all that apply. (Enabled by 8.020 [B])
A. Vegetation arcing or in contact with energized conductor (Notification Required)
B. Immediate danger concerning palm fronds falling or blowing into conductors (Notification Required)
C. Vines, branches or foliage presenting an overhang or other imminent threat (Notification Required)
D. Tree with potential to have less than 4 feet of clearance during wind events (Enabled by question SV006 [A])
E. Tree with potential to have less than 1.5 feet of clearance during wind events (Enabled by question SV006 [B])
F. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by question SV001 [B])

8.002B (AERIAL/GROUND) Are there estimated inadequate clearance distances between energized conductors and other structures observed? Select all that apply (Enabled by 8.020 [C])
A. Conductor located above a building, and is vertically less than 12 feet from top surface of - building (commonly roof) (Notification Required)
B. Conductor NOT located above building, but is vertically is less than 12 feet from top surface of building (commonly roof) (Notification Required)
C. Less than 6 feet horizontally between conductor and any surface of a building (Notification Required)
D. Less than 6 feet radially between conductor and non-climbable pole (e.g. streetlight) (Notification Required)

8.016 (AERIAL/GROUND) Indicate if any of the following types of conductor, span, and/or guy wire issues identified on the pole may create conductor clash. Select all that apply. (Enabled by 8.020 [D])
A. Slack primary conductor (Notification Required)
B. Span guy (Notification Required)
C. Down guy (Notification Required)
D. Encroachment primary conductor with span/down guy (Notification Required)
E. Encroachment bare secondary conductor with span/down guy (Notification Required)

8.010 (AERIAL/GROUND) For covered conductor, are there visible signs of tracking or damage on the outer jacket? (Enabled by 8.009 [A])
A. Yes (Notification Required)
B. No

8.014 For covered conductor – select all applicable directions covered conductor is installed? Select all that apply". (Enabled by 8.009 [A])

A. North
B. South
C. East
D. West

8.015 For covered conductor – indicate if any of the following covered conductor covers are missing. Select all that apply or select "No missing covered conductor covers" (Enabled by 8.009 [A])
A. Dead-end cover (Notification Required)
B. Bare Tap (Notification Required)
C. Connector cover (Notification Required)
D. Fuse cover (Notification Required)
E. Lightning arrestor cover (Notification Required)
F. Equipment bushing cover (Notification Required)
G. Pothead cover (Notification Required)
H. No missing covered conductor cover

8.017 For covered conductor – Are lightning arresters installed on structures containing the following equipment: RAR, RSR, Capacitors, Voltage Regulators, PTs associated with RSCs and PE equipment, Transformers, BLFs, and UG Dips? (Enabled by 8.009 [A]
A. No (Notification Required)
B. Yes
C. No primary equipment present

8.018 For covered conductor – For line connections (excludes connections to equipment), what jumper is used? (Enabled by 8.009 [A])
A. PGW (Notification Required)
B. Bare wire (If bare, will need to be covered with split tube) (Notification Required)
C. Covered conductor
D. Wire with split tube
E. No jumper exists

RECLOSERS, PE GEAR, REGULATORS, SWITCHES (0.021A, 10.007, 10.008)

0.021A Indicate if any of the following types of non-exempt SWITCH material are present on the pole. Select all that apply or select "No non-exempt switch present". (Enabled by SV006 [A])
A. Grasshopper air switch (Enables 0.022)
B. Single blade disconnect NOT in conjunction with reclosers or regulators (Enables 0.022)
C. In-line disconnect (Enables 0.022)
D. Alduti Rupter (Enables 0.022)
E. OMNI R4 (Enables 0.022)
F. No non-exempt switch present

10.007 (AERIAL/GROUND) Are any of the following apparatus equipment conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Animal guards missing
B. Animal guards damaged (Notification Required)

C. Excessive oil leaking and reaching ground, public access, or environmentally sensitive area (Notification Required)
D. Minor leakage, oil remains on equipment, does not reach ground, public access, or environmentally sensitive area (Notification Required)
E. Vegetation interfering with operation of apparatus equipment (Notification Required) (Disabled by SV001 [B])
F. No abnormal conditions

10.008 (AERIAL/GROUND) If the switch is in the closed position, are all switch blades fully engaged?
A. Yes, switch is closed and all blades are fully engaged
B. No, switch is closed, but one or more blades are not fully engaged (Notification Required)
C. Switch in open position
D. No switch present

HARDWARE/FRAMING (11.004)

11.004 (AERIAL/GROUND) Are any of the following hardware/framing conditions observed? Select all that apply. (Disabled by SV003 [E])
A. Corroded, missing, broken or bending hardware (Notification Required)
B. Damaged equipment brackets or braces (Notification Required)
C. No abnormal conditions

SPAN GUYS (0.014E, 12.002, 12.004)

0.014E How many span guys are installed at this level? (Disabled by SV003 [E])
A. Answer choices will be 1-10

12.004 Are any of the following span guy conditions observed? Select all that apply. (Disabled by SV003 [E])
A. Cracked, damaged, deflected, frayed or loose (Notification Required)
B. Sagging or extreme slack (Notification Required)
C. Inadequate clearance with energized components, non-energized components, communication facilities (Enables 12.002)
D. No abnormal conditions

12.002 Is there inadequate clearance between span guy and any of the following? Select all that apply. (Enabled by 12.004 [C])
A. SCE energized components (Notification Required)
B. SCE non-energized electrical components (Notification Required)
C. Communication facilities
D. Other

DOWN GUYS (13.001B)

13.001B Are there signs of contact between guy wire and conductors (arcing marks)? (Disabled by SV003 [E])

A. Yes (Notification Required)
B. No

RISERS/TERMINATIONS (14.001, 14.002, 14.004)

14.004 (AERIAL/GROUND) Are any of the following Riser/Pothead conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Damage/Discoloration (Notification Required)
B. Pothead not properly secured, leaking, swollen, sparking, arcing, noisy, insulator broken, in contact with nest (Enables 14.002)
C. No abnormal conditions

14.002 (AERIAL/GROUND) Indicate if the Pothead shows signs of any of the following conditions in the primary level. Select all that apply. (Enabled by 14.004 [B])

A. Pothead not properly attached to supporting structure (Notification Required)
B. Pothead leaking (Notification Required)
C. Pothead sparking, arcing, or noisy during normal 'dry' weather conditions (Notification Required)
D. Pothead swollen (Notification Required)
E. Porcelain pothead insulators chipped or broken (Notification Required)
F. In contact with animal nest (Notification Required)

LIGHTNING ARRESTERS (0.014G, 16.001, 0.021C)

0.014G How many surge arrester/lightning arresters are installed on this structure? (Disabled by SV003 [E,H,I])

A. Answer choices will be 1-10

16.001 Has the ground lead disconnected or any arrester operated? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No

0.021C Indicate if any of the following types of non-exempt ARRESTER material are present on the pole. Select all that apply or select "No non-exempt arrester present". (Enabled by SV006 [A])

A. Porcelain surge arrester/Lightning arrester (Enables 0.022)
B. Non-porcelain lightning arrester (Enables 0.022)
C. No non-exempt arrester present

FUSES (0.021B, 11.002)

0.021B Indicate if any of the following types of non-exempt FUSE material are present on the pole. Select all that apply or select "No non-exempt fuse present". (Enabled by SV006 [A])

A. Universal fuse (Enables 0.022)
B. Enclosed cutout w/universal fuse (Enables 0.022)
C. Open link fuse (Enables 0.022)
D. No non-exempt fuse present

11.002 (AERIAL/GROUND) Are any fuse holders burned or tracking? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No
C. No fuse holders installed

Secondary Level

MAT_SEC Select all the equipment you see at the secondary level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Poles – Tree (Disabled by SV003 [E])
D. Poles – Steel (Disabled by SV003 [E])
E. Crossarms – Wood (Disabled by SV003 [H,I])
F. Crossarms – Composite (Disabled by SV003 [E,H,I])
G. Insulators (Disabled by SV003 [H,I])
H. Conductors - Secondary (Disabled by SV003 [H,I])
I. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])
J. Hardware/Framing
K. Span Guys
L. Down Guys
M. Risers/Terminations (Disabled by SV003 [H,I])
N. Service Drops (Disabled by SV003 [E,H,I])
O. Crossarms – Steel (Disabled by SV003 [E,H,I])
P. Streetlight Only Pole – Concrete (Enabled by SV004 [E])
Q. Streetlight Only Pole – Wood (Enabled by SV004 [F])
R. Streetlight Only Pole – Steel (Enabled by SV004 [G])
S. Streetlight (Disabled by SV003 [H,I])

POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

STREETLIGHT ONLY POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions".

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)

C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

CROSSARMS - WOOD (0.014L, 0.014M, 0.014N, 2.003A, 2.003C, 2.004A, 2.005B, 2.006A, 2.003B, 2.006B, 2.010)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [H,I])
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.010 (AERIAL/GROUND) Are any of the following secondary wood crossarm conditions observed? Select all that apply. (Disabled by SV003 [H,I])
A. Bowing/twisting (Enables 2.003A, 2.003B)
B. Deterioration (Enables 2.003C)
C. Canting (Enables 2.004A)
D. Tracking (Enables 2.005B)
E. Brace damage (Enables 2.006A, 2.006B)
F. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.010 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003B Are any crossarms of this material type showing any of the following signs of bowing/twisting at this level and need to be replaced? Select all that apply. (Enabled by 2.010 [A])
A. Crossarm bowed approximately >5 inches and splintering (Notification Required)
B. Crossarm bowed approximately >5 inches without splintering (Notification Required)
C. Significant damage at a bolt (Notification Required)

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced?

(Enabled by 2.010 [B])

A. Answer choices will be 1-20 (Notification Required)

2.004A How many crossarms of this material type at this level are canted and need to be replaced? (Enabled by 2.010 [C])

A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.010 [D])

A. Answer choices will be 1-20 (Notification Required)

2.006A How many crossarms of this material type at this level have damaged braces and need to be replaced? (Enabled by 2.010 [E])

A. Answer choices will be 1-20 (Notification Required)

2.006B Do any crossarms of this material type have any of the following brace damage at this level and need to be replaced? (Enabled by 2.010 [E])

Select all that apply.

A. Braces broken (Notification Required)
B. Braces loose (Notification Required)
C. Braces missing (Notification Required)

CROSSARMS - COMPOSITE (0.014L, 0.014M, 0.014N, 2.003C, 7.002A, 7.002B, 7.004A, 7.007)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.

A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

7.007 (AERIAL/GROUND) Are any of the following secondary composite crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Deterioration (Enables 2.003C)
B. Bending (Enables 7.002A, 7.002B)
C. Damage (Enables 7.004A)
D. No abnormal conditions

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? (Enabled by 7.007 [A])
   A. Answer choices will be 1-20 (Notification Required)

7.002A How many crossarms of this material type at this level show signs of bending and need to be replaced? (Enabled by 7.007 [B])
   A. Answer choices will be 1-20 (Notification Required)

7.002B Do any crossarms of this material type have any of the following conditions of bending and need to be replaced? Select all that apply. (Enabled by 7.007 [B])
   A. Visual fracturing (Notification Required)
   B. Significant visual buckling (Notification Required)
   C. Significantly unbalanced due to tension (Notification Required)
   D. Bent mounting bracket and associated hardware (Notification Required)

7.004A How many crossarms of this material type at this level are physically damaged and need to be replaced? (Enabled by 7.007 [C])

   A. Answer choices will be 1-20 (Notification Required)

CROSSARMS - STEEL (0.014L, 0.014M, 0.014N, 2.003A, 2.005B, 2.007A)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
   A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
   A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
   A. Answer choices will be 0-20

2.009 (AERIAL/GROUND) Are any of the following steel crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
   A. Bowing/twisting (Enables 2.003A)
   B. Rusting/corrosion (Enables 2.003D)
   C. Tracking (Enables 2.005B)
   D. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.009 [A])
   A. Answer choices will be 1-20 (Notification Required)

2.003D How many crossarms of this material type at this level are excessively rusted or corroded and need to be replaced? (Enabled by 2.009 [B])
   A. Answer choices will be 1-20 (Notification Required)

INSULATORS (0.014O, 6.001, 6.003, 6.006)

0.014O How many insulators are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Dead-end insulators count as 1.
   A. Answer choices will be 1-30

6.001 What types of insulators are installed at this level? Select all that apply. (Disabled by SV003 [E,H,I])
   A. Porcelain
   B. Polymer
   C. Hendrix Universal
   D. Hendrix (vice-top)
   E. Other

6.006 (AERIAL/GROUND) Are any of the following insulator conditions observed? Select all that apply. (Disabled by SV003 [H,I])
   A. Missing parts (Notification Required)
   B. Insulator damaged (broken, cracked, loose, floating, squatting, chipped), Tie wire (damaged, missing, loose), Upward strain (Enables 6.003)
   C. Top/Side tie insulator touching crossarm (Notification Required)
   D. No abnormal conditions
      Streetlight Pole Problem statement: REPAIR DAMAGE PUBLIC STLTPOLE
      NOTE: ESI will have to indicate insulator issue

6.003 (AERIAL/GROUND) Indicate if any of the following types of damage are observed on any portion of any insulator, or its associated hardware, at this level. Select all that apply. (Enabled by 6.006 [B]) (Disabled by SV003 [H,I])
   A. Insulator broken (Notification Required)
   B. Insulator cracked, damaged or loose (Notification Required)
   C. Insulator floating (Notification Required)
   D. Insulator squatting (Notification Required)
   E. Tie wire broken/missing/damaged or loose (Notification Required)
   F. Upward strain (lift) on pin in tangent configuration (Notification Required)
   G. Insulator chipped (Notification Required)
   H. Improper angle on pin insulator (Notification Required)

CONDUCTORS - SECONDARY (0.014I, 0.021E, 9.006, 9.005, 9.007A, 9.007B, 9.008, 9.009, 9.010, 9.001, 9.003, 9.004, 9.011, 9.012)

0.014I How many phases are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Only count secondary phases, NOT services. (Multi-plex is counted as 1 phase).
A. Answer choices will be 1-20

0.021E Indicate which of the following types of non-exempt CONNECTOR material are present at this level. Select all that apply or select "No non-exempt connector present" (Enabled by SV006 [A]) (Disabled by SV003 [H,I])
A. Split bolt connector (Enables 0.022)
B. Copper vise connector (Enables 0.022)
C. No non-exempt connector present

9.006 (AERIAL/GROUND) What type(s) of secondary conductors are installed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Open wire
B. Bare copper (Enables 9.007A)
C. Bare aluminum (Enables 9.007B)
D. Covered
E. Multiplex
F. One or more conductors are types not listed

9.005 Which of the following sizes of secondary conductors are on the span? Select all that apply. (Disabled by SV003 [H,I])
NOTE: Only count secondary conductor/phases, not services
A. #4 Copper
B. #6 Copper
C. #4 Aluminum
D. #4 Aluminum Triplex
E. #6 Aluminum
F. One or more conductors are sizes not listed

9.007A Is ANY copper secondary conductor span length in ANY direction greater than 240 feet? (Disabled by SV003 [H,I])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select "Yes".
(Enabled by 9.006[B])
A. Yes
B. No

9.007B Is ANY Aluminum secondary conductor span length in ANY direction greater than 240 feet?
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select "Yes".
(Enabled by 9.006[C]) (Disabled by SV003 [H,I])
A. Yes
B. No

9.011 Are there any splices on the secondary conductors? (Disabled by SV003 [H,I])
NOTE: Check all conductors in all directions from pole to mid-span.

A. Yes (Enables 9.0008, 9.009, 9.010)
B. No

9.008 How many automatic (bump) splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

9.009 How many preform splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

9.010 How many compression splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
A. Answer choices will be 0-20

9.012 (AERIAL/GROUND) Are any of the following conductor conditions observed? Select all that apply. (Disabled by SV003 [H,I])
A. Foreign objects (Notification Required)
B. Conductor has less than appropriate radial clearance with potential for contact, no public safety hazard (Notification Required)
C. Clearance issues with vegetation (Enables 9.003)
D. Damage (broken, missing loose conductor or tie wires) (Enables 9.004)
E. No abnormal conditions

9.003 (AERIAL/GROUND) Which of the following inadequate clearances are observed at this level at the time of inspection? Select all that apply. (Enabled by 9.012 [C]) (Disabled by SV003 [H,I])
A. Bare conductors and through tree (Notification Required)
B. Tree condition causing significant strain and/or visible abrasion damage - either open wire or Triplex (Notification Required)
C. Immediate danger concerning palm fronds falling or blowing into conductors (Notification Required)
D. Vines, branches, or foliage presenting an overhang or other imminent threat (Notification Required)
E. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

9.004 (AERIAL/GROUND) Indicate if any of the following types of part damage are observed. Select all that apply (Enabled by 9.012 [D]) (Disabled by SV003 [H,I])
A. Conductors not in good condition, broken, missing (Notification Required)
B. Tie wire broken/missing/damaged or loose (Notification Required)

RECLOSERS, PE GEAR, REGULATORS, AND SWITCHES (10.002, 10.004, 10.006, 10.007)

10.007 (AERIAL/GROUND) Are any of the following apparatus equipment conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Animal guards missing
B. Animal guards damaged (Notification Required)
C. Excessive oil leaking and reaching ground, public access, or environmentally sensitive area (Notification Required)
D. Minor leakage, oil remains on equipment, does not reach ground, public access, or environmentally sensitive area (Notification Required)
E. Vegetation interfering with operation of apparatus equipment (Notification Required) (Disabled by SV001 [B])
F. No abnormal conditions

HARDWARE/FRAMING (11.004)

11.004 (AERIAL/GROUND) Are any of the following hardware/framing conditions observed? Select all that apply.

A. Corroded, missing, broken or bending hardware (Notification Required)
B. Damaged equipment brackets or braces (Notification Required)
C. No abnormal conditions

STREETLIGHT (11.005)

11.005 (AERIAL/GROUND) Are any of the following streetlight conditions observed? (Enabled by MAT_SEC [S])

A. Mastarm or mounting hardware corroded, missing, broken, loose or bending (Notification Required)
B. Luminaire (streetlight head) or hardware corroded, missing, broken, or bending (Notification Required)
C. Streetlight brackets damaged (Notification Required)
D. Signs of animal presence in the luminaire
E. Lamp Flickering
F. No abnormal conditions

SPAN GUYS (0.014E, 12.002, 12.004)

0.014E How many span guys are installed at this level?

A. Answer choices will be 1-10

12.004 Are any of the following span guy conditions observed? Select all that apply.

A. Cracked, damaged, deflected, frayed or loose (Notification Required)
B. Sagging or extreme slack (Notification Required)
C. Inadequate clearance with energized components, non-energized components, communication facilities (Enables 12.002)
D. No abnormal conditions

12.002 Is there inadequate clearance between span guy and any of the following? Select all that apply. (Enabled by 12.004 [C])
- A. SCE Energized components (Notification Required)
- B. SCE non-energized electrical components (Notification Required)
- C. Communication facilities
- D. Other

DOWN GUYS (13.001B)

13.001B Are there signs of contact between guy wire and conductors (arcing marks)?
- A. Yes (Notification Required)
- B. No

RISERS/TERMINATIONS (14.003)

14.003 (AERIAL/GROUND) Indicate if any of the following Riser conditions are observed on the structure. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [H,I])
- A. Cables in Riser exposed (Notification Required)
- B. Riser broken (Notification Required)
- C. Riser swollen (Notification Required)
- D. In contact with animal nest (Notification Required)
- E. Non-Schedule 80 Riser installed (Notification Required)
- F. No abnormal conditions

SERVICE DROPS (15.001, 15.004)

15.001 What type of service drops are installed? Select all that apply. (Disabled by SV003 [E,H,I])
- A. Aluminum
- B. Copper
- C. 2 wire
- D. 3 wire
- E. 4 wire

15.004 (AERIAL/GROUND) Indicate if any of the following inadequate clearances are observed at the time of inspection. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E,H,I])
- A. Tree condition causing significant strain and/or visible abrasion damage — either open wire or Triplex (Notification Required) (Disabled by SV001 [B])
- B. Mid-span service clearance not maintained (Notification Required)
- C. Does not meet G.O. 95 vertical clearances (Notification Required)
- D. No abnormal conditions

Communication Level (Disabled by SV003 [E])

MAT_COMM Select all the equipment you see at the communication level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Buddy Pole (Disabled by SV003 [E])
D. Communication Lines and Equipment (Disabled by SV003 [E])
E. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])

POLES - WOOD (0.020B, 1.002)

0.020B Is there adequate climbing space at this level? (Disabled by SV003 [E])

A. No (Notification Required)
B. Yes

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

POLES – COMPOSITE (0.020B,)

0.020B Is there adequate climbing space at this level? (Disabled by SV003 [E])

A. No (Notification Required)
B. Yes

Buddy Pole (0.028)

0.028 What is attached to the Buddy Pole? (Disabled by SV003 [E])

A. TTC cable
B. 3rd party cable
C. Distribution
D. Nothing (bare pole)

Communication Lines and Equipment (0.029)

0.029 Indicate if any of the following communication equipment conditions are observed. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures (Notification Required)
B. Excessive sag of communication cables (Notification Required)
C. Loose lashing wires (Notification Required)
D. Broken or separated messenger wire (Notification Required)
E. Broken, damaged or severely strained communication guy wires (Notification Required)
F. Excessive bowing or bending of pole from potential overloading at communication attachment points (Notification Required)
G. Improperly secured communication conductor or equipment (Notification Required)
H. Vegetation straining communication messenger or guy wire and/or causing structural integrity issues (Notification Required)
I. No abnormal conditions

RECLOSERS, PE GEAR, REGULATORS, AND SWITCHES (10.006)

10.006 Are trees or vegetation interfering with operation of any reclosers, PE gear, regulators, or switches? (Disabled by SV003 [E])

A. Yes (Notification Required)
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

Public Level

MAT_PUB Select all the equipment you see at the public level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Poles – Tree (Disabled by SV003 [E])
D. Poles – Steel (Disabled by SV003 [E])
E. Down Guys
F. Risers/Terminations (Disabled by SV003 [H,I])
G. Streetlight Only Pole – Concrete (Enabled by SV004 [E])
H. Streetlight Only Pole – Wood (Enabled by SV004 [F])
I. Streetlight Only Pole – Steel (Enabled by SV004 [G])

POLES - WOOD (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.020B, 0.022, 0.024, 0.027, 1.002, 1.004, 1.007, 1.009)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?

A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?

A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])

A. Yes
B. No

0.005D Do visibility strips require replacement?

A. Yes
B. No
C. Cannot access

0.008 Is the circular pole medallion present?

A. Yes
B. No
C. Cannot access

0.009 Is the pole brand visible?

A. Yes

B. No
C. Cannot access

0.020B Is there adequate climbing space at this level?
A. No (Notification Required)
B. Yes

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

1.009 Are any of the following structure conditions observed? Select all that apply.
A. Defects on or around structure (contamination, unauthorized attachment, 3rd party structure, or burn marks) (Enables 0.024)
B. Structural failure (holes, damage) (Enables 1.002)
C. Construction faults (decay pockets, soil erosion) (Enables 1.004)
D. Pole lean (Enables 1.007)
E. Animal nests with potential to contact energized components or interfere with equipment operation (Notification Required)
F. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 1.009 [A])
A. Contamination from SCE equipment (Notification Required)
B. Unauthorized attachment (Notification Required)
C. 3rd party structure touching or surrounding SCE structure (Notification Required)
D. Burn marks or signs of exposure to fire

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 1.009 [B])
A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)

D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

1.004 Indicate if there are any of the following types of construction faults. Select all that apply. (Enabled by 1.009 [C])
A. Exposed decay pocket at ground line where part of shell is gone (Notification Required)
B. Evidence of soil erosion around base of pole (Notification Required)

1.007 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 1.009 [D])
A. Pole leaning - public hazard (Notification Required)
B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
C. Pole leaning less than 1 foot per 10 feet of pole height

POLES - COMPOSITE (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.020B, 0.022, 0.024, 0.027, 5.001, 5.003, 5.006)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.008 Is the circular pole medallion present?
A. Yes
B. No
C. Cannot access

Current List of Inspection Survey Questions

0.009 Is the pole brand visible?
- A. Yes
- B. No
- C. Cannot access

0.020B Is there adequate climbing space at this level?
- A. No (Notification Required)
- B. Yes

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

5.006 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (Enables 0.024)
- B. Structural damage (fracturing, buckling, ponding, cracking, vandalism, embedment depth, gouging) (Enables 5.001)
- C. Overloading (pole leaning, bowing) (Enables 5.003)
- D. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 5.006 [A])
- A. Contamination from SCE equipment (Notification Required)
- B. Unauthorized attachment (Notification Required)
- C. 3rd party structure touching or surrounding SCE structure (Notification Required)
- D. Burn marks or signs of exposure to fire

5.001 Indicate if any of the following types of structural damage are observed on the pole. Select all that apply. (Enabled by 5.006 [B])
- A. Fracture or buckling of exterior wall (Notification Required)
- B. Visual cracks or rupture of exterior laminates or exterior wall exposing interior (Notification Required)
- C. Pole embedded on soil/heavy ponding (water) (Notification Required)
- D. Vandalism that affects the structural integrity (i.e. gun damage) (Notification Required)

E. Depth of embedment less than 10% + 1 feet of the pole height (Notification Required)
F. Surface gouging on exterior greater than 2" length

5.003 Indicate if any of the following signs of overloading are observed on the pole. Select all that apply. (Enabled by 5.006 [C])
A. Excessive lean (approximately 10% or more of the pole height), caused by erosion of soil at groundline (Notification Required)
B. Excessive lean not caused by erosion of soil (Notification Required)
C. Leaning at the top of pole greater than approximately 5% of the height of the pole above ground with equipment (i.e. transformers, capacitors, etc.)
D. Bowing of the pole at or near the mid-height due to from guys

POLES - STEEL (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?

A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

17.001 Are any of the following structure conditions observed? Select all that apply.
A. Defects on or around structure (unauthorized attachment, 3rd party structure, signs of burning/fire) (Enables 17.002
B. Structural failure (corrosion, denting/damage, anchor/foundation damage, mastarm out of plumb) (Enables 17.003)
C. Pole lean (Enables 17.004)
D. Animal nest with potential to contact energized component or interfere with equipment operation (Notification Required)
E. No abnormal conditions

17.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 17.001 [A])
A. Unauthorized attachment (Notification Required)
B. 3rd party structure touching or surrounding SCE structure (Notification Required)
C. Burn marks or signs of exposure to fire

17.003 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 17.001 [B])
A. Corrosion on pole or hardware
B. Denting or damage to pole
C. Damage to anchor bolts or foundation (Notification Required)
D. Mastarm out of plumb

17.004 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 17.001 [C])
A. Pole leaning - public hazard (Notification Required)
B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
C. Pole leaning less than 1 foot per 10 feet of pole height

POLES – TREE (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No

C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes (Disabled by SV001 [B])
B. No (Disabled by SV001 [B])
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

STREETLIGHT ONLY POLES - WOOD (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.022, 0.024, 0.027, 1.002, 1.004, 1.007, 1.008, 1.009)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (E2 Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?

A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])

A. Yes (Disabled by SV001 [B])
B. No (Disabled by SV001 [B])
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?

A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

1.009 Are any of the following structure conditions observed? Select all that apply.

A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 0.024)
B. Structural failure (holes, damage) (Enables 1.002)
C. Construction faults (decay pockets, soil erosion) (Enables 1.004)
D. Pole lean (Enables 1.007)
E. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
F. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 1.009 [A])

A. Contamination from SCE equipment (Notification Required)
B. Unauthorized attachment (Notification Required)
C. 3rd party structure touching or surrounding SCE structure (Notification Required)
D. Burn marks or signs of exposure to fire

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 1.009 [B])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)

1.004 Indicate if there are any of the following types of construction faults. Select all that apply. (Enabled by 1.009 [C])
- A. Exposed decay pocket at ground line where part of shell is gone (Notification Required)
- B. Evidence of soil erosion around base of pole (Notification Required)

1.007 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 1.009 [D])
- A. Pole leaning - public hazard (Notification Required)
- B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
- C. Pole leaning less than 1 foot per 10 feet of pole height

STREETLIGHT ONLY POLES - STEEL (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027, 17.001, 17.002, 17.003, 17.004)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
- A. No (E2 Notification Required) (Enables 0.005C)
- B. Yes (Enables 0.005C)
- C. No structure number present (Enables 0.005C)
- D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
- A. Yes
- B. No

0.005D Do visibility strips require replacement?
- A. Yes
- B. No
- C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

17.001 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 17.002)
- B. Structural failure (corrosion, denting/damage, anchor/foundation damage, mastarm out of plumb) (Enables 17.003)
- C. Pole lean (Enables 17.004)
- D. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

17.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 17.001 [A])
- A. Unauthorized attachment (Notification Required)
- B. 3rd party structure touching or surrounding SCE structure (Notification Required)
- C. Burn marks or signs of exposure to fire

17.003 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 17.001 [B])
- A. Corrosion on pole or hardware
- B. Denting or damage to pole
- C. Damage to anchor bolts or foundation
- D. Mastarm out of plumb

17.004 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 17.001 [C])
- A. Pole leaning - public hazard (Notification Required)
- B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
- C. Pole leaning less than 1 foot per 10 feet of pole height

STREETLIGHT ONLY POLES - CONCRETE (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027, 18.001, 18.002, 18.003)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
- A. No (E2 Notification Required) (Enables 0.005C)
- B. Yes (Enables 0.005C)
- C. No structure number present (Enables 0.005C)
- D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
- A. Yes
- B. No

0.005D Do visibility strips require replacement?
- A. Yes
- B. No
- C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

18.001 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 18.002)
- B. Structural damage (Fracture, buckling, cracks, exterior damage) (Enables 18.003)
- C. Damage to Anchor Bolts or foundation (Notification Required)
- D. Animal nest with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

18.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 18.001[A])
- A. Unauthorized attachment (Notification Required)
- B. 3rd party structure touching or surrounding SCE structure (Notification Required)
- C. Burn marks or signs of exposure to fire

18.003 Indicate if any of the following types of structural damage are observed on the pole. Select all that apply. (Enabled by 18.001 [B])
- A. Fracture or buckling of exterior wall (Notification Required)
- B. Visual cracks or rupture of exterior surface exposing interior (Notification Required)
- C. Vandalism that affects the structural integrity (i.e. gun damage) (Notification Required)

DOWN GUYS (0.014F, 13.001A, 13.002, 13.004, 13.005, 13.006. 13.007, 13.008, 13.009, 13.010, 13.012, 13.013, 13.014)

0.014F How many SCE down guys are installed on this structure?

A. Answer choices will be 1-10

13.004 Are any of the following down guy conditions observed? Select all that apply.

A. Damage (broken, missing, loose, guys, hardware or anchors) (Enables 13.001A)
B. Inadequate clearance (Enables 13.002)
C. Sag or extreme slack (Notification Required)
D. No abnormal conditions

13.001A Indicate if any of the following types of damage to SCE distribution down guys are observed. Select all that apply. (Enabled by 13.004 [A])

A. Guys broken/damaged, pole leaning, public hazard (Notification Required)
B. Guys missing, pole leaning, public hazard (Notification Required)
C. Guys broken/damaged, pole not leaning (Notification Required)
D. Guys missing, pole not leaning (Notification Required)
E. Anchor rods broken/corroded, pole leaning, public hazard (Notification Required)
F. Anchor rods missing, pole leaning, public hazard (Notification Required)
G. Anchor rods broken/corroded, pole not leaning (Notification Required)
H. Anchor rods missing, pole not leaning (Notification Required)
I. One or more anchor rods not visible (e.g. buried, obstructed, etc.), unable to determine condition

13.002 Is there inadequate clearance between down guy and any of the following? Select all that apply. (Enabled by 13.004 [B])

A. SCE Energized components (Notification Required)
B. SCE non-energized electrical components (Notification Required)
C. Communication facilities
D. Other

13.006 Which of the following SCE distribution down guy anchor types exist? Select all that apply.

A. 3 Eye (Enables 13.007, 13.008)
B. 2 Eye (Enables 13.010)
C. 1 Eye (Enables 13.011)
D. Buried (Enables 13.012)
E. Extension rod (Enables 13.013)
F. No anchor present
G. Other (comment) (Enables 13.014)
H. Unable to determine

13.007 Quantity of 3 Eye anchors (Enabled by 13.006 [A])

A. Answer choices will be 1-10

13.008 Indicate the type for all 3 Eye Anchors by identifying the stamp or construction configuration. Select all that apply. (Enabled by 13.006 [A])

A. C-1¼-10
B. C-1-10
C. C-1¼
D. C-Rock Anchor
E. D
F. M26
G. J
H. K Triple Eye (K Trip)
I. M
J. PISA (Enables 13.009)
    - PHOTO: Capture a picture of each distribution guy anchor.
K. Unable to determine – no stamp
L. Unable to determine – stamp altered/tampered
M. Unable to determine – stamp unreadable
N. Unable to determine – no access to anchor

13.009 Is there truck access to the PISA anchors at the time of inspection: (Enabled by 13.008 [J])

A. Yes, truck access exists
B. No, truck access is not possible
C. Unsure, but truck access may be possible
D. Unable to determine

13.010 Quantity of 2 Eye anchors (Enabled by 13.006 [B])

A. Answer choices will be 1-10

13.011 Quantity of 1 Eye anchors (Enabled by 13.006 [C])

A. Answer choices will be 1-10

13.012 Quantity of buried anchors (Enabled by 13.006 [D])

A. Answer choices will be 1-10

13.013 Quantity of anchor extension rods (Enabled by 13.006 [E])

A. Answer choices will be 1-10

13.014 Quantity of other anchors (Enabled by 13.006 [G])

A. Answer choices will be 1-10
    - PHOTO: Capture a picture of each distribution guy anchor. Include any stamp/marking if visible.

RISERS/TERMINATIONS (14.003)

14.003 Indicate if any of the following Riser conditions are observed on the structure. Select all that apply or select "No abnormal conditions".

A. Cables in Riser exposed (Notification Required)
B. Riser broken (Notification Required)
C. Riser swollen (Notification Required)
D. In contact with animal nest (Notification Required)
E. Non-Schedule 80 Riser installed
F. No abnormal conditions

SOUTHERN CALIFORNIA EDISON
TRANSMISSION AND DISTRIBUTION

Distribution Inspection and Maintenance Program (DIMP)

2022— FOURTH QUARTER ISSUE

October 28, 2022

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►SCE Internal◄

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Distribution Inspection and Maintenance Program (DIMP)

Revision Summary

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Effective Date: October 28, 2022

Overview

The main purpose of this revision summary is to describe new revisions to this manual. (Some or all of the information may have been previously communicated to field personnel by other means.)

Table 1 lists the revisions. Clickable page/sheet numbers link directly to individual revisions or the first of a series of revisions.

Table 2 defines four types of revisions: (1) Admin (Administrative), (2) Technical, (3) New, and (4) Pilot.

Note: **Admin** *and* **Technical** *revisions to existing standards or existing* **Pilot** *projects are identified with change bars* **|** *in the left margin.* **New** *standards (as well as new pilot projects) do not receive change bars. Editorial revisions, such as corrections to spelling, do not receive change bars.*

A Getting Help section provides contact information.

Table 1: Revisions

Chapter	Page	Description	Type
IN-1	3,9	Added hazard conditions (e.g. P1 and P2) that may be found on assets belonging to third party CIPs.	Technical
IN-2	2	Added hazard conditions (e.g. P1 and P2) that may be found on assets belonging to third party CIPs.	Technical

Table 2: Revision Types

Type	Definition
Admin	Administrative revisions do not significantly affect design, construction, maintenance or operation of the electrical distribution, substation, and transmission systems. They do not require Standards Review Team (SRT) or management approval; however, they have been approved by other organizations, as appropriate. They may include updates to SAP codes, updates to references, updates to standards for clarity, or deletions of outdated information.
Technical	Technical revisions are engineering changes to existing standards. They affect the design, construction, maintenance or operation of the electrical distribution, substation, and transmission systems. They require SRT and management approval.
New	Refers to a new standard. New technical standards require SRT and management approval.
Pilot	A *Pilot* is an in-field evaluation of a piece of equipment or work method, with the intention of approving for standardized use. Pilot standards will have a PILOT watermark so that they are easily identified throughout this manual.

Getting Help

Technical Issues

If you have any comments, corrections, questions, or suggestions concerning manual revisions, please contact one of the following individuals at the numbers provided, or click on the name to send an email:

- Alaira Bilek (Manager) — PAX: 54156 Outside: (714) 702-4763
- Erfan Bambad — Mobile: (949) 538-7919
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Address Corrections

Send address changes to:

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ATTN: Alaira Bilek

Vik Trehan

Director, Design Engineering & Work Management

GE–TOC: General

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GE–1: General Overview of Distribution Inspection and Maintenance Program

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GE–1: General Overview of Distribution Inspection and Maintenance Program

1.0 Introduction

1.1 Mission Statement

The Distribution Inspection and Maintenance Program (DIMP) seeks to ensure public and worker safety and regulatory compliance by completing scheduled Detailed Inspections and Grid Patrols, as described in Chapter IM-2 of the Distribution Operations Maintenance Policies and Procedures (DOM) Manual and in conformity to the California Public Utilities Commission's (CPUC) General Order (G.O.) 165 and performing Distribution Maintenance, as described in Chapter IM-3 of the DOM, in accordance with G.O. 95, G.O.128, Southern California Edison (SCE) standards, and good utility practice.

The purpose of this manual is to provide guidance to the field inspectors who perform detailed inspections and patrols. This manual also provides the guidelines for G.O. 95/128 infractions and maintenance activities to be properly identified, correctly rated, and recorded in a timely manner.

1.2 Program Overview

The DIMP is an ongoing Company-wide program established to maintain the distribution system in accordance with good utility practices and the CPUC's G.O. 95, G.O. 128, and G.O. 165.

SCE has developed and improved its various maintenance and inspection programs to ensure the safety of its workers and the general public, as well as to provide reliable service to our customers.

General Order 165 was enacted on March 31, 1997 to establish maximum time intervals of inspection frequency of all electric distribution facilities within the jurisdiction of the CPUC. The basic premise of G.O. 165 is that all distribution assets must be patrolled every year for safety and reliability issues and the identification of significant G.O. 95 and 128 discrepancies. General Order 165 also requires these same assets to have a close up detailed inspection every 5 years (or less) to identify safety and reliability issues as well as all G.O. 95 and 128 discrepancies.

DIMP is SCE's approach to combining these two worthwhile endeavors into one efficient and cost effective program. This is a very large undertaking for SCE as there are over 2 million assets to be inspected and numerous SCE organizations involved.

1.3 Organizational Responsibilities

A. Maintenance and Inspection Program Oversight

Maintenance and Inspection Program Oversight (M&IPO) is responsible for oversight and improvement of the DIMP, including:

- ☐ Resolving all CPUC audits of G.O. 95/128/165
- ☐ Strategic direction of the M&I program and governance of policies, including frequency, scope, inspection criteria, corrective action time frames, and documentation of inspection and repair requirements
- ☐ Providing technical advisory staff
- ☐ Providing annual and informal training

- ☐ Developing performance measures
- ☐ Analyzing and tracking program department performance
- ☐ Providing staff to manage and/or support audits conducted by the CPUC
- ☐ Providing oversight of notification process, including developing enhancements and oversight reports
- ☐ Responsible for Aviation, Filing, and Maintenance (AF&M) program
- ☐ Responsible for supporting aerial program quality reviews

B. Distribution Construction and Maintenance

Distribution Construction and Maintenance (DC&M) is responsible for identifying and scheduling resources to achieve program goals and seeking to ensure:

- ☐ Discrepancies are properly identified and rated per policy
- ☐ Rated discrepancies are recorded timely
- ☐ Priority 2 rated discrepancies are reviewed prior to Work Management System (WMS) upload
- ☐ Resultant Maintenance is scheduled properly
- ☐ Maintenance (DC&M) is completed safely and according to policy

C. Overhead Detail Inspections

Overhead Detail Inspections is responsible for identifying and scheduling resources to achieve program goals and seeking to ensure:

- ☐ Overhead Detail Inspections (ODIs) are completed and timely
- ☐ Annual Grid Patrols (AGPs) are completed correctly and timely
- ☐ Repair by Inspector (RBI) is performed during inspections when authorized by Labor Agreement
- ☐ Streetlight detailed inspections are completed correctly and timely
- ☐ Discrepancies are properly identified and rated correctly
- ☐ Rated discrepancies are recorded timely
- ☐ Priority 2 rated discrepancies are reviewed by a Gatekeeper after the notifications have been by the Overhead Detail Inspector.
- ☐ Inspections are completed safely and according to policy

D. Substation Construction and Maintenance Field Apparatus

Substation Construction and Maintenance (SC&M) Field Apparatus is responsible for identifying and approving equipment as described in IN–1, Attachment 1–2 to allocate resources for achieving program goals and seeking to ensure:

- ☐ Assigned inspections are completed correctly and timely
- ☐ Infractions and maintenance activities are identified, rated correctly, and recorded timely
- ☐ Maintenance is completed safely and according to policy

E. Information Technology System Support and Administration

Information Technology (IT) System Support and Administration is responsible for identifying and allocating resources to achieve DIMP goals by ensuring recording devices and the WMS are functioning properly.

F. Compliance and Quality Control

Compliance and Quality Control is responsible for administering an effective quality assurance program, assessing compliance with regulatory requirements and supporting continuous improvement of the DIMP.

G. Environmental Requirements

For equipment inspection activities that occur in open space areas and/or on public lands, activities must follow the applicable environmental requirements. Activities conducted in natural areas, areas with historic or cultural resources, or areas in or adjacent to wetlands or waters have the highest potential for impacts. It is important to avoid impacts to the greatest extent possible on private or public lands; but we must be particularly sensitive when working on public lands such as U.S. Forest Service, National or State Parks, and Bureau of Land Management properties. Of special concern are sensitive species and their habitats, waterways, associated upland areas, and archaeological resources.

To reduce potential impacts to environmental resources and to ensure public land management agencies are notified as appropriate, engage the Environmental Services Department (ESD) at environmentalrequirements@sce.com or (833) 723-2362. Additionally, contact the ESD for further guidance if these guidelines cannot be followed to complete inspections in a safe manner, or if there is a change in inspection scope. For inspections occurring within public lands, contact Government Lands for applicable access requirements (rpgovernmentlands@sce.com). Refer to DOM IM-8 for environmental guidelines.

H. Distribution Aerial Inspection Program

In April 2019, SCE launched a robust Aerial Inspection Program to support SCE's Wildfire Mitigation Plan (WMP) which supplements SCE's ground-based inspections. The Aerial Inspection Program was deployed to reduce wildfire risks by assessing assets in High Fire Risk Areas (HFRAs) from the air, enabling detection of Priority 1 and 2 conditions not visible from the ground.

I. Pole Program Management

The Pole Program Management (PPM) group administers the Pole Replacement Program, which encompasses the visual and intrusive testing of transmission and distribution wood poles, including necessary repair, reinforcement, and replacement in alignment with remediation time frame requirements.

J. Vegetation Management

The Vegetation Management (VM) department is responsible for all line-clearing activities occurring within SCE’s Distribution districts. VM Managers and Senior Specialists work with SCE’s vegetation contractors who are responsible for maintaining vegetation-to-line clearances in order to comply with regulations such as General Order 95, Rule 35 and 37, and California Fire Public Resources Code 4293.

2.0 Definitions

2.1 Annual (Inspection)

Twelve consecutive calendar months starting the first full calendar month after an inspection is performed, plus three full calendar months, not to exceed the end of the calendar year in which the next inspection is due.

2.2 Communication Lines

The continuous set of SCE communication cables, components, and appurtenances, located outside of substations.

2.3 Discrepancy

A noteworthy material or structural deficiency; a condition that does not meet a SCE standard or specification or General Order 95 and General Order 128 requirement; or, a condition that left unresolved (in the opinion of the inspector) presents a hazard to the public or workers; or, a condition that will negatively impact system reliability.

2.4 Good Utility Practice

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts, which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practices is not intended to be any one of a number of optimum practices, methods, or acts to the exclusion of all others; but rather acceptable practices, methods, or acts generally in practice in the region.

2.5 Inspections

A. Aerial Inspection

Performed mainly via drones to support with 360-degree inspections as well as some use of helicopters. Potential ignition risk conditions in HFRA locations are identified; Priority 1 and 2 notifications on findings and additional findings to support with data collection are created.

B. Detailed Inspection

A close proximity evaluation of an SCE distribution asset. Distribution assets subject to underground detail inspections include subsurface and pad mounted enclosures, switches, transformers, visible cables, and associated components.

Distribution assets are also subject to overhead detail inspections include poles, transformers, capacitors, regulators, visible wires and/or cables, and associated line elements.

- Inspector duties include:
  - — Identifying discrepancies rating and recording conditions
  - — Performing minor corrective action
  - — Documenting Priority 2 rated safety and reliability conditions created by third parties on or near SCE structures.

Conditions assigned a priority rating are recorded electronically in a field tool. Additional data recorded in the field tool includes:

- Functional location (FLOC) or equipment number, problem statement, date found, and unique employee identifier.
- Electronically recorded data is uploaded to the WMS.

C. Grid Patrol

Basic visual evaluation of SCE's distribution assets located within a specified boundary. Distribution assets subject to grid patrols include above ground structures, overhead conductors and equipment; as well as entryways to subsurface enclosures and vaults. Grid Patrols are typically conducted by land vehicle; however, patrols may be conducted by foot or by aircraft (helicopter or fixed wing) in remote areas. Conditions assigned a priority rating are recorded electronically in a field tool.

Additional data recorded in the field tool includes, but not limited to:

- FLOC or equipment number
- Problem statement
- Date found
- Unique employee identifier

Electronically recorded data is uploaded to the WMS. The AGP should not be considered complete for a grid until, for all structures with required assets within the grid, SCE has either documented a successful visual inspection (by vehicle, foot, or air) or documented a permissible justification for an incomplete inspection (that is, permitting, government access restrictions, or other reasonable circumstances).

Refer to IN–2, Section 2.0 for details.

D. Emergency Patrols

Typically performed following a circuit interruption or system event to identify affected facilities and safety hazards, as well as to perform initial damage assessments. Results are reported to the responsible manager and/or Grid Control Center and recorded.

E. Infrared Thermography

The use of an infrared imaging and measurement camera to "see" and "measure" the thermal energy emitted from an object.

F. Repair by Inspectors (RBI)

Inspectors also identify and perform certain maintenance tasks during the course of a Detail Inspection or Grid Patrol. Upon completion of these tasks, the inspectors will accurately record work completed in the field tool and upload recorded data to the WMS.

G. Streetlight Inspections

Conducted as visual evaluations.

H. Intrusive Pole Inspection

Involves boring of holes at different levels to identify degradation. These inspections are categorized as either:

- Partial Dig
- Full Treatment
- OR Sound and Bore
  - — For poles set in asphalt or concrete) and performed on a 15-year cycle for poles that have been in-service for 20 years. Inspections are typically performed by contract personnel.

Visual and Intrusive test results are recorded and submitted to the responsible program administrator for review and input into a WMS.

2.6 Maintenance

As used herein, encompasses inspection, assessment, maintenance, repair, and replacement activities performed with respect to Transmission and Communication Lines.

A. Repair

The restoration or reconditioning of equipment, structures, or components.

B. Replacement

The installation of new or refurbished equipment, structures, or components.

2.7 Safety Hazard

A condition that poses a significant threat to human life or property.

2.8 Work Management System (WMS)

Any database used to collect data, schedule, and monitor pending and completed activities. Examples include SAP and Consolidated Mobile Solutions (CMS).

3.0 Action Priortization

There are three basic elements to the overall inspection program: 1) Identification of actionable items, 2) Risk assessment and action prioritization, and 3) Actual repairs.

3.1 Identification and Repair of Actionable Items

Information required to identify and repair actionable items (Items 1 and 3 in Section 3.0 above) are contained in the various SCE standards manuals as well as G.O. 95 and 128. The Condition Guides included in this document provide typical conditions, criteria and tests that have associated Priority 1 and 2 ratings. These Condition Guides are intended only to serve as aids, and do not, nor cannot, contain all the possible safety and reliability issues and/or G.O. discrepancies that the inspector is expected to identify.

- A condition that conflicts with SCE standards, G.O. 95 or G.O. 128 requirements;
- OR a condition that, left unchecked (in the opinion of the Inspector), presents a hazard to the public or utility worker, property, environment, or will negatively impact system reliability.

Discrepancies identified during detail inspections and grid patrols or while performing

associated tasks are cross-referenced with the Risk Assessment Matrix and as necessary, conditions are assigned a priority rating according to the Assigning Priority Levels.

3.2 Risk Assessment and Action Prioritization

Risk assessment and action prioritization of repair efforts for these actionable items (Item 2 in Section 3.0 above) requires evaluation of site and equipment specific conditions by the inspector to determine the appropriate priority rating and action time frame.

3.3 E1 Notification

The E1 notification provides the detailed information needed for corrective actions to be taken following the identification of a potential violation or safety hazard on SCE's facilities.

The E1 notification is also defined as:

- Repair notifications created in SAP to document and record corrective actions on SCE facilities and equipment.
- The E1 notification will provide the detailed information needed for corrective actions to be taken following the identification of a potential violation or safety hazard on SCE's facilities.
- Each condition or discrepancy identified in the field shall be assigned its own E1 notification.

3.4 Notification Priority Rating with Remediation Time Frames

Transmission and Distribution (T&D) uses a three-priority ratings system: 1) Priority 1 (E1P1) Notifications, 2) Priority 2 (E1P2) Notifications, and 3) Priority 3 (E1P3) Notifications. This system ranks the potential impact to safety or reliability of a condition. These may be conditions which present a hazard to workers or to the public or conditions which may cause a system failure. The ratings also define the maximum corrective action time frames to remediate the condition.

The three priorities are as follows:

A. Priority 1 (E1P1) Notifications

Priority 1 notification conditions are an immediate risk of high potential impact to safety or reliability and require temporary or permanent corrective action within 72 hours. The site must be made safe to the public via immediate corrective action taken by the first responder if necessary. Otherwise, T&D personnel are required to remain on-site, at a safe distance, until relieved by a company representative. It is acceptable to briefly leave the site if it is for the purpose of making the site safe as long as steps are taken to limit access to the site by the public until return. For all immediate corrective actions taken, and temporary repairs performed it shall be documented in SAP to include a description of what was done, when the work was performed, and who performed the work.

The on-site requirement does not apply to the following exclusions; however, temporary or permanent corrective action is still required for these exclusions within 72 hours:

- T&D notification derived from calculated values:
  - — Intrusive Pole Inspections (IPI)
  - — Overhead Infrared Inspections

— Pole Loading Calculations

- Special programs or projects such as:
  — Aerial Inspection Program
  — Deteriorated Vault and Manhole Program (DVMP)

1. E1P1 Remediation Time Frames

   A temporary or permanent repair is required within 72 hours of the notification date. If a temporary repair is made:

   - The E1P1 notification can be completed for the temporary repair, then an E1P2 notification is required for the permanent repair;
   - OR the E1P1 notification can remain open and a permanent repair must be made within 21-calendar days or the notification date.

   If the permanent repair extends beyond 21-calendar days of the notification date, the following actions are required:

   ☐ Complete the E1P1 notification for the temporary repair made
   ☐ Create an E1P2 notification for the permanent repair

   Exceptions to the requirement to complete the E1P1 notification and create an E1P2 notification if a permanent repair extends beyond 21 calendar days:

   Claims and Storms

   - The associated E1P1 notification may be kept open longer than 21-calendar days for a permanent repair to be made if necessary.
   - In each such instance, it shall be documented in the system of record that the E1P1 is being left open to ensure proper tracking for the purpose of Claim and/or Storm accounting.

B. Priority 2 (E1P2) Notifications

Priority 2 notifications are for conditions which pose a risk of moderate potential impact to safety or reliability. These notifications require action anywhere from the same day up to 36 months of the notification date depending on the condition and the location. Repairs completed by inspectors during an inspection are classified as Priority 9 notifications.

The Gatekeeper will review issue notifications, using the appropriate standards that are in place, and can reassess time frames, if necessary, to allow for the condition to be remediated within the required compliance time frames:

1. E1P2 Remediation Time Frames

   - Same day Find & Fix notifications require all notification dates to be the same.
   - Conditions that create a fire risk located in CPUC Tier 3 Extreme Fire Threat Area (overhead only) require corrective action within 6 months of the notification date.
   - Conditions that create a fire risk located in CPUC Tier 2 Elevated Fire Threat Area / Non-CPUC HFRA (SOB322) (overhead only) require corrective action within 12 months of the notification date.
   - Conditions that compromise worker safety require corrective action within 12 months of the notification date.

- All other conditions require corrective action within 36 months of the notification date.

2. Exceptions To Remediation Time Frames

Exceptions to remediation time frames are conditions in a HFRA that are identified as not creating a fire risk. These conditions are determined by Gatekeeper review, risk assessment, or an engineering analysis (that is, Intrusive Pole Inspection) and may be classified as a Non-High Fire Threat Notification with a remediation time frame up to 36 months of the notification date.

To be classified as a Non-High Fire Threat Notification, the following condition(s) must be met:

- Remove the High Fire status from the notification AND
- Enter in the Notification Long Text “NonFireRiskNotification” followed by a description of why the condition is not a fire risk.

OR

- Enter in the Notification Long Text “NonElevatedFireRiskNotification” followed by a description of why the condition is not an Elevated fire risk

Notifications created on the assets below can exceed 6 or 12 months in high fire areas, but cannot exceed 36 months:

- Underground assets
- Apparatus assets
  — Apparatus notifications must have the Main Work Center of Apparatus

Exceptions to remediate time frames are those E1P2 notifications that are not reviewed by a Gatekeeper due to their automation:

- Same day Find & Fix
- Notify Customer/Communication Infrastructure Provider (CIP)
- Intrusive Pole Inspection (IPI)
- Pole Loading Failures

C. Priority 3 (E1P3) Notifications

Priority 3 notifications are for conditions which pose a risk of low potential impact to safety or reliability, GO 95 or GO 128 infractions, and programmatic replacement work.

1. E1P3 Remediation Time Frames

Corrective actions necessary within these remediation time frames appear below:

- Conditions on overhead assets found on or after June 30, 2019 require corrective action within 5 years of the notification date.
- Conditions on overhead assets found prior to June 30, 2019 do not require corrective action within a specified time frame.
- Conditions on non-overhead assets do not require corrective action within a specified time frame.

D. Maintenance Priority Accuracy

Maintenance priorities will be thoroughly evaluated and accurately assigned and maintained. Training and continuing analysis will take place to prevent premature maintenance, and to prevent failure prior to repair or the next scheduled inspection.

A discrepancy not yet entered into WMS can be re-rated when being reviewed by a Gatekeeper (supervisor with qualified electrical worker knowledge) who clearly demonstrates that it was prioritized incorrectly. The discrepancy should then be entered into WMS with the appropriate priority.

3.5 Actual Repairs

Repairs shall be made in conformance with established internal standards. When performing Priority 2 maintenance work, all pending Priority 2 and Priority 3 work on the structure shall be repaired as long as it does not exceed the qualifications of the crew.

4.0 References

4.1 E1 Notification Policy

5.0 Attachments

Attachment 1–1: Assigning Priority Levels

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition

Attachment 1–3: Risk Assessment Matrix

Attachment 1–1: Assigning Priority Levels

Discrepancies identified during Patrols or Detail Inspections requiring remedial action are prioritized according to Table 1–1 below.

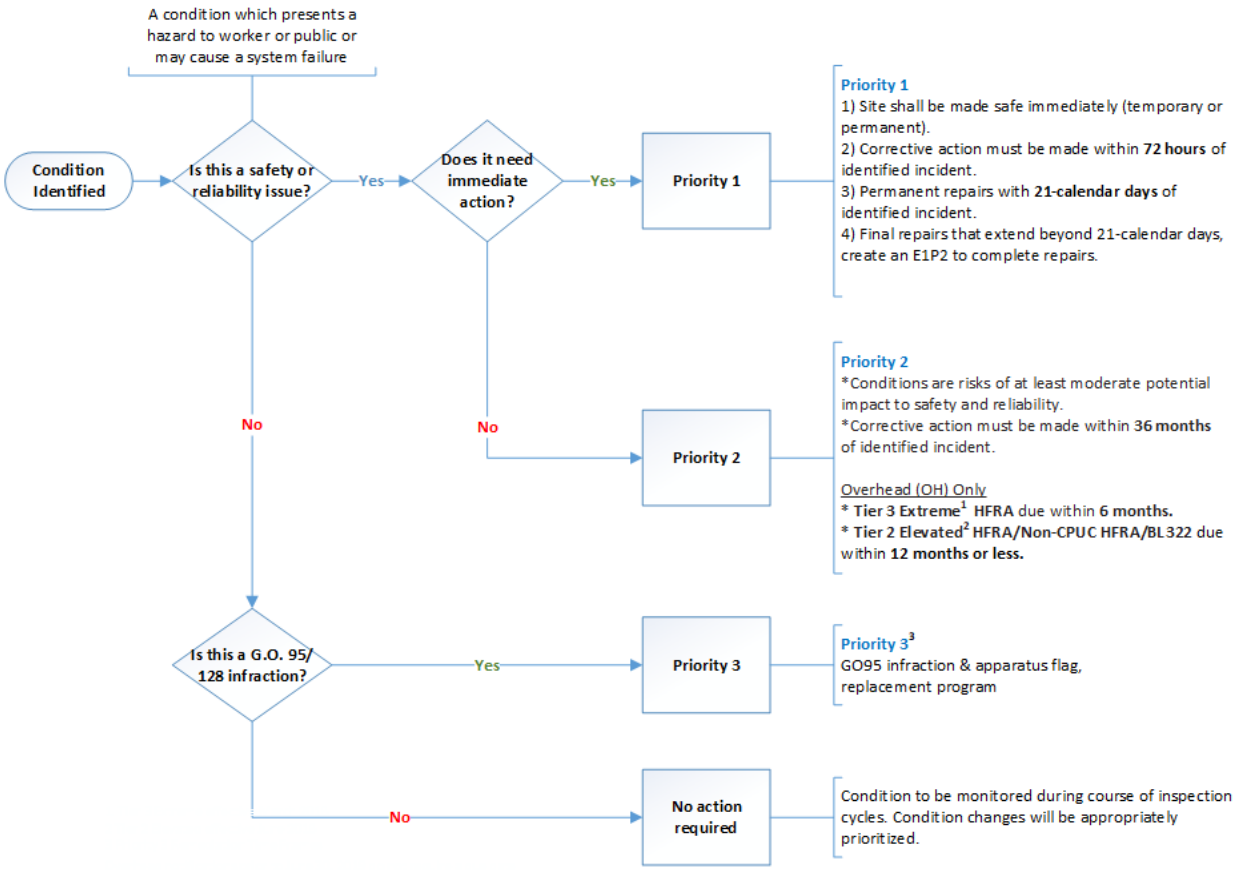
Table 1–1: Priority Rating

Priority	Overhead	Underground	Wood Poles
1	Initiative corrective action	Initiative corrective action	Initiative corrective action
2	Remedy within 36 month[1]	Remedy within 36 months[2]	Remedy within 36 months[1]
3	Remedy within 60 months[3, 4]	Re-evaluate next routine patrol cycle	Re-evaluate next routine patrol cycle

Note(s):

1. SCE HFRA repair time frame:
   - Tier 3 (Extreme) HFRA due within 6 months from the inspection/notification date
   - Tier 2 (Elevated) HFRA/ Non-CPUC HFRA/BL 322 due within 12 months from the inspection/notification date.
2. SCE HFRA Priority repair time frames are applicable only to overhead facilities/structures and underground facilities shall require remediation within 36 months and are not required to comply with HFRA Tier 3 (Extreme) and Tier 2 (Elevated) remediation time frames.
3. Unless discrepancy is exempted per G.O. 95 Rule 18 and Appendix J.
   - Priority 3 Remediation Time Frames
     — Overhead notifications prior to June 30, 2019 do not require a due date
     — Overhead notifications created on or after June 30, 2019 have up to a 5-year due date
     — Underground notifications do not currently require due dates
4. These priority levels are applicable to the maintenance and inspection requirements referenced in G.O. 95 /128/165.
   Please reference E1 Notification Policy for further definition of E1 priority levels and time frames. The Condition Guides included in this document provide typical conditions, criteria and tests that have associated Priority 1 and 2 ratings.
   These Condition Guides are intended only to serve as aids, and do not, nor cannot, contain all the possible safety and reliability issues and/or G.O. discrepancies that the inspector is expected to identify.

Figure 1–1: Priority Inspection Decision Flowchart



Once a condition has been determined to be a Priority 2, the inspector performs a risk assessment to properly establish a reasonable time frame within zero (0) to 24 months. This is done by assessing the condition through determination of the safety and reliability factors in accordance with Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition, and then applying this information to the risk assessment, Attachment 1–3: Risk Assessment Matrix.

Note(s):

1. Tier 3 Extreme HFRA effective March 2018
2. Tier 2 Elevated HFRA effective June 2018
3. Priority 3 Remediation Time Frames:
   - Overhead notifications prior to June 30, 2019 do not require a due date.
   - Overhead notifications created on or after June 30, 2019 have up to a 5-year due date
   - Underground notifications do not currently require due dates.

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition

NOTE Each problem or condition is independent from one another.

Determine Safety Factors

Factors to Consider when Assessing the Safety Risk		
Public/Worker Safety	Property	Environmental
•Near a school/park •In front of a mall •Rear property line •Behind a commercial strip center •In a vacant field •Minor pedestrian traffic •Major intersection •Impossible climbing space	•In a parking lot •In an agricultural area •In a vacant field	•In the desert •In coastal areas •Mountainous •Urban/Rural •Time of season –High wind –Rainy –High heat –Snow •Protective habitats •Hazardous spills •In a high fire risk area
It is important to note that no one factor weighs more than another. Only after you have considered all your surroundings, People/Property/Environment, can you make a true assessment of the risk. Refer to DOM IM-8 for environmental guidelines.		

Identifying the Safety Risk Impact Levels	
No/Slight Safety Impact	Any Condition which has *LITTLE/NO* safety risk to public or worker safety/Property/Environment.
Minor Safety Impact	Any Condition which has *MINOR* safety risk to public or worker safety/Property/Environment.
Moderate Safety Impact	Any Condition which has *MODERATE* safety risk to public or worker safety/Property/Environment.
High Safety Impact	Any Condition which has *HIGH* safety risk to public or worker safety/Property/Environment.

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition
(Continued)

Each problem or condition is independent from one another.

Determine Reliability Factors

CONSTRUCTION TYPE

- ☐ What is the component the condition is associated to?
- ☐ What is the construction type of the component?
- ☐ Is there any electrical equipment associated to the component?
- ☐ Where is the condition located on the component?
- ☐ What is the stress factor?
  - — Weight: high/medium/low
  - — Span length: long/medium/short

CIRCUIT TYPE/LOCATION

- ☐ What is the highest voltage “Directly” associated to the component?
- ☐ What is the highest voltage “Indirectly” associated to component?
- ☐ What is the load factor: High/Medium/Low
- ☐ Is the component located behind any fusing?

Attachment 1–3: Risk Assessment Matrix

Select the safety impact level to people, property, and environment aligned with the condition of the component regarding the risk to the system.

Reliability (Failure Risk)	No/Slight Impact	Minor Impact	Moderate Impact	High Impact
Component Failure could lead to System Failure	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-12 Months	**Priority 2** Action Required 0-3 Months	**Priority 1** Action Required Immediately
Component Has Failed No significant risk to system	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-36 Months	**Priority 2** Action Required 0-3 Months
Potential Component Failure	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-12 Months

Safety (People/Property/Environment)

Note(s):

1. This “Risk Assessment Matrix” is a reference tool intended to give inspectors guidelines to assign a reasonable time frame for the remediation of any distribution facility condition.
2. Starting March 1, 2018, Overhead Equipment in an Extreme High Fire Area has HFRA an allowed maximum of 6 months. Starting June 30, 2019, Priority 3 notifications on Overhead Equipment have an allowed maximum of 60 months.
3. System Failure is when the system no longer operates. (An interruption of service caused by damaged equipment preventing the system to perform).
4. Component Failure is when a piece of equipment can no longer perform the function it was designed for, but the system continues to operate. (Abnormal elbow temperature that is connected to the transformer.) (The elbow has failed, however, the system is still operating).

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GE–2: Inspection and Maintenance Training

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GE–2: Inspection and Maintenance Training

1.0 Purpose

Training for the SCE Distribution Inspection and Maintenance Program (DIMP) will promote safety and circuit reliability on all electrical distribution facilities for both underground and overhead systems through routine inspections.

2.0 Training Objectives

Initial training and annual refresher training is mandatory and will be provided to all personnel inspecting distribution assets to ensure SCE will meet all inspection and maintenance objectives. These objectives include:

- Using proper field inspection procedures
- Accurately and timely documenting and reporting findings via the Work Management System (WMS)
- Prioritizing items identified for follow-up maintenance
- Compliance with CPUC-required maintenance cycles on structures, equipment, conductors and/or components

Inspectors will be tested at completion of training.

3.0 Operations

The Manager of Maintenance and Inspection is responsible for determination of training program requirements.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 128, Rules for Construction of Underground Electric Supply and Communication Systems

4.3 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.4 SCE Distribution Overhead Construction Standards (DOH)

4.5 SCE Distribution Underground Construction Standards (DUG)

4.6 SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

4.7 SCE Accident Prevention Manual (APM)

4.8 SCE Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.9 DOM IM-3, Distribution Maintenance Program

4.10 Work Management System

4.11 Underground Corrosion Inspection and Maintenance Manual

4.12 SCE Training Manual for Performing Grid Patrol, Detail Inspection and Intrusive Inspection of Wood Pole Structures

IN–TOC: Inspection

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IN–1: Overhead Detail Inspections

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IN–1: Overhead Detail Inspections

1.0 Purpose

The purpose of the Overhead Detail Inspection (ODI) is to visually evaluate SCE's overhead electrical distribution facilities with the intent to identify and document obvious discrepancies and validate accuracy of asset information and facility inventory mapping references for appropriate corrective action. Inspectors also identify and perform certain maintenance tasks during the course of a detailed inspection. Overhead detail inspections also accomplish the annual patrol of the grids, including streetlights.

2.0 Methods and Procedures

The inspector performs a close in-depth visual inspection of all the overhead electrical distribution facilities, including the streetlights and third party communication assets, within the assigned inspection area. The frequency of ODI is directed elsewhere in this chapter, and in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual.

When inspecting structures with both transmission and distribution assets (e.g., combo poles), observe and identify conditions that require immediate attention (e.g., priority 1) on non-distribution assets, when authorized by the Labor Agreement. If conditions are found at the transmission level, the inspector shall notify their Supervisor who will contact the appropriate Transmission Grid Manager or Senior Patrol (if known) and provide photos and information related to the condition. If the condition is related to SCE communication, contact Telecom Control Center (TCC) - Contact (949) 587-5500.

3.0 Duties of the Inspector

The inspector performs the following tasks for each facility detailed inspection:

3.1 Identification of Discrepancies per the OH Detailed Inspection Guidelines

The ODI inspector performs an in-depth visual examination of each overhead distribution facility, including streetlights and third party communication assets, using the following Overhead Detailed Inspection Guidelines as a guideline. This list is a high level summary of the items and areas to inspect. Additional information showing typical conditions requiring corrective action (Priorities 1 and 2) is shown in the applicable overhead equipment and component Condition Guide attached.

The inspector also identifies and reports any G.O. 95/128 infractions created on or near Distribution facilities by the following:

- Third party communication providers subject to CPUC jurisdiction
- Non-utility third parties that are non-subject to CPUC jurisdiction

3.2 Establishment of Priorities per the Priority Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition Guides, Risk Assessment Matrix

Only Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action thus no action time frame decision is required from the inspector. As discussed in the General Overview Section of this manual, Priority 2 conditions have zero (0) to 36-month time frame options depending on the severity of the situation (unless in a high fire risk area.)

3.4 Performance of Appropriate Minor Repairs at the “Public” Level

The ODI inspector makes minor repairs at the Public level, when authorized by the Labor Agreement, while at the site for the detailed inspection, rather than having other SCE personnel return at a later time to make the repairs.

The following is a list of repairs that the ODI inspector performs:

- ☐ Repair damaged ground molding.
- ☐ Install new and/or repair existing guy guard.
- ☐ Repair damaged visibility strips or install new strips in locations where necessary.
- ☐ Install or repair riser strap.
- ☐ Repair broken risers and exposed conductor.
- ☐ Repair damaged PVC separations, loose holders, and uncapped sweeps
- ☐ Install pole number.
- ☐ Remove unauthorized attachments when safe to do so.
- ☐ Repair open/damaged secondary hand hold and remove minor brush.

Overhead structures present unique public safety exposure and work conditions depending on the height of the necessary repairs from the ground level where public exposure exists.

3.5 Validation of Accuracy of Asset Information and Facility Inventory Mapping References

While at the facility site, the ODI inspector performs the following:

- ☐ Records corrections—found assets, missing assets, asset corrections.
- ☐ Mapping corrections

3.6 Document in the Field Tool

Refer to the Work Management System (WMS) procedures manual.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 SCE Distribution Overhead Construction Standards (DOH)

4.4 SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

4.5 SCE Accident Prevention Manual (APM)

4.6 SCE Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.7 DOM, IM-3: Distribution Maintenance Program

4.8 Work Management System

5.0 Attachments

Attachment 1–1: Overhead Detailed Inspection Guideline

Attachment 1–2: Frequency of Apparatus Inspections

Attachment 1–1: Overhead Detailed Inspection Guideline

1. Condition of Equipment, Apparatus, and Hardware
   - ☐ Broken, chipped, or severely contaminated insulators/Primary insulator or pin above 750 V (cracked/damaged/loose)
   - ☐ Pole switch indicating need for repair
   - ☐ Indication of equipment oil leak
   - ☐ Bulged or discolored capacitor units
   - ☐ Blown or dry fuses, blown surge arresters, broken fuseholders
   - ☐ Streetlights broken or damaged including brackets, mast arms, and lights/globes – public hazard
   - ☐ Damaged anchor bolts
   - ☐ Insulator broken, cracked or loose, floating, squatting, chipped
   - ☐ Insulator tie wire broken/missing/damaged
   - ☐ Animals, birds, foreign material interfering with operation
   - ☐ Evidence of tracking or burning
   - ☐ Broken pins or squatters (primary or secondary)
   - ☐ Broken, bent pole steps
   - ☐ Damaged or missing ground wire molding or ground wire exposed
   - ☐ Condition of transformer's Internal Fault Detector (IFD), if so equipped; see DOM, TR–9.
2. Condition of Pole and Structures
   - ☐ Damage/deteriorated pole
   - ☐ Damage to pole foundation
   - ☐ Crossarm broken, split, or extremely canted
   - ☐ Visually check for pole leaning
   - ☐ Washout or excavation around pole or anchor
   - ☐ Check pole setting depth marked from brand. (Brands are at 10 feet on 60-foot poles and less; at 13 feet for poles taller than 60 feet.)
   - ☐ Damage down guys, guy guard missing (Install guard where required.) – public hazard
   - ☐ Excessive slack on down guys or span guys
   - ☐ Six-foot Fiberglass Guy Strain Insulator installed (upgrade to standard 12-foot version)
   - ☐ Visually check pad-mounted equipment for movement and cabinet secured or locked.
   - ☐ Visually check Buried Underground Residential Distribution (BURD) lids, vault lids, vent pipes, and handhole lids.
3. Conductors and Covered Conductors
   - ☐ Inadequate primary, secondary, or service ground clearances
   - ☐ Exposed conductor (covering falling off) – service drops, secondary, and primary
   - ☐ Excessive slack in primary conductors in high wind areas
   - ☐ Clearance from building, television or radio antenna, billboard signs, scaffolding, streetlights, communication cable or hazardous locations for primary, secondary or services
   - ☐ Trees touching or above primary conductors or covered conductors (overhangs) unless special encased aerial bundled cable (18 inches required)
   - ☐ Hazardous tree conditions, limbs over wire, dead or decaying trees, palm fronds

- ☐ Foreign objects in line, such as kites, Mylar balloons
- ☐ Bare conductors in rack construction
- ☐ Bare service drops
- ☐ Deflection, strain or abrasion on service drops and secondaries
- ☐ Abandoned conductors

4. Risers
   - ☐ Riser straps, blocks broken – public hazard
   - ☐ Opening in riser conduit coupling, damaged – public hazard
   - ☐ Riser in climbing space in rack construction
   - ☐ Missing/Damaged Conduit Riser Label
5. Climbing Space
   - ☐ Obstructions in climbing space (bolts, wire)
   - ☐ Climbing space obstructed by cable TV or phone, and a hazard to climb
6. General Conditions
   - ☐ Unlocked substations, pole switches, equipment
   - ☐ Verify circuit-to-circuit map for additional equipment and tap lines not identified.
   - ☐ Check status of fault indicators with circuit map inventory.
   - ☐ Validate asset information – maps, asset characteristics, location
   - ☐ Unauthorized attachments
   - ☐ Foreign attachments to SCE ground
   - ☐ Conditions for transmission and distribution assets (e.g., combo pole), include but are not limited to:
     - — Pole broken/damaged or excessive leaning
     - — Vegetation contacting or nearly contacting energized lines (e.g., expected to imminently fail and contact energized lines, contact or arcing with bare-wire conductors is highly probable to occur in a high wind event due to vegetation proximity to power lines, appears contact has occurred with primary electric facilities, appears strain or abrasion has occurred with secondary bare open wire)
     - — Broken, damaged, burned or rotted crossarm
     - — Energized conductor with inadequate clearances, bare conductor contacting communication, burned jumpers/connectors, or burned wire
     - — SCE Communication (e.g., broken lashing wire with slack to reach into power space, attachments/repairs poorly secured with tape/rope, broken and hanging strands, down guys, primary/secondary slack and jumpers capable of contacting communication facilities, Transmission/primary/secondary broken down guys hanging in communication space, foreign objects with potential to cause arcing, shorts or conduct electricity across insulators)
     - — Loose, broken, damaged, or missing insulator
     - — Broken/damaged guy in proximity to energized conductor
     - — Leaking oil from the equipment - for transmission, 66 kV and 115 kV potheads
     - — Excessive corrosion (e.g., loss of material/holes in equipment)

- ☐ Conditions for third party communication assets include but are not limited to:
  - — Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures
  - — Loose or broken lashing wire
  - — Improperly secured communication conductor or equipment
  - — Broken, damaged or severely strained communication guy wires
  - — Excessive bowing or bending of pole from potential overloading at communication equipment attachment points
  - — Excessive sag of communication cables causing G.O. 95 infraction(s) or safety issue(s)
  - — Communication messenger and/or cable sag is too tight and creating a G.O. 95 clearance violation for SCE low voltage or high voltage lines
  - — Vegetation straining communication messenger or guy wire and/or causing structural integrity issues

Attachment 1–2: Frequency of Apparatus Inspections

Facility/Equipment[a/]	Inspection Frequency (yr)	DOM Section
Apparatus		
Capacitors, Fixed (Overhead)	5	CA–1
Capacitors,. Fixed (Padmounted)	5	CA–1
Capacitors,. Switched (Overhead)	5	CA–2, CA–3, CA–4
Capacitors, Switched (Padmounted)	5	CA–2, CA–3, CA–4
Fault Interrupters (Padmounted)	5	SW–9, SW–12
Fault interrupters (Underground)	3	SW–9
Network Protectors	1	PD–3
Preferred Emergency Equipment (Overhead & Padmounted)	5	SW–8
Preferred Emergency Equipment. (Underground)	3	SW–8
Reclosers (Overhead)	5	SW–1
Reclosers (Padmounted)	5	SW–13
Regulators	5	TR–4
Remote Controlled Switches (Underground)	3	SW–11
Remote Controlled Switches (Overhead & Padmounted)	5	SW–11

[a/] For inspection frequencies of equipment located in customer substations, co-generation interface sub-stations and small power-production interface substations, see DOM SC-1 Distribution Substations.

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IN–2: Inspection Procedures — Grid Patrols

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1.0 Purpose

The purpose of the Grid Patrol is to conduct an annual visual evaluation of SCE's Electrical distribution facilities with the intent to identify and document obvious discrepancies that require corrective action.

2.0 Methods and Procedures

The Grid Patrol inspector performs a simple visual inspection of publicly accessible electrical distribution facilities, including streetlights, within the assigned inspection area. The frequency of ODI is directed elsewhere in this chapter, and in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual.

The inspections can be performed from vehicles, on foot, or by aircraft. The vehicle method is the most used as it provides the required accuracy while being cost effective. The problem conditions can generally be seen adequately by the naked eye or through the use of binoculars. The Grid Patrol does not require the climbing of overhead structures (poles)/streetlights or the opening of underground structures and equipment. Inspectors shall attempt to inspect all assigned structures from the ground when safe and practical to do so. If a portion of the circuit/streetlight cannot be safely and/or cost effectively inspected from the ground, then that portion shall be bypassed and clearly documented in red on the inventory maps for follow-up air patrol within the required compliance time frame.

Underground facilities such as pad-mounted transformers, BURD enclosures, vent pipes, handholes, and subsurface structure lids are also included as items to be visually observed for public safety hazards during a Grid Patrol. Underground portions of the circuit, including pad-mounted equipment, that are located on rear property lines, within private property, or in limited access communities do not require a patrol as these structures and equipment are in a controlled environment. In these cases the Underground Detail Inspection will be used to ensure compliance.

If the inspector is unable to complete a basic visual inspection of a given asset by vehicle or foot, then an air patrol should be used to timely complete the patrol inspection for that asset.

In the event that permitting, government access restrictions, a state of emergency, or other reasonable circumstances prevent the inspector from timely completing a basic visual inspection of a given asset by vehicle, foot, or air, the justification for the incomplete inspection of the relevant structure must be documented.

The Grid Patrol should not be considered complete for a grid until, for all structures with required assets within the grid, the inspector has either documented a successful visual inspection (by vehicle, foot, or air) or documented a permissible justification for an incomplete inspection (that is, permitting, government access restrictions, or other reasonable circumstances). This documentation should permit SCE to not only capture the percentage of required structures successfully inspected within the grid during the Grid Patrol, but to also capture, on a structure-by-structure basis, whether a given structure was successfully inspected or not, and, if not successfully inspected, the justification for the incomplete inspection.

Regardless of whether an AGP is considered complete or not for internal compliance purposes, for every structure that is not timely inspected, SCE shall make reasonable efforts to complete the inspection as soon as practical given the exception circumstances. For example, if a structure is

not able to be timely inspected because SCE needs a permit, SCE shall make reasonable efforts to obtain a permit and, once the permit is obtained, should complete the inspection of the structure as soon as practical.

When inspecting structures with both transmission and distribution assets (e.g., combo pole), observe and identify conditions that require immediate attention (e.g., priority 1) on non-Distribution assets, when authorized by the Labor Agreement. If conditions are found at the transmission level, the inspector shall notify their Supervisor who will contact the appropriate Transmission Grid Manager or Senior Patrol (if known) and provide photos and information related to the condition. If the condition is related to SCE communication, contact Telecom Control Center (TCC) - Contact (949) 587-5500. See grid patrol guideline section for condition examples.

3.0 Duties of Grid Patrol Inspector

The grid patrol inspector performs the following tasks for each facility in the grid:

3.1 Identification of Hazards and/or Discrepancies per the Grid Patrol Guideline

The grid patrol inspector shall perform annual routine visual examination of each overhead distribution facility, including streetlights, using the following Grid Patrol Guideline as a guideline. This list is a high level summary of the items and areas to inspect. Additional information showing typical conditions requiring corrective action (Priorities 1 and 2) is shown in the applicable equipment and component Condition Guide attached. Priority 3 conditions are generally not identified or documented as part of a grid patrol.

3.2 Establishment of Priorities per the Priority Inspection Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition Guides, Condition Risk Assessment Matrix

Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action; site shall be made safe immediately and corrective action shall be made within 72 hours of reported incident. As discussed in the General Section of this manual, Priority 2 conditions have zero (0) to 36-month time frames (unless in a high fire risk area). Priority 3 (overhead) conditions have remediation time frames up to a 5-year due date if notification was created on or after June 30, 2019. Overhead notifications prior to June 30, 2019 do not require a due date.

3.4 Performance of Appropriate Routine Repairs

The inspector also repairs or installs, when authorized by the Labor Agreement, new guy guard/markers on down guys in general public proximity or exposed to pedestrians, areas easily accessible to the general public, parking lots, or areas exposed to vehicular contact. Any repair by inspector during a patrol will be recorded in the field tool.

3.5 Document in the Field Tool

Refer to the Work Management System (WMS) procedure manual.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 Distribution Overhead Construction Standards (DOH)

4.4 Distribution Operations and Maintenance Policies and Procedures (DOM)

4.5 Accident Prevention Manual (APM)

4.6 Environmental Policies and Procedures (EN) & ESD Waste Management Manual

4.7 DOM, IM-3: Distribution Maintenance Program

4.8 Work Management System

5.0 Attachments

Attachment 2–1: Grid Patrol Guideline

Attachment 2–1: Grid Patrol Guideline

1. Condition of Equipment, Apparatus, and Hardware
   - ☐ Broken, chipped, or severely contaminated insulators/Primary insulator or pin above 750 V (cracked/damaged/loose)
   - ☐ Pole switch indicating need for repair
   - ☐ Indication of equipment oil leak
   - ☐ Bulged or discolored capacitor units
   - ☐ Blown or dry fuses, blown surge arresters, broken fuse-holders
   - ☐ Streetlights broken or damaged including brackets, mast arms, and light/globes — public hazard
   - ☐ Damaged anchor bolts
   - ☐ Insulator broken, cracked or loose, floating, squatting, chipped
   - ☐ Insulator tie wire broken/missing/damaged
   - ☐ Animals, birds, foreign material interfering with operation
   - ☐ Evidence of tracking or burning
   - ☐ Broken pins or squatters (primary or secondary)
2. Condition of Pole and Structures
   - ☐ Damage/deteriorated pole
   - ☐ Damage to pole foundation
   - ☐ Crossarm broken, split, or extremely canted
   - ☐ Visually check for pole leaning
   - ☐ Washout or excavation around pole or anchor
   - ☐ Damage down guys, guy guard missing — public hazard
   - ☐ Excessive slack on down guys or span guys — clearance problem or pole integrity issue
   - ☐ Visually check pad-mounted equipment for movement and cabinet secured or locked.
   - ☐ Visually check BURD lids, subsurface structure lids, vent pipes, and handhole lids.
3. Conductors
   - ☐ Inadequate primary, secondary, or service ground clearances
   - ☐ Excessive slack in primary conductors in high wind areas
   - ☐ Clearance from building, television or radio antenna, billboard signs, scaffolding, streetlights, communication cable or hazardous locations for primary, secondary or services
   - ☐ Trees touching or above primary conductors (overhangs) unless special encased tree cable (18 inches required)
   - ☐ Hazardous tree conditions, limbs over wire, dead or decaying trees, palm fronds
   - ☐ Foreign objects in line, such as kites, Mylar balloons
4. Risers
   - ☐ Riser straps, blocks broken, unattached — public hazard
   - ☐ Opening in riser conduit coupling, damaged conductor — public hazard
5. General Conditions
   - ☐ Unlocked substations, pole switches, equipment

- ☐ Conditions for transmission and distribution assets (e.g., combo pole), included but are not limited to:
  - — Pole broken/damaged or excessive leaning
  - — Vegetation contacting or nearly contacting energized lines (e.g., expected to imminently fail and contact energized lines, contact or arcing with bare-wire conductors is highly probable to occur in a high wind event due to vegetation proximity to power lines, appears contact has occurred with primary electric facilities, appears strain or abrasion has occurred with secondary bare open wire, etc.)
  - — Broken, damaged, burned or rotted crossarm
  - — Energized conductor with inadequate clearances, bare conductor contacting communication, burned jumpers/connectors, or burned wire
  - — SCE Communication (e.g., broken lashing wire with slack to reach into power space, attachments/repairs poorly secured with tape/rope, broken and hanging strands, down guys, primary/secondary slack and jumpers capable of contacting communication facilities, Transmission/primary/secondary broken down guys hanging in communication space, foreign objects with potential to cause arcing, shorts or conduct electricity across insulators, etc.)
  - — Loose, broken, damaged, or missing insulator
  - — Broken/damaged guy in proximity to energized conductor
  - — Leaking oil from the equipment - for transmission, 66 kV and 115 kV potheads
  - — Excessive corrosion (e.g., loss of material/holes in equipment)
- ☐ Conditions for third party communication assets include but are not limited to:
  - — Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures
  - — Loose or broken lashing wire
  - — Improperly secured communication conductor or equipment
  - — Broken, damaged or severely strained communication guy wires
  - — Excessive bowing or bending of pole from potential overloading at communication equipment attachment points
  - — Excessive sag of communication cables causing G.O. 95 infraction(s) or safety issue(s)
  - — Communication messenger and/or cable sag is too tight and creating a G.O. 95 clearance violation for SCE low voltage or high voltage lines
  - — Vegetation straining communication messenger or guy wire and/or causing structural integrity issues

IN–3: Inspection Procedures — Underground Detail Inspections

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1.0 Purpose

The purpose of the Underground Detail Inspection (UDI) is to give a visual evaluation of SCE's underground electrical distribution assets with the intent to identify and document obvious discrepancies and/or California Public Utility Commission (CPUC) General Order (G.O.) 128 discrepancies for appropriate corrective action.

2.0 Methods and Procedures

The UDI inspector performs a close in-depth visual inspection of all the underground electrical distribution assets per inspection orders. UDI frequency is identified in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual, Chapter IM-1: Distribution Inspection and Maintenance Program (DIMP) - Overview.

3.0 Duties of Underground Detail Inspector

The UDI inspector performs the following tasks as appropriate for each facility detailed inspection:

3.1 Identification of Discrepancies per the Underground Structure Detailed Inspection Guidelines

The UDI inspector performs an in-depth visual examination of each underground distribution facility using the following Underground Detailed Inspection Guidelines (Structure, Equipment and Apparatus Equipment) as minimum guides. These lists are high level summaries of the items and areas to inspect. Additional information regarding the extent of the condition is shown in underground equipment and component Condition and Corrosion Guides attached. Inspectors will inspect and report on all equipment within a structure, and confirm the configuration numbering of the equipment.

The UDI inspector also identifies and reports any G.O. 128 infractions created on or near Distribution facilities by non-utility third parties that are not subject to CPUC jurisdiction.

NOTE

Inspectors will comply with the Confined Space Safety Initiative (CSSI), when inspectors are entering a Confined Space/Other Confined Space (CS/OCS).

3.2 Establishment of Priorities per the Priority Inspection Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition and Corrosion Guides, Condition Risk Assessment Matrix

Only Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action thus no action time frame decision is required from the inspector. As discussed in the General section of this manual, Priority 2 conditions have a zero (0) to 36-month time frame (unless in a high fire risk area).

3.4 Performance of Appropriate Routine Repairs

☐ The UDI inspector will make routine repairs while at the site for the detailed inspection, rather than having other SCE personnel return at a later time to make the repairs.

☐ Inspectors will perform structure cleanup of debris or materials prior to leaving the structure.

3.5 Validation of Accuracy of Asset Information and Facility Inventory Mapping references

It is extremely important that SCE's records be as accurate as possible. The UDI inspector is a valuable force in realizing this goal. While at the facility site, the UDI inspector shall perform the following:

☐ Records corrections—found assets, missing assets, asset corrections

☐ Mapping corrections

3.6 Document in the Field Tool

Refer to the Work Management System (WMS) Procedure Manual.

4.0 References

4.1 CPUC G.O. 128, Rules for Construction of Underground Electric Supply and Communication Systems

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 Distribution Underground Construction Standards (DUG)

4.4 The following chapters of SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

- CP-3 Vault Sump Pumps
- TE-5 Infrared Heat Sensing Devices-Underground Equipment
- TE-6 Impact Pro Gas and Oxygen Monitors
- TR-7 Vault Blowers

4.5 Accident Prevention Manual (APM)

4.6 Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.7 Distribution Maintenance Program

4.8 Work Management System

4.9 Underground Corrosion Inspection and Maintenance Manual

4.10 Underground Structure Standards (UGS)

5.0 Attachments

Attachment 3–1: Underground Structure Detail Inspection Guideline

Attachment 3–1: Underground Structure Detail Inspection Guideline

EXTERNAL PROCEDURE CHECKLIST

- ☐ Prior to and after entering a structure, perform a general thermal scan for hot spots in structure and all equipment, cable, terminations, and splices.
- ☐ Check for missing or damaged manhole lid gasket/seal rope.
- ☐ Check air vents for damage and presence of shields around vent standpipe in landscaped areas.
- ☐ Check vault lid (equipment cover) seal (felt) and lifting hole plugs.
- ☐ Check manhole and vault lid for any openings where small objects can be inserted.
- ☐ Check for any visual damage to manhole cover.
- ☐ Check for evidence of water ponding on top of the structure.
- ☐ Check for missing/damaged bolts or penta bolts.
- ☐ Check for debris in or around structures.(Good Housekeeping)
- ☐ Check for visual hazards.
- ☐ Check for structure movement.
- ☐ Verify that HIGH VOLTAGE signs and the structure number are legible.
- ☐ Check for exterior damage to structure.
- ☐ Check for sufficient work space around structure.
- ☐ Check that traffic barrier(s) are in place and that adequate clearance exists in front of structure.
- ☐ Check for deterioration of concrete.
- ☐ Check for signs of corrosion (specifically inspect weld seams, corners, door hinges, and enclosure roof.).
- ☐ Check that the structure is sound and secure.]
- ☐ Check for openings in structure which may allow the passage of wire, or other conducting material into the structure from the outside.
- ☐ Check for exterior damage to adjacent service handholes or splice boxes.
- ☐ Secure lids/covers prior to leaving site.
- ☐ Check for 3-inch backfill of soil on pads.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

INTERNAL PROCEDURE CHECKLIST

- ☐ Check that restraint system is intact (connected per UGS MH 319, VA 410, FC 670, or FC 625).
- ☐ Check for water inside the structure.
- ☐ Check for sand, dirt, mud, signs of vermin, and debris.
- ☐ Verify cable tags.
- ☐ Verify that cable clearances are adequate, not rubbing on sharp edges.
- ☐ Check that duct plugs are installed and in good working order in all necessary ducts.
- ☐ Check if the vent is leaking, or shows signs of previous leaking.
- ☐ Check for corrosion of ground rods and cables and all ground connections are proper.
- ☐ Check for concrete spalling and exposed rebar per UGS MC 880.
- ☐ Remove debris and loose materials from inside structure.
- ☐ Inspect shoring (if present) for signs of delamination, discoloration, or corrosion of metal components.

ADDITIONAL CHECKLIST (VOLTEK STRUCTURE)

- ☐ Signs of splitting or fraying and swelling on any of the composite panels.
- ☐ Check column beams between the wall panels for signs of warping and deterioration.
- ☐ Signs of loose embedded unistrut.
- ☐ Check duct bank and grade rings for deterioration. Any part of the walks or ceiling bulging (out of plumb.)

NOTE

The above lists are to be used as guides only and inspection should not be limited to the lists.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

EQUIPMENT CHECKLIST

- ☐ Prior to and after entering a structure, perform a detailed thermal scan for hot spots on structure and all equipment, cable, terminations, and splices.
- ☐ Check for signs of termination overheating or distortion.
- ☐ Check for signs of corrosion, oil leakage, and low oil levels.
- ☐ Check for signs of severe rusting of all restraint hardware (that is, turnbuckle, chains, anchors, and shackles).
- ☐ Check operation of vault blower (transformer structures) and perform maintenance.
- ☐ Check operation of sump pumps and perform maintenance.
- ☐ Check for scratches or abrasion to bare metal on equipment.
- ☐ Inspect weld seams.
- ☐ Inspect external operating mechanism.
- ☐ Inspect operating shaft seals.
- ☐ Inspect gaskets (cover, cableheads).
- ☐ Inspect oil fill plug and sight gauge seals.
- ☐ Inspect tightness of hold-down bails.
- ☐ Inspect condition of marine-coating.
- ☐ Inspect fuse carriers for proper locking and sealing.
- ☐ Check for sufficient work space around equipment.
- ☐ Verify appropriate signs are legible, that is, signs for ownership, clearance requirements, ferroresonant condition, switch feeding a capacitor bank.
- ☐ Check for signs of contamination, tracking, or deterioration of insulating barriers and arc interrupting chutes.
- ☐ Verify electrical clearances are maintained between barriers, live front or exposed terminations, and other insulated components.
- ☐ Verify that phase barriers are securely attached.
- ☐ Verify that the ground conductor is the correct size and is attached to the ground pad on the tank.
- ☐ Check safety barrier installation and condition on live front equipment (for example, pothead skirt in the PMH switch in contact with the protective barrier).
- ☐ In live-front equipment, verify that the fuse clips are in good condition (no signs of heating, arcing, or corrosion)
- ☐ Verify that locking devices are in place.
- ☐ Inspect mounting bolts for the correct size and number, tightness and corrosion.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

APPARATUS CHECKLIST

The following list is designed for non-technicians to use while performing their normal work in and around apparatus equipment, such as network protectors, P.E. gear, fault interrupters, automatic circuit reclosers, regulators, sectionalizers, and capacitor banks.

- ☐ Check for bulging, ruptured, or discolored capacitor units.
- ☐ Inspect fuseholders, cutouts, or fused disconnects.
- ☐ Check for blown fuses.
- ☐ Check cable and cable terminations for signs of deterioration or damage (underground).
- ☐ Heat scan the cable, terminations, and equipment (underground).
- ☐ Check for corrosion or other damage.
- ☐ Check for oil or compound leaks.
- ☐ Check clearances, barriers, and grounding.
- ☐ Check weld seams.
- ☐ Inspect operating shaft seals.
- ☐ Check oil fill and sight gauge seals (underground)
- ☐ Check oil fill and sight gauge seals (underground)
- ☐ Check to see if relay tripped (if applicable).
- ☐ Check for loose connections (arcing or burning).
- ☐ Check for damaged or blown control transformer.
- ☐ Check for approved locking devices in place and locked.
- ☐ Check for exterior/interior damage to enclosure (underground).
- ☐ Check for washout or excavation around enclosure (underground).
- ☐ Check all decals for legibility.
- ☐ Check that enclosure mountings are securely bolted to structure (underground).
- ☐ Check for signs of rodents or other animals (underground).
- ☐ Check for any signs of water or oil within the apparatus housing (underground).
- ☐ Enter the status of equipment, counter and load reads, any abnormal conditions, and the names of all inspection personnel in the log provided at equipment.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

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CG–1: Overhead Equipment Condition Guide

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1.0 Attachments

Attachment 1–1: Wood and Composite Poles

Pole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood Poles			
Unstable structure due to damage caused by splits, decay, hole or boring, exterior mechanical damage, or foot setting depth no longer supports the pole; failure is imminent **Priority 1**	X		
Pole leaning; public hazard **Priority 1**	X		
Leaning more than 1' per 10' pole height		X	X
Split or decay at critical attachment; bolt pulling through pole	X		
Split or decay within 6" of critical attachment; bolt not pulling through pole		X	X
Split, decay, or hole below highest attachment allows light through the pole	X		
Hole greater than 2" and extends past pole center	X		
Hole greater than 2" and possible cavity in high stress area		X	X
Three or more holes >2" diameter within 18" vertical at a high stress area	X		
Exposed decay pocket at ground line where part of shell is gone	X		
Insect borings or droppings		X	X
Compression wood peeling off, >2"	X		
Compression wood peeling off, 1–2"		X	X
Exterior damage >2" depth and > 1/4 pole circumference	X		
Exterior damage 1–2" depth and > 1/4 pole circumference		X	X
Depth in soil >20% shallow with heavy equipment	X		
Depth in soil 10–20% shallow with heavy equipment		X	X
Leaning more than 1' per 10' pole height with heavy equipment		X	X
Cavity with <1" shell thickness	X		
Decay within 6" of critical attachment; not pulling through		X	X
Three or more holes >2" diameter within 18" vertical		X	X
Rotten top		X	X
Animal/bird's nest near circuitry/equipment	X		
Steel stub banding is damaged or missing		X	X

Attachment 1–1: Wood and Composite Poles *(Continued)*

Pole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Composite Poles			
Fracture or buckling of exterior wall	X		
Visual cracks or rupture of exterior laminates on any location of the exterior wall exposing interior laminates	X		
Excessive lean at the top of the pole due to insufficient embedment caused by erosion of soil at groundline or due to eccentricity of heavy equipment (horizontal displacement at the tip of the pole greater than 10% of the pole height above the groundline).	X		
Elongated bolt holes, cracks or rupture around the hardware connection to equipment and guy attachments (bolts pulling through, sharp edges cutting into surface of wall)		X	X
Cutting or drilling within “No-Drill-Zone”	X		
Exposed fiberglass due to exposure of fire[a/]			X
Surface gouging on exterior of pole larger than 2-inches in length		X	X
Surface discoloration or fiberblooming (“fuzzing”) greater than 20% of total exterior surface area		X	X
Pole embedded on soil with heavy ponding (accumulation of water)		X	X
Depth of embedment less than 10% + 1 ft of the pole height with heavy equipment		X	X
Leaning at the top of pole greater than 5% of the height of the pole above ground with heavy equipment		X	X
Bowing of the pole at or near the mid-height due to heavy load from guys		X	X
Animal/bird’s nest near circuitry/equipment		X	X
Missing or damaged pole cap		X	X

[a/] Contact Linear & Structural Strategies and Standards for immediate review.

Attachment 1–2: Transformers

Overhead Transformer Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	**Component Has Failed No Significant Risk to System**	**Potential Component Failure**
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Transformer damaged	X		
Transformer extremely rusted or corroded		X	X

Attachment 1–3: Capacitors

Overhead Capacitor Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured or severely bulged capacitor units **Priority 1**	X		
Capacitor units or capacitor oil switches leaking, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage from capacitor units or oil capacitor switches, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Signs of tracking or arcing on capacitor units			X
Broken/damaged bushings or terminals on capacitor units, capacitor switches, fuseholders or control power transformer		X	
Single phase condition with bank still energized[a/] **Priority 1**	X		
Capacitor bank damaged, not functioning		X	
Floating connections **Priority 1**	X		
Catastrophic or severely damaged capacitor switches, safety or reliability issue **Priority 1**	X		
Capacitor switches not secure, damaged, not functioning		X	X
Capacitor controller damaged			X
Antenna damaged		X	
Animal nest			X
Blown fuse		X	
Incorrect fuse size		X	
Damage to control power transformer		X	

[a/] A single phase condition can occur when one phase fuse is blown or when switch position indicators are not synchronized (that is, all open or all closed).

Attachment 1–4: Switches

Overhead Switch Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Manually Operated			
Pole switch mechanism broken/missing/damaged/loose	X		
Pole switch damaged	X		
Remote Controlled			
Remote control actuator broken, missing or worn out		X	
Control damaged		X	

Attachment 1–5: Apparatus Equipment

Overhead Apparatus Equipment Condition Description (Reclosers, PE Gear, Regulators, Sectionalizers)	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Any fuse operation **Priority 1**	X		
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Oil weepage indicated by oily film on tank surface			X
Equipment damaged			X
Tree/vegetation interfering with apparatus equipment operation	X		
Equipment extremely rusted or corroded		X	X

Attachment 1–6: Branch Line Fuse

Branch Line Fuse Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

Attachment 1–7: Fuse Dip

Fuse Dip Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

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CG–2: Overhead Component Condition Guide

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Attachment 2–1: HIGH VOLTAGE Signs

HIGH VOLTAGE Sign Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
HIGH VOLTAGE sign broken or missing in critical public awareness/hazardous situation		X	

Attachment 2–2: Overhead Hardware/Framing

Overhead Hardware/Framing Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Corroded, missing or broken hardware		X	X
Holder burned or tracking		X	X
Major equipment bracket broken/missing/worn out (including damaged Scott brackets)		X	X
Equipment brackets or braces cracked/damaged/loose		X	X
Scott brackets with no visible damage			X

Attachment 2–3: Crossarms

Crossarm Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood Crossarms			
Complete fracture or partial fracture causing significant deflection **Priority 1**	X		
Partial fracture causing <5" deflection		X	X
Primary crossarms bowed >5" and splintering	X		
Primary arm bowed >5", but no splintering		X	X
Secondary arm bowed >5" with or without splintering		X	X
Canting, through bolt pulled out **Priority 1**	X		
Canting, through bolt pulling out		X	X
Significant damage at a stress point	X		
Significant damage at insulator pin/bolt and pin/bolt ready to separate from arm	X		
Significant damage at attachment or insulator pin/bolt and pin/bolt may or may not be pulling through arm; if multiple X-arms and bolt at damaged area have not pulled through either arm, no damage on second arm		X	X
Crossarm tracking — cross section missing >50% **Priority 1**	X		
Crossarm tracking - cross section missing <50%		X	X
Braces broken/missing/worn out		X	

Attachment 2–3: Crossarms *(Continued)*

Crossarm Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	**Component Has Failed No Significant Risk to System**	**Potential Component Failure**
Composite Crossarms			
Significant deflection (greater than 10% of overhang length) on either side of the crossarm due to fracture, buckling or excessive unbalanced tension	X		
Visual cracks or rupture of exterior laminates on any location of the exterior wall exposing interior laminates	X		
Any signs of charring, “blister”, “bubble” or distortion of exterior surface due to exposure to fire	X		
Fractured mounting bracket and associated hardware	X		
Elongated bolt holes, cracks or rupture around the hardware connection (bolts pulling through, sharp edges cutting into surface of wall)		X	X
Surface discoloration or fiberblooming (“fuzzing”) greater than 20% of total exterior surface area		X	X
Bent mounting bracket and associated hardware		X	X

Attachment 2–4: Insulators

Insulator Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary insulator above 750 volts missing **Priority 1**	X		
Primary insulator above 750 volts broken/worn out **Priority 1**	X		
Primary insulator above 750 volts cracked, damaged or loose		X	X
Tie wire broken/missing/damaged or loose		X	X
Primary side tie insulator touching arm		X	X
Secondary insulator <750 volts cracked, damaged or loose		X	X
Secondary insulator - squatter		X	X
Primary insulator chipped		X	X
Primary post-type insulator above 750 volts with universal clamping mechanism showing signs of corrosion at clamp	X		

Attachment 2–5: Grounds

Ground Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ground wire broken/missing/worn out		X	

Attachment 2–6: Guys

Guy Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Span Guys			
Span guy cracked/damaged or loose		X	X
Span guy clearance issue		X	X
Span guy sagging or extremely slack		X	X
Down Guys			
Guys broken/missing/worn out, pole leaning, public hazard **Priority 1**	X		
Guys broken/missing/worn out, pole not leaning		X	X
Down guy clearance issue, pedestrian/vehicle traffic		X	X
Down guy sagging or extremely slack		X	X
Anchor rods broken/missing/worn out, pole leaning, public hazard **Priority 1**	X		
Anchor rods broken/missing/worn out, pole not leaning		X	X

Attachment 2–7: Risers/Conduits

Riser/Conduit Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary/secondary riser and cable damage in the public level **Priority 1**	X		
Primary/secondary riser damaged but cable intact		X	X
Primary/secondary riser uncoupled/gap, cable exposed, no damage		X	X
Riser coming loose from pole			X
Missing Conduit Riser Label		X	
Damaged Conduit Riser Label		X	

Attachment 2–8: Cutouts/Fuses

Cutout/Fuse Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

Attachment 2–9: Bonds

Bond Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Bonding has loosened or separated from pole/crossarm or is broken/missing		X	X

Attachment 2–10: Surge Arresters

Surge Arrester Condition Description		Reliability/Failure Risk		
		Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Blown ground lead isolator	**Priority 1**	X		
Surge arrester broken but not blown, including corroded, missing or broken hardware, housing			X	X

Attachment 2–11: Overhead Terminations

Overhead Termination Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Potheads			
Pothead sparking, arcing, or noisy during normal 'dry' weather conditions **Priority 1**	X		
Pothead swollen	X		
Pothead not properly attached to supporting structure	X		
Pothead leaking	X		
Pothead showing signs of tracking such as discoloration	X		
Porcelain pothead insulators chipped or broken	X		

Attachment 2–12: Overhead Conductors and Service Drops

Overhead Conductor and Service Drop Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary Conductors			
Contact with other conductors or where contact is imminent **Priority 1**	X		
Metal debris in conductors **Priority 1**	X		
Vegetation arcing or in contact with bare or covered conductor **Priority 1**	X		
Conductors not in good condition, broken, missing, worn out		X	X
More than 10% reduction in radial or vertical clearance		X	X
Vegetation <18" from energized conductors (bare or covered)	X		
Growth on pole >18" but <48" from conductors (bare or covered)		X	X
Trees with <4' clearance in high fire risk area	X		
Foreign material in lines	X		
Tie wire broken/missing/damaged or loose	X		
Secondary Conductors			
Extreme safety hazard to the public such as reachable, wire down, bare wires touching anything, wires touching each other at bare spots **Priority 1**	X		
More than 10% reduction in radial or vertical clearance		X	X
Bare conductors in rack construction and through tree		X	X
Tree condition causing significant strain and/or visible abrasion damage - either open wire or Triplex		X	X
Conductor has less than appropriate radial clearance with contact, no public safety hazard		X	X
Vegetation growth within secondary level		X	X
Conductors not in good condition, broken, missing, worn out		X	X
Tie wire broken/missing/damaged or loose	X		
Foreign material in lines		X	X

Attachment 2–12: Overhead Conductors and Service Drops *(Continued)*

Overhead Conductor and Service Drop Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Service Drops			
Greater than 15% reduction in vertical clearance **Priority 1**	X		
Bare drop with >10% reduction in vertical clearance **Priority 1**	X		
Bare drop arcing **Priority 1**	X		
Greater than 10% but less than 15% reduction in vertical clearance		X	X
Bare drop with <10% reduction in vertical clearance			
Drop with <radial clearance and contact		X	X
Tree condition causing significant strain and/or visible abrasion damage — either open wire or Triplex		X	X
Bare drop		X	X
Drop connector bare at weatherhead		X	X
Service attachment broken		X	X
Service termination damage		X	X
Mid-span service clearance		X	X

Attachment 2–13: Overhead Pole-Mounted Streetlights

Overhead Pole-Mounted Streetlight Condition Description		Reliability/Failure Risk		
		Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Access plate missing — conductor exposed	**Priority 1**	X		
Broken glass ready to fall	**Priority 1**	X		
Fixture or fixture door ready to fall	**Priority 1**	X		
Structural/mechanical failure/vehicle hit pole	**Priority 1**	X		
Fixture/door cover missing			X	X
Visible cracks in fixture			X	X
Broken/missing glass but no public safety hazard			X	X
Mast arm weak and unsecured, but no public safety hazard			X	X
Unauthorized attachments			X	X
Pole mechanical damage and may fail soon			X	
Anchor bolts missing/rusted through			X	
Large multiple holes				X
Anchor bolts corroded, unremovable				X

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Attachment 3–1: BURD Structures

BURD Structure Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access to structure			X
BURD cylinder damaged		X	X
Debris in structure requiring removal		X	X

Attachment 3–2: Enclosures

Enclosure Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Vent pipes cracked, damaged, loose or missing		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Roof/grate damaged or missing	X		
Door damaged, unsecurable or cannot lock	X		
Enclosure structure damaged	X		

Attachment 3–3: Handholes

Handhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged handhole in public area	X		
High/low tripping hazard	X		

Attachment 3–4: Manholes

Manhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–5: Primary Splice Boxes

Primary Splice Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access		X	X
Unable to secure **Priority 1**	**X**		
Structure damaged		X	X
Debris in structure requiring removal		X	X
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	**X**		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	**X**		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	**X**		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	**X**		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X

Attachment 3–5: Primary Splice Boxes *(Continued)*

Primary Splice Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–6: Pads

Pad Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Any tilt, lean, or structure movement causing strain on electrical connectors or adverse oil level	X		
Pad Damaged — > 25% of surface area. Deep cracks were observed that propagate from one end of the pad to the other.		X	X
Grade change requiring pad relocation			X
Pad Surface Area Deterioration (< 25%) — Cracks, spalls, delamination (loose concrete), exposed rebar			X

Attachment 3–7: Subsurface Structure (CST)

Subsurface (CST) Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Vent pipes cracked, damaged, loose or missing	X		
Debris or vegetation blocking proper access		X	X

Attachment 3–8: Vaults

Vault Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Vent pipes cracked, damaged, loose or missing	X		

Attachment 3–9: Vault Shoring

Vault Shoring Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood members (columns, beams, or ceiling decking) are broken	X		
Wood members showing signs of severe deterioration, heavy discoloration present (confirmed by sounding with tool)	X		
Delamination is present on wood members	X		
Gap is present between ledger plate and structure wall (not due to curvature of wall)			X
Severe corrosion is present on steel components (metal flaking, severe pitting)			X

Attachment 3–10: Underground Transformers

Underground Transformer Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Tank wall temperature >265°F	X		
Tank wall temperature >155°F above ambient			X
Indications of overload, past or present (burned spades, paint)			X
Hole >1/8" diameter	X		
Transformer damaged		X	X
Corrosion per Corrosion Guide		X	X
Excessive noise			X

Attachment 3–11: Underground Capacitors

Underground Capacitor Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured or severely bulged capacitor units **Priority 1**	X		
Capacitor units or capacitor oil switches leaking, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage from capacitor units or oil capacitor switches, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Signs of tracking or arcing on capacitor units			X
Broken/damaged bushings or terminals on capacitor units, capacitor switches, fuseholders or control power transformer		X	
Single phase condition with bank still energized[a/] **Priority 1**	X		
Capacitor bank damaged, not functioning		X	
Loose or floating connections **Priority 1**	X		
Catastrophic or severely damaged capacitor switches, safety or reliability issue **Priority 1**	X		
Capacitor switches not secure, damaged, not functioning		X	X
Capacitor controller damaged			X
Antenna damaged		X	
Animal nest			X
Thermal criteria exceeded per DOM TE–5		X	X
Obstacles restricting operating clearance/access to compartments			X
Corrosion per Corrosion Guide		X	X
Blown fuse		X	
Incorrect fuse size		X	
Damage to control power transformer		X	
Damaged fiberglass boards or plexiglas panels		X	

[a/] A single phase condition can occur when one phase fuse is blown or when switch position indicators are not synchronized (that is, all open or all closed).

Attachment 3–12: Underground Switches

Underground Switches Condition Description		Reliability/Failure Risk: Component Failure Could Lead to System Failure	Reliability/Failure Risk: Component Has Failed No Significant Risk to System	Reliability/Failure Risk: Potential Component Failure
Oil — Subsurface				
Field oil test failure (<15kV) *Priority 2 (90 days) — see DOM TS–4*		X		
No oil at gauge and major leakage	**Priority 1**	X		
No oil at gauge and minor leakage			X	X
No oil at gauge but no evidence of leakage				X
Oil leak in wet structure	**Priority 1**	X		
Oil leak in dry structure		X		
Thermal failure per DOM TE–5	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
G&W RA style switches with aluminum cableheads manufactured from 1970–1973				X
Corrosion per Corrosion Guide			X	X
Solid Dielectric Vacuum Switch — Subsurface				
Switch Temperature >40°F above Cable Temperature	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
Corrosion per Corrosion Guide			X	X
Oil — Padmount				
Field oil test failure (<15 kV) *Priority 2 (90 days) — see DOM TS–4*		X		
No oil at gauge and major leakage	**Priority 1**	X		
No oil at gauge and minor leakage			X	X
No oil at gauge but no evidence of leakage				X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area	**Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X	X
Oil weepage indicated by oily film on tank surface				X
Thermal failure per DOM TE–5	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
Corrosion per Corrosion Guide			X	X

Attachment 3–12: Underground Switches *(Continued)*

Underground Switches Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Gas Switches			
Gas switch: 0 psi in wet structure (DOM, SW–5) **Priority 1**	X		
Gas switch: < 5 psi or in **red zone** in wet structure (DOM, SW–5)	X		
Gas switch: < 5 psi or in **red zone** in dry structure (DOM, SW–5)		X	
Corrosion per Corrosion Guide		X	X
PMH/PME			
Hole > 1/8" diameter	X		
Evidence of previous electric flashover **Priority 1**	X		
Thermal failure per DOM TE–5 **Priority 1**	X		
Vegetation or debris inside structure	X		
Electrical clearance < 1-1/2" between barriers and energized parts	X		
Moisture barrier missing	X		
Mechanism frozen	X		
Corrosion per Corrosion Guide		X	X
ARC compressor caps missing or damaged		X	X
Remote-Controlled Switches			
Control damaged		X	X
Actuator damaged		X	

Attachment 3–13: Sump Pumps

Sump Pump Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Sump pump damaged and not operating		X	

Attachment 3–14: Underground Apparatus

Underground Apparatus Condition Description (Automatic Reclosers, Fault Interrupters, Network Protectors, Regulators, and Sectionalizers)	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Thermal failure per DOM TE–5 **Priority 1**	X		
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Hole >1/8" diameter	X		

Attachment 3–15: Blowers

Blower Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Blower damaged and not operating		X	

Attachment 3–16: Fault Indicator

Fault Indicator Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Unit has malfunctioned or has failed to operate when tested		X	
Visible damage that has caused a malfunction under test		X	
Units > 20 years in service			X

Attachment 3–17: Junction Boxes

Junction Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access		X	X
Unable to secure **Priority 1**	X		
Structure damaged		X	X
Debris in structure requiring removal		X	X
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X

Attachment 3–17: Junction Boxes *(Continued)*

Junction Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–18: Oil Fuse Cutouts

Oil Fuse Cutout Condition Description[a/]	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Corroded fuseholder		X	X
Oil leak not repairable		X	
Mechanism frozen	X		
Minor oil leak, but repairable			X

[a/] Oil fuse cutouts are obsolete. Replacement fuses are no longer available. The units must be replaced whenever opportunity exists.

Attachment 3–19: Underground PE Gears

Underground PE Gear Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Oil — Subsurface Type Switches			
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Thermal failure per DOM TE–5 **Priority 1**	X		
Mechanism frozen, inoperable	X	X	X
G&W RA style switches with aluminum cableheads manufactured from 1970–1973			X
Corrosion per Corrosion Guide		X	X
Oil — Padmount Switches			
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Thermal failure per DOM TE–5 **Priority 1**	X		
Mechanism frozen, inoperable	X	X	X
Corrosion per Corrosion Guide		X	X
Gas Switches			
Gas switch: 0 psi in wet structure (DOM, SW–5) **Priority 1**	X		
Gas switch: <5 psi in wet structure (DOM, SW–5)	X		
Gas switch: <5 psi in dry structure (DOM, SW–5)		X	X
Corrosion per Corrosion Guide		X	X

Attachment 3–19: Underground PE Gears *(Continued)*

Underground PE Gear Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
PMH/PME Switches			
Hole >1/8" diameter	X		
External evidence of previous electric flashover **Priority 1**	X		
Corrosion per Corrosion Guide		X	X
Remote-Controlled PE Gear			
Control damaged		X	X
Actuator damaged		X	

Attachment 3–20: Fuse Cabinets

Fuse Cabinet Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Access or load-break elbow operational issue		X	X
Door does not secure (not sealed)	X		
External visual inspection failure		X	X
Hole >1/8" diameter	X		
Corrosion per Corrosion Guide		X	X
Elbow not properly seated or attached; that is, bail is missing **Priority 1**	X		
Elbow sparking, arcing, or noisy **Priority 1**	X		
Elbow swollen	X		
Elbow showing signs of tracking such as discoloration	X		
Elbow temperature >40°F above cable temperature **Priority 1**	X		
Elbow temperature 10–39°F above cable temperature		X	X

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CG–4: Underground Component Condition Guide

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CG–4: Underground Component Condition Guide

1.0 Attachments

Attachment 4–1: Underground Hardware/Framing

Underground Hardware/Framing Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Major equipment bracket broken/missing/worn out **Priority 1**	X		
Equipment brackets or braces cracked/damaged/loose		X	X
Cable, equipment, or termination failure due to lack of rack support**Priority 1**	X		
Cable racks and other equipment supports cracked, damaged or loose, or are hanging in concrete separated from the rebar		X	X
Racks and/or through bolts corroded but can still support cable and/or equipment			X
Ladder broken/missing/worn out; cracked, damaged or loose	X		
Corroded, missing or broken hardware		X	X

Attachment 4–2: Grounds

Ground Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ground grid has lost all embeds, or ground rod connection is gone			X
Grounds/bonds broken, missing or worn out		X	
Grounding of insufficient capacity			X

Attachment 4–3: Lids and Frames

Lid and Frame Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Lids/covers broken, missing, worn out and cannot be secured; subject to pedestrian traffic**Priority 1**	X		
Grade ring broken, missing, worn out and cannot be secured; subject to pedestrian traffic**Priority 1**	X		
Lids/covers cracked, damaged or loose, structure temporarily secured		X	
Grade ring damaged or missing, structure temporarily secured		X	
Corroded restraint hardware (turnbuckle, chains, anchors, and shackles)		X	X

Attachment 4–4: Retaining Walls

Retaining Wall Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Retaining wall damaged or undermined, requiring repairs	X		

Attachment 4–5: Underground Terminations

Underground Termination Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Potheads			
Pothead sparking, arcing, or noisy during normal “dry” weather conditions**Priority 1**	X		
Pothead swollen	X		
Pothead not properly attached to supporting structure	X		
Pothead leaking	X		
Pothead showing signs of tracking such as discoloration	X		
Porcelain pothead insulators chipped or broken	X		
Elbows			
Elbow not properly seated or attached; that is, bail is missing**Priority 1**	X		
Elbow sparking, arcing, or noisy **Priority 1**	X		
Elbow swollen; subject to water intrusion between cable entrances and bushing interface	X		
Elbow showing signs of tracking such as discoloration	X		
Elbow temperature > 40F above cable temperature **Priority 1**	X		
Elbow temperature 10-39F above cable temperature		X	X

Attachment 4–6: Barrier Posts

Barrier Post Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Traffic barrier broken or missing and equipment contact imminent		X	X

Attachment 4–7: Pedestals

Pedestal Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged, unable to secure or lock	X		
Corrosion per Corrosion Guide	X		

Attachment 4–8: Handholes

Handhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged handhole in public area	X		
High/low tripping hazard	X		

Attachment 4–9: Cables

Cable Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
50% or less of concentric neutrals remain		X	X
Visual and serious damage (open cracks) on the semiconducting shield		X	X
Cable temperature exceeds 240 degrees	X		
Wet, contaminant condition that could damage cable			X
Cable temperature exceeds 175 degrees			X
Secondary/service cable damaged		X	X
Visible signs of incorrect positioning of cable causing contact and/or damage (that is, cable movement, rubbing points)			X
Visible signs of burning of materials or external heat damage to cable or any of the visible layers	X		

Attachment 4–10: Streetlights

Streetlight Condition Description		Reliability/Failure Risk: Component Failure Could Lead to System Failure	Reliability/Failure Risk: Component Has Failed No Significant Risk to System	Reliability/Failure Risk: Potential Component Failure
Access plate missing — conductor exposed	**Priority 1**	X		
Broken glass ready to fall	**Priority 1**	X		
Fixture or fixture door ready to fall	**Priority 1**	X		
Structural/mechanical failure/vehicle hit pole	**Priority 1**	X		
Fixture/door cover missing			X	
Visible cracks in fixture			X	X
Broken/missing glass but no public safety hazard			X	
Mast arm weak and unsecured, but no public safety hazard			X	X
Unauthorized attachments			X	X
Pole mechanical damage and may fail soon			X	
Anchor bolts missing/rusted through			X	
Large multiple holes				X
Anchor bolts corroded, unremovable				X

Attachment 4–11: Splices

Splice Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured lead splice **Priority 1**	X		
Splice not properly seated or attached, that is, T-splice not secure **Priority 1**	X		
Splice sparking, arcing, or noisy **Priority 1**	X		
Splice swollen; subject to water intrusion between cable entrances and bushing interface	X		
Splice showing signs of tracking such as discoloration	X		
Splice temperature >40°F above cable temperature **Priority 1**	X		
Splice temperature 10–39°F above cable temperature		X	X
Leaking splice	X		

CG–5: Underground Equipment Corrosion Condition Guide

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CG–5: Underground Equipment Corrosion Condition Guide

1.0 Corrosion Evaluation Overview

Listed below are guidelines to assessing corrosion conditions. Utilize the Risk Assessment Matrix to determine reasonable time frame for any required action needed.

1.1 Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable terminations hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leak in a wet structure.
- ☐ Any condition that would indicate that a severe hazard exits.

1.2 Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment's surface, or the pitting exceeds 50% of the wall thickness.
- ☐ The cable termination hold-down bolts have corroded to a point where the threads have been obliterated.
- ☐ Equipment oil leak in a dry structure.
- ☐ Any other condition of the equipment that would indicate that a hazard exists.

1.3 Heavy Corrosion (Priority 2)

- ☐ There is discoloration, loss of paint, and deep pitting over 50% of the equipment's surface.
- ☐ There is pitting greater than 25% of wall thickness, but less than 50% of wall thickness.
- ☐ Switch operators are frozen and cannot be freed with simple field repair.

1.4 Moderate Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is discoloration, some loss of paint, and slight pitting (pencil-point-sized pits less than 25% wall thickness—that is, 1/16" maximum on R.A. switches).
- ☐ No sign of oil leaks.
- ☐ Switch operators are temporarily frozen but can be made operational with a minimum amount of effort.
- ☐ Bottom of equipment, or 25% of surface area is not accessible and corrosion is likely to occur (that is, wet structure and equipment does not have marine coating).

1.5 Light Corrosion

No action required; monitor during next inspection cycle.

- ☐ Equipment may be dirty but there is no sign of corrosion.
- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling is present over 75% of the equipment's surface.
- ☐ Switch operators work freely.
- ☐ No signs of oil leaks.

NOTE Once a corrosion evaluation has been established, that evaluation should not be changed as a result of cleaning, repairing, or painting. This policy is established since pitting cannot be repaired and the back, as well as the bottom, of the switch cannot always be cleaned and repainted.

2.0 Corrosion Examples

2.1 Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable terminations hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leak in a wet structure.
- ☐ Any condition that would indicate that a severe hazard exists.

NOTE Severe corrosion is described above. There are no pictures of severe corrosion in this manual revision. Corrosion conditions exceeding the conditions identified in Priority 2 images are considered Priority 1.

WARNING When a severe corrosion condition exists, the structure shall be closed and a sign shall be posted stating “DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.” The situation shall be made safe and the equipment shall be replaced as soon as possible.

2.2 Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment's surface, or the pitting exceeds 50% of the wall thickness.
- ☐ The cable termination hold-down bolts have corroded to a point where the threads have been obliterated.
- ☐ Equipment oil leak in a dry structure.
- ☐ Any other condition of the equipment that would indicate that a hazard exists.

WARNING When A Very Heavy Corrosion condition exists, the structure shall be closed and a sign shall be posted stating “DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.” The situation shall be made safe and the equipment shall be replaced within 90 days. See Figure 5–1.

Figure 5–1: Severe/Very Heavy Corrosion — CAUTION Sign

CAUTION

DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.

SCE 14-174-150

Figure 5–2: Very Heavy Corrosion — Example 1 of 2

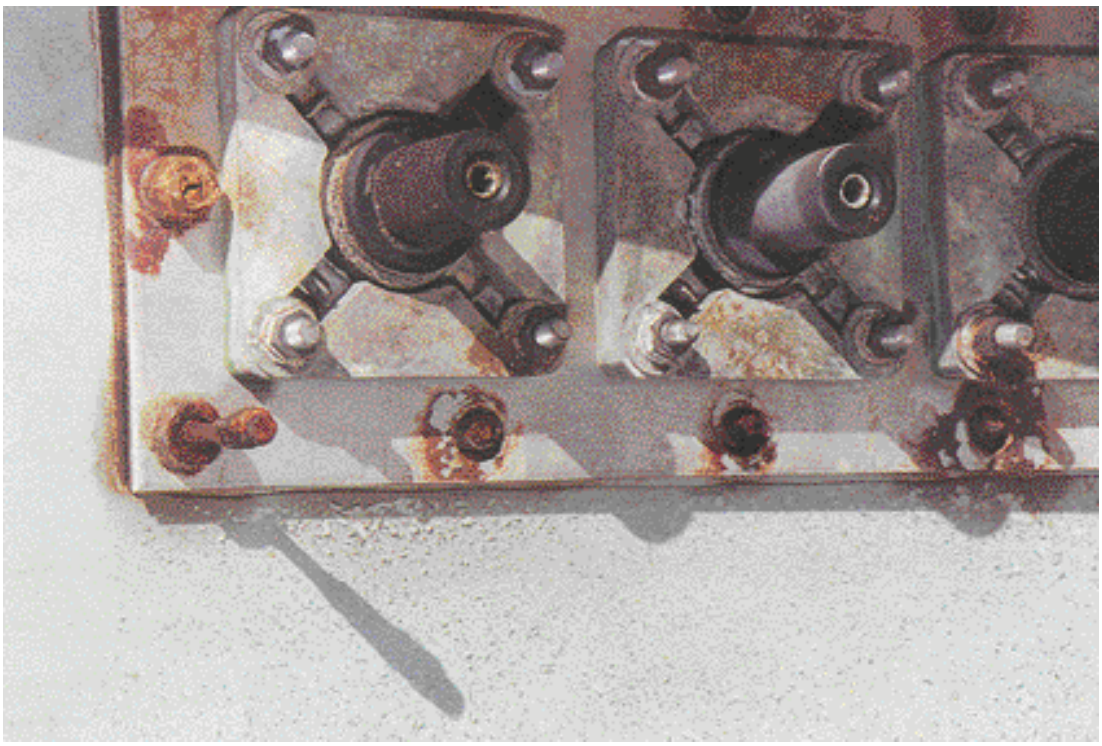
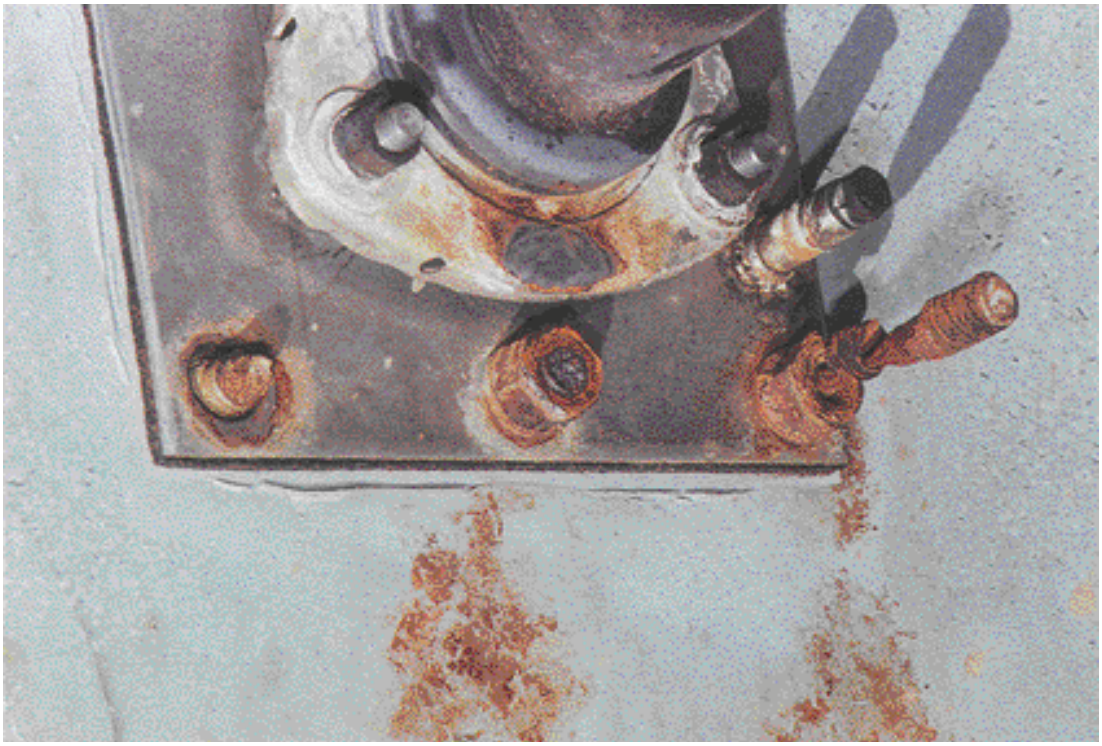


Figure 5–3: Very Heavy Corrosion — Example 2 of 2



2.3 Heavy Corrosion

- ☐ There is discoloration, loss of paint, and deep pitting over 50% of the equipment's surface.
- ☐ There is pitting greater than 25% of the wall thickness, but less than 50% of the wall thickness.
- ☐ Switch operators are frozen and cannot be freed with simple field repair.
- ☐ There is minor oil leakage, but it is repairable.

Figure 5–4: Heavy Corrosion — Example 1 of 3

Figure 5–5: Heavy Corrosion — Example 2 of 3

Figure 5–6: Heavy Corrosion — Example 3 of 3

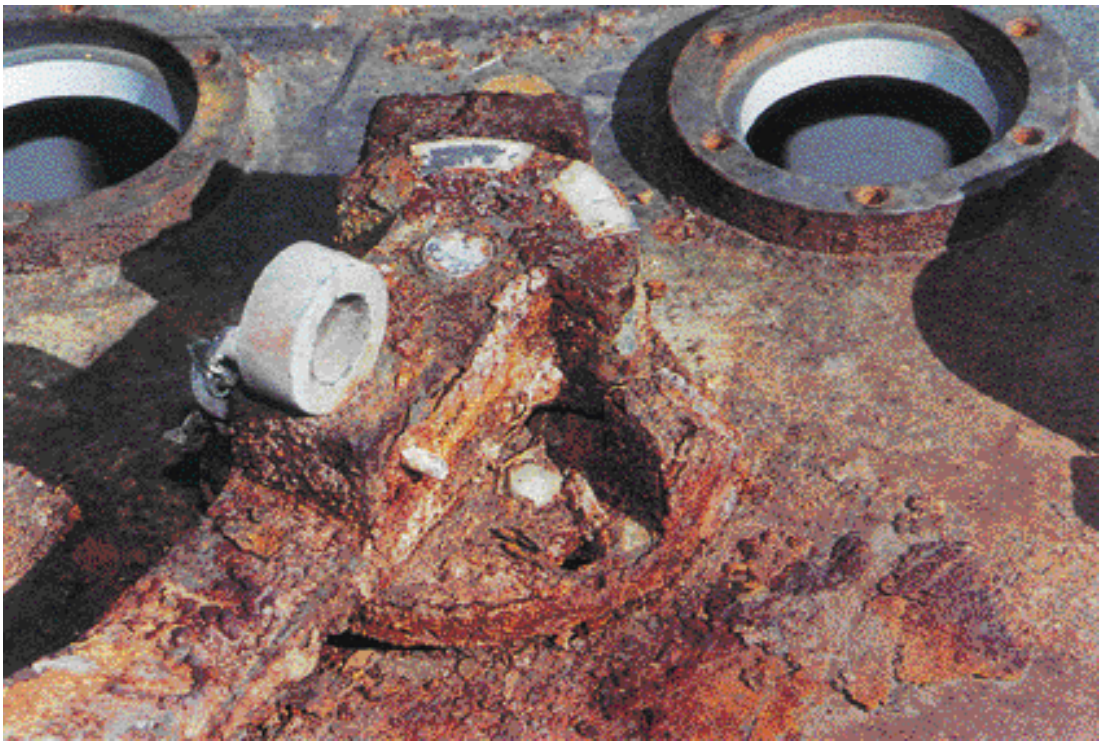
2.4 Moderate Corrosion

- ☐ There is discoloration, loss of paint, and slight pitting (pencil point-sized pits less than 25% of the wall thickness – that is, R.A. switches – 1/16" maximum depth).
- ☐ No signs of oil leaks.
- ☐ Switch operators are temporarily frozen but can be maintained and made operational with a minimum amount of effort.
- ☐ Bottom of equipment or 25% of surface area is not accessible and corrosion is likely to occur (that is, wet structure and equipment does not have marine coating).

Figure 5–7: Moderate Corrosion — Example 1 of 3

Figure 5–8: Moderate Corrosion — Example 2 of 3

Figure 5–9: Moderate Corrosion — Example 3 of 3



2.5 Light Corrosion

- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling is present over 75% of the equipment's surface.
- ☐ Switch operators work freely.
- ☐ No signs of oil leaks.

Figure 5–10: Light Corrosion — Example 1 of 3

Figure 5–11: Light Corrosion — Example 2 of 3

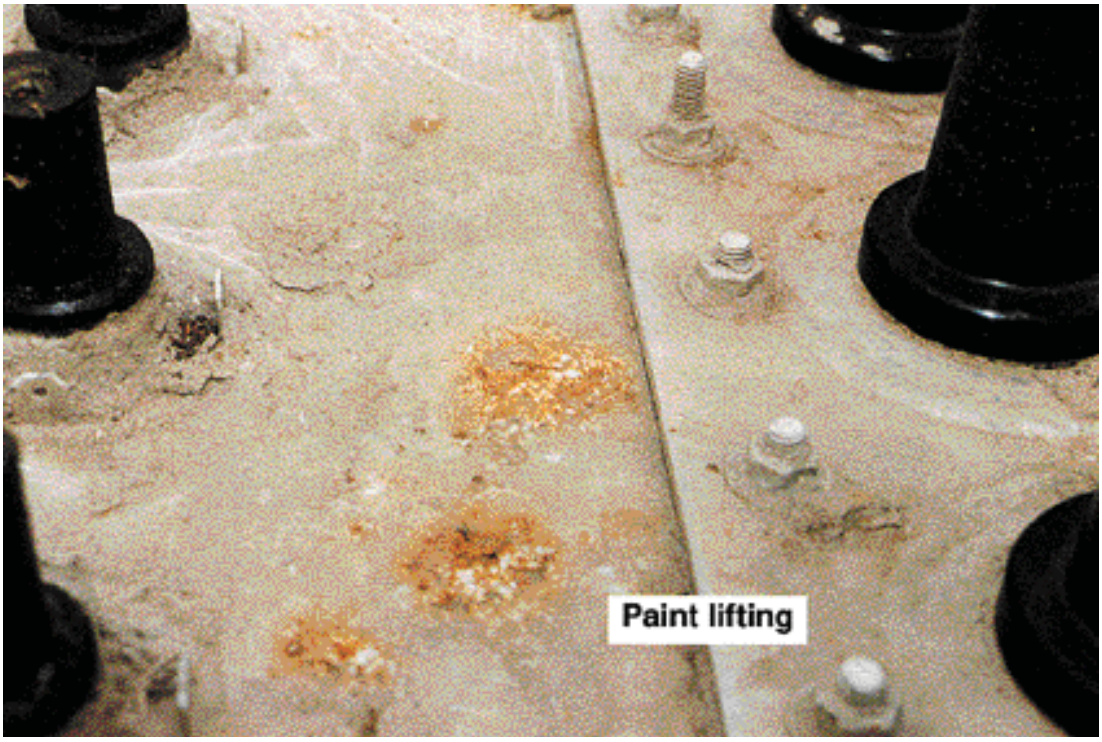


Figure 5–12: Light Corrosion — Example 3 of 3

2.6 Maintenance and Refurbishing

- ☐ Any “moderate” or “light” corrosion equipment should have the following repairs performed:
- ☐ The operating mechanism should be cleaned, greased (if required), and operate freely.
- ☐ The equipment tank, except for the back and/or bottom, should be cleaned of corrosion and coated with an approved material.
- ☐ The equipment tank, except for the back and/or bottom, should be cleaned of corrosion and coated with an approved material.
- ☐ To determine the level of corrosion and, in particular, the depth of pitting, the corroded material must be removed.
- ☐ To extend the life of equipment and ensure the operating mechanism functions properly.
- ☐ To inspire confidence in crew members when working in a vault or enclosure where the equipment has obviously been maintained.

Figure 5–13: Maintenance and Refurbishing — Example 1 of 4

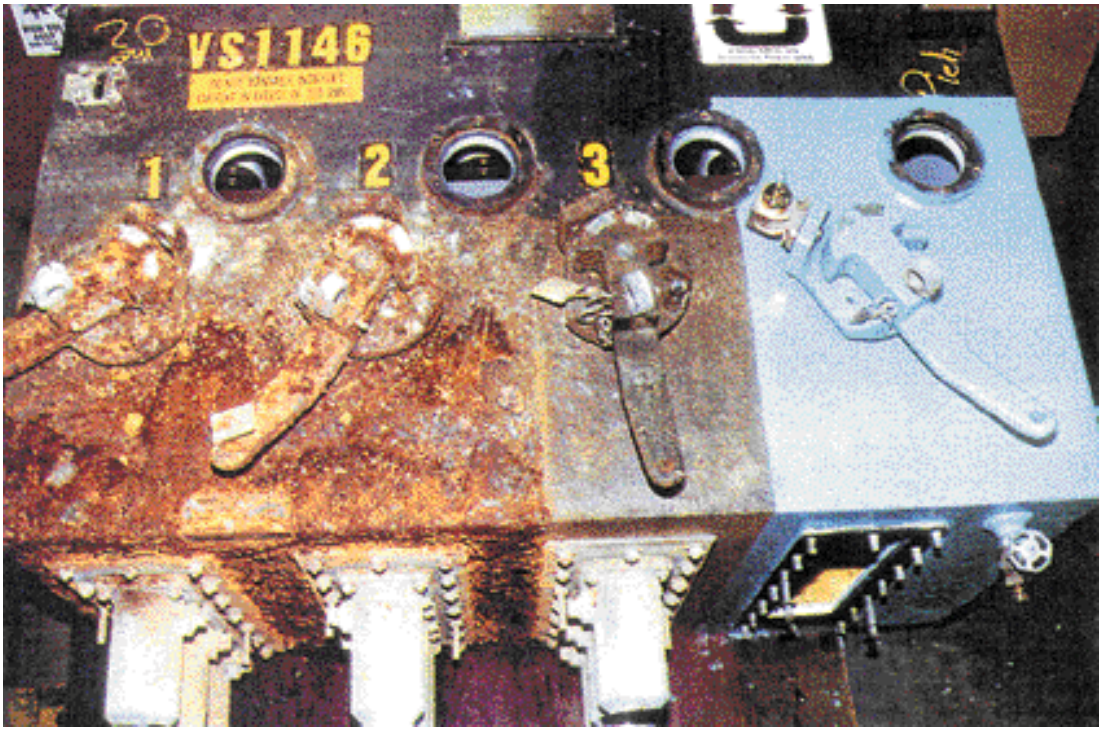


Figure 5–14: Maintenance and Refurbishing — Example 2 of 4

Figure 5–15: Maintenance and Refurbishing — Example 3 of 4

Figure 5–16: Maintenance and Refurbishing — Example 4 of 4

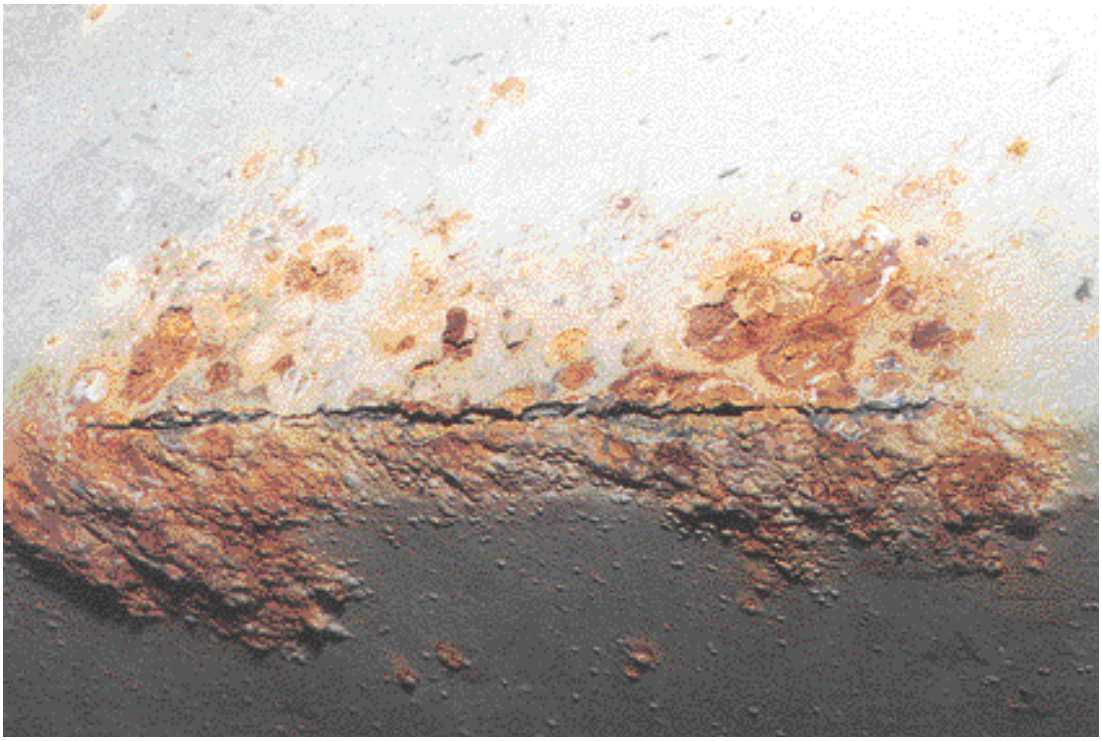
2.7 Typical Problems

A. This is an example of a switch oil drain valve assembly where the drain plug and nipple have corroded to the point that the assembly is inoperative.

Figure 5–17: Typical Problems — Example 1 of 4

B. This picture illustrates a weld seam that has possibly corroded to the extent that an oil leak may be imminent.

Figure 5–18: Typical Problems — Example 2 of 4



C. In some cases, there are aluminum-bodied terminators installed in areas where moisture is present. These terminators will normally be classified as “very heavy” or “heavy” corrosion, depending upon degree of corrosion.

Figure 5–19: Typical Problems — Example 3 of 4

Figure 5–20: Typical Problems — Example 4 of 4

CG–6: Aboveground Equipment Corrosion Condition Guide

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FIGURES **PAGE**

CG–6: Aboveground Equipment Corrosion Condition Guide

1.0 Corrosion Levels of Pad Mounts, Switch Enclosures, Transformers and Capacitors

1.1 Purpose

Listed below are guidelines to assessing corrosion guidelines. Utilize the Risk Assessment Matrix to determine reasonable time frame for any required action needed.

This procedure provides the requirements for establishing external and internal corrosion levels and the criteria for making necessary field repairs or replacements of padmounted (PMH/PME) switch enclosures, transformers, and capacitors.

1.2 Inspection

The following are the measures for detection and inspection of corrosive and deteriorating conditions of padmounted switch enclosures, transformers, and capacitors:

A. External Inspection

- ☐ Check paint for blistering, cracking, flaking, peeling, and any significant color changes.
- ☐ Check for evidence of corrosion at specific locations. These locations include but are not limited to weld seams, edges, corners, and around enclosure base.
- ☐ Open switch operating mechanism compartments in switch enclosures and check for hidden areas of corrosion.

B. Internal Inspection

- ☐ Check around door edges (including hinges), at areas where the door comes in contact with the enclosure, at base of door openings, and on component structural support members for evidence of corrosion.
- ☐ Check for evidence of standing water in structure below switch enclosure, transformer, or capacitor, and note in inspection report.
- ☐ Check for evidence of moisture condensation on internal surfaces.

1.3 Designating External and Internal Corrosion Evaluation

To evaluate the external corrosion evaluation of PMH/PME switch enclosures, transformers, or capacitors, scrape and wire brush the areas on the enclosure, operating mechanisms, and other metal components where corrosion is suspected so that the depth and extent of corrosion can be determined. Ensure proper safety measures are being taken. After scraping and cleaning, each enclosure shall have the corrosion level rated and maintenance priority established as described in the following:

NOTE

Once a corrosion evaluation has been established, that evaluation should not be changed as a result of cleaning, repairing, or painting. This policy is established since pitting cannot be repaired and the interior of the enclosure usually will not be repaired or repainted.

A. Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable termination hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leakage is severe where routine repairs will not stop leakage.
- ☐ Any condition that would indicate that a severe hazard exits.

B. Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment, or the equipment enclosure has pits that are “near through” the wall thickness.
- ☐ There are openings completely through the enclosure wall.
- ☐ There is oil leakage that cannot be repaired.
- ☐ Any other condition exists that would indicate a hazard.

C. Heavy Corrosion (Priority 2)

- ☐ There is distinct corrosion, heavy loss of paint, and deep pitting over half of the equipment surface.
- ☐ There is pitting that exceeds one quarter of the original wall thickness.
- ☐ Metal is flaking away in nonhazardous locations.
- ☐ There is minor oil leakage, but it is repairable.

D. Moderate Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is distinct discoloration and significant loss of paint and/or moderate pitting (pencil point-sized pits no deeper than one quarter of the original wall thickness).
- ☐ There is no sign of oil leakage.

E. Light Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling are present.
- ☐ Switch handles and mechanism are operational.
- ☐ There is no sign of oil leakage.
- ☐ There are only minor touch-up repairs required.

2.0 Corrosion Examples

2.1 Severe Corrosion

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable termination hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leakage is severe where routine repairs will not stop leakage.
- ☐ Any condition that would indicate that a severe hazard exits.

NOTE

Severe corrosion is described above. There are no pictures of severe corrosion in this manual revision. Corrosion conditions exceeding the conditions identified in "Very Heavy" images are considered Severe.

WARNING

When a severe corrosion condition exists, the structure shall be closed and a sign shall be posted stating "DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED." The situation shall be made safe and the equipment shall be replaced as soon as possible.

2.2 Very Heavy Corrosion

- ☐ There is very heavy corrosion over most of the equipment, or the equipment enclosure has pits that are "near through" the wall thickness.
- ☐ There are openings completely through the enclosure wall.
- ☐ There is severe oil leakage that cannot be repaired.
- ☐ Any other conditions exist that would indicate a hazard.

WARNING

When a very heavy corrosion condition exists, the structure shall be closed and a sign shall be posted stating "DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED." The situation shall be made safe and the equipment shall be replaced as soon as possible.

Figure 6–1: Opening Completely Through the Enclosure Wall

Figure 6–2: Very Heavy Corrosion of Locking Assembly

Figure 6–3: Another Example of Metal Flaking Away at Nonhazardous Locations

2.3 Heavy Corrosion

- ☐ There is distinct corrosion, heavy loss of paint, and/or deep pitting over half of the equipment's surface.
- ☐ There is pitting that exceeds one quarter of the original wall thickness.
- ☐ Metal is flaking away in nonhazardous locations.
- ☐ There is minor oil leakage, but it is repairable.

Figure 6–4: Wall Corrosion at Top of Compartment Door, Covered when Other Door Closed

Figure 6–5: Wall Corrosion at Bottom of Compartment Door, Covered when Other Door Closed

Figure 6–6: Pitting Exceeding One-Quarter Depth of Wall Thickness

Figure 6–7: Distinct Corrosion of Component Structural Support Members

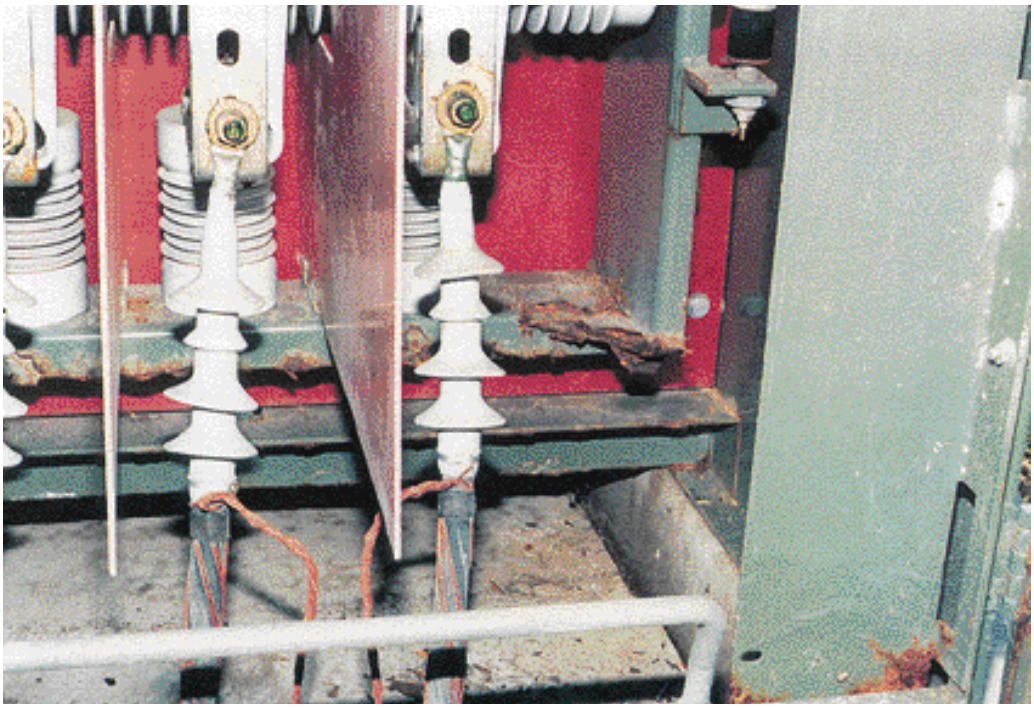


Figure 6–8: Metal Flaking Away at Nonhazardous Locations

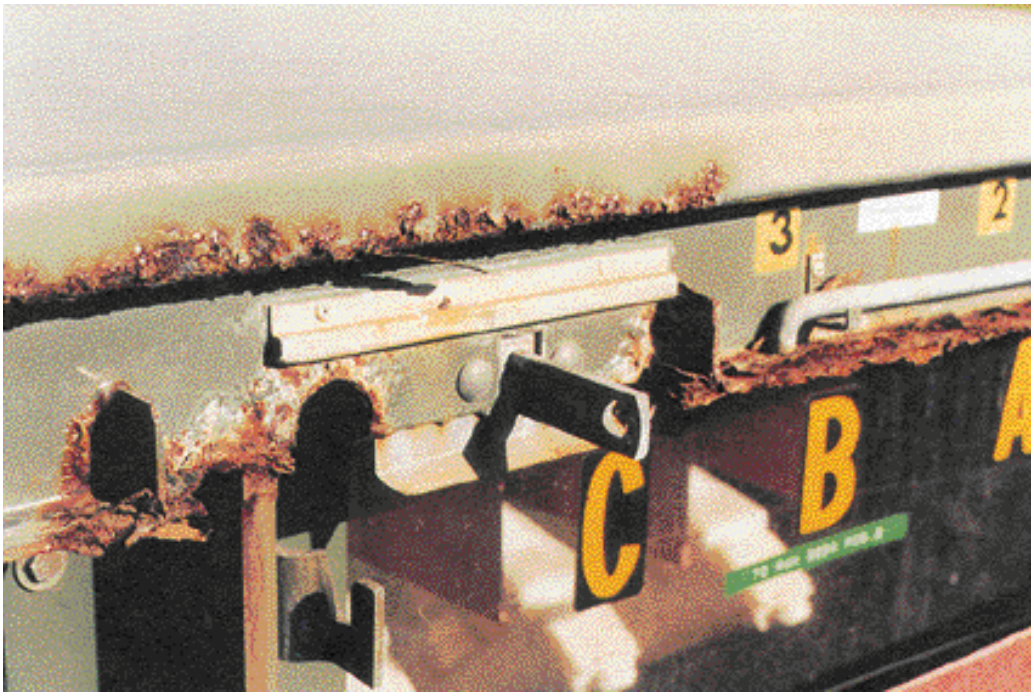


Figure 6–9: Another Example of Metal Flaking Away at Nonhazardous Locations

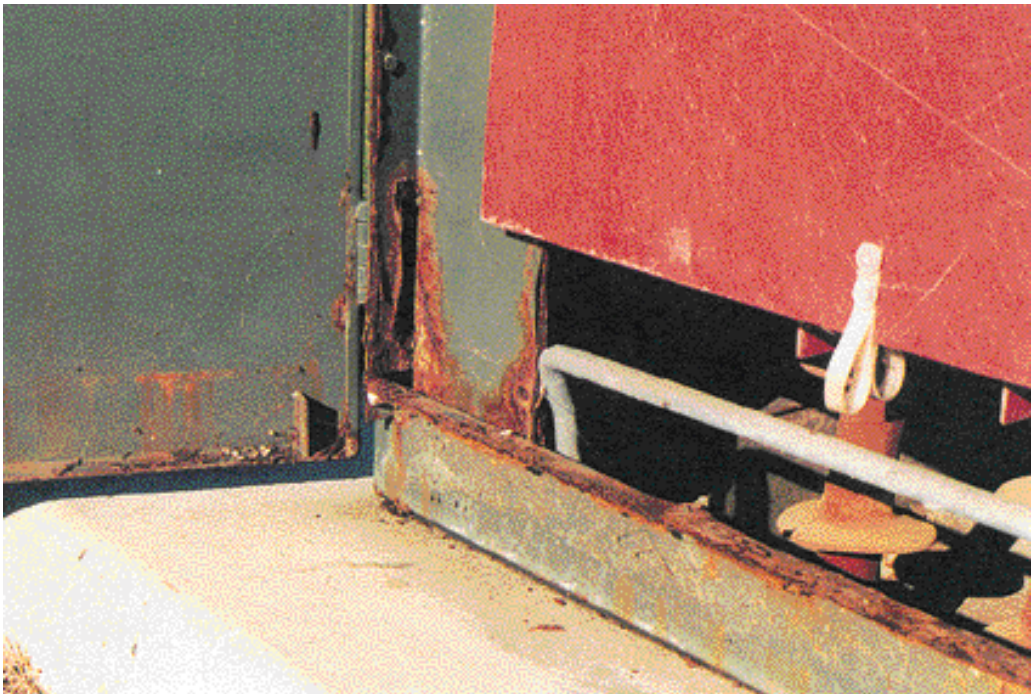


Figure 6–10: Heavy Corrosion with Deep Pitting, Exceeding One-Quarter of Original Wall Thickness

Figure 6–11: Another Example of Heavy Corrosion with Deep Pitting, Exceeding One-Quarter of Original Wall Thickness

2.4 Moderate Corrosion

- ☐ There is distinct discoloration and significant loss of paint and/or moderate pitting (pencil point-sized pits no deeper than one quarter of the original wall thickness).
- ☐ There is no sign of oil leakage.

Figure 6–12: Ineffective Prior Repairs

Figure 6–13: Significant Blistering of Paint

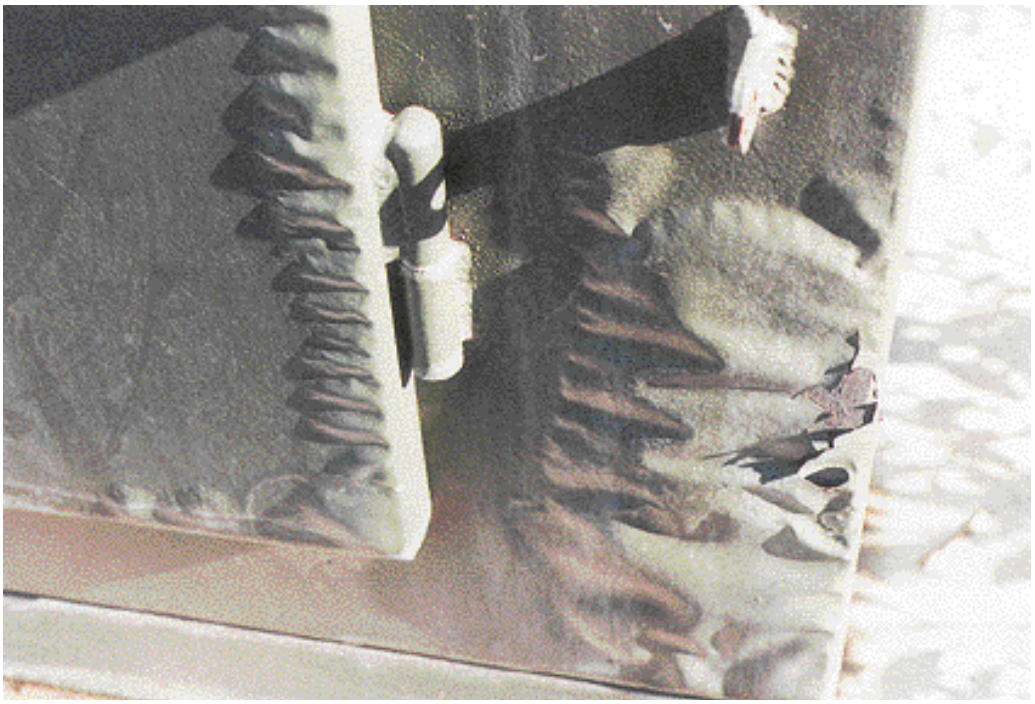


Figure 6–14: Moderate Corrosion with Pitting on Edge of Enclosure Top

Figure 6–15: Loss of Metal

Figure 6–16: Moderate Corrosion with Blistering, Pitting, and Discoloration in and around Vents

Figure 6–17: Moderate Corrosion with Pitting and Significant Loss of Paint

Figure 6–18: Moderate Corrosion with Significant Loss of Paint at Base

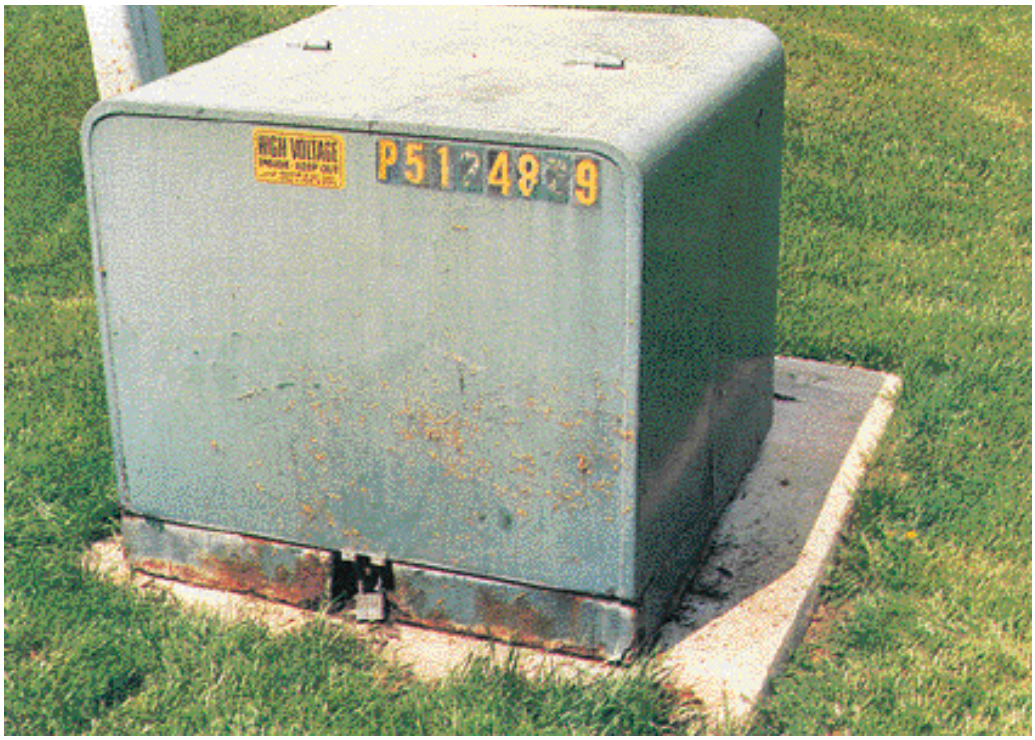


Figure 6–19: Interior Blistering, Flaking, Corrosion, and Discoloration

Figure 6–20: Peeling of Paint with Moderate Pitting

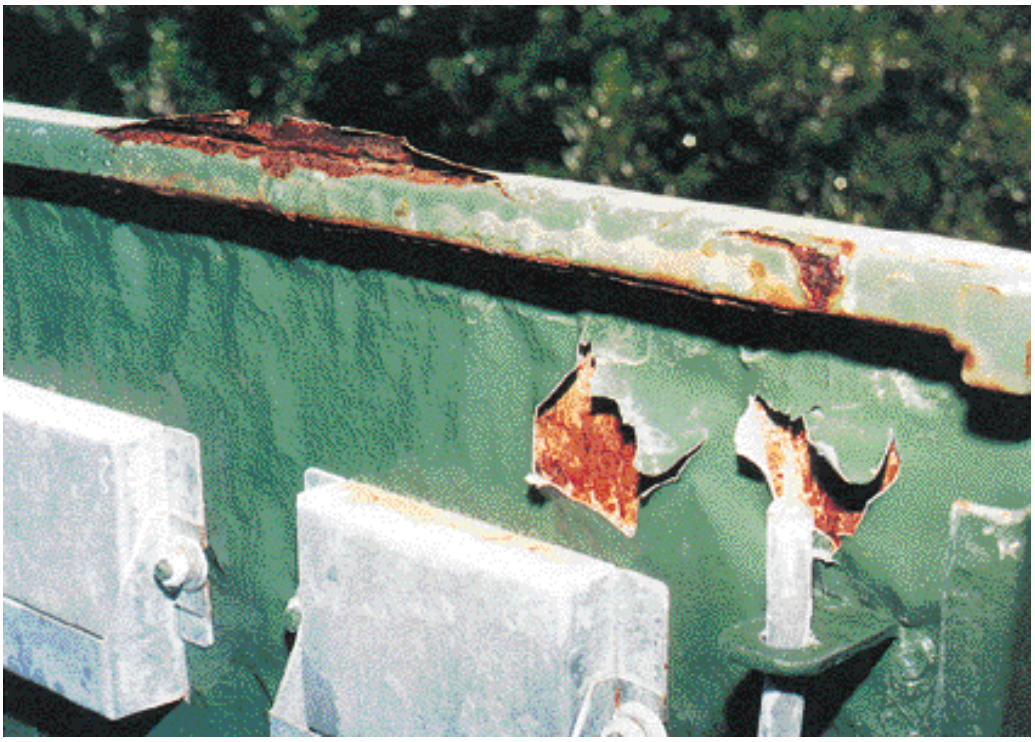
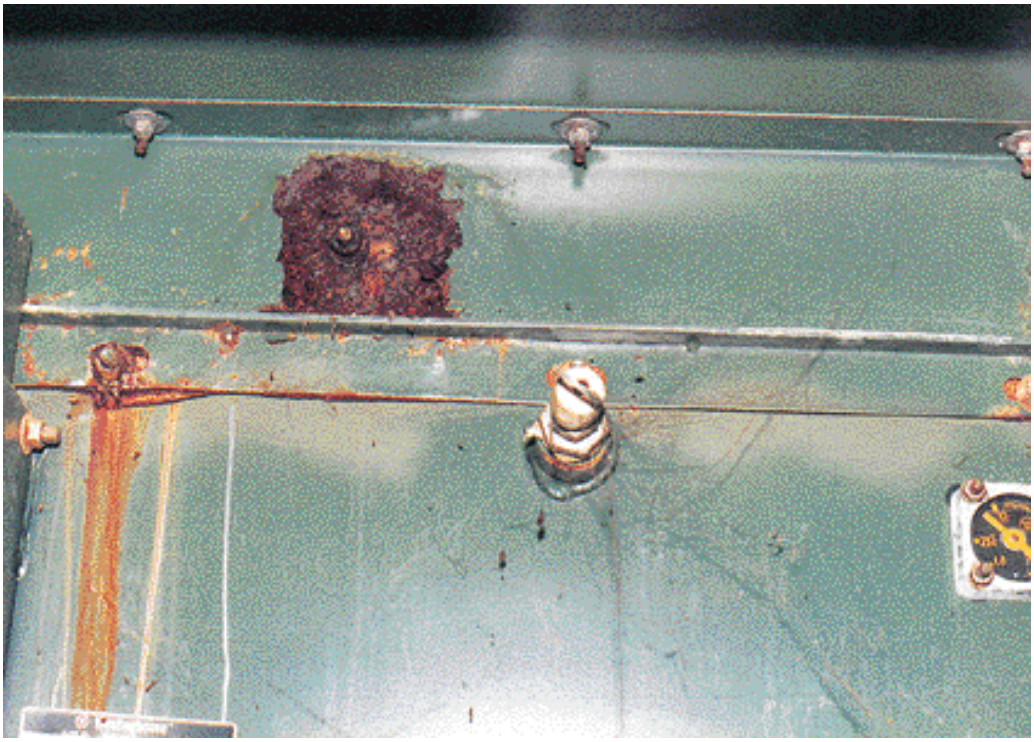


Figure 6–21: Moderate Corrosion of Interior with Significant Pitting



2.5 Light Corrosion

- ☐ There is some discoloration and disruption of painted surfaces but no serious pitting or scaling are present.
- ☐ Switch handles and mechanisms are operational.
- ☐ There is no sign of oil leakage.
- ☐ There are only minor touch-up repairs required.

Figure 6–22: Light Corrosion on Bottom of Door (No Serious Pitting)

Figure 6–23: Close-Up of Light Corrosion on Bottom of Door (No Serious Pitting)

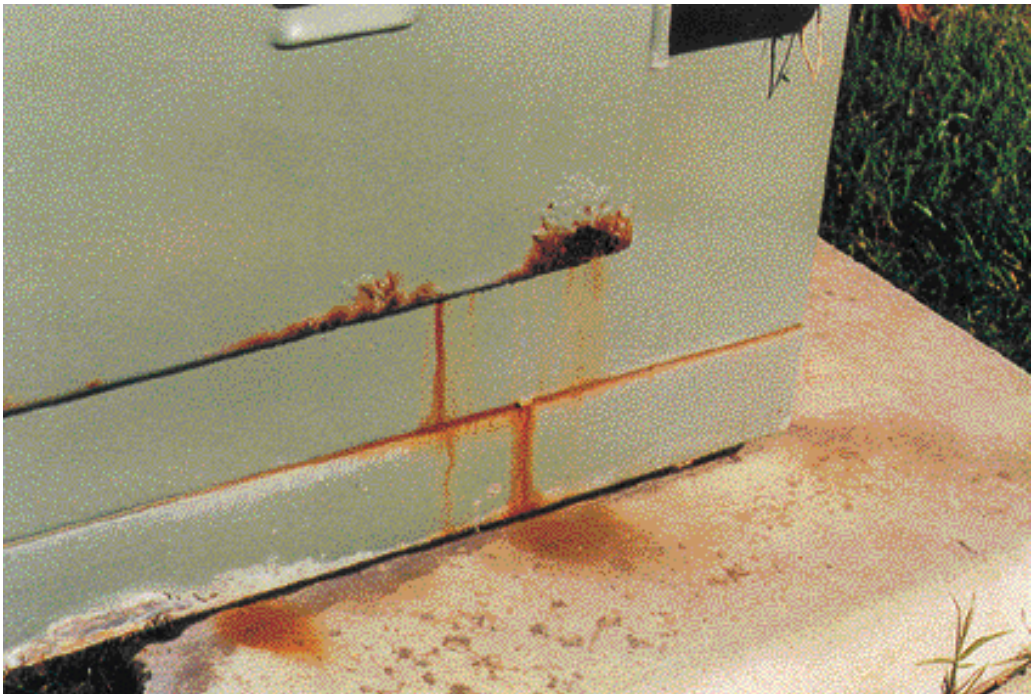


Figure 6–24: Light Corrosion within Manual Switch Operating Mechanism Compartment (No Serious Pitting)

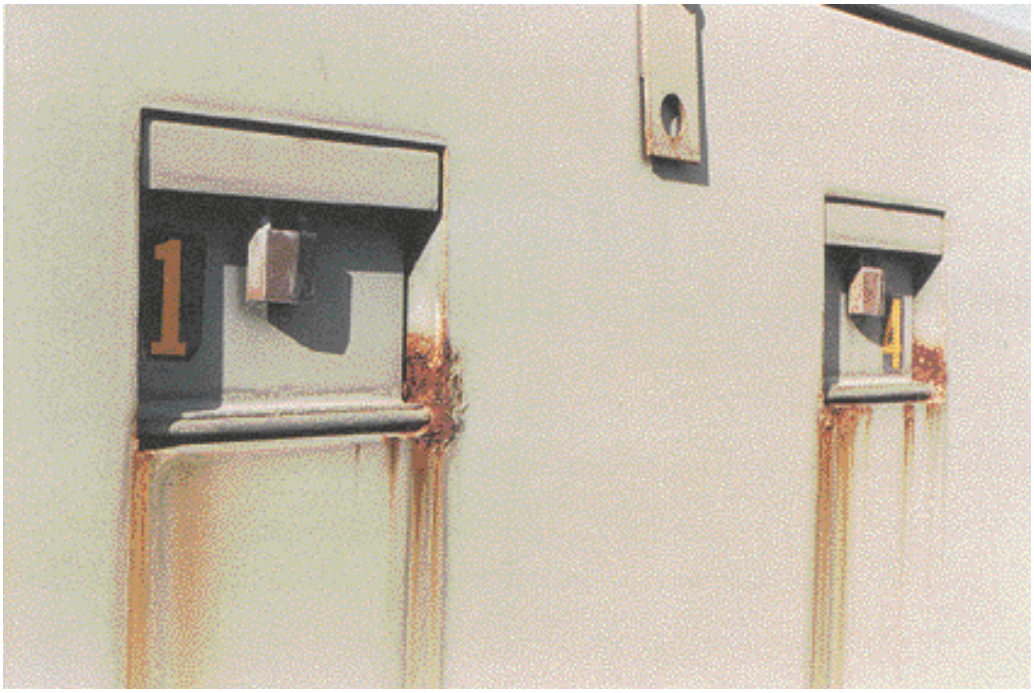


Figure 6–25: Light Corrosion at Louver Openings and at Base of Cabinet (No Serious Pitting)

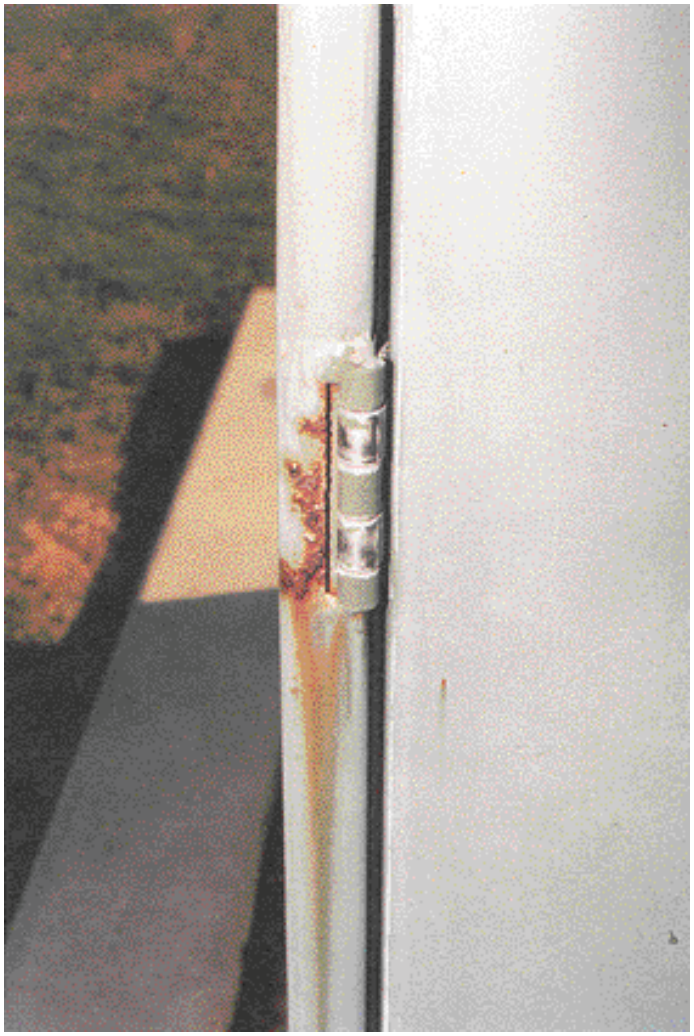
Figure 6–26: Limited Peeling of Paint

Figure 6–27: Light Corrosion of Adapter Cover Plate (No Serious Pitting)

Figure 6–28: Light Corrosion at Lower Edge of Top Cover and Brackets (No Serious Pitting)

Figure 6–29: Light Corrosion at Weld Seam
(No Serious Pitting)

Figure 6–30: Light Corrosion at Hinges



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CG–7: Field Painting of Pad-Mounted Equipment

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CG–7: Field Painting of Pad-Mounted Equipment

1.0 Moderate Corrosion

Perform routine maintenance within three years. Touch up exterior of equipment rated as Corrosion Level 4 as necessary using the following material coded items:

- Paint Thinner, SCE Item 303
- Valspar Chromox Primer, SCE Item 105 (Manufacturer's No. 13-R-50)
- Paint, SCE Item 214, Bell Telephone Green

NOTE

Refer to Corrosion Prevention maintenance instructions (CP-2, 1.0) for field repainting of padmounted equipment.

2.0 Light Corrosion

Opportunity maintenance is identified (but not required) prior to the next inspection cycle.

3.0 Surface Preparation

The following photographs illustrate three stages of surface preparation recommended for repainting of PMH/PME switch enclosures, transformers, and capacitors.

- Stage **A** — Condition as found before scraping or cleaning.
- Stage **B** — Condition after scraping and cleaning.
- Stage **C** — Finished condition with primer undercoat.

Figure 7–1: Field Painting of Pad-Mounted Equipment (1 of 12)

Figure 7–2: Field Painting of Pad-Mounted Equipment (2 of 12)

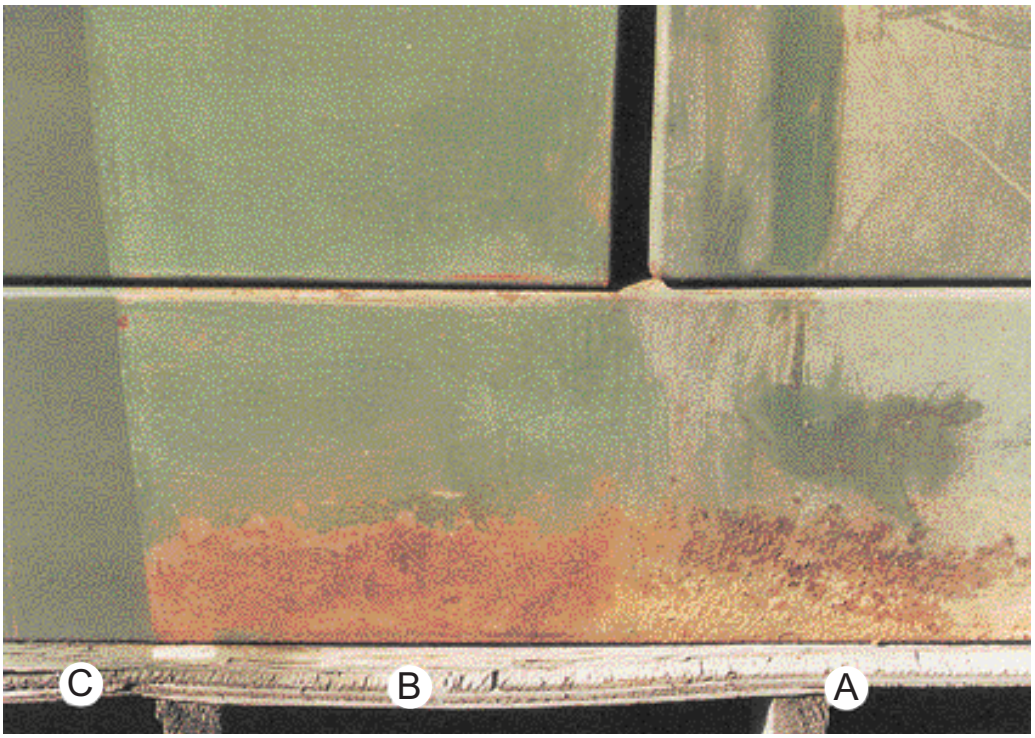


Figure 7–3: Field Painting of Pad-Mounted Equipment (3 of 12)

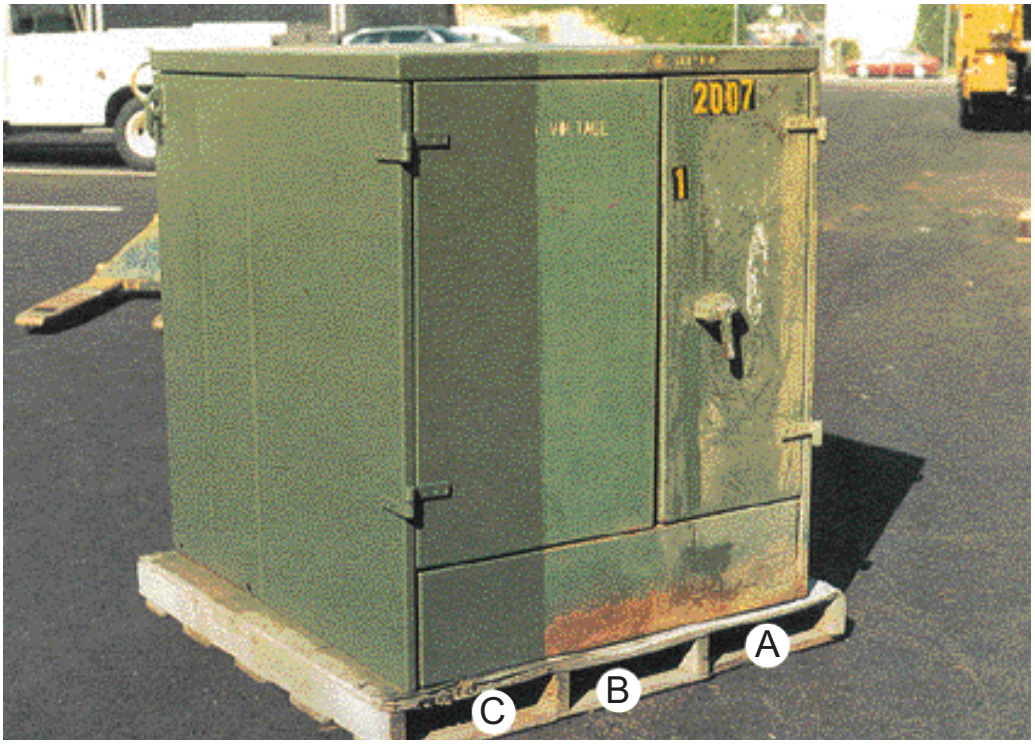


Figure 7–4: Field Painting of Pad-Mounted Equipment (4 of 12)

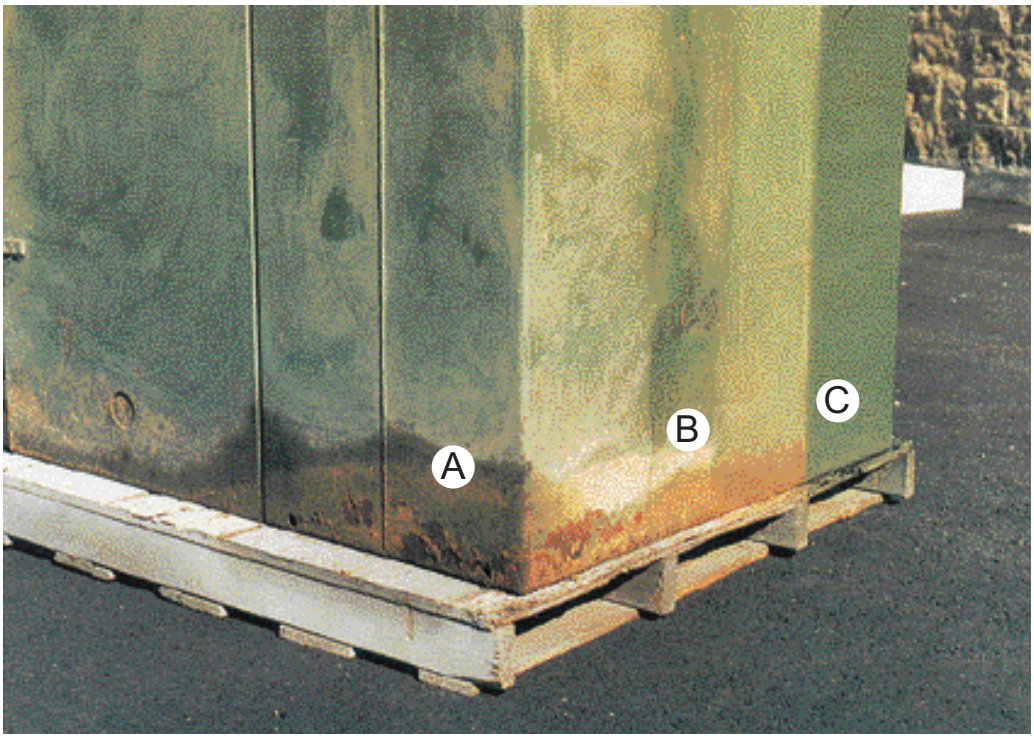


Figure 7–5: Field Painting of Pad-Mounted Equipment (5 of 12)

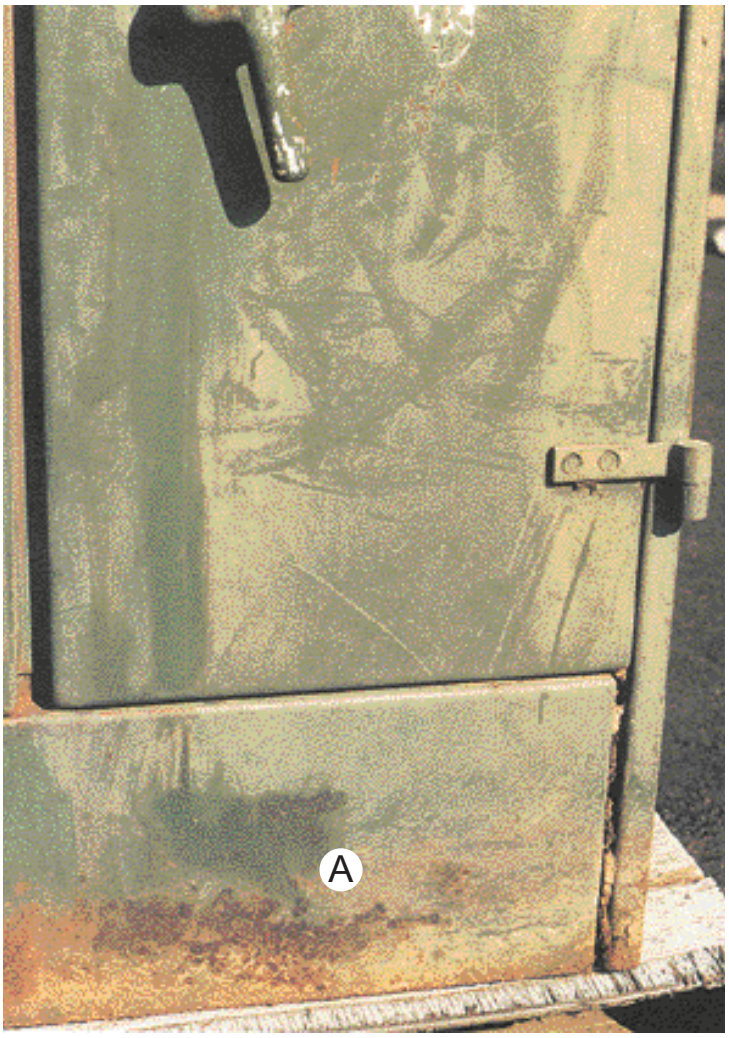


Figure 7–6: Field Painting of Pad-Mounted Equipment (6 of 12)

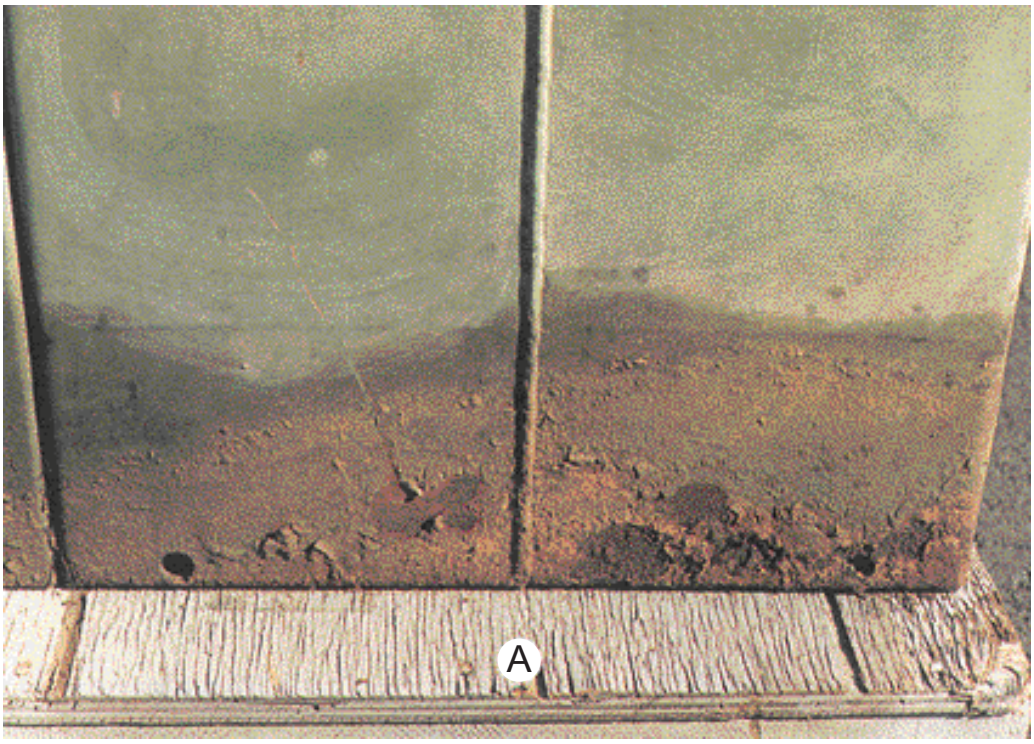


Figure 7–7: Field Painting of Pad-Mounted Equipment (7 of 12)

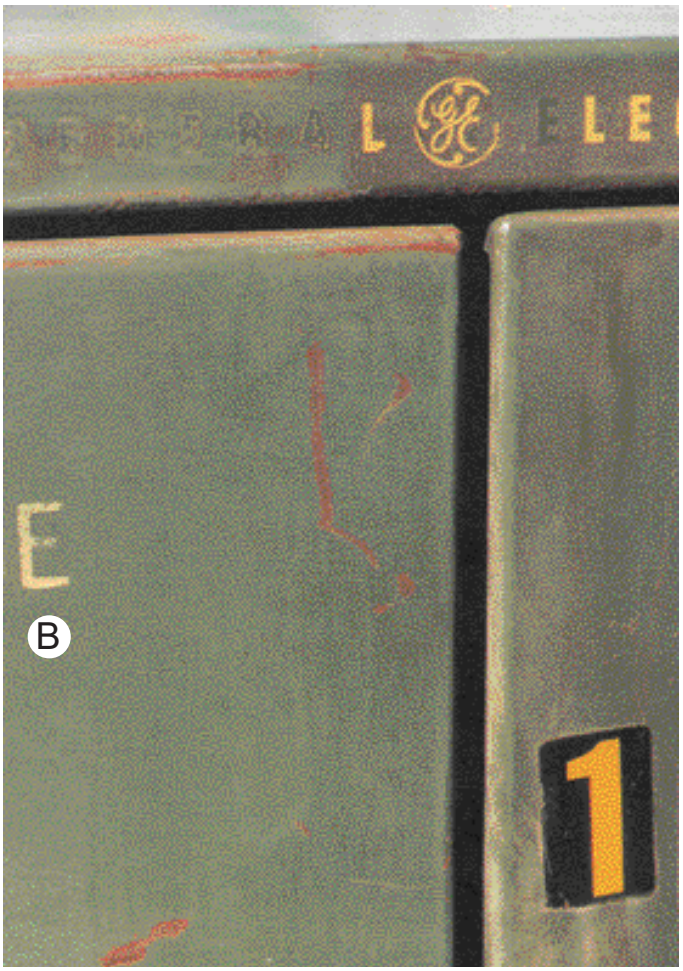


Figure 7–8: Field Painting of Pad-Mounted Equipment (8 of 12)

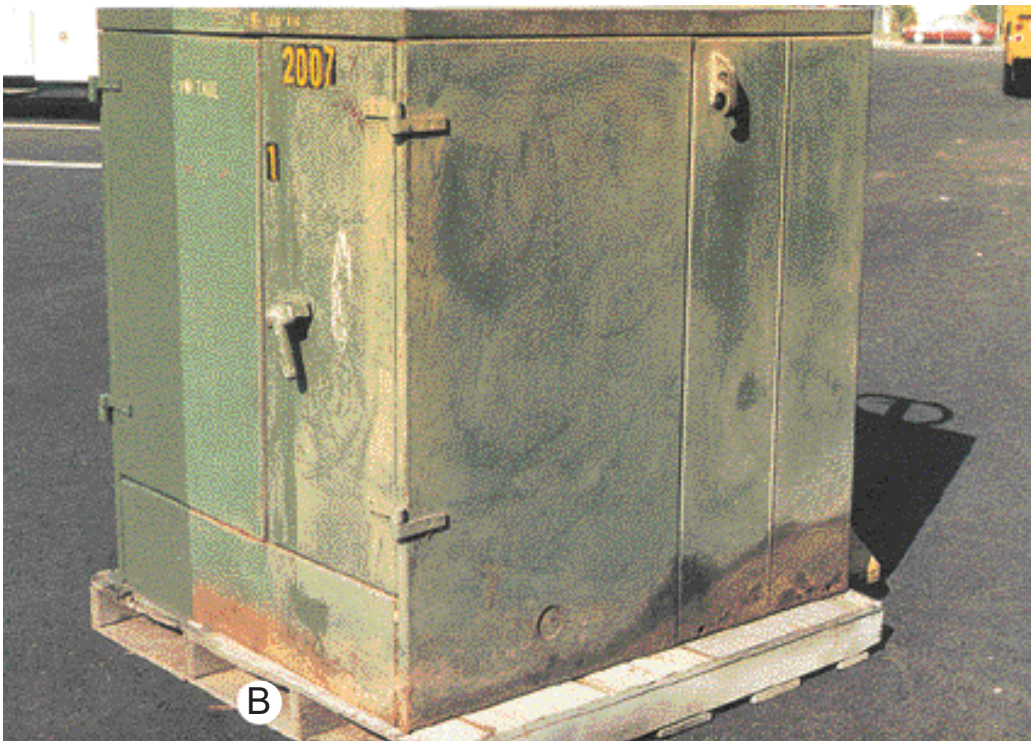


Figure 7–9: Field Painting of Pad-Mounted Equipment (9 of 12)

Figure 7–10: Field Painting of Pad-Mounted Equipment (10 of 12)

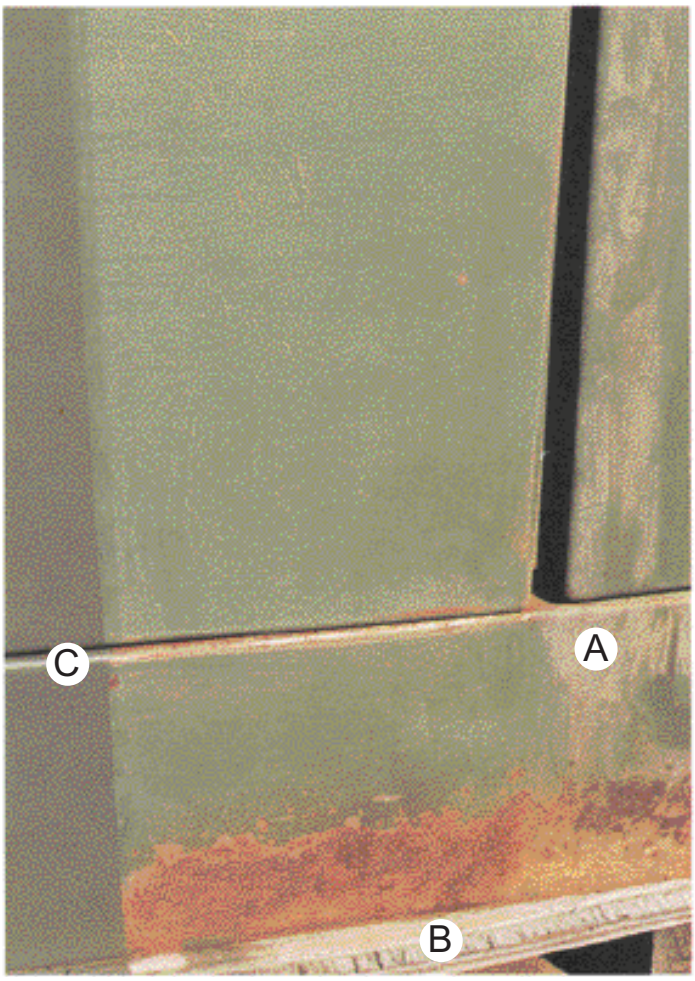
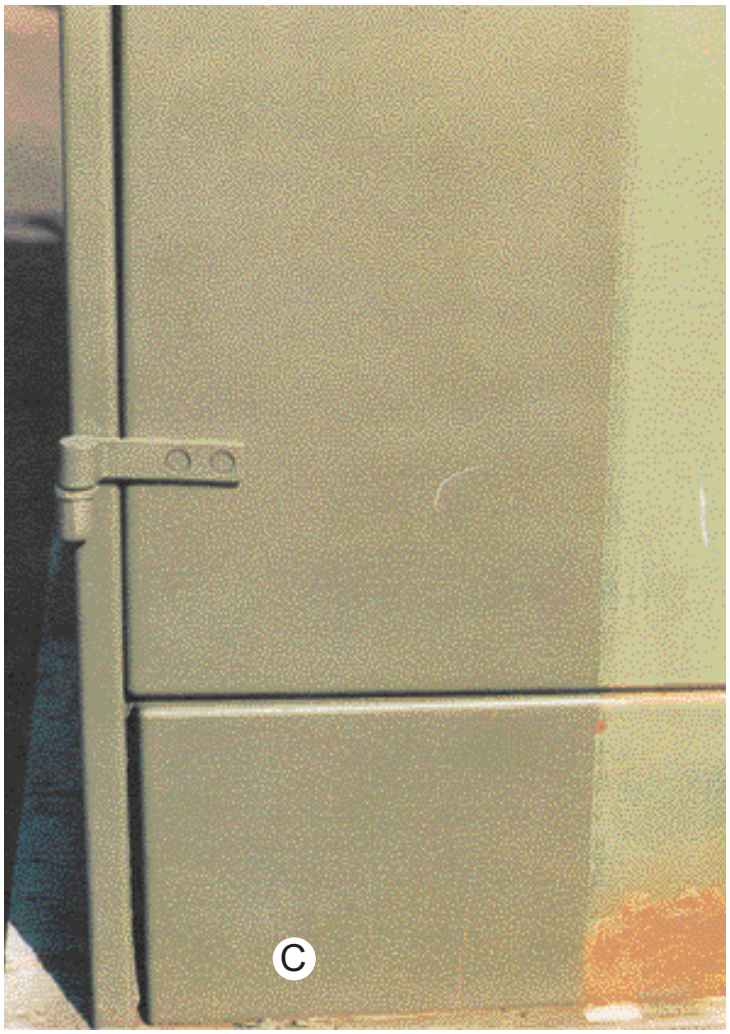


Figure 7–11: Field Painting of Pad-Mounted Equipment (11 of 12)

Figure 7–12: Field Painting of Pad-Mounted Equipment (12 of 12)



Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Melvin Stark
Job Title: Principal Manager
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 02. b:
Regarding SCE's Asset Inspection Program

b. Provide the QA/QC inspection checklists used for asset-related inspections.

Response to Question 02. b:

When performing asset-related inspections, the Compliance & Quality organization assesses compliance with CPUC General Orders and various SCE maintenance, inspection, and/or construction standards specific to the program or inspection being evaluated.

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Kevin Arlic
Job Title: Senior Manager
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 02. c:
Regarding SCE's Asset Inspection Program

c. If SCE tailors its inspections specifically to inspect wildfire risk specific items, identify which items within the checklist this applies to, particularly if such differs from standard GO 95 inspections.

Response to Question 02. c:

SCE's annual grid patrol and detailed inspections are used to identify GO 95 safety and reliability issues in accordance with GO 165 timing. Although a checklist is neither required nor completed, further details regarding methods and procedures for the patrol can be referenced within the file: "*Distribution Inspection and Maintenance Program (DIMP)*." SCE detailed inspections go beyond this in HFTD to identify conditions that may not be a specific focus in GO 95, but still pose safety and reliability risk, as well wildfire risk.

SCE's inspection form has been updated as SCE's understanding of wildfire risk has evolved, and to formalize questions that inspectors are required to address in their inspections. In some cases, this involved the identification of specific types of issues in the checklist for which inspectors are specifically required to evaluate. To this end, SCE added questions to its inspection checklist performed within HFTD to help identify issues that may indicate wildfire risk. Additionally, SCE has added questions to the inspection checklist to capture additional asset-related data that can be useful to incorporate into SCE's wildfire risk assessments. This data helps to provide information for evaluating wildfire risk and to maintain current and relevant data for SCE assets within its HFTD.

Please refer to the file "*Distribution Inspection Survey Questions_2022"* which indicates several of these questions that SCE has added to its HFTD checklist since its inception in 2020. SCE indicates the question ID, which can be cross-referenced to the full question text and responses in the file "*Distribution Ground InspectApp Survey Approved 2022-05-20.*"

ATTACHMENT

Inspect App Survey Question Updates for Combo Pole Urgent Issues and 360 MVP

APPROVED: MAY 20, 2022

EFFECTIVE: JULY 2022

DATA CAPTURE QUESTIONS FOR INSPECTION –

Approvals

Department, Title	Name	Date of Approval
[redacted]	[redacted]	5/11/2022
[redacted]	[redacted]	5/20/2022
[redacted]	[redacted]	5/18/2022
[redacted]	[redacted]	5/18/2022
[redacted]	[redacted]	3/3/2022
[redacted]	[redacted]	5/20/2022

Transmission Level

(Enabled by SV003 [B])

MAT_TRAN

Default material selection to EZ Pole equipment record from SAP

T001 Were any conditions identified at the Transmission level that require immediate attention (e.g. Priority 1 notification)? (Enabled by SV003 [B])

A. Yes, issues requiring immediate attention were identified (Enables T002, T003)
B. No, issues requiring immediate attention were not identified

T002 What type of components or condition(s) at the transmission level require immediate attention? Select all that apply. (Enabled by T001 [A])

A. Vegetation (arcing, contact, signs of contact, or potential to contact energized conductors or equipment)
B. Crossarm (broken, damaged, burned or deteriorated)
C. Conductor (damage, inadequate clearances, signs of burn, tracking or arcing)
D. Insulator (loose, broken, damaged or missing)
E. Guy (damage, inadequate clearances, signs of burn, tracking or arcing)
F. Leaking oil from potheads (66kV or 115kV)
G. Excessive corrosion (loss of material or holes in equipment)
H. Other

T003 Confirm Transmission Operations was notified of conditions requiring immediate attention? (Enabled by T001 [A])

A. Yes, Transmission Operations was notified of issues requiring immediate attention

Structure Verification

SV001 This survey is being completed by:

A. An SCE employee
B. Contractor – NO Veg (Disables 0.016, 8.002A, 9.003, 10.006, 10.007[E], 0.022, 0.027 [A], 15.004 [A])
C. Contractor - with Veg

SV002 Are you able to complete the data capture survey?

A. Yes (Disables SV002A)
B. No (Enables SV002A, Disables SV003, SV004, SV005, SV006, SV007)

SV002A Indicate why the survey is unable to be completed:

A. Access/Obstruction Issue
B. Structure not in field (Note: if user picks survey stops)

SV003 What is the structure type?

A. Distribution Pole – ED
B. Transmission / Distribution Pole – EZ
C. Hydro Pole – ED
D. Communication Only Pole (Note: if user picks survey stops)
E. Streetlight Only Pole – EDSL (Disables SV004 [A,B,C,D]; SV005 [A,C]; MAT_PRI [A-R]; MAT_SEC [A,B,C,D,F,I,N,O]; MAT_COMM [A,B,C,D,E]; 0.014M; 0.014N; 1.002; 2.008; 0.014O; 6.001; 0.014I; 9.006; 9.007A; 9.007B; 11.004) (Enables SV004 [E,F,G]; 11.005)
F. Transmission Pole – ET (Note: if user picks survey stops)
G. Trans-Telecom Pole – ER (Note: if user picks survey stops)
H. Guy Stub Pole (Disables MAT_PRI [C,D,E,F,G,H,L,O,P,Q,R]; MAT_SEC [E,F,G,H,I,M,N,O,S]; MAT_COMM [E]; MAT_PUB [F])
I. Push Pole (Disables MAT_PRI [C,D,E,F,G,H,L,O,P,Q,R]; MAT_SEC [E,F,G,H,I,M,N,O,S]; MAT_COMM [E]; MAT_PUB [F])
J. None of the above (Note: if user picks survey stops)

SV004 What is the structure material?

A. Poles - Wood (Disabled by SV003 [E])
B. Poles - Composite (Disabled by SV003 [E])
C. Poles - Steel (Enables SV010) (Disabled by SV003 [E])
D. Poles - Tree (Disabled by SV003 [E])
E. Streetlight Only Pole – Concrete (Enabled by SV003 [E])
F. Streetlight Only Pole – Wood (Enabled by SV003 [E])
G. Streetlight Only Pole – Steel (Enabled by SV003 [E])
H. None of the above (Note: if user picks survey stops)

SV005 What levels exist on this structure?

NOTE: For guy stub and push poles indicate the level in which structure or attachments are connected to the associated structure

A. Primary level (Enables MAT_PRI) (Disabled by SV003 [E])
B. Secondary level (Enables MAT_SEC)
C. Communication level (Enables MAT_COMM) (Disabled by SV003 [E])
D. Public level (Enables MAT_PUB)

SV006 Is this structure located in a High Fire Area?
A. Yes (Enables 8.002A [D], 0.021A, 0.021B, 0.021C, 0.021D, 0.021E)
B. No (Enables 8.002A [E])

SV007 Is the structure one of these multi-pole configurations?
A. H-Frame (Enables SV008, SV009)
B. Platform Rack (Enables SV008, SV009)
C. No

SV008 How many poles does the structure contain? (Enabled by SV007 [A,B])
A. 2
B. 3
C. 4

SV009 Record the structure numbers for the other poles that make up the structure (Enabled by SV007 [A,B])
A. Structure 1
B. Structure 2
C. Structure 3

SV010 What type of Steel pole is the structure? (Enabled by SV004 [C])
A. Light Weight Steel
B. Tubular Steel Pole

FOR REFERENCE ONLY
Take the following photos, vertically and no zoom
- ✓ Take a photo of the entire structure
- ✓ Take a photo of the TOP HALF of the structure
- ✓ Take a photo of the BOTTOM HALF of the structure
- ✓ Take a photo of the structure number

Primary Level (Disabled by SV003 [E])

MAT_PRI Select all the equipment you see at the primary level:

A. Poles - Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Overhead Transformers (Enabled by SAP)
D. Overhead Capacitors (Enabled by SAP)
E. Crossarms – Wood (Disabled by SV003 [E,H,I])
F. Insulators (Disabled by SV003 [E,H,I])
G. Conductors – Primary (Disabled by SV003 [E,H,I])
H. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])
I. Hardware/Framing (Disabled by SV003 [E])
J. Span Guys (Disabled by SV003 [E])
K. Down Guys (Disabled by SV003 [E])
L. Risers/Terminations (Disabled by SV003 [E,H,I])
M. Poles – Tree (Disabled by SV003 [E])
N. Poles – Steel (Disabled by SV003 [E])
O. Crossarms – Composite (Disabled by SV003 [E,H,I])
P. Crossarms - Steel (Disabled by SV003 [E,H,I])
Q. Lightning Arresters (Disabled by SV003 [E,H,I])
R. Fuses (Disabled by SV003 [E,H,I])

POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

OVERHEAD TRANSFORMERS (0.014C, 3.001, 3.002, 3.003, 3.004, 3.005)

0.014C How many overhead transformers are installed on this structure? (Disabled by SV003 [E,H,I])

A. Answer choices will be 1, 2, 3

3.005 (AERIAL/GROUND) Are any of the following transformer conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Oil leakage (Enables 3.001)
B. Damage (damaged, missing or loose hardware, bushings or wire) or Operational issues (blown fuse, nests, swelling, burn marks, bare leads, humming, fault indicator) (Enables 3.002)
C. Rust/Corrosion (Enables 3.003)
D. No abnormal conditions

3.001 (AERIAL/GROUND) Indicate if any of the following signs of transformer oil leakage or weepage are observed. Select all that apply. (Enabled by 3.005 [A])

A. Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area (Notification Required)
B. Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area (Notification Required)
C. Oil weepage indicated by oily film on tank surface

3.002 (AERIAL/GROUND) Indicate if transformer has any of the following conditions at the time of inspection. Select all that apply. (Enabled by 3.005 [B])

A. Brackets damaged (Notification Required)
B. Scott brackets fiberglass pads present (Notification Required)
C. Visibly loose hardware (Notification Required)
D. Secondary leads in contact with the case (Notification Required)
E. Blown fuse (Notification Required)
F. Improperly connected (loose) wire (Notification Required)
G. In contact with animal nest (Notification Required)
H. One fuse is open/down (Notification Required)
I. Bushings damaged (Notification Required)
J. Signs of burn (Notification Required)
K. Signs of swelling (Notification Required)
L. Red flag fault indicator is visible
M. Secondary leads are bare
N. Transformers are humming

3.003 Is the transformer showing any of the following signs of rust or corrosion? (Enabled by 3.005 [C])

A. Rust or corrosion compromising equipment integrity (Notification Required)
B. Light surface rust or corrosion

3.004 (AERIAL/GROUND) Are animal guards installed, intact, and adequately covering the transformer? (Disabled by SV003 [E,H,I])

A. Yes
B. No

OVERHEAD CAPACITORS (0.014D, 4.001, 4.002. 4.003, 4.004)

0.014D How many overhead capacitor banks are installed on this structure? (Disabled by SV003 [E,H,I])
*NOTE: Only count entire **capacitor bank** and **NOT** individual capacitor units.*
A. Answer choices will be 1, 2, 3

4.004 (AERIAL/GROUND) Are any of the following capacitor conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Damage (damaged, missing or loose unit, controller, switch, PT transformer, bushing, hardware or wire) or Operational Issues (switch malfunction, nests, swelling, burn marks, bare leads, humming) (Enables 4.001)
B. Oil leakage (Enables 4.002)
C. Single phase condition (Enables 4.003)
D. No abnormal conditions

4.001 (AERIAL/GROUND) Indicate if any capacitor bank, or associated equipment, shows any of the following conditions. Select all that apply. (Enabled by 4.004 [A])
A. Ruptured or severely bulged capacitor units (Notification Required)
B. Capacitor bank damaged, not functioning (Notification Required)
C. Capacitor switches not secure, damaged, not functioning (Notification Required)
D. Capacitor controller damaged (Notification Required)
E. One fuse is open/down (Notification Required)
F. Bushings damaged (Notification Required)
G. Blown fuse (Notification Required)
H. Signs of burn (Notification Required)
I. Signs of swelling (Notification Required)
J. Improperly Connected (loose) Wire (Notification Required)
K. PT Transformer damaged or severely rusted (Notification Required)
L. In contact with animal nest (Notification Required)
M. Capacitor controller missing or enclosure damaged (exposed meter socket) (Notification Required)
N. Capacitor is humming

4.002 Indicate if any of the following types of capacitor bank oil leakage or weepage are observed. Select all that apply (Enabled by 4.004 [B])
A. Capacitor units leaking, oil reaches ground or public access or environmentally sensitive area (Notification Required)
B. Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area (Notification Required)
C. Oil weepage indicated by oily film on capacitor unit surface (not capacitor switches)

4.003 Has the capacitor equipment (i.e. fuses) broken down to a single phase condition with bank still energized? (Enabled by 4.004 [C])
A. Yes (Notification Required)
B. No

CROSSARMS - WOOD (0.014H, 0.014J, 0.014K, 2.003A, 2.003C, 2.004A, 2.005B, 2.006A, 2.007A, 2.003B, 2.006B, 2.008)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A single crossarm is when only one crossarm piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.008 **(AERIAL/GROUND)** Are any of the following primary wood crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Bowing/twisting (Enables 2.003A, 2.003B)
B. Deterioration (Enables 2.003C)
C. Canting (Enables 2.004A)
D. Tracking (Enables 2.005B)
E. Brace Damage (Enables 2.006A, 2.006B)
F. Damaged bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
G. Missing bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
H. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.008 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003B Are any crossarms of this material type showing any of the following signs of bowing/twisting at this level and need to be replaced? Select all that apply (Enabled by 2.008 [A])
A. Crossarm bowed approximately >5 inches and splintering (Notification Required)

B. Crossarm bowed approximately >5 inches without splintering (Notification Required)
C. Significant damage at a bolt (Notification Required)

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? (Enabled by 2.008 [B])
A. Answer choices will be 1-20 (Notification Required)

2.004A How many crossarms of this material type at this level are canted and need to be replaced? (Enabled by 2.008 [C])
A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.008 [D])
A. Answer choices will be 1-20 (Notification Required)

2.006A How many crossarms of this material type at this level have damaged braces and need to be replaced? (Enabled by 2.008 [E])
A. Answer choices will be 1-20 (Notification Required)

2.006B Do any crossarms of this material type have any of the following brace damage at this level and need to be replaced? (Enabled by 2.008 [E])
Select all that apply.
A. Braces broken (Notification Required)
B. Braces loose (Notification Required)
C. Braces missing (Notification Required)

CROSSARMS - COMPOSITE (0.014H, 0.014J, 0.014K, 2.003C, 7.002A, 7.002B, 7.004A, 7.006)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.

NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

7.006 (AERIAL/GROUND) Are any of the following primary composite crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Deterioration (Enables 2.003C)
B. Bending (Enables 7.002A, 7.002B)
C. Damage (Enables 7.004A)
D. Damaged bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
E. Missing bonding wire under crossarm for 12kV and higher (Notification Required only if crossarm does not require replacement)
F. No abnormal conditions

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? Enabled by 7.006 [A])

A. Answer choices will be 1-20 (Notification Required)

7.002A How many crossarms of this material type at this level show signs of bending and need to be replaced? (Enabled by 7.006 [B])

A. Answer choices will be 1-20 (Notification Required)

7.002B Do any crossarms of this material type have any of the following conditions of bending and need to be replaced? Select all that apply (Enabled by 7.006 [B])

A. Visual fracturing (Notification Required)
B. Significant visual buckling (Notification Required)
C. Significantly unbalanced due to tension (Notification Required)
D. Bent mounting bracket and associated hardware (Notification Required)

7.004A How many crossarms of this material type at this level are physically damaged and need to be replaced? (Enabled by 7.006 [C])

A. Answer choices will be 1-20 (Notification Required)

CROSSARMS – STEEL (0.014H, 0.014J, 0.014K, 2.003A, 2.003D, 2.005B, 2.007A)

0.014H How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.

NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.

A. Answer choices will be 0-20

0.014J How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
B. Answer choices will be 0-20

0.014K How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: Count all crossarms of this material type at this level – including fuse-holder arms, transformer hanger arms, etc.
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.009 (AERIAL/GROUND) Are any of the following steel crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Bowing/twisting (Enables 2.003A)
B. Rusting/Corrosion (Enables 2.003D)
C. Tracking (Enables 2.005B)
D. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.009 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003D How many crossarms of this material type at this level are excessively rusted or corroded and need to be replaced? (Enabled by 2.009 [B])
A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.009 [C])
A. Answer choices will be 1-20 (Notification Required)

INSULATORS (0.014A, 6.001, 6.002, 6.003, 6.004, 6.005, 6.006)

0.014A How many insulators are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Dead-end insulators count as 1; Count primary polymer insulators if applicable, count 3 phase bank delta insulators and/or all primary tap supporting insulators.
A. Answer choices will be 1-30

6.001 What types of insulators are installed at this level? Select all that apply. (Disabled by SV003 [E,H,I])
A. Porcelain
B. Polymer
C. Hendrix Universal
D. Hendrix (vice-top)
E. Other

6.006 (AERIAL/GROUND) Are any of the following insulator conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Missing parts (Notification Required)
B. Insulator damage (broken, cracked, loose, floating, squatting, chipped), Tie wire damaged, missing, loose), Upward Strain (Enables 6.003)
C. Top/Side tie insulator touching crossarm (Notification Required)
D. No abnormal conditions

6.003 (AERIAL/GROUND) Indicate if any of the following types of damage are observed on any portion of any insulator, or its associated hardware, at this level. Select all that apply. (Enabled by 6.006 [B])

A. Insulator broken (Notification Required)
B. Insulator cracked, damaged or loose (Notification Required)
C. Insulator floating (Notification Required)
D. Insulator squatting (Notification Required)
E. Tie wire broken/missing/damaged or loose (Notification Required)
F. Upward strain (lift) on pin in tangent configuration (Notification Required)
G. Insulator chipped (Notification Required)
H. Improper angle on pin insulator (Notification Required)

6.005 Do the insulators connect to the structure using a hook? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No

6.007 Is there visible wear on the hook or structure where it attaches? (Enabled by 6.005 [A])

A. Yes, visible wear on the hook or structure exists (Notification Required)
B. No, visible wear on the hook or structure does not exist

CONDUCTORS - PRIMARY (0.014B, 0.016, 0.026A, 0.026B, 0.026C, 8.009, 8.006, 8.007A, 8.007B, 8.011, 8.012, 8.013, 8.014, 8.015, 8.005, 8.008, 8.001, 8.002A, 8.002B, 8.016, 8.010, 8.017, 8.018, 8.019, 8.020)

0.014B How many line/high side conductors are installed at this level? (Disabled by SV003 [E,H,I])
*NOTE: This is **NOT** load-side primary. **DO NOT COUNT** buck arm primary or primary fed from same circuit/tap-line – only different circuits/voltages.*

A. Answer choices will be 1-20

0.016 What is the clearance between trees/foliage and primary conductors? (Disabled by SV003 [E,H,I])

A. 2 feet or less (Notification Required)
B. Between 2 feet and 6 feet (Notification Required)
C. 6 feet to 10 feet
D. Greater than 10 feet
E. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.026A Is the primary circuit horizontal or vertical construction? (Disabled by SV003 [E,H,I])
NOTE: If a double circuit and/or both types of construction exist on the pole, select both options. On multi-arm and triangular construction, only select "Vertical" if primary conductors roll/transpose mid-span; otherwise select "Horizontal".
A. Horizontal construction
B. Vertical construction

0.026B Is there any indication of the primary conductor rolling/transposing from vertical-to-horizontal or horizontal-to-vertical? (Disabled by SV003 [E,H,I])
A. Yes and clearance between conductors appears to be greater than 12 inches
B. Yes and clearance between conductors appears to be less than 12 inches (Notification Required)
C. No

0.021D (AERIAL/GROUND) Indicate if any of the following types of non-exempt CONNECTOR material are present at this level. Select all that apply or select "No non-exempt connector present". (Enabled by SV006 [A])
A. Split bolt connector (Enables 0.022)
B. Copper vise connector (Enables 0.022)
C. No non-exempt connector present

8.009 What type(s) of primary conductors are installed? Select all that apply. (Disabled by SV003 [E,H,I])
NOTE: Only select primary conductor sizes and NOT taps/jumpers. Covered is tree wire. Aerial cable is bundled cable.
A. Covered (Enables 8.010, 8.014, 8.015, 8.017, 8.018)
B. Copper (Enables 8.007A)
C. Aluminum (Enables 8.007B)
D. Aerial cable

8.006 Which of the following estimated sizes of primary conductors are on the span? Select all that apply. (Disabled by SV003 [E,H,I])
NOTE: Only select primary conductor/phase sizes and NOT taps/jumpers.
A. #4 Aluminum
B. 1/0 Aluminum
C. #2 Aluminum
D. 336 Aluminum
E. 653 Aluminum
F. 4/0 Aluminum
G. 4/0 Copper
H. 2/0 Copper
I. #2 Copper
J. #4 Copper
K. #6 Copper
L. One or more conductors are sizes not listed

8.007A Is any copper primary conductor span length in any direction greater than 240 feet, and are line spacers installed (Enabled by 8.009 [B])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select one of the

"Yes" responses.
NOTE: If one span has line spacers and the other does not, select one of the"… and line spacers are not installed" responses.
A. No, and line spacers are installed
B. No, and line spacers are not installed
C. Yes, and line spacers are installed.
D. Yes, and line spacers are not installed.

8.007B Is any Aluminum primary conductor span length in any direction greater than 240 feet and are line spacers installed? (Enabled by 8.009 [C])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select one of the "Yes" responses.
NOTE: If one span has line spacers and the other does not, select one of the"… and line spacers are not installed" responses.
A. No, and line spacers are installed
B. No, and line spacers are not installed
C. Yes, and line spacers are installed.
D. Yes, and line spacers are not installed.

8.019 Are there any splices on the conductors? (Disabled by SV003 [E,H,I])
NOTE: Check all conductors in all directions from pole to mid-span.
A. Yes (Enables 8.011, 8.012, 8.013)
B. No

8.011 How many automatic (bump) splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.012 How many preform splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.013 How many compression splices are in the primary level? (Enabled by 8.019 [A])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

8.008 For slack spans only – Do ALL slack spans in ALL directions have primary conductor spacers? (Disabled by SV003 [E,H,I])
NOTE: If one slack span has line spacers and the other does not, select "No"
A. Yes
B. No
C. No slack span present

8.020 (AERIAL/GROUND) Are any of the following conductor conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Metal or Non-Metal Debris (Enables 8.001)
B. Clearance issues with vegetation (Enables 8.002A)
C. Clearance issues with structures (Enables 8.002B)

D. Guy wire or conductor issues that may lead to conductor clash (Enables 8.016)
E. No abnormal conditions

8.001 (AERIAL/GROUND) Indicate if any of the following types of foreign objects are observed. Select all that apply. (Enabled by 8.020 [A])
A. Metal debris in conductors (Notification Required)
B. Non-metal debris in conductors

8.002A (AERIAL/GROUND) Are there inadequate clearance distances observed? Select all that apply. (Enabled by 8.020 [B])
A. Vegetation arcing or in contact with energized conductor (Notification Required)
B. Immediate danger concerning palm fronds falling or blowing into conductors (Notification Required)
C. Vines, branches or foliage presenting an overhang or other imminent threat (Notification Required)
D. Tree with potential to have less than 4 feet of clearance during wind events (Enabled by question SV006 [A])
E. Tree with potential to have less than 1.5 feet of clearance during wind events (Enabled by question SV006 [B])
F. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by question SV001 [B])

8.002B (AERIAL/GROUND) Are there estimated inadequate clearance distances between energized conductors and other structures observed? Select all that apply (Enabled by 8.020 [C])
A. Conductor located above a building, and is vertically less than 12 feet from top surface of - building (commonly roof) (Notification Required)
B. Conductor NOT located above building, but is vertically is less than 12 feet from top surface of building (commonly roof) (Notification Required)
C. Less than 6 feet horizontally between conductor and any surface of a building (Notification Required)
D. Less than 6 feet radially between conductor and non-climbable pole (e.g. streetlight) (Notification Required)

8.016 (AERIAL/GROUND) Indicate if any of the following types of conductor, span, and/or guy wire issues identified on the pole may create conductor clash. Select all that apply. (Enabled by 8.020 [D])
A. Slack primary conductor (Notification Required)
B. Span guy (Notification Required)
C. Down guy (Notification Required)
D. Encroachment primary conductor with span/down guy (Notification Required)
E. Encroachment bare secondary conductor with span/down guy (Notification Required)

8.010 (AERIAL/GROUND) For covered conductor, are there visible signs of tracking or damage on the outer jacket? (Enabled by 8.009 [A])
A. Yes (Notification Required)
B. No

8.014 For covered conductor – select all applicable directions covered conductor is installed? Select all that apply". (Enabled by 8.009 [A])

A. North
B. South
C. East
D. West

8.015 For covered conductor – indicate if any of the following covered conductor covers are missing. Select all that apply or select "No missing covered conductor covers" (Enabled by 8.009 [A])
A. Dead-end cover (Notification Required)
B. Bare Tap (Notification Required)
C. Connector cover (Notification Required)
D. Fuse cover (Notification Required)
E. Lightning arrestor cover (Notification Required)
F. Equipment bushing cover (Notification Required)
G. Pothead cover (Notification Required)
H. No missing covered conductor cover

8.017 For covered conductor – Are lightning arresters installed on structures containing the following equipment: RAR, RSR, Capacitors, Voltage Regulators, PTs associated with RSCs and PE equipment, Transformers, BLFs, and UG Dips? (Enabled by 8.009 [A]
A. No (Notification Required)
B. Yes
C. No primary equipment present

8.018 For covered conductor – For line connections (excludes connections to equipment), what jumper is used? (Enabled by 8.009 [A])
A. PGW (Notification Required)
B. Bare wire (If bare, will need to be covered with split tube) (Notification Required)
C. Covered conductor
D. Wire with split tube
E. No jumper exists

RECLOSERS, PE GEAR, REGULATORS, SWITCHES (0.021A, 10.007, 10.008)

0.021A Indicate if any of the following types of non-exempt SWITCH material are present on the pole. Select all that apply or select "No non-exempt switch present". (Enabled by SV006 [A])
A. Grasshopper air switch (Enables 0.022)
B. Single blade disconnect NOT in conjunction with reclosers or regulators (Enables 0.022)
C. In-line disconnect (Enables 0.022)
D. Alduti Rupter (Enables 0.022)
E. OMNI R4 (Enables 0.022)
F. No non-exempt switch present

10.007 (AERIAL/GROUND) Are any of the following apparatus equipment conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Animal guards missing
B. Animal guards damaged (Notification Required)

C. Excessive oil leaking and reaching ground, public access, or environmentally sensitive area (Notification Required)
D. Minor leakage, oil remains on equipment, does not reach ground, public access, or environmentally sensitive area (Notification Required)
E. Vegetation interfering with operation of apparatus equipment (Notification Required) (Disabled by SV001 [B])
F. No abnormal conditions

10.008 (AERIAL/GROUND) If the switch is in the closed position, are all switch blades fully engaged?
A. Yes, switch is closed and all blades are fully engaged
B. No, switch is closed, but one or more blades are not fully engaged (Notification Required)
C. Switch in open position
D. No switch present

HARDWARE/FRAMING (11.004)

11.004 (AERIAL/GROUND) Are any of the following hardware/framing conditions observed? Select all that apply. (Disabled by SV003 [E])
A. Corroded, missing, broken or bending hardware (Notification Required)
B. Damaged equipment brackets or braces (Notification Required)
C. No abnormal conditions

SPAN GUYS (0.014E, 12.002, 12.004)

0.014E How many span guys are installed at this level? (Disabled by SV003 [E])
A. Answer choices will be 1-10

12.004 Are any of the following span guy conditions observed? Select all that apply. (Disabled by SV003 [E])
A. Cracked, damaged, deflected, frayed or loose (Notification Required)
B. Sagging or extreme slack (Notification Required)
C. Inadequate clearance with energized components, non-energized components, communication facilities (Enables 12.002)
D. No abnormal conditions

12.002 Is there inadequate clearance between span guy and any of the following? Select all that apply. (Enabled by 12.004 [C])
A. SCE energized components (Notification Required)
B. SCE non-energized electrical components (Notification Required)
C. Communication facilities
D. Other

DOWN GUYS (13.001B)

13.001B Are there signs of contact between guy wire and conductors (arcing marks)? (Disabled by SV003 [E])

A. Yes (Notification Required)
B. No

RISERS/TERMINATIONS (14.001, 14.002, 14.004)

14.004 (AERIAL/GROUND) Are any of the following Riser/Pothead conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Damage/Discoloration (Notification Required)
B. Pothead not properly secured, leaking, swollen, sparking, arcing, noisy, insulator broken, in contact with nest (Enables 14.002)
C. No abnormal conditions

14.002 (AERIAL/GROUND) Indicate if the Pothead shows signs of any of the following conditions in the primary level. Select all that apply. (Enabled by 14.004 [B])

A. Pothead not properly attached to supporting structure (Notification Required)
B. Pothead leaking (Notification Required)
C. Pothead sparking, arcing, or noisy during normal 'dry' weather conditions (Notification Required)
D. Pothead swollen (Notification Required)
E. Porcelain pothead insulators chipped or broken (Notification Required)
F. In contact with animal nest (Notification Required)

LIGHTNING ARRESTERS (0.014G, 16.001, 0.021C)

0.014G How many surge arrester/lightning arresters are installed on this structure? (Disabled by SV003 [E,H,I])

A. Answer choices will be 1-10

16.001 Has the ground lead disconnected or any arrester operated? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No

0.021C Indicate if any of the following types of non-exempt ARRESTER material are present on the pole. Select all that apply or select "No non-exempt arrester present". (Enabled by SV006 [A])

A. Porcelain surge arrester/Lightning arrester (Enables 0.022)
B. Non-porcelain lightning arrester (Enables 0.022)
C. No non-exempt arrester present

FUSES (0.021B, 11.002)

0.021B Indicate if any of the following types of non-exempt FUSE material are present on the pole. Select all that apply or select "No non-exempt fuse present". (Enabled by SV006 [A])

A. Universal fuse (Enables 0.022)
B. Enclosed cutout w/universal fuse (Enables 0.022)
C. Open link fuse (Enables 0.022)
D. No non-exempt fuse present

11.002 (AERIAL/GROUND) Are any fuse holders burned or tracking? (Disabled by SV003 [E,H,I])

A. Yes (Notification Required)
B. No
C. No fuse holders installed

Secondary Level

MAT_SEC Select all the equipment you see at the secondary level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Poles – Tree (Disabled by SV003 [E])
D. Poles – Steel (Disabled by SV003 [E])
E. Crossarms – Wood (Disabled by SV003 [H,I])
F. Crossarms – Composite (Disabled by SV003 [E,H,I])
G. Insulators (Disabled by SV003 [H,I])
H. Conductors - Secondary (Disabled by SV003 [H,I])
I. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])
J. Hardware/Framing
K. Span Guys
L. Down Guys
M. Risers/Terminations (Disabled by SV003 [H,I])
N. Service Drops (Disabled by SV003 [E,H,I])
O. Crossarms – Steel (Disabled by SV003 [E,H,I])
P. Streetlight Only Pole – Concrete (Enabled by SV004 [E])
Q. Streetlight Only Pole – Wood (Enabled by SV004 [F])
R. Streetlight Only Pole – Steel (Enabled by SV004 [G])
S. Streetlight (Disabled by SV003 [H,I])

POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

STREETLIGHT ONLY POLES - WOOD (1.002)

1.002 (AERIAL/GROUND) Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions".

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)

C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

CROSSARMS - WOOD (0.014L, 0.014M, 0.014N, 2.003A, 2.003C, 2.004A, 2.005B, 2.006A, 2.003B, 2.006B, 2.010)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [H,I])
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
A. Answer choices will be 0-20

2.010 (AERIAL/GROUND) Are any of the following secondary wood crossarm conditions observed? Select all that apply. (Disabled by SV003 [H,I])
A. Bowing/twisting (Enables 2.003A, 2.003B)
B. Deterioration (Enables 2.003C)
C. Canting (Enables 2.004A)
D. Tracking (Enables 2.005B)
E. Brace damage (Enables 2.006A, 2.006B)
F. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.010 [A])
A. Answer choices will be 1-20 (Notification Required)

2.003B Are any crossarms of this material type showing any of the following signs of bowing/twisting at this level and need to be replaced? Select all that apply. (Enabled by 2.010 [A])
A. Crossarm bowed approximately >5 inches and splintering (Notification Required)
B. Crossarm bowed approximately >5 inches without splintering (Notification Required)
C. Significant damage at a bolt (Notification Required)

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced?

(Enabled by 2.010 [B])

A. Answer choices will be 1-20 (Notification Required)

2.004A How many crossarms of this material type at this level are canted and need to be replaced? (Enabled by 2.010 [C])

A. Answer choices will be 1-20 (Notification Required)

2.005B How many crossarms of this material type at this level are tracking and need to be replaced? (Enabled by 2.010 [D])

A. Answer choices will be 1-20 (Notification Required)

2.006A How many crossarms of this material type at this level have damaged braces and need to be replaced? (Enabled by 2.010 [E])

A. Answer choices will be 1-20 (Notification Required)

2.006B Do any crossarms of this material type have any of the following brace damage at this level and need to be replaced? (Enabled by 2.010 [E])

Select all that apply.

A. Braces broken (Notification Required)
B. Braces loose (Notification Required)
C. Braces missing (Notification Required)

CROSSARMS - COMPOSITE (0.014L, 0.014M, 0.014N, 2.003C, 7.002A, 7.002B, 7.004A, 7.007)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.

A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])

NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.

A. Answer choices will be 0-20

7.007 (AERIAL/GROUND) Are any of the following secondary composite crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Deterioration (Enables 2.003C)
B. Bending (Enables 7.002A, 7.002B)
C. Damage (Enables 7.004A)
D. No abnormal conditions

2.003C How many crossarms of this material type at this level are deteriorated and need to be replaced? (Enabled by 7.007 [A])
   A. Answer choices will be 1-20 (Notification Required)

7.002A How many crossarms of this material type at this level show signs of bending and need to be replaced? (Enabled by 7.007 [B])
   A. Answer choices will be 1-20 (Notification Required)

7.002B Do any crossarms of this material type have any of the following conditions of bending and need to be replaced? Select all that apply. (Enabled by 7.007 [B])
   A. Visual fracturing (Notification Required)
   B. Significant visual buckling (Notification Required)
   C. Significantly unbalanced due to tension (Notification Required)
   D. Bent mounting bracket and associated hardware (Notification Required)

7.004A How many crossarms of this material type at this level are physically damaged and need to be replaced? (Enabled by 7.007 [C])

   A. Answer choices will be 1-20 (Notification Required)

CROSSARMS - STEEL (0.014L, 0.014M, 0.014N, 2.003A, 2.005B, 2.007A)

0.014L How many total single crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A single crossarm is when only one crossarms piece exists at a specific elevation on the pole.
   A. Answer choices will be 0-20

0.014M How many total sets of double crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A double crossarm is when two crossarm pieces exist in a parallel orientation at the same elevation on the pole.
   A. Answer choices will be 0-20

0.014N How many total sets of triple crossarms of this material type are at this level? (Disabled by SV003 [E,H,I])
NOTE: A triple crossarm is when three crossarms pieces exist in a parallel orientation at the same elevation on the pole.
   A. Answer choices will be 0-20

2.009 (AERIAL/GROUND) Are any of the following steel crossarm conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])
   A. Bowing/twisting (Enables 2.003A)
   B. Rusting/corrosion (Enables 2.003D)
   C. Tracking (Enables 2.005B)
   D. No abnormal conditions

2.003A How many crossarms of this material type at this level are bowed/twisted and need to be replaced? (Enabled by 2.009 [A])
   A. Answer choices will be 1-20 (Notification Required)

2.003D How many crossarms of this material type at this level are excessively rusted or corroded and need to be replaced? (Enabled by 2.009 [B])
   A. Answer choices will be 1-20 (Notification Required)

INSULATORS (0.014O, 6.001, 6.003, 6.006)

0.014O How many insulators are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Dead-end insulators count as 1.
   A. Answer choices will be 1-30

6.001 What types of insulators are installed at this level? Select all that apply. (Disabled by SV003 [E,H,I])
   A. Porcelain
   B. Polymer
   C. Hendrix Universal
   D. Hendrix (vice-top)
   E. Other

6.006 (AERIAL/GROUND) Are any of the following insulator conditions observed? Select all that apply. (Disabled by SV003 [H,I])
   A. Missing parts (Notification Required)
   B. Insulator damaged (broken, cracked, loose, floating, squatting, chipped), Tie wire (damaged, missing, loose), Upward strain (Enables 6.003)
   C. Top/Side tie insulator touching crossarm (Notification Required)
   D. No abnormal conditions
      Streetlight Pole Problem statement: REPAIR DAMAGE PUBLIC STLTPOLE
      NOTE: ESI will have to indicate insulator issue

6.003 (AERIAL/GROUND) Indicate if any of the following types of damage are observed on any portion of any insulator, or its associated hardware, at this level. Select all that apply. (Enabled by 6.006 [B]) (Disabled by SV003 [H,I])
   A. Insulator broken (Notification Required)
   B. Insulator cracked, damaged or loose (Notification Required)
   C. Insulator floating (Notification Required)
   D. Insulator squatting (Notification Required)
   E. Tie wire broken/missing/damaged or loose (Notification Required)
   F. Upward strain (lift) on pin in tangent configuration (Notification Required)
   G. Insulator chipped (Notification Required)
   H. Improper angle on pin insulator (Notification Required)

CONDUCTORS - SECONDARY (0.014I, 0.021E, 9.006, 9.005, 9.007A, 9.007B, 9.008, 9.009, 9.010, 9.001, 9.003, 9.004, 9.011, 9.012)

0.014I How many phases are installed at this level? (Disabled by SV003 [E,H,I])
NOTE: Only count secondary phases, NOT services. (Multi-plex is counted as 1 phase).
A. Answer choices will be 1-20

0.021E Indicate which of the following types of non-exempt CONNECTOR material are present at this level. Select all that apply or select "No non-exempt connector present" (Enabled by SV006 [A]) (Disabled by SV003 [H,I])
A. Split bolt connector (Enables 0.022)
B. Copper vise connector (Enables 0.022)
C. No non-exempt connector present

9.006 (AERIAL/GROUND) What type(s) of secondary conductors are installed? Select all that apply. (Disabled by SV003 [E,H,I])
A. Open wire
B. Bare copper (Enables 9.007A)
C. Bare aluminum (Enables 9.007B)
D. Covered
E. Multiplex
F. One or more conductors are types not listed

9.005 Which of the following sizes of secondary conductors are on the span? Select all that apply. (Disabled by SV003 [H,I])
NOTE: Only count secondary conductor/phases, not services
A. #4 Copper
B. #6 Copper
C. #4 Aluminum
D. #4 Aluminum Triplex
E. #6 Aluminum
F. One or more conductors are sizes not listed

9.007A Is ANY copper secondary conductor span length in ANY direction greater than 240 feet? (Disabled by SV003 [H,I])
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select "Yes".
(Enabled by 9.006[B])
A. Yes
B. No

9.007B Is ANY Aluminum secondary conductor span length in ANY direction greater than 240 feet?
NOTE: If one span is greater than 240 feet and one span is less than 240 feet – select "Yes".
(Enabled by 9.006[C]) (Disabled by SV003 [H,I])
A. Yes
B. No

9.011 Are there any splices on the secondary conductors? (Disabled by SV003 [H,I])
NOTE: Check all conductors in all directions from pole to mid-span.

A. Yes (Enables 9.0008, 9.009, 9.010)
B. No

9.008 How many automatic (bump) splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

9.009 How many preform splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
NOTE: Count all splices in all directions from pole to mid-span.
A. Answer choices will be 0-20

9.010 How many compression splices are in the secondary level? (Enabled by 9.011 [A]) (Disabled by SV003 [H,I])
A. Answer choices will be 0-20

9.012 (AERIAL/GROUND) Are any of the following conductor conditions observed? Select all that apply. (Disabled by SV003 [H,I])
A. Foreign objects (Notification Required)
B. Conductor has less than appropriate radial clearance with potential for contact, no public safety hazard (Notification Required)
C. Clearance issues with vegetation (Enables 9.003)
D. Damage (broken, missing loose conductor or tie wires) (Enables 9.004)
E. No abnormal conditions

9.003 (AERIAL/GROUND) Which of the following inadequate clearances are observed at this level at the time of inspection? Select all that apply. (Enabled by 9.012 [C]) (Disabled by SV003 [H,I])
A. Bare conductors and through tree (Notification Required)
B. Tree condition causing significant strain and/or visible abrasion damage - either open wire or Triplex (Notification Required)
C. Immediate danger concerning palm fronds falling or blowing into conductors (Notification Required)
D. Vines, branches, or foliage presenting an overhang or other imminent threat (Notification Required)
E. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

9.004 (AERIAL/GROUND) Indicate if any of the following types of part damage are observed. Select all that apply (Enabled by 9.012 [D]) (Disabled by SV003 [H,I])
A. Conductors not in good condition, broken, missing (Notification Required)
B. Tie wire broken/missing/damaged or loose (Notification Required)

RECLOSERS, PE GEAR, REGULATORS, AND SWITCHES (10.002, 10.004, 10.006, 10.007)

10.007 (AERIAL/GROUND) Are any of the following apparatus equipment conditions observed? Select all that apply. (Disabled by SV003 [E,H,I])

A. Animal guards missing
B. Animal guards damaged (Notification Required)
C. Excessive oil leaking and reaching ground, public access, or environmentally sensitive area (Notification Required)
D. Minor leakage, oil remains on equipment, does not reach ground, public access, or environmentally sensitive area (Notification Required)
E. Vegetation interfering with operation of apparatus equipment (Notification Required) (Disabled by SV001 [B])
F. No abnormal conditions

HARDWARE/FRAMING (11.004)

11.004 (AERIAL/GROUND) Are any of the following hardware/framing conditions observed? Select all that apply.

A. Corroded, missing, broken or bending hardware (Notification Required)
B. Damaged equipment brackets or braces (Notification Required)
C. No abnormal conditions

STREETLIGHT (11.005)

11.005 (AERIAL/GROUND) Are any of the following streetlight conditions observed? (Enabled by MAT_SEC [S])

A. Mastarm or mounting hardware corroded, missing, broken, loose or bending (Notification Required)
B. Luminaire (streetlight head) or hardware corroded, missing, broken, or bending (Notification Required)
C. Streetlight brackets damaged (Notification Required)
D. Signs of animal presence in the luminaire
E. Lamp Flickering
F. No abnormal conditions

SPAN GUYS (0.014E, 12.002, 12.004)

0.014E How many span guys are installed at this level?

A. Answer choices will be 1-10

12.004 Are any of the following span guy conditions observed? Select all that apply.

A. Cracked, damaged, deflected, frayed or loose (Notification Required)
B. Sagging or extreme slack (Notification Required)
C. Inadequate clearance with energized components, non-energized components, communication facilities (Enables 12.002)
D. No abnormal conditions

12.002 Is there inadequate clearance between span guy and any of the following? Select all that apply. (Enabled by 12.004 [C])
- A. SCE Energized components (Notification Required)
- B. SCE non-energized electrical components (Notification Required)
- C. Communication facilities
- D. Other

DOWN GUYS (13.001B)

13.001B Are there signs of contact between guy wire and conductors (arcing marks)?
- A. Yes (Notification Required)
- B. No

RISERS/TERMINATIONS (14.003)

14.003 (AERIAL/GROUND) Indicate if any of the following Riser conditions are observed on the structure. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [H,I])
- A. Cables in Riser exposed (Notification Required)
- B. Riser broken (Notification Required)
- C. Riser swollen (Notification Required)
- D. In contact with animal nest (Notification Required)
- E. Non-Schedule 80 Riser installed (Notification Required)
- F. No abnormal conditions

SERVICE DROPS (15.001, 15.004)

15.001 What type of service drops are installed? Select all that apply. (Disabled by SV003 [E,H,I])
- A. Aluminum
- B. Copper
- C. 2 wire
- D. 3 wire
- E. 4 wire

15.004 (AERIAL/GROUND) Indicate if any of the following inadequate clearances are observed at the time of inspection. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E,H,I])
- A. Tree condition causing significant strain and/or visible abrasion damage — either open wire or Triplex (Notification Required) (Disabled by SV001 [B])
- B. Mid-span service clearance not maintained (Notification Required)
- C. Does not meet G.O. 95 vertical clearances (Notification Required)
- D. No abnormal conditions

Communication Level (Disabled by SV003 [E])

MAT_COMM Select all the equipment you see at the communication level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Buddy Pole (Disabled by SV003 [E])
D. Communication Lines and Equipment (Disabled by SV003 [E])
E. Reclosers, PE Gear, Regulators, and Switches (Disabled by SV003 [E,H,I])

POLES - WOOD (0.020B, 1.002)

0.020B Is there adequate climbing space at this level? (Disabled by SV003 [E])

A. No (Notification Required)
B. Yes

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

POLES – COMPOSITE (0.020B,)

0.020B Is there adequate climbing space at this level? (Disabled by SV003 [E])

A. No (Notification Required)
B. Yes

Buddy Pole (0.028)

0.028 What is attached to the Buddy Pole? (Disabled by SV003 [E])

A. TTC cable
B. 3rd party cable
C. Distribution
D. Nothing (bare pole)

Communication Lines and Equipment (0.029)

0.029 Indicate if any of the following communication equipment conditions are observed. Select all that apply or select "No abnormal conditions". (Disabled by SV003 [E])

A. Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures (Notification Required)
B. Excessive sag of communication cables (Notification Required)
C. Loose lashing wires (Notification Required)
D. Broken or separated messenger wire (Notification Required)
E. Broken, damaged or severely strained communication guy wires (Notification Required)
F. Excessive bowing or bending of pole from potential overloading at communication attachment points (Notification Required)
G. Improperly secured communication conductor or equipment (Notification Required)
H. Vegetation straining communication messenger or guy wire and/or causing structural integrity issues (Notification Required)
I. No abnormal conditions

RECLOSERS, PE GEAR, REGULATORS, AND SWITCHES (10.006)

10.006 Are trees or vegetation interfering with operation of any reclosers, PE gear, regulators, or switches? (Disabled by SV003 [E])

A. Yes (Notification Required)
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

Public Level

MAT_PUB Select all the equipment you see at the public level:

A. Poles – Wood (Disabled by SV003 [E])
B. Poles – Composite (Disabled by SV003 [E])
C. Poles – Tree (Disabled by SV003 [E])
D. Poles – Steel (Disabled by SV003 [E])
E. Down Guys
F. Risers/Terminations (Disabled by SV003 [H,I])
G. Streetlight Only Pole – Concrete (Enabled by SV004 [E])
H. Streetlight Only Pole – Wood (Enabled by SV004 [F])
I. Streetlight Only Pole – Steel (Enabled by SV004 [G])

POLES - WOOD (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.020B, 0.022, 0.024, 0.027, 1.002, 1.004, 1.007, 1.009)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?

A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?

A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])

A. Yes
B. No

0.005D Do visibility strips require replacement?

A. Yes
B. No
C. Cannot access

0.008 Is the circular pole medallion present?

A. Yes
B. No
C. Cannot access

0.009 Is the pole brand visible?

A. Yes

B. No
C. Cannot access

0.020B Is there adequate climbing space at this level?
A. No (Notification Required)
B. Yes

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

1.009 Are any of the following structure conditions observed? Select all that apply.
A. Defects on or around structure (contamination, unauthorized attachment, 3rd party structure, or burn marks) (Enables 0.024)
B. Structural failure (holes, damage) (Enables 1.002)
C. Construction faults (decay pockets, soil erosion) (Enables 1.004)
D. Pole lean (Enables 1.007)
E. Animal nests with potential to contact energized components or interfere with equipment operation (Notification Required)
F. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 1.009 [A])
A. Contamination from SCE equipment (Notification Required)
B. Unauthorized attachment (Notification Required)
C. 3rd party structure touching or surrounding SCE structure (Notification Required)
D. Burn marks or signs of exposure to fire

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 1.009 [B])
A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)

D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)
E. No abnormal conditions

1.004 Indicate if there are any of the following types of construction faults. Select all that apply. (Enabled by 1.009 [C])
A. Exposed decay pocket at ground line where part of shell is gone (Notification Required)
B. Evidence of soil erosion around base of pole (Notification Required)

1.007 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 1.009 [D])
A. Pole leaning - public hazard (Notification Required)
B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
C. Pole leaning less than 1 foot per 10 feet of pole height

POLES - COMPOSITE (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.020B, 0.022, 0.024, 0.027, 5.001, 5.003, 5.006)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.008 Is the circular pole medallion present?
A. Yes
B. No
C. Cannot access

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0.009 Is the pole brand visible?
- A. Yes
- B. No
- C. Cannot access

0.020B Is there adequate climbing space at this level?
- A. No (Notification Required)
- B. Yes

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

5.006 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (Enables 0.024)
- B. Structural damage (fracturing, buckling, ponding, cracking, vandalism, embedment depth, gouging) (Enables 5.001)
- C. Overloading (pole leaning, bowing) (Enables 5.003)
- D. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 5.006 [A])
- A. Contamination from SCE equipment (Notification Required)
- B. Unauthorized attachment (Notification Required)
- C. 3rd party structure touching or surrounding SCE structure (Notification Required)
- D. Burn marks or signs of exposure to fire

5.001 Indicate if any of the following types of structural damage are observed on the pole. Select all that apply. (Enabled by 5.006 [B])
- A. Fracture or buckling of exterior wall (Notification Required)
- B. Visual cracks or rupture of exterior laminates or exterior wall exposing interior (Notification Required)
- C. Pole embedded on soil/heavy ponding (water) (Notification Required)
- D. Vandalism that affects the structural integrity (i.e. gun damage) (Notification Required)

E. Depth of embedment less than 10% + 1 feet of the pole height (Notification Required)
F. Surface gouging on exterior greater than 2" length

5.003 Indicate if any of the following signs of overloading are observed on the pole. Select all that apply. (Enabled by 5.006 [C])
A. Excessive lean (approximately 10% or more of the pole height), caused by erosion of soil at groundline (Notification Required)
B. Excessive lean not caused by erosion of soil (Notification Required)
C. Leaning at the top of pole greater than approximately 5% of the height of the pole above ground with equipment (i.e. transformers, capacitors, etc.)
D. Bowing of the pole at or near the mid-height due to from guys

POLES - STEEL (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No
C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes
B. No
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?

A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

17.001 Are any of the following structure conditions observed? Select all that apply.
A. Defects on or around structure (unauthorized attachment, 3rd party structure, signs of burning/fire) (Enables 17.002
B. Structural failure (corrosion, denting/damage, anchor/foundation damage, mastarm out of plumb) (Enables 17.003)
C. Pole lean (Enables 17.004)
D. Animal nest with potential to contact energized component or interfere with equipment operation (Notification Required)
E. No abnormal conditions

17.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 17.001 [A])
A. Unauthorized attachment (Notification Required)
B. 3rd party structure touching or surrounding SCE structure (Notification Required)
C. Burn marks or signs of exposure to fire

17.003 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 17.001 [B])
A. Corrosion on pole or hardware
B. Denting or damage to pole
C. Damage to anchor bolts or foundation (Notification Required)
D. Mastarm out of plumb

17.004 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 17.001 [C])
A. Pole leaning - public hazard (Notification Required)
B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
C. Pole leaning less than 1 foot per 10 feet of pole height

POLES – TREE (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005B Is the structure number the yellow and black style?
A. Yes
B. No

C. No structure number present
D. Cannot access

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?
A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
A. Yes (Disabled by SV001 [B])
B. No (Disabled by SV001 [B])
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

STREETLIGHT ONLY POLES - WOOD (0.005A, 0.005B, 0.005C, 0.005D, 0.008, 0.009, 0.022, 0.024, 0.027, 1.002, 1.004, 1.007, 1.008, 1.009)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
A. No (E2 Notification Required) (Enables 0.005C)
B. Yes (Enables 0.005C)
C. No structure number present (Enables 0.005C)
D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
A. Yes
B. No

0.005D Do visibility strips require replacement?

A. Yes
B. No
C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])

A. Yes (Disabled by SV001 [B])
B. No (Disabled by SV001 [B])
C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?

A. Vegetation (Disabled by SV001 [B])
B. Residential or commercial area/structures
C. Sand/dirt, gravel/rock, or water
D. Concrete and/or pavement
E. Debris, trash, or other combustible material
F. Homeless encampment

1.009 Are any of the following structure conditions observed? Select all that apply.

A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 0.024)
B. Structural failure (holes, damage) (Enables 1.002)
C. Construction faults (decay pockets, soil erosion) (Enables 1.004)
D. Pole lean (Enables 1.007)
E. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
F. No abnormal conditions

0.024 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 1.009 [A])

A. Contamination from SCE equipment (Notification Required)
B. Unauthorized attachment (Notification Required)
C. 3rd party structure touching or surrounding SCE structure (Notification Required)
D. Burn marks or signs of exposure to fire

1.002 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 1.009 [B])

A. Hole approximately > 2 inches near through bolt (Notification Required)
B. Three or more holes approximately >2 inch diameter, within approximately 18 inches vertical of a through bolt (Notification Required)
C. Exterior damage approximately >2 inch depth and approximately > 1/4 pole circumference (Notification Required)
D. Exterior damage approximately 1–2 inch depth and approximately > 1/4 pole circumference (Notification Required)

1.004 Indicate if there are any of the following types of construction faults. Select all that apply. (Enabled by 1.009 [C])
- A. Exposed decay pocket at ground line where part of shell is gone (Notification Required)
- B. Evidence of soil erosion around base of pole (Notification Required)

1.007 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 1.009 [D])
- A. Pole leaning - public hazard (Notification Required)
- B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
- C. Pole leaning less than 1 foot per 10 feet of pole height

STREETLIGHT ONLY POLES - STEEL (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027, 17.001, 17.002, 17.003, 17.004)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
- A. No (E2 Notification Required) (Enables 0.005C)
- B. Yes (Enables 0.005C)
- C. No structure number present (Enables 0.005C)
- D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
- A. Yes
- B. No

0.005D Do visibility strips require replacement?
- A. Yes
- B. No
- C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

17.001 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 17.002)
- B. Structural failure (corrosion, denting/damage, anchor/foundation damage, mastarm out of plumb) (Enables 17.003)
- C. Pole lean (Enables 17.004)
- D. Animal nests with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

17.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 17.001 [A])
- A. Unauthorized attachment (Notification Required)
- B. 3rd party structure touching or surrounding SCE structure (Notification Required)
- C. Burn marks or signs of exposure to fire

17.003 Indicate if any of the following types of structural failure are observed at this level. Select all that apply. (Enabled by 17.001 [B])
- A. Corrosion on pole or hardware
- B. Denting or damage to pole
- C. Damage to anchor bolts or foundation
- D. Mastarm out of plumb

17.004 Indicate if the pole is showing any of the following signs of pole lean. (Enabled by 17.001 [C])
- A. Pole leaning - public hazard (Notification Required)
- B. Pole leaning more than 1 foot per 10 feet of pole height (Notification Required)
- C. Pole leaning less than 1 foot per 10 feet of pole height

STREETLIGHT ONLY POLES - CONCRETE (0.005A, 0.005B, 0.005C, 0.005D, 0.022, 0.027, 18.001, 18.002, 18.003)

0.005A Does pole number in the app match the structure number on the structure that you are inspecting?
- A. No (E2 Notification Required) (Enables 0.005C)
- B. Yes (Enables 0.005C)
- C. No structure number present (Enables 0.005C)
- D. Cannot access (Disables 0.005C)

0.005C Does the structure number or tag require replacement? (Enabled by 0.005A [A,B,C]; Disabled by 0.005A [D])
- A. Yes
- B. No

0.005D Do visibility strips require replacement?
- A. Yes
- B. No
- C. Cannot access

0.022 If Non-Exempt material is present on the pole, is there at least 10 feet of clearance between vegetation and the base of the pole, up to 8 feet high? (Enabled by 0.021A [A,B,C,D,E] 0.021B [A,B,C], 0.021C [A,B], 0.021D [A,B], 0.021E[A,B])
- A. Yes
- B. No
- C. Defer question to SCE Inspector – Item outside of Contractor Scope of Work (Enabled by SV001 [B])

0.027 Which of the following generally describes the area surrounding the pole within 100 feet?
- A. Vegetation (Disabled by SV001 [B])
- B. Residential or commercial area/structures
- C. Sand/dirt, gravel/rock, or water
- D. Concrete and/or pavement
- E. Debris, trash, or other combustible material
- F. Homeless encampment

18.001 Are any of the following structure conditions observed? Select all that apply.
- A. Defects on or around structure (unauthorized attachments, 3rd party structures, burn marks) (Enables 18.002)
- B. Structural damage (Fracture, buckling, cracks, exterior damage) (Enables 18.003)
- C. Damage to Anchor Bolts or foundation (Notification Required)
- D. Animal nest with potential to contact energized component or interfere with equipment operation (Notification Required)
- E. No abnormal conditions

18.002 Indicate which of the following defects are present on or around the structure. Select all that apply. (Enabled by 18.001[A])
- A. Unauthorized attachment (Notification Required)
- B. 3rd party structure touching or surrounding SCE structure (Notification Required)
- C. Burn marks or signs of exposure to fire

18.003 Indicate if any of the following types of structural damage are observed on the pole. Select all that apply. (Enabled by 18.001 [B])
- A. Fracture or buckling of exterior wall (Notification Required)
- B. Visual cracks or rupture of exterior surface exposing interior (Notification Required)
- C. Vandalism that affects the structural integrity (i.e. gun damage) (Notification Required)

DOWN GUYS (0.014F, 13.001A, 13.002, 13.004, 13.005, 13.006. 13.007, 13.008, 13.009, 13.010, 13.012, 13.013, 13.014)

0.014F How many SCE down guys are installed on this structure?

A. Answer choices will be 1-10

13.004 Are any of the following down guy conditions observed? Select all that apply.

A. Damage (broken, missing, loose, guys, hardware or anchors) (Enables 13.001A)
B. Inadequate clearance (Enables 13.002)
C. Sag or extreme slack (Notification Required)
D. No abnormal conditions

13.001A Indicate if any of the following types of damage to SCE distribution down guys are observed. Select all that apply. (Enabled by 13.004 [A])

A. Guys broken/damaged, pole leaning, public hazard (Notification Required)
B. Guys missing, pole leaning, public hazard (Notification Required)
C. Guys broken/damaged, pole not leaning (Notification Required)
D. Guys missing, pole not leaning (Notification Required)
E. Anchor rods broken/corroded, pole leaning, public hazard (Notification Required)
F. Anchor rods missing, pole leaning, public hazard (Notification Required)
G. Anchor rods broken/corroded, pole not leaning (Notification Required)
H. Anchor rods missing, pole not leaning (Notification Required)
I. One or more anchor rods not visible (e.g. buried, obstructed, etc.), unable to determine condition

13.002 Is there inadequate clearance between down guy and any of the following? Select all that apply. (Enabled by 13.004 [B])

A. SCE Energized components (Notification Required)
B. SCE non-energized electrical components (Notification Required)
C. Communication facilities
D. Other

13.006 Which of the following SCE distribution down guy anchor types exist? Select all that apply.

A. 3 Eye (Enables 13.007, 13.008)
B. 2 Eye (Enables 13.010)
C. 1 Eye (Enables 13.011)
D. Buried (Enables 13.012)
E. Extension rod (Enables 13.013)
F. No anchor present
G. Other (comment) (Enables 13.014)
H. Unable to determine

13.007 Quantity of 3 Eye anchors (Enabled by 13.006 [A])

A. Answer choices will be 1-10

13.008 Indicate the type for all 3 Eye Anchors by identifying the stamp or construction configuration. Select all that apply. (Enabled by 13.006 [A])

A. C-1¼-10
B. C-1-10
C. C-1¼
D. C-Rock Anchor
E. D
F. M26
G. J
H. K Triple Eye (K Trip)
I. M
J. PISA (Enables 13.009)
    - PHOTO: Capture a picture of each distribution guy anchor.
K. Unable to determine – no stamp
L. Unable to determine – stamp altered/tampered
M. Unable to determine – stamp unreadable
N. Unable to determine – no access to anchor

13.009 Is there truck access to the PISA anchors at the time of inspection: (Enabled by 13.008 [J])

A. Yes, truck access exists
B. No, truck access is not possible
C. Unsure, but truck access may be possible
D. Unable to determine

13.010 Quantity of 2 Eye anchors (Enabled by 13.006 [B])

A. Answer choices will be 1-10

13.011 Quantity of 1 Eye anchors (Enabled by 13.006 [C])

A. Answer choices will be 1-10

13.012 Quantity of buried anchors (Enabled by 13.006 [D])

A. Answer choices will be 1-10

13.013 Quantity of anchor extension rods (Enabled by 13.006 [E])

A. Answer choices will be 1-10

13.014 Quantity of other anchors (Enabled by 13.006 [G])

A. Answer choices will be 1-10
    - PHOTO: Capture a picture of each distribution guy anchor. Include any stamp/marking if visible.

RISERS/TERMINATIONS (14.003)

14.003 Indicate if any of the following Riser conditions are observed on the structure. Select all that apply or select "No abnormal conditions".

A. Cables in Riser exposed (Notification Required)
B. Riser broken (Notification Required)
C. Riser swollen (Notification Required)
D. In contact with animal nest (Notification Required)
E. Non-Schedule 80 Riser installed
F. No abnormal conditions

SOUTHERN CALIFORNIA EDISON
TRANSMISSION AND DISTRIBUTION

Distribution Inspection and Maintenance Program (DIMP)

2022— FOURTH QUARTER ISSUE

October 28, 2022

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►SCE Internal◄

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Distribution Inspection and Maintenance Program (DIMP)

Revision Summary

2022 Fourth Quarter Issue

Effective Date: October 28, 2022

Overview

The main purpose of this revision summary is to describe new revisions to this manual. (Some or all of the information may have been previously communicated to field personnel by other means.)

Table 1 lists the revisions. Clickable page/sheet numbers link directly to individual revisions or the first of a series of revisions.

Table 2 defines four types of revisions: (1) Admin (Administrative), (2) Technical, (3) New, and (4) Pilot.

Note: **Admin** *and* **Technical** *revisions to existing standards or existing* **Pilot** *projects are identified with change bars* **|** *in the left margin.* **New** *standards (as well as new pilot projects) do not receive change bars. Editorial revisions, such as corrections to spelling, do not receive change bars.*

A Getting Help section provides contact information.

Table 1: Revisions

Chapter	Page	Description	Type
IN-1	3,9	Added hazard conditions (e.g. P1 and P2) that may be found on assets belonging to third party CIPs.	Technical
IN-2	2	Added hazard conditions (e.g. P1 and P2) that may be found on assets belonging to third party CIPs.	Technical

Table 2: Revision Types

Type	Definition
Admin	Administrative revisions do not significantly affect design, construction, maintenance or operation of the electrical distribution, substation, and transmission systems. They do not require Standards Review Team (SRT) or management approval; however, they have been approved by other organizations, as appropriate. They may include updates to SAP codes, updates to references, updates to standards for clarity, or deletions of outdated information.
Technical	Technical revisions are engineering changes to existing standards. They affect the design, construction, maintenance or operation of the electrical distribution, substation, and transmission systems. They require SRT and management approval.
New	Refers to a new standard. New technical standards require SRT and management approval.
Pilot	A *Pilot* is an in-field evaluation of a piece of equipment or work method, with the intention of approving for standardized use. Pilot standards will have a PILOT watermark so that they are easily identified throughout this manual.

Getting Help

Technical Issues

If you have any comments, corrections, questions, or suggestions concerning manual revisions, please contact one of the following individuals at the numbers provided, or click on the name to send an email:

- Alaira Bilek (Manager) — PAX: 54156 Outside: (714) 702-4763
- Erfan Bambad — Mobile: (949) 538-7919
- Araya Gebeyehu — PAX: 54229 Outside: (310) 844-5624
- Alan Kasanow — PAX: 54733 Outside: (714) 614-6870
- Luis D. Perez — Mobile: (949) 538-7919

Address Corrections

Send address changes to:

Southern California Edison
7400 Fenwick Lane
Westminster, CA 92683-5288

ATTN: Alaira Bilek

Vik Trehan

Director, Design Engineering & Work Management

GE–TOC: General

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GE–1: General Overview of Distribution Inspection and Maintenance Program

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GE–1: General Overview of Distribution Inspection and Maintenance Program

1.0 Introduction

1.1 Mission Statement

The Distribution Inspection and Maintenance Program (DIMP) seeks to ensure public and worker safety and regulatory compliance by completing scheduled Detailed Inspections and Grid Patrols, as described in Chapter IM-2 of the Distribution Operations Maintenance Policies and Procedures (DOM) Manual and in conformity to the California Public Utilities Commission's (CPUC) General Order (G.O.) 165 and performing Distribution Maintenance, as described in Chapter IM-3 of the DOM, in accordance with G.O. 95, G.O.128, Southern California Edison (SCE) standards, and good utility practice.

The purpose of this manual is to provide guidance to the field inspectors who perform detailed inspections and patrols. This manual also provides the guidelines for G.O. 95/128 infractions and maintenance activities to be properly identified, correctly rated, and recorded in a timely manner.

1.2 Program Overview

The DIMP is an ongoing Company-wide program established to maintain the distribution system in accordance with good utility practices and the CPUC's G.O. 95, G.O. 128, and G.O. 165.

SCE has developed and improved its various maintenance and inspection programs to ensure the safety of its workers and the general public, as well as to provide reliable service to our customers.

General Order 165 was enacted on March 31, 1997 to establish maximum time intervals of inspection frequency of all electric distribution facilities within the jurisdiction of the CPUC. The basic premise of G.O. 165 is that all distribution assets must be patrolled every year for safety and reliability issues and the identification of significant G.O. 95 and 128 discrepancies. General Order 165 also requires these same assets to have a close up detailed inspection every 5 years (or less) to identify safety and reliability issues as well as all G.O. 95 and 128 discrepancies.

DIMP is SCE's approach to combining these two worthwhile endeavors into one efficient and cost effective program. This is a very large undertaking for SCE as there are over 2 million assets to be inspected and numerous SCE organizations involved.

1.3 Organizational Responsibilities

A. Maintenance and Inspection Program Oversight

Maintenance and Inspection Program Oversight (M&IPO) is responsible for oversight and improvement of the DIMP, including:

- ☐ Resolving all CPUC audits of G.O. 95/128/165
- ☐ Strategic direction of the M&I program and governance of policies, including frequency, scope, inspection criteria, corrective action time frames, and documentation of inspection and repair requirements
- ☐ Providing technical advisory staff
- ☐ Providing annual and informal training

- ☐ Developing performance measures
- ☐ Analyzing and tracking program department performance
- ☐ Providing staff to manage and/or support audits conducted by the CPUC
- ☐ Providing oversight of notification process, including developing enhancements and oversight reports
- ☐ Responsible for Aviation, Filing, and Maintenance (AF&M) program
- ☐ Responsible for supporting aerial program quality reviews

B. Distribution Construction and Maintenance

Distribution Construction and Maintenance (DC&M) is responsible for identifying and scheduling resources to achieve program goals and seeking to ensure:

- ☐ Discrepancies are properly identified and rated per policy
- ☐ Rated discrepancies are recorded timely
- ☐ Priority 2 rated discrepancies are reviewed prior to Work Management System (WMS) upload
- ☐ Resultant Maintenance is scheduled properly
- ☐ Maintenance (DC&M) is completed safely and according to policy

C. Overhead Detail Inspections

Overhead Detail Inspections is responsible for identifying and scheduling resources to achieve program goals and seeking to ensure:

- ☐ Overhead Detail Inspections (ODIs) are completed and timely
- ☐ Annual Grid Patrols (AGPs) are completed correctly and timely
- ☐ Repair by Inspector (RBI) is performed during inspections when authorized by Labor Agreement
- ☐ Streetlight detailed inspections are completed correctly and timely
- ☐ Discrepancies are properly identified and rated correctly
- ☐ Rated discrepancies are recorded timely
- ☐ Priority 2 rated discrepancies are reviewed by a Gatekeeper after the notifications have been by the Overhead Detail Inspector.
- ☐ Inspections are completed safely and according to policy

D. Substation Construction and Maintenance Field Apparatus

Substation Construction and Maintenance (SC&M) Field Apparatus is responsible for identifying and approving equipment as described in IN–1, Attachment 1–2 to allocate resources for achieving program goals and seeking to ensure:

- ☐ Assigned inspections are completed correctly and timely
- ☐ Infractions and maintenance activities are identified, rated correctly, and recorded timely
- ☐ Maintenance is completed safely and according to policy

E. Information Technology System Support and Administration

Information Technology (IT) System Support and Administration is responsible for identifying and allocating resources to achieve DIMP goals by ensuring recording devices and the WMS are functioning properly.

F. Compliance and Quality Control

Compliance and Quality Control is responsible for administering an effective quality assurance program, assessing compliance with regulatory requirements and supporting continuous improvement of the DIMP.

G. Environmental Requirements

For equipment inspection activities that occur in open space areas and/or on public lands, activities must follow the applicable environmental requirements. Activities conducted in natural areas, areas with historic or cultural resources, or areas in or adjacent to wetlands or waters have the highest potential for impacts. It is important to avoid impacts to the greatest extent possible on private or public lands; but we must be particularly sensitive when working on public lands such as U.S. Forest Service, National or State Parks, and Bureau of Land Management properties. Of special concern are sensitive species and their habitats, waterways, associated upland areas, and archaeological resources.

To reduce potential impacts to environmental resources and to ensure public land management agencies are notified as appropriate, engage the Environmental Services Department (ESD) at environmentalrequirements@sce.com or (833) 723-2362. Additionally, contact the ESD for further guidance if these guidelines cannot be followed to complete inspections in a safe manner, or if there is a change in inspection scope. For inspections occurring within public lands, contact Government Lands for applicable access requirements (rpgovernmentlands@sce.com). Refer to DOM IM-8 for environmental guidelines.

H. Distribution Aerial Inspection Program

In April 2019, SCE launched a robust Aerial Inspection Program to support SCE's Wildfire Mitigation Plan (WMP) which supplements SCE's ground-based inspections. The Aerial Inspection Program was deployed to reduce wildfire risks by assessing assets in High Fire Risk Areas (HFRAs) from the air, enabling detection of Priority 1 and 2 conditions not visible from the ground.

I. Pole Program Management

The Pole Program Management (PPM) group administers the Pole Replacement Program, which encompasses the visual and intrusive testing of transmission and distribution wood poles, including necessary repair, reinforcement, and replacement in alignment with remediation time frame requirements.

J. Vegetation Management

The Vegetation Management (VM) department is responsible for all line-clearing activities occurring within SCE’s Distribution districts. VM Managers and Senior Specialists work with SCE’s vegetation contractors who are responsible for maintaining vegetation-to-line clearances in order to comply with regulations such as General Order 95, Rule 35 and 37, and California Fire Public Resources Code 4293.

2.0 Definitions

2.1 Annual (Inspection)

Twelve consecutive calendar months starting the first full calendar month after an inspection is performed, plus three full calendar months, not to exceed the end of the calendar year in which the next inspection is due.

2.2 Communication Lines

The continuous set of SCE communication cables, components, and appurtenances, located outside of substations.

2.3 Discrepancy

A noteworthy material or structural deficiency; a condition that does not meet a SCE standard or specification or General Order 95 and General Order 128 requirement; or, a condition that left unresolved (in the opinion of the inspector) presents a hazard to the public or workers; or, a condition that will negatively impact system reliability.

2.4 Good Utility Practice

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts, which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practices is not intended to be any one of a number of optimum practices, methods, or acts to the exclusion of all others; but rather acceptable practices, methods, or acts generally in practice in the region.

2.5 Inspections

A. Aerial Inspection

Performed mainly via drones to support with 360-degree inspections as well as some use of helicopters. Potential ignition risk conditions in HFRA locations are identified; Priority 1 and 2 notifications on findings and additional findings to support with data collection are created.

B. Detailed Inspection

A close proximity evaluation of an SCE distribution asset. Distribution assets subject to underground detail inspections include subsurface and pad mounted enclosures, switches, transformers, visible cables, and associated components.

Distribution assets are also subject to overhead detail inspections include poles, transformers, capacitors, regulators, visible wires and/or cables, and associated line elements.

- Inspector duties include:
  - — Identifying discrepancies rating and recording conditions
  - — Performing minor corrective action
  - — Documenting Priority 2 rated safety and reliability conditions created by third parties on or near SCE structures.

Conditions assigned a priority rating are recorded electronically in a field tool. Additional data recorded in the field tool includes:

- Functional location (FLOC) or equipment number, problem statement, date found, and unique employee identifier.
- Electronically recorded data is uploaded to the WMS.

C. Grid Patrol

Basic visual evaluation of SCE's distribution assets located within a specified boundary. Distribution assets subject to grid patrols include above ground structures, overhead conductors and equipment; as well as entryways to subsurface enclosures and vaults. Grid Patrols are typically conducted by land vehicle; however, patrols may be conducted by foot or by aircraft (helicopter or fixed wing) in remote areas. Conditions assigned a priority rating are recorded electronically in a field tool.

Additional data recorded in the field tool includes, but not limited to:

- FLOC or equipment number
- Problem statement
- Date found
- Unique employee identifier

Electronically recorded data is uploaded to the WMS. The AGP should not be considered complete for a grid until, for all structures with required assets within the grid, SCE has either documented a successful visual inspection (by vehicle, foot, or air) or documented a permissible justification for an incomplete inspection (that is, permitting, government access restrictions, or other reasonable circumstances).

Refer to IN–2, Section 2.0 for details.

D. Emergency Patrols

Typically performed following a circuit interruption or system event to identify affected facilities and safety hazards, as well as to perform initial damage assessments. Results are reported to the responsible manager and/or Grid Control Center and recorded.

E. Infrared Thermography

The use of an infrared imaging and measurement camera to "see" and "measure" the thermal energy emitted from an object.

F. Repair by Inspectors (RBI)

Inspectors also identify and perform certain maintenance tasks during the course of a Detail Inspection or Grid Patrol. Upon completion of these tasks, the inspectors will accurately record work completed in the field tool and upload recorded data to the WMS.

G. Streetlight Inspections

Conducted as visual evaluations.

H. Intrusive Pole Inspection

Involves boring of holes at different levels to identify degradation. These inspections are categorized as either:

- Partial Dig
- Full Treatment
- OR Sound and Bore
  - — For poles set in asphalt or concrete) and performed on a 15-year cycle for poles that have been in-service for 20 years. Inspections are typically performed by contract personnel.

Visual and Intrusive test results are recorded and submitted to the responsible program administrator for review and input into a WMS.

2.6 Maintenance

As used herein, encompasses inspection, assessment, maintenance, repair, and replacement activities performed with respect to Transmission and Communication Lines.

A. Repair

The restoration or reconditioning of equipment, structures, or components.

B. Replacement

The installation of new or refurbished equipment, structures, or components.

2.7 Safety Hazard

A condition that poses a significant threat to human life or property.

2.8 Work Management System (WMS)

Any database used to collect data, schedule, and monitor pending and completed activities. Examples include SAP and Consolidated Mobile Solutions (CMS).

3.0 Action Priortization

There are three basic elements to the overall inspection program: 1) Identification of actionable items, 2) Risk assessment and action prioritization, and 3) Actual repairs.

3.1 Identification and Repair of Actionable Items

Information required to identify and repair actionable items (Items 1 and 3 in Section 3.0 above) are contained in the various SCE standards manuals as well as G.O. 95 and 128. The Condition Guides included in this document provide typical conditions, criteria and tests that have associated Priority 1 and 2 ratings. These Condition Guides are intended only to serve as aids, and do not, nor cannot, contain all the possible safety and reliability issues and/or G.O. discrepancies that the inspector is expected to identify.

- A condition that conflicts with SCE standards, G.O. 95 or G.O. 128 requirements;
- OR a condition that, left unchecked (in the opinion of the Inspector), presents a hazard to the public or utility worker, property, environment, or will negatively impact system reliability.

Discrepancies identified during detail inspections and grid patrols or while performing

associated tasks are cross-referenced with the Risk Assessment Matrix and as necessary, conditions are assigned a priority rating according to the Assigning Priority Levels.

3.2 Risk Assessment and Action Prioritization

Risk assessment and action prioritization of repair efforts for these actionable items (Item 2 in Section 3.0 above) requires evaluation of site and equipment specific conditions by the inspector to determine the appropriate priority rating and action time frame.

3.3 E1 Notification

The E1 notification provides the detailed information needed for corrective actions to be taken following the identification of a potential violation or safety hazard on SCE's facilities.

The E1 notification is also defined as:

- Repair notifications created in SAP to document and record corrective actions on SCE facilities and equipment.
- The E1 notification will provide the detailed information needed for corrective actions to be taken following the identification of a potential violation or safety hazard on SCE's facilities.
- Each condition or discrepancy identified in the field shall be assigned its own E1 notification.

3.4 Notification Priority Rating with Remediation Time Frames

Transmission and Distribution (T&D) uses a three-priority ratings system: 1) Priority 1 (E1P1) Notifications, 2) Priority 2 (E1P2) Notifications, and 3) Priority 3 (E1P3) Notifications. This system ranks the potential impact to safety or reliability of a condition. These may be conditions which present a hazard to workers or to the public or conditions which may cause a system failure. The ratings also define the maximum corrective action time frames to remediate the condition.

The three priorities are as follows:

A. Priority 1 (E1P1) Notifications

Priority 1 notification conditions are an immediate risk of high potential impact to safety or reliability and require temporary or permanent corrective action within 72 hours. The site must be made safe to the public via immediate corrective action taken by the first responder if necessary. Otherwise, T&D personnel are required to remain on-site, at a safe distance, until relieved by a company representative. It is acceptable to briefly leave the site if it is for the purpose of making the site safe as long as steps are taken to limit access to the site by the public until return. For all immediate corrective actions taken, and temporary repairs performed it shall be documented in SAP to include a description of what was done, when the work was performed, and who performed the work.

The on-site requirement does not apply to the following exclusions; however, temporary or permanent corrective action is still required for these exclusions within 72 hours:

- T&D notification derived from calculated values:
  - — Intrusive Pole Inspections (IPI)
  - — Overhead Infrared Inspections

— Pole Loading Calculations

- Special programs or projects such as:
  — Aerial Inspection Program
  — Deteriorated Vault and Manhole Program (DVMP)

1. E1P1 Remediation Time Frames

   A temporary or permanent repair is required within 72 hours of the notification date. If a temporary repair is made:

   - The E1P1 notification can be completed for the temporary repair, then an E1P2 notification is required for the permanent repair;
   - OR the E1P1 notification can remain open and a permanent repair must be made within 21-calendar days or the notification date.

   If the permanent repair extends beyond 21-calendar days of the notification date, the following actions are required:

   ☐ Complete the E1P1 notification for the temporary repair made
   ☐ Create an E1P2 notification for the permanent repair

   Exceptions to the requirement to complete the E1P1 notification and create an E1P2 notification if a permanent repair extends beyond 21 calendar days:

   Claims and Storms

   - The associated E1P1 notification may be kept open longer than 21-calendar days for a permanent repair to be made if necessary.
   - In each such instance, it shall be documented in the system of record that the E1P1 is being left open to ensure proper tracking for the purpose of Claim and/or Storm accounting.

B. Priority 2 (E1P2) Notifications

Priority 2 notifications are for conditions which pose a risk of moderate potential impact to safety or reliability. These notifications require action anywhere from the same day up to 36 months of the notification date depending on the condition and the location. Repairs completed by inspectors during an inspection are classified as Priority 9 notifications.

The Gatekeeper will review issue notifications, using the appropriate standards that are in place, and can reassess time frames, if necessary, to allow for the condition to be remediated within the required compliance time frames:

1. E1P2 Remediation Time Frames

   - Same day Find & Fix notifications require all notification dates to be the same.
   - Conditions that create a fire risk located in CPUC Tier 3 Extreme Fire Threat Area (overhead only) require corrective action within 6 months of the notification date.
   - Conditions that create a fire risk located in CPUC Tier 2 Elevated Fire Threat Area / Non-CPUC HFRA (SOB322) (overhead only) require corrective action within 12 months of the notification date.
   - Conditions that compromise worker safety require corrective action within 12 months of the notification date.

- All other conditions require corrective action within 36 months of the notification date.

2. Exceptions To Remediation Time Frames

Exceptions to remediation time frames are conditions in a HFRA that are identified as not creating a fire risk. These conditions are determined by Gatekeeper review, risk assessment, or an engineering analysis (that is, Intrusive Pole Inspection) and may be classified as a Non-High Fire Threat Notification with a remediation time frame up to 36 months of the notification date.

To be classified as a Non-High Fire Threat Notification, the following condition(s) must be met:

- Remove the High Fire status from the notification AND
- Enter in the Notification Long Text “NonFireRiskNotification” followed by a description of why the condition is not a fire risk.

OR

- Enter in the Notification Long Text “NonElevatedFireRiskNotification” followed by a description of why the condition is not an Elevated fire risk

Notifications created on the assets below can exceed 6 or 12 months in high fire areas, but cannot exceed 36 months:

- Underground assets
- Apparatus assets
  — Apparatus notifications must have the Main Work Center of Apparatus

Exceptions to remediate time frames are those E1P2 notifications that are not reviewed by a Gatekeeper due to their automation:

- Same day Find & Fix
- Notify Customer/Communication Infrastructure Provider (CIP)
- Intrusive Pole Inspection (IPI)
- Pole Loading Failures

C. Priority 3 (E1P3) Notifications

Priority 3 notifications are for conditions which pose a risk of low potential impact to safety or reliability, GO 95 or GO 128 infractions, and programmatic replacement work.

1. E1P3 Remediation Time Frames

Corrective actions necessary within these remediation time frames appear below:

- Conditions on overhead assets found on or after June 30, 2019 require corrective action within 5 years of the notification date.
- Conditions on overhead assets found prior to June 30, 2019 do not require corrective action within a specified time frame.
- Conditions on non-overhead assets do not require corrective action within a specified time frame.

D. Maintenance Priority Accuracy

Maintenance priorities will be thoroughly evaluated and accurately assigned and maintained. Training and continuing analysis will take place to prevent premature maintenance, and to prevent failure prior to repair or the next scheduled inspection.

A discrepancy not yet entered into WMS can be re-rated when being reviewed by a Gatekeeper (supervisor with qualified electrical worker knowledge) who clearly demonstrates that it was prioritized incorrectly. The discrepancy should then be entered into WMS with the appropriate priority.

3.5 Actual Repairs

Repairs shall be made in conformance with established internal standards. When performing Priority 2 maintenance work, all pending Priority 2 and Priority 3 work on the structure shall be repaired as long as it does not exceed the qualifications of the crew.

4.0 References

4.1 E1 Notification Policy

5.0 Attachments

Attachment 1–1: Assigning Priority Levels

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition

Attachment 1–3: Risk Assessment Matrix

Attachment 1–1: Assigning Priority Levels

Discrepancies identified during Patrols or Detail Inspections requiring remedial action are prioritized according to Table 1–1 below.

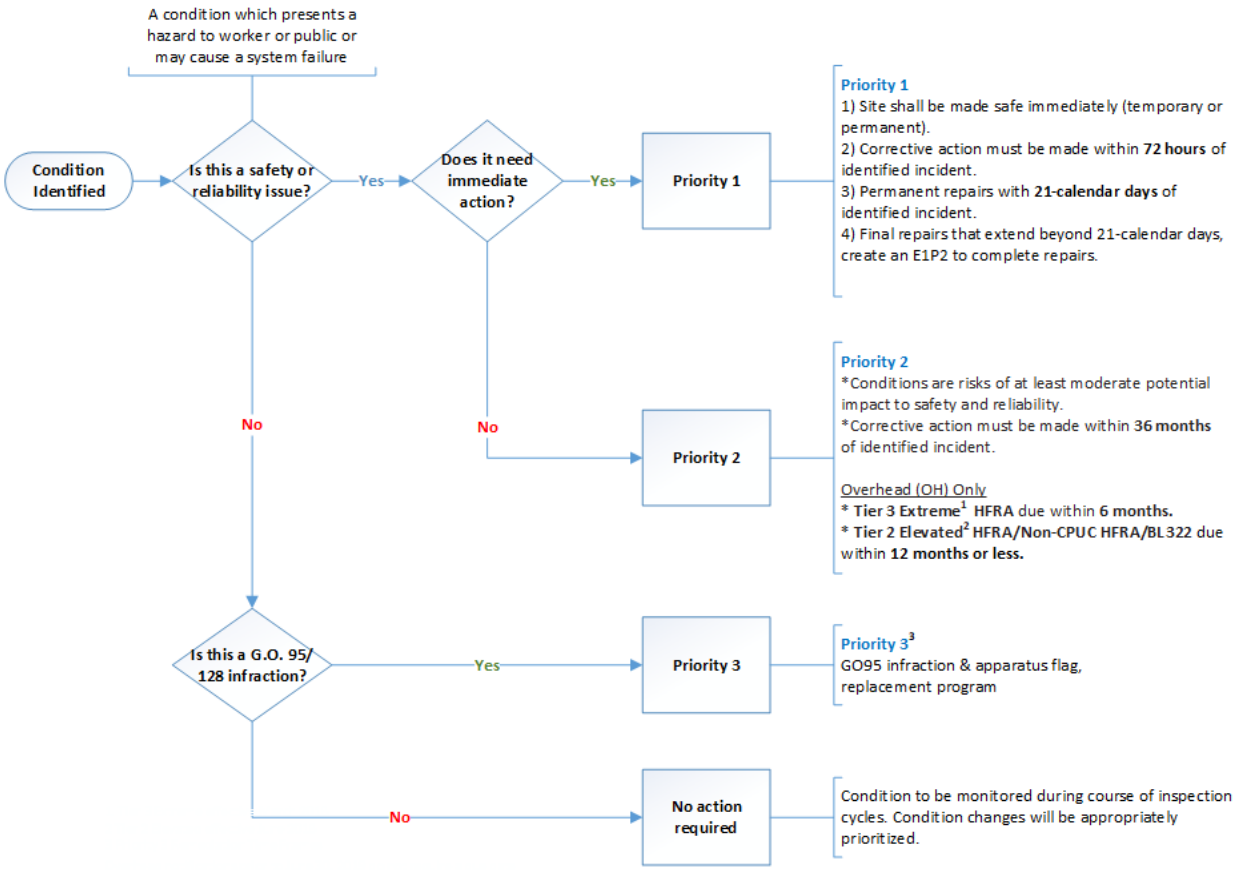
Table 1–1: Priority Rating

Priority	Overhead	Underground	Wood Poles
1	Initiative corrective action	Initiative corrective action	Initiative corrective action
2	Remedy within 36 month[1]	Remedy within 36 months[2]	Remedy within 36 months[1]
3	Remedy within 60 months[3, 4]	Re-evaluate next routine patrol cycle	Re-evaluate next routine patrol cycle

Note(s):

1. SCE HFRA repair time frame:
   - Tier 3 (Extreme) HFRA due within 6 months from the inspection/notification date
   - Tier 2 (Elevated) HFRA/ Non-CPUC HFRA/BL 322 due within 12 months from the inspection/notification date.
2. SCE HFRA Priority repair time frames are applicable only to overhead facilities/structures and underground facilities shall require remediation within 36 months and are not required to comply with HFRA Tier 3 (Extreme) and Tier 2 (Elevated) remediation time frames.
3. Unless discrepancy is exempted per G.O. 95 Rule 18 and Appendix J.
   - Priority 3 Remediation Time Frames
     — Overhead notifications prior to June 30, 2019 do not require a due date
     — Overhead notifications created on or after June 30, 2019 have up to a 5-year due date
     — Underground notifications do not currently require due dates
4. These priority levels are applicable to the maintenance and inspection requirements referenced in G.O. 95 /128/165.
   Please reference E1 Notification Policy for further definition of E1 priority levels and time frames. The Condition Guides included in this document provide typical conditions, criteria and tests that have associated Priority 1 and 2 ratings.
   These Condition Guides are intended only to serve as aids, and do not, nor cannot, contain all the possible safety and reliability issues and/or G.O. discrepancies that the inspector is expected to identify.

Figure 1–1: Priority Inspection Decision Flowchart



Once a condition has been determined to be a Priority 2, the inspector performs a risk assessment to properly establish a reasonable time frame within zero (0) to 24 months. This is done by assessing the condition through determination of the safety and reliability factors in accordance with Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition, and then applying this information to the risk assessment, Attachment 1–3: Risk Assessment Matrix.

Note(s):

1. Tier 3 Extreme HFRA effective March 2018
2. Tier 2 Elevated HFRA effective June 2018
3. Priority 3 Remediation Time Frames:
   - Overhead notifications prior to June 30, 2019 do not require a due date.
   - Overhead notifications created on or after June 30, 2019 have up to a 5-year due date
   - Underground notifications do not currently require due dates.

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition

NOTE Each problem or condition is independent from one another.

Determine Safety Factors

Factors to Consider when Assessing the Safety Risk		
Public/Worker Safety	Property	Environmental
•Near a school/park •In front of a mall •Rear property line •Behind a commercial strip center •In a vacant field •Minor pedestrian traffic •Major intersection •Impossible climbing space	•In a parking lot •In an agricultural area •In a vacant field	•In the desert •In coastal areas •Mountainous •Urban/Rural •Time of season –High wind –Rainy –High heat –Snow •Protective habitats •Hazardous spills •In a high fire risk area
It is important to note that no one factor weighs more than another. Only after you have considered all your surroundings, People/Property/Environment, can you make a true assessment of the risk. Refer to DOM IM-8 for environmental guidelines.		

Identifying the Safety Risk Impact Levels	
No/Slight Safety Impact	Any Condition which has *LITTLE/NO* safety risk to public or worker safety/Property/Environment.
Minor Safety Impact	Any Condition which has *MINOR* safety risk to public or worker safety/Property/Environment.
Moderate Safety Impact	Any Condition which has *MODERATE* safety risk to public or worker safety/Property/Environment.
High Safety Impact	Any Condition which has *HIGH* safety risk to public or worker safety/Property/Environment.

Attachment 1–2: Risk Assessment Matrix — Things to Consider when Assessing a Condition
(Continued)

Each problem or condition is independent from one another.

Determine Reliability Factors

CONSTRUCTION TYPE

- ☐ What is the component the condition is associated to?
- ☐ What is the construction type of the component?
- ☐ Is there any electrical equipment associated to the component?
- ☐ Where is the condition located on the component?
- ☐ What is the stress factor?
  - — Weight: high/medium/low
  - — Span length: long/medium/short

CIRCUIT TYPE/LOCATION

- ☐ What is the highest voltage “Directly” associated to the component?
- ☐ What is the highest voltage “Indirectly” associated to component?
- ☐ What is the load factor: High/Medium/Low
- ☐ Is the component located behind any fusing?

Attachment 1–3: Risk Assessment Matrix

Select the safety impact level to people, property, and environment aligned with the condition of the component regarding the risk to the system.

Reliability (Failure Risk)	No/Slight Impact	Minor Impact	Moderate Impact	High Impact
Component Failure could lead to System Failure	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-12 Months	**Priority 2** Action Required 0-3 Months	**Priority 1** Action Required Immediately
Component Has Failed No significant risk to system	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-36 Months	**Priority 2** Action Required 0-3 Months
Potential Component Failure	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 3/No Action Required** Only 95/128 Infractions Recorded	**Priority 2** Action Required 13-36 Months	**Priority 2** Action Required 4-12 Months

Safety (People/Property/Environment)

Note(s):

1. This “Risk Assessment Matrix” is a reference tool intended to give inspectors guidelines to assign a reasonable time frame for the remediation of any distribution facility condition.
2. Starting March 1, 2018, Overhead Equipment in an Extreme High Fire Area has HFRA an allowed maximum of 6 months. Starting June 30, 2019, Priority 3 notifications on Overhead Equipment have an allowed maximum of 60 months.
3. System Failure is when the system no longer operates. (An interruption of service caused by damaged equipment preventing the system to perform).
4. Component Failure is when a piece of equipment can no longer perform the function it was designed for, but the system continues to operate. (Abnormal elbow temperature that is connected to the transformer.) (The elbow has failed, however, the system is still operating).

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GE–2: Inspection and Maintenance Training

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GE–2: Inspection and Maintenance Training

1.0 Purpose

Training for the SCE Distribution Inspection and Maintenance Program (DIMP) will promote safety and circuit reliability on all electrical distribution facilities for both underground and overhead systems through routine inspections.

2.0 Training Objectives

Initial training and annual refresher training is mandatory and will be provided to all personnel inspecting distribution assets to ensure SCE will meet all inspection and maintenance objectives. These objectives include:

- Using proper field inspection procedures
- Accurately and timely documenting and reporting findings via the Work Management System (WMS)
- Prioritizing items identified for follow-up maintenance
- Compliance with CPUC-required maintenance cycles on structures, equipment, conductors and/or components

Inspectors will be tested at completion of training.

3.0 Operations

The Manager of Maintenance and Inspection is responsible for determination of training program requirements.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 128, Rules for Construction of Underground Electric Supply and Communication Systems

4.3 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.4 SCE Distribution Overhead Construction Standards (DOH)

4.5 SCE Distribution Underground Construction Standards (DUG)

4.6 SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

4.7 SCE Accident Prevention Manual (APM)

4.8 SCE Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.9 DOM IM-3, Distribution Maintenance Program

4.10 Work Management System

4.11 Underground Corrosion Inspection and Maintenance Manual

4.12 SCE Training Manual for Performing Grid Patrol, Detail Inspection and Intrusive Inspection of Wood Pole Structures

IN–TOC: Inspection

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IN–1: Overhead Detail Inspections

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IN–1: Overhead Detail Inspections

1.0 Purpose

The purpose of the Overhead Detail Inspection (ODI) is to visually evaluate SCE's overhead electrical distribution facilities with the intent to identify and document obvious discrepancies and validate accuracy of asset information and facility inventory mapping references for appropriate corrective action. Inspectors also identify and perform certain maintenance tasks during the course of a detailed inspection. Overhead detail inspections also accomplish the annual patrol of the grids, including streetlights.

2.0 Methods and Procedures

The inspector performs a close in-depth visual inspection of all the overhead electrical distribution facilities, including the streetlights and third party communication assets, within the assigned inspection area. The frequency of ODI is directed elsewhere in this chapter, and in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual.

When inspecting structures with both transmission and distribution assets (e.g., combo poles), observe and identify conditions that require immediate attention (e.g., priority 1) on non-distribution assets, when authorized by the Labor Agreement. If conditions are found at the transmission level, the inspector shall notify their Supervisor who will contact the appropriate Transmission Grid Manager or Senior Patrol (if known) and provide photos and information related to the condition. If the condition is related to SCE communication, contact Telecom Control Center (TCC) - Contact (949) 587-5500.

3.0 Duties of the Inspector

The inspector performs the following tasks for each facility detailed inspection:

3.1 Identification of Discrepancies per the OH Detailed Inspection Guidelines

The ODI inspector performs an in-depth visual examination of each overhead distribution facility, including streetlights and third party communication assets, using the following Overhead Detailed Inspection Guidelines as a guideline. This list is a high level summary of the items and areas to inspect. Additional information showing typical conditions requiring corrective action (Priorities 1 and 2) is shown in the applicable overhead equipment and component Condition Guide attached.

The inspector also identifies and reports any G.O. 95/128 infractions created on or near Distribution facilities by the following:

- Third party communication providers subject to CPUC jurisdiction
- Non-utility third parties that are non-subject to CPUC jurisdiction

3.2 Establishment of Priorities per the Priority Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition Guides, Risk Assessment Matrix

Only Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action thus no action time frame decision is required from the inspector. As discussed in the General Overview Section of this manual, Priority 2 conditions have zero (0) to 36-month time frame options depending on the severity of the situation (unless in a high fire risk area.)

3.4 Performance of Appropriate Minor Repairs at the “Public” Level

The ODI inspector makes minor repairs at the Public level, when authorized by the Labor Agreement, while at the site for the detailed inspection, rather than having other SCE personnel return at a later time to make the repairs.

The following is a list of repairs that the ODI inspector performs:

- ☐ Repair damaged ground molding.
- ☐ Install new and/or repair existing guy guard.
- ☐ Repair damaged visibility strips or install new strips in locations where necessary.
- ☐ Install or repair riser strap.
- ☐ Repair broken risers and exposed conductor.
- ☐ Repair damaged PVC separations, loose holders, and uncapped sweeps
- ☐ Install pole number.
- ☐ Remove unauthorized attachments when safe to do so.
- ☐ Repair open/damaged secondary hand hold and remove minor brush.

Overhead structures present unique public safety exposure and work conditions depending on the height of the necessary repairs from the ground level where public exposure exists.

3.5 Validation of Accuracy of Asset Information and Facility Inventory Mapping References

While at the facility site, the ODI inspector performs the following:

- ☐ Records corrections—found assets, missing assets, asset corrections.
- ☐ Mapping corrections

3.6 Document in the Field Tool

Refer to the Work Management System (WMS) procedures manual.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 SCE Distribution Overhead Construction Standards (DOH)

4.4 SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

4.5 SCE Accident Prevention Manual (APM)

4.6 SCE Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.7 DOM, IM-3: Distribution Maintenance Program

4.8 Work Management System

5.0 Attachments

Attachment 1–1: Overhead Detailed Inspection Guideline

Attachment 1–2: Frequency of Apparatus Inspections

Attachment 1–1: Overhead Detailed Inspection Guideline

1. Condition of Equipment, Apparatus, and Hardware
   - ☐ Broken, chipped, or severely contaminated insulators/Primary insulator or pin above 750 V (cracked/damaged/loose)
   - ☐ Pole switch indicating need for repair
   - ☐ Indication of equipment oil leak
   - ☐ Bulged or discolored capacitor units
   - ☐ Blown or dry fuses, blown surge arresters, broken fuseholders
   - ☐ Streetlights broken or damaged including brackets, mast arms, and lights/globes – public hazard
   - ☐ Damaged anchor bolts
   - ☐ Insulator broken, cracked or loose, floating, squatting, chipped
   - ☐ Insulator tie wire broken/missing/damaged
   - ☐ Animals, birds, foreign material interfering with operation
   - ☐ Evidence of tracking or burning
   - ☐ Broken pins or squatters (primary or secondary)
   - ☐ Broken, bent pole steps
   - ☐ Damaged or missing ground wire molding or ground wire exposed
   - ☐ Condition of transformer's Internal Fault Detector (IFD), if so equipped; see DOM, TR–9.
2. Condition of Pole and Structures
   - ☐ Damage/deteriorated pole
   - ☐ Damage to pole foundation
   - ☐ Crossarm broken, split, or extremely canted
   - ☐ Visually check for pole leaning
   - ☐ Washout or excavation around pole or anchor
   - ☐ Check pole setting depth marked from brand. (Brands are at 10 feet on 60-foot poles and less; at 13 feet for poles taller than 60 feet.)
   - ☐ Damage down guys, guy guard missing (Install guard where required.) – public hazard
   - ☐ Excessive slack on down guys or span guys
   - ☐ Six-foot Fiberglass Guy Strain Insulator installed (upgrade to standard 12-foot version)
   - ☐ Visually check pad-mounted equipment for movement and cabinet secured or locked.
   - ☐ Visually check Buried Underground Residential Distribution (BURD) lids, vault lids, vent pipes, and handhole lids.
3. Conductors and Covered Conductors
   - ☐ Inadequate primary, secondary, or service ground clearances
   - ☐ Exposed conductor (covering falling off) – service drops, secondary, and primary
   - ☐ Excessive slack in primary conductors in high wind areas
   - ☐ Clearance from building, television or radio antenna, billboard signs, scaffolding, streetlights, communication cable or hazardous locations for primary, secondary or services
   - ☐ Trees touching or above primary conductors or covered conductors (overhangs) unless special encased aerial bundled cable (18 inches required)
   - ☐ Hazardous tree conditions, limbs over wire, dead or decaying trees, palm fronds

- ☐ Foreign objects in line, such as kites, Mylar balloons
- ☐ Bare conductors in rack construction
- ☐ Bare service drops
- ☐ Deflection, strain or abrasion on service drops and secondaries
- ☐ Abandoned conductors

4. Risers
   - ☐ Riser straps, blocks broken – public hazard
   - ☐ Opening in riser conduit coupling, damaged – public hazard
   - ☐ Riser in climbing space in rack construction
   - ☐ Missing/Damaged Conduit Riser Label
5. Climbing Space
   - ☐ Obstructions in climbing space (bolts, wire)
   - ☐ Climbing space obstructed by cable TV or phone, and a hazard to climb
6. General Conditions
   - ☐ Unlocked substations, pole switches, equipment
   - ☐ Verify circuit-to-circuit map for additional equipment and tap lines not identified.
   - ☐ Check status of fault indicators with circuit map inventory.
   - ☐ Validate asset information – maps, asset characteristics, location
   - ☐ Unauthorized attachments
   - ☐ Foreign attachments to SCE ground
   - ☐ Conditions for transmission and distribution assets (e.g., combo pole), include but are not limited to:
     - — Pole broken/damaged or excessive leaning
     - — Vegetation contacting or nearly contacting energized lines (e.g., expected to imminently fail and contact energized lines, contact or arcing with bare-wire conductors is highly probable to occur in a high wind event due to vegetation proximity to power lines, appears contact has occurred with primary electric facilities, appears strain or abrasion has occurred with secondary bare open wire)
     - — Broken, damaged, burned or rotted crossarm
     - — Energized conductor with inadequate clearances, bare conductor contacting communication, burned jumpers/connectors, or burned wire
     - — SCE Communication (e.g., broken lashing wire with slack to reach into power space, attachments/repairs poorly secured with tape/rope, broken and hanging strands, down guys, primary/secondary slack and jumpers capable of contacting communication facilities, Transmission/primary/secondary broken down guys hanging in communication space, foreign objects with potential to cause arcing, shorts or conduct electricity across insulators)
     - — Loose, broken, damaged, or missing insulator
     - — Broken/damaged guy in proximity to energized conductor
     - — Leaking oil from the equipment - for transmission, 66 kV and 115 kV potheads
     - — Excessive corrosion (e.g., loss of material/holes in equipment)

- ☐ Conditions for third party communication assets include but are not limited to:
  - — Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures
  - — Loose or broken lashing wire
  - — Improperly secured communication conductor or equipment
  - — Broken, damaged or severely strained communication guy wires
  - — Excessive bowing or bending of pole from potential overloading at communication equipment attachment points
  - — Excessive sag of communication cables causing G.O. 95 infraction(s) or safety issue(s)
  - — Communication messenger and/or cable sag is too tight and creating a G.O. 95 clearance violation for SCE low voltage or high voltage lines
  - — Vegetation straining communication messenger or guy wire and/or causing structural integrity issues

Attachment 1–2: Frequency of Apparatus Inspections

Facility/Equipment[a/]	Inspection Frequency (yr)	DOM Section
Apparatus		
Capacitors, Fixed (Overhead)	5	CA–1
Capacitors,. Fixed (Padmounted)	5	CA–1
Capacitors,. Switched (Overhead)	5	CA–2, CA–3, CA–4
Capacitors, Switched (Padmounted)	5	CA–2, CA–3, CA–4
Fault Interrupters (Padmounted)	5	SW–9, SW–12
Fault interrupters (Underground)	3	SW–9
Network Protectors	1	PD–3
Preferred Emergency Equipment (Overhead & Padmounted)	5	SW–8
Preferred Emergency Equipment. (Underground)	3	SW–8
Reclosers (Overhead)	5	SW–1
Reclosers (Padmounted)	5	SW–13
Regulators	5	TR–4
Remote Controlled Switches (Underground)	3	SW–11
Remote Controlled Switches (Overhead & Padmounted)	5	SW–11

[a/] For inspection frequencies of equipment located in customer substations, co-generation interface sub-stations and small power-production interface substations, see DOM SC-1 Distribution Substations.

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IN–2: Inspection Procedures — Grid Patrols

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ATTACHMENTS

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1.0 Purpose

The purpose of the Grid Patrol is to conduct an annual visual evaluation of SCE's Electrical distribution facilities with the intent to identify and document obvious discrepancies that require corrective action.

2.0 Methods and Procedures

The Grid Patrol inspector performs a simple visual inspection of publicly accessible electrical distribution facilities, including streetlights, within the assigned inspection area. The frequency of ODI is directed elsewhere in this chapter, and in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual.

The inspections can be performed from vehicles, on foot, or by aircraft. The vehicle method is the most used as it provides the required accuracy while being cost effective. The problem conditions can generally be seen adequately by the naked eye or through the use of binoculars. The Grid Patrol does not require the climbing of overhead structures (poles)/streetlights or the opening of underground structures and equipment. Inspectors shall attempt to inspect all assigned structures from the ground when safe and practical to do so. If a portion of the circuit/streetlight cannot be safely and/or cost effectively inspected from the ground, then that portion shall be bypassed and clearly documented in red on the inventory maps for follow-up air patrol within the required compliance time frame.

Underground facilities such as pad-mounted transformers, BURD enclosures, vent pipes, handholes, and subsurface structure lids are also included as items to be visually observed for public safety hazards during a Grid Patrol. Underground portions of the circuit, including pad-mounted equipment, that are located on rear property lines, within private property, or in limited access communities do not require a patrol as these structures and equipment are in a controlled environment. In these cases the Underground Detail Inspection will be used to ensure compliance.

If the inspector is unable to complete a basic visual inspection of a given asset by vehicle or foot, then an air patrol should be used to timely complete the patrol inspection for that asset.

In the event that permitting, government access restrictions, a state of emergency, or other reasonable circumstances prevent the inspector from timely completing a basic visual inspection of a given asset by vehicle, foot, or air, the justification for the incomplete inspection of the relevant structure must be documented.

The Grid Patrol should not be considered complete for a grid until, for all structures with required assets within the grid, the inspector has either documented a successful visual inspection (by vehicle, foot, or air) or documented a permissible justification for an incomplete inspection (that is, permitting, government access restrictions, or other reasonable circumstances). This documentation should permit SCE to not only capture the percentage of required structures successfully inspected within the grid during the Grid Patrol, but to also capture, on a structure-by-structure basis, whether a given structure was successfully inspected or not, and, if not successfully inspected, the justification for the incomplete inspection.

Regardless of whether an AGP is considered complete or not for internal compliance purposes, for every structure that is not timely inspected, SCE shall make reasonable efforts to complete the inspection as soon as practical given the exception circumstances. For example, if a structure is

not able to be timely inspected because SCE needs a permit, SCE shall make reasonable efforts to obtain a permit and, once the permit is obtained, should complete the inspection of the structure as soon as practical.

When inspecting structures with both transmission and distribution assets (e.g., combo pole), observe and identify conditions that require immediate attention (e.g., priority 1) on non-Distribution assets, when authorized by the Labor Agreement. If conditions are found at the transmission level, the inspector shall notify their Supervisor who will contact the appropriate Transmission Grid Manager or Senior Patrol (if known) and provide photos and information related to the condition. If the condition is related to SCE communication, contact Telecom Control Center (TCC) - Contact (949) 587-5500. See grid patrol guideline section for condition examples.

3.0 Duties of Grid Patrol Inspector

The grid patrol inspector performs the following tasks for each facility in the grid:

3.1 Identification of Hazards and/or Discrepancies per the Grid Patrol Guideline

The grid patrol inspector shall perform annual routine visual examination of each overhead distribution facility, including streetlights, using the following Grid Patrol Guideline as a guideline. This list is a high level summary of the items and areas to inspect. Additional information showing typical conditions requiring corrective action (Priorities 1 and 2) is shown in the applicable equipment and component Condition Guide attached. Priority 3 conditions are generally not identified or documented as part of a grid patrol.

3.2 Establishment of Priorities per the Priority Inspection Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition Guides, Condition Risk Assessment Matrix

Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action; site shall be made safe immediately and corrective action shall be made within 72 hours of reported incident. As discussed in the General Section of this manual, Priority 2 conditions have zero (0) to 36-month time frames (unless in a high fire risk area). Priority 3 (overhead) conditions have remediation time frames up to a 5-year due date if notification was created on or after June 30, 2019. Overhead notifications prior to June 30, 2019 do not require a due date.

3.4 Performance of Appropriate Routine Repairs

The inspector also repairs or installs, when authorized by the Labor Agreement, new guy guard/markers on down guys in general public proximity or exposed to pedestrians, areas easily accessible to the general public, parking lots, or areas exposed to vehicular contact. Any repair by inspector during a patrol will be recorded in the field tool.

3.5 Document in the Field Tool

Refer to the Work Management System (WMS) procedure manual.

4.0 References

4.1 CPUC G.O. 95, Rules for Overhead Electric Line Construction

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 Distribution Overhead Construction Standards (DOH)

4.4 Distribution Operations and Maintenance Policies and Procedures (DOM)

4.5 Accident Prevention Manual (APM)

4.6 Environmental Policies and Procedures (EN) & ESD Waste Management Manual

4.7 DOM, IM-3: Distribution Maintenance Program

4.8 Work Management System

5.0 Attachments

Attachment 2–1: Grid Patrol Guideline

Attachment 2–1: Grid Patrol Guideline

1. Condition of Equipment, Apparatus, and Hardware
   - ☐ Broken, chipped, or severely contaminated insulators/Primary insulator or pin above 750 V (cracked/damaged/loose)
   - ☐ Pole switch indicating need for repair
   - ☐ Indication of equipment oil leak
   - ☐ Bulged or discolored capacitor units
   - ☐ Blown or dry fuses, blown surge arresters, broken fuse-holders
   - ☐ Streetlights broken or damaged including brackets, mast arms, and light/globes — public hazard
   - ☐ Damaged anchor bolts
   - ☐ Insulator broken, cracked or loose, floating, squatting, chipped
   - ☐ Insulator tie wire broken/missing/damaged
   - ☐ Animals, birds, foreign material interfering with operation
   - ☐ Evidence of tracking or burning
   - ☐ Broken pins or squatters (primary or secondary)
2. Condition of Pole and Structures
   - ☐ Damage/deteriorated pole
   - ☐ Damage to pole foundation
   - ☐ Crossarm broken, split, or extremely canted
   - ☐ Visually check for pole leaning
   - ☐ Washout or excavation around pole or anchor
   - ☐ Damage down guys, guy guard missing — public hazard
   - ☐ Excessive slack on down guys or span guys — clearance problem or pole integrity issue
   - ☐ Visually check pad-mounted equipment for movement and cabinet secured or locked.
   - ☐ Visually check BURD lids, subsurface structure lids, vent pipes, and handhole lids.
3. Conductors
   - ☐ Inadequate primary, secondary, or service ground clearances
   - ☐ Excessive slack in primary conductors in high wind areas
   - ☐ Clearance from building, television or radio antenna, billboard signs, scaffolding, streetlights, communication cable or hazardous locations for primary, secondary or services
   - ☐ Trees touching or above primary conductors (overhangs) unless special encased tree cable (18 inches required)
   - ☐ Hazardous tree conditions, limbs over wire, dead or decaying trees, palm fronds
   - ☐ Foreign objects in line, such as kites, Mylar balloons
4. Risers
   - ☐ Riser straps, blocks broken, unattached — public hazard
   - ☐ Opening in riser conduit coupling, damaged conductor — public hazard
5. General Conditions
   - ☐ Unlocked substations, pole switches, equipment

- ☐ Conditions for transmission and distribution assets (e.g., combo pole), included but are not limited to:
  - — Pole broken/damaged or excessive leaning
  - — Vegetation contacting or nearly contacting energized lines (e.g., expected to imminently fail and contact energized lines, contact or arcing with bare-wire conductors is highly probable to occur in a high wind event due to vegetation proximity to power lines, appears contact has occurred with primary electric facilities, appears strain or abrasion has occurred with secondary bare open wire, etc.)
  - — Broken, damaged, burned or rotted crossarm
  - — Energized conductor with inadequate clearances, bare conductor contacting communication, burned jumpers/connectors, or burned wire
  - — SCE Communication (e.g., broken lashing wire with slack to reach into power space, attachments/repairs poorly secured with tape/rope, broken and hanging strands, down guys, primary/secondary slack and jumpers capable of contacting communication facilities, Transmission/primary/secondary broken down guys hanging in communication space, foreign objects with potential to cause arcing, shorts or conduct electricity across insulators, etc.)
  - — Loose, broken, damaged, or missing insulator
  - — Broken/damaged guy in proximity to energized conductor
  - — Leaking oil from the equipment - for transmission, 66 kV and 115 kV potheads
  - — Excessive corrosion (e.g., loss of material/holes in equipment)
- ☐ Conditions for third party communication assets include but are not limited to:
  - — Inadequate clearance between communication equipment or structures and SCE electrical equipment or structures
  - — Loose or broken lashing wire
  - — Improperly secured communication conductor or equipment
  - — Broken, damaged or severely strained communication guy wires
  - — Excessive bowing or bending of pole from potential overloading at communication equipment attachment points
  - — Excessive sag of communication cables causing G.O. 95 infraction(s) or safety issue(s)
  - — Communication messenger and/or cable sag is too tight and creating a G.O. 95 clearance violation for SCE low voltage or high voltage lines
  - — Vegetation straining communication messenger or guy wire and/or causing structural integrity issues

IN–3: Inspection Procedures — Underground Detail Inspections

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1.0 Purpose

The purpose of the Underground Detail Inspection (UDI) is to give a visual evaluation of SCE's underground electrical distribution assets with the intent to identify and document obvious discrepancies and/or California Public Utility Commission (CPUC) General Order (G.O.) 128 discrepancies for appropriate corrective action.

2.0 Methods and Procedures

The UDI inspector performs a close in-depth visual inspection of all the underground electrical distribution assets per inspection orders. UDI frequency is identified in the Distribution Operations and Maintenance Policies and Procedures (DOM) manual, Chapter IM-1: Distribution Inspection and Maintenance Program (DIMP) - Overview.

3.0 Duties of Underground Detail Inspector

The UDI inspector performs the following tasks as appropriate for each facility detailed inspection:

3.1 Identification of Discrepancies per the Underground Structure Detailed Inspection Guidelines

The UDI inspector performs an in-depth visual examination of each underground distribution facility using the following Underground Detailed Inspection Guidelines (Structure, Equipment and Apparatus Equipment) as minimum guides. These lists are high level summaries of the items and areas to inspect. Additional information regarding the extent of the condition is shown in underground equipment and component Condition and Corrosion Guides attached. Inspectors will inspect and report on all equipment within a structure, and confirm the configuration numbering of the equipment.

The UDI inspector also identifies and reports any G.O. 128 infractions created on or near Distribution facilities by non-utility third parties that are not subject to CPUC jurisdiction.

NOTE

Inspectors will comply with the Confined Space Safety Initiative (CSSI), when inspectors are entering a Confined Space/Other Confined Space (CS/OCS).

3.2 Establishment of Priorities per the Priority Inspection Decision Flowchart

Once the inspector has identified a condition requiring action, a risk assessment is performed using the Priority Inspection Decision Flowchart. This process helps identify the appropriate priority of the condition. The highest priorities are for those items that pose a safety hazard to the public or employees, property, environment, or could present a reliability threat to the system.

3.3 Establishment of Action Time Frames for Each Identified Priority 2 Condition per the Condition and Corrosion Guides, Condition Risk Assessment Matrix

Only Priority 1 and 2 conditions have action time frames for mitigation. Priority 1 requires same day or immediate action thus no action time frame decision is required from the inspector. As discussed in the General section of this manual, Priority 2 conditions have a zero (0) to 36-month time frame (unless in a high fire risk area).

3.4 Performance of Appropriate Routine Repairs

☐ The UDI inspector will make routine repairs while at the site for the detailed inspection, rather than having other SCE personnel return at a later time to make the repairs.

☐ Inspectors will perform structure cleanup of debris or materials prior to leaving the structure.

3.5 Validation of Accuracy of Asset Information and Facility Inventory Mapping references

It is extremely important that SCE's records be as accurate as possible. The UDI inspector is a valuable force in realizing this goal. While at the facility site, the UDI inspector shall perform the following:

☐ Records corrections—found assets, missing assets, asset corrections

☐ Mapping corrections

3.6 Document in the Field Tool

Refer to the Work Management System (WMS) Procedure Manual.

4.0 References

4.1 CPUC G.O. 128, Rules for Construction of Underground Electric Supply and Communication Systems

4.2 CPUC G.O. 165, Inspection Cycles for Electric Distribution Facilities

4.3 Distribution Underground Construction Standards (DUG)

4.4 The following chapters of SCE Distribution Operations and Maintenance Policies and Procedures (DOM)

- CP-3 Vault Sump Pumps
- TE-5 Infrared Heat Sensing Devices-Underground Equipment
- TE-6 Impact Pro Gas and Oxygen Monitors
- TR-7 Vault Blowers

4.5 Accident Prevention Manual (APM)

4.6 Environmental Policies and Procedures (EN) and ESD Waste Management Manual

4.7 Distribution Maintenance Program

4.8 Work Management System

4.9 Underground Corrosion Inspection and Maintenance Manual

4.10 Underground Structure Standards (UGS)

5.0 Attachments

Attachment 3–1: Underground Structure Detail Inspection Guideline

Attachment 3–1: Underground Structure Detail Inspection Guideline

EXTERNAL PROCEDURE CHECKLIST

- ☐ Prior to and after entering a structure, perform a general thermal scan for hot spots in structure and all equipment, cable, terminations, and splices.
- ☐ Check for missing or damaged manhole lid gasket/seal rope.
- ☐ Check air vents for damage and presence of shields around vent standpipe in landscaped areas.
- ☐ Check vault lid (equipment cover) seal (felt) and lifting hole plugs.
- ☐ Check manhole and vault lid for any openings where small objects can be inserted.
- ☐ Check for any visual damage to manhole cover.
- ☐ Check for evidence of water ponding on top of the structure.
- ☐ Check for missing/damaged bolts or penta bolts.
- ☐ Check for debris in or around structures.(Good Housekeeping)
- ☐ Check for visual hazards.
- ☐ Check for structure movement.
- ☐ Verify that HIGH VOLTAGE signs and the structure number are legible.
- ☐ Check for exterior damage to structure.
- ☐ Check for sufficient work space around structure.
- ☐ Check that traffic barrier(s) are in place and that adequate clearance exists in front of structure.
- ☐ Check for deterioration of concrete.
- ☐ Check for signs of corrosion (specifically inspect weld seams, corners, door hinges, and enclosure roof.).
- ☐ Check that the structure is sound and secure.]
- ☐ Check for openings in structure which may allow the passage of wire, or other conducting material into the structure from the outside.
- ☐ Check for exterior damage to adjacent service handholes or splice boxes.
- ☐ Secure lids/covers prior to leaving site.
- ☐ Check for 3-inch backfill of soil on pads.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

INTERNAL PROCEDURE CHECKLIST

- ☐ Check that restraint system is intact (connected per UGS MH 319, VA 410, FC 670, or FC 625).
- ☐ Check for water inside the structure.
- ☐ Check for sand, dirt, mud, signs of vermin, and debris.
- ☐ Verify cable tags.
- ☐ Verify that cable clearances are adequate, not rubbing on sharp edges.
- ☐ Check that duct plugs are installed and in good working order in all necessary ducts.
- ☐ Check if the vent is leaking, or shows signs of previous leaking.
- ☐ Check for corrosion of ground rods and cables and all ground connections are proper.
- ☐ Check for concrete spalling and exposed rebar per UGS MC 880.
- ☐ Remove debris and loose materials from inside structure.
- ☐ Inspect shoring (if present) for signs of delamination, discoloration, or corrosion of metal components.

ADDITIONAL CHECKLIST (VOLTEK STRUCTURE)

- ☐ Signs of splitting or fraying and swelling on any of the composite panels.
- ☐ Check column beams between the wall panels for signs of warping and deterioration.
- ☐ Signs of loose embedded unistrut.
- ☐ Check duct bank and grade rings for deterioration. Any part of the walks or ceiling bulging (out of plumb.)

NOTE

The above lists are to be used as guides only and inspection should not be limited to the lists.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

EQUIPMENT CHECKLIST

- ☐ Prior to and after entering a structure, perform a detailed thermal scan for hot spots on structure and all equipment, cable, terminations, and splices.
- ☐ Check for signs of termination overheating or distortion.
- ☐ Check for signs of corrosion, oil leakage, and low oil levels.
- ☐ Check for signs of severe rusting of all restraint hardware (that is, turnbuckle, chains, anchors, and shackles).
- ☐ Check operation of vault blower (transformer structures) and perform maintenance.
- ☐ Check operation of sump pumps and perform maintenance.
- ☐ Check for scratches or abrasion to bare metal on equipment.
- ☐ Inspect weld seams.
- ☐ Inspect external operating mechanism.
- ☐ Inspect operating shaft seals.
- ☐ Inspect gaskets (cover, cableheads).
- ☐ Inspect oil fill plug and sight gauge seals.
- ☐ Inspect tightness of hold-down bails.
- ☐ Inspect condition of marine-coating.
- ☐ Inspect fuse carriers for proper locking and sealing.
- ☐ Check for sufficient work space around equipment.
- ☐ Verify appropriate signs are legible, that is, signs for ownership, clearance requirements, ferroresonant condition, switch feeding a capacitor bank.
- ☐ Check for signs of contamination, tracking, or deterioration of insulating barriers and arc interrupting chutes.
- ☐ Verify electrical clearances are maintained between barriers, live front or exposed terminations, and other insulated components.
- ☐ Verify that phase barriers are securely attached.
- ☐ Verify that the ground conductor is the correct size and is attached to the ground pad on the tank.
- ☐ Check safety barrier installation and condition on live front equipment (for example, pothead skirt in the PMH switch in contact with the protective barrier).
- ☐ In live-front equipment, verify that the fuse clips are in good condition (no signs of heating, arcing, or corrosion)
- ☐ Verify that locking devices are in place.
- ☐ Inspect mounting bolts for the correct size and number, tightness and corrosion.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

Attachment 3–1: Underground Structure Detail Inspection Guideline *(Continued)*

APPARATUS CHECKLIST

The following list is designed for non-technicians to use while performing their normal work in and around apparatus equipment, such as network protectors, P.E. gear, fault interrupters, automatic circuit reclosers, regulators, sectionalizers, and capacitor banks.

- ☐ Check for bulging, ruptured, or discolored capacitor units.
- ☐ Inspect fuseholders, cutouts, or fused disconnects.
- ☐ Check for blown fuses.
- ☐ Check cable and cable terminations for signs of deterioration or damage (underground).
- ☐ Heat scan the cable, terminations, and equipment (underground).
- ☐ Check for corrosion or other damage.
- ☐ Check for oil or compound leaks.
- ☐ Check clearances, barriers, and grounding.
- ☐ Check weld seams.
- ☐ Inspect operating shaft seals.
- ☐ Check oil fill and sight gauge seals (underground)
- ☐ Check oil fill and sight gauge seals (underground)
- ☐ Check to see if relay tripped (if applicable).
- ☐ Check for loose connections (arcing or burning).
- ☐ Check for damaged or blown control transformer.
- ☐ Check for approved locking devices in place and locked.
- ☐ Check for exterior/interior damage to enclosure (underground).
- ☐ Check for washout or excavation around enclosure (underground).
- ☐ Check all decals for legibility.
- ☐ Check that enclosure mountings are securely bolted to structure (underground).
- ☐ Check for signs of rodents or other animals (underground).
- ☐ Check for any signs of water or oil within the apparatus housing (underground).
- ☐ Enter the status of equipment, counter and load reads, any abnormal conditions, and the names of all inspection personnel in the log provided at equipment.

NOTE

The above list is to be used as a guide only and inspection should not be limited to the list.

CG–TOC: Condition Guides

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CG–1: Overhead Equipment Condition Guide

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1.0 Attachments

Attachment 1–1: Wood and Composite Poles

Pole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood Poles			
Unstable structure due to damage caused by splits, decay, hole or boring, exterior mechanical damage, or foot setting depth no longer supports the pole; failure is imminent **Priority 1**	X		
Pole leaning; public hazard **Priority 1**	X		
Leaning more than 1' per 10' pole height		X	X
Split or decay at critical attachment; bolt pulling through pole	X		
Split or decay within 6" of critical attachment; bolt not pulling through pole		X	X
Split, decay, or hole below highest attachment allows light through the pole	X		
Hole greater than 2" and extends past pole center	X		
Hole greater than 2" and possible cavity in high stress area		X	X
Three or more holes >2" diameter within 18" vertical at a high stress area	X		
Exposed decay pocket at ground line where part of shell is gone	X		
Insect borings or droppings		X	X
Compression wood peeling off, >2"	X		
Compression wood peeling off, 1–2"		X	X
Exterior damage >2" depth and > 1/4 pole circumference	X		
Exterior damage 1–2" depth and > 1/4 pole circumference		X	X
Depth in soil >20% shallow with heavy equipment	X		
Depth in soil 10–20% shallow with heavy equipment		X	X
Leaning more than 1' per 10' pole height with heavy equipment		X	X
Cavity with <1" shell thickness	X		
Decay within 6" of critical attachment; not pulling through		X	X
Three or more holes >2" diameter within 18" vertical		X	X
Rotten top		X	X
Animal/bird's nest near circuitry/equipment	X		
Steel stub banding is damaged or missing		X	X

Attachment 1–1: Wood and Composite Poles *(Continued)*

Pole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Composite Poles			
Fracture or buckling of exterior wall	X		
Visual cracks or rupture of exterior laminates on any location of the exterior wall exposing interior laminates	X		
Excessive lean at the top of the pole due to insufficient embedment caused by erosion of soil at groundline or due to eccentricity of heavy equipment (horizontal displacement at the tip of the pole greater than 10% of the pole height above the groundline).	X		
Elongated bolt holes, cracks or rupture around the hardware connection to equipment and guy attachments (bolts pulling through, sharp edges cutting into surface of wall)		X	X
Cutting or drilling within “No-Drill-Zone”	X		
Exposed fiberglass due to exposure of fire[a/]			X
Surface gouging on exterior of pole larger than 2-inches in length		X	X
Surface discoloration or fiberblooming (“fuzzing”) greater than 20% of total exterior surface area		X	X
Pole embedded on soil with heavy ponding (accumulation of water)		X	X
Depth of embedment less than 10% + 1 ft of the pole height with heavy equipment		X	X
Leaning at the top of pole greater than 5% of the height of the pole above ground with heavy equipment		X	X
Bowing of the pole at or near the mid-height due to heavy load from guys		X	X
Animal/bird’s nest near circuitry/equipment		X	X
Missing or damaged pole cap		X	X

[a/] Contact Linear & Structural Strategies and Standards for immediate review.

Attachment 1–2: Transformers

Overhead Transformer Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	**Component Has Failed No Significant Risk to System**	**Potential Component Failure**
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Transformer damaged	X		
Transformer extremely rusted or corroded		X	X

Attachment 1–3: Capacitors

Overhead Capacitor Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured or severely bulged capacitor units **Priority 1**	X		
Capacitor units or capacitor oil switches leaking, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage from capacitor units or oil capacitor switches, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Signs of tracking or arcing on capacitor units			X
Broken/damaged bushings or terminals on capacitor units, capacitor switches, fuseholders or control power transformer		X	
Single phase condition with bank still energized[a/] **Priority 1**	X		
Capacitor bank damaged, not functioning		X	
Floating connections **Priority 1**	X		
Catastrophic or severely damaged capacitor switches, safety or reliability issue **Priority 1**	X		
Capacitor switches not secure, damaged, not functioning		X	X
Capacitor controller damaged			X
Antenna damaged		X	
Animal nest			X
Blown fuse		X	
Incorrect fuse size		X	
Damage to control power transformer		X	

[a/] A single phase condition can occur when one phase fuse is blown or when switch position indicators are not synchronized (that is, all open or all closed).

Attachment 1–4: Switches

Overhead Switch Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Manually Operated			
Pole switch mechanism broken/missing/damaged/loose	X		
Pole switch damaged	X		
Remote Controlled			
Remote control actuator broken, missing or worn out		X	
Control damaged		X	

Attachment 1–5: Apparatus Equipment

Overhead Apparatus Equipment Condition Description (Reclosers, PE Gear, Regulators, Sectionalizers)	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Any fuse operation **Priority 1**	X		
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Oil weepage indicated by oily film on tank surface			X
Equipment damaged			X
Tree/vegetation interfering with apparatus equipment operation	X		
Equipment extremely rusted or corroded		X	X

Attachment 1–6: Branch Line Fuse

Branch Line Fuse Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

Attachment 1–7: Fuse Dip

Fuse Dip Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

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CG–2: Overhead Component Condition Guide

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CG–2: Overhead Component Condition Guide

1.0 Attachments

Attachment 2–1: HIGH VOLTAGE Signs

HIGH VOLTAGE Sign Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
HIGH VOLTAGE sign broken or missing in critical public awareness/hazardous situation		X	

Attachment 2–2: Overhead Hardware/Framing

Overhead Hardware/Framing Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Corroded, missing or broken hardware		X	X
Holder burned or tracking		X	X
Major equipment bracket broken/missing/worn out (including damaged Scott brackets)		X	X
Equipment brackets or braces cracked/damaged/loose		X	X
Scott brackets with no visible damage			X

Attachment 2–3: Crossarms

Crossarm Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood Crossarms			
Complete fracture or partial fracture causing significant deflection **Priority 1**	X		
Partial fracture causing <5" deflection		X	X
Primary crossarms bowed >5" and splintering	X		
Primary arm bowed >5", but no splintering		X	X
Secondary arm bowed >5" with or without splintering		X	X
Canting, through bolt pulled out **Priority 1**	X		
Canting, through bolt pulling out		X	X
Significant damage at a stress point	X		
Significant damage at insulator pin/bolt and pin/bolt ready to separate from arm	X		
Significant damage at attachment or insulator pin/bolt and pin/bolt may or may not be pulling through arm; if multiple X-arms and bolt at damaged area have not pulled through either arm, no damage on second arm		X	X
Crossarm tracking — cross section missing >50% **Priority 1**	X		
Crossarm tracking - cross section missing <50%		X	X
Braces broken/missing/worn out		X	

Attachment 2–3: Crossarms *(Continued)*

Crossarm Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	**Component Has Failed No Significant Risk to System**	**Potential Component Failure**
Composite Crossarms			
Significant deflection (greater than 10% of overhang length) on either side of the crossarm due to fracture, buckling or excessive unbalanced tension	X		
Visual cracks or rupture of exterior laminates on any location of the exterior wall exposing interior laminates	X		
Any signs of charring, “blister”, “bubble” or distortion of exterior surface due to exposure to fire	X		
Fractured mounting bracket and associated hardware	X		
Elongated bolt holes, cracks or rupture around the hardware connection (bolts pulling through, sharp edges cutting into surface of wall)		X	X
Surface discoloration or fiberblooming (“fuzzing”) greater than 20% of total exterior surface area		X	X
Bent mounting bracket and associated hardware		X	X

Attachment 2–4: Insulators

Insulator Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary insulator above 750 volts missing **Priority 1**	X		
Primary insulator above 750 volts broken/worn out **Priority 1**	X		
Primary insulator above 750 volts cracked, damaged or loose		X	X
Tie wire broken/missing/damaged or loose		X	X
Primary side tie insulator touching arm		X	X
Secondary insulator <750 volts cracked, damaged or loose		X	X
Secondary insulator - squatter		X	X
Primary insulator chipped		X	X
Primary post-type insulator above 750 volts with universal clamping mechanism showing signs of corrosion at clamp	X		

Attachment 2–5: Grounds

Ground Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ground wire broken/missing/worn out		X	

Attachment 2–6: Guys

Guy Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Span Guys			
Span guy cracked/damaged or loose		X	X
Span guy clearance issue		X	X
Span guy sagging or extremely slack		X	X
Down Guys			
Guys broken/missing/worn out, pole leaning, public hazard **Priority 1**	X		
Guys broken/missing/worn out, pole not leaning		X	X
Down guy clearance issue, pedestrian/vehicle traffic		X	X
Down guy sagging or extremely slack		X	X
Anchor rods broken/missing/worn out, pole leaning, public hazard **Priority 1**	X		
Anchor rods broken/missing/worn out, pole not leaning		X	X

Attachment 2–7: Risers/Conduits

Riser/Conduit Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary/secondary riser and cable damage in the public level **Priority 1**	X		
Primary/secondary riser damaged but cable intact		X	X
Primary/secondary riser uncoupled/gap, cable exposed, no damage		X	X
Riser coming loose from pole			X
Missing Conduit Riser Label		X	
Damaged Conduit Riser Label		X	

Attachment 2–8: Cutouts/Fuses

Cutout/Fuse Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Dry or low liquid levels dropped more than one inch below the bottom of the upper ferrule		X	
Corroded, missing or broken hardware		X	X
Holder burned		X	
Tracking	X		

Attachment 2–9: Bonds

Bond Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Bonding has loosened or separated from pole/crossarm or is broken/missing		X	X

Attachment 2–10: Surge Arresters

Surge Arrester Condition Description		Reliability/Failure Risk		
		Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Blown ground lead isolator	**Priority 1**	X		
Surge arrester broken but not blown, including corroded, missing or broken hardware, housing			X	X

Attachment 2–11: Overhead Terminations

Overhead Termination Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Potheads			
Pothead sparking, arcing, or noisy during normal 'dry' weather conditions **Priority 1**	X		
Pothead swollen	X		
Pothead not properly attached to supporting structure	X		
Pothead leaking	X		
Pothead showing signs of tracking such as discoloration	X		
Porcelain pothead insulators chipped or broken	X		

Attachment 2–12: Overhead Conductors and Service Drops

Overhead Conductor and Service Drop Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Primary Conductors			
Contact with other conductors or where contact is imminent **Priority 1**	X		
Metal debris in conductors **Priority 1**	X		
Vegetation arcing or in contact with bare or covered conductor **Priority 1**	X		
Conductors not in good condition, broken, missing, worn out		X	X
More than 10% reduction in radial or vertical clearance		X	X
Vegetation <18" from energized conductors (bare or covered)	X		
Growth on pole >18" but <48" from conductors (bare or covered)		X	X
Trees with <4' clearance in high fire risk area	X		
Foreign material in lines	X		
Tie wire broken/missing/damaged or loose	X		
Secondary Conductors			
Extreme safety hazard to the public such as reachable, wire down, bare wires touching anything, wires touching each other at bare spots **Priority 1**	X		
More than 10% reduction in radial or vertical clearance		X	X
Bare conductors in rack construction and through tree		X	X
Tree condition causing significant strain and/or visible abrasion damage - either open wire or Triplex		X	X
Conductor has less than appropriate radial clearance with contact, no public safety hazard		X	X
Vegetation growth within secondary level		X	X
Conductors not in good condition, broken, missing, worn out		X	X
Tie wire broken/missing/damaged or loose	X		
Foreign material in lines		X	X

Attachment 2–12: Overhead Conductors and Service Drops *(Continued)*

Overhead Conductor and Service Drop Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Service Drops			
Greater than 15% reduction in vertical clearance **Priority 1**	X		
Bare drop with >10% reduction in vertical clearance **Priority 1**	X		
Bare drop arcing **Priority 1**	X		
Greater than 10% but less than 15% reduction in vertical clearance		X	X
Bare drop with <10% reduction in vertical clearance			
Drop with <radial clearance and contact		X	X
Tree condition causing significant strain and/or visible abrasion damage — either open wire or Triplex		X	X
Bare drop		X	X
Drop connector bare at weatherhead		X	X
Service attachment broken		X	X
Service termination damage		X	X
Mid-span service clearance		X	X

Attachment 2–13: Overhead Pole-Mounted Streetlights

Overhead Pole-Mounted Streetlight Condition Description		Reliability/Failure Risk		
		Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Access plate missing — conductor exposed	**Priority 1**	X		
Broken glass ready to fall	**Priority 1**	X		
Fixture or fixture door ready to fall	**Priority 1**	X		
Structural/mechanical failure/vehicle hit pole	**Priority 1**	X		
Fixture/door cover missing			X	X
Visible cracks in fixture			X	X
Broken/missing glass but no public safety hazard			X	X
Mast arm weak and unsecured, but no public safety hazard			X	X
Unauthorized attachments			X	X
Pole mechanical damage and may fail soon			X	
Anchor bolts missing/rusted through			X	
Large multiple holes				X
Anchor bolts corroded, unremovable				X

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Attachment 3–1: BURD Structures

BURD Structure Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access to structure			X
BURD cylinder damaged		X	X
Debris in structure requiring removal		X	X

Attachment 3–2: Enclosures

Enclosure Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Vent pipes cracked, damaged, loose or missing		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Roof/grate damaged or missing	X		
Door damaged, unsecurable or cannot lock	X		
Enclosure structure damaged	X		

Attachment 3–3: Handholes

Handhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged handhole in public area	X		
High/low tripping hazard	X		

Attachment 3–4: Manholes

Manhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–5: Primary Splice Boxes

Primary Splice Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access		X	X
Unable to secure **Priority 1**	**X**		
Structure damaged		X	X
Debris in structure requiring removal		X	X
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	**X**		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	**X**		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	**X**		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	**X**		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X

Attachment 3–5: Primary Splice Boxes *(Continued)*

Primary Splice Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–6: Pads

Pad Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Any tilt, lean, or structure movement causing strain on electrical connectors or adverse oil level	X		
Pad Damaged — > 25% of surface area. Deep cracks were observed that propagate from one end of the pad to the other.		X	X
Grade change requiring pad relocation			X
Pad Surface Area Deterioration (< 25%) — Cracks, spalls, delamination (loose concrete), exposed rebar			X

Attachment 3–7: Subsurface Structure (CST)

Subsurface (CST) Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Vent pipes cracked, damaged, loose or missing	X		
Debris or vegetation blocking proper access		X	X

Attachment 3–8: Vaults

Vault Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		
Vent pipes cracked, damaged, loose or missing	X		

Attachment 3–9: Vault Shoring

Vault Shoring Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Wood members (columns, beams, or ceiling decking) are broken	X		
Wood members showing signs of severe deterioration, heavy discoloration present (confirmed by sounding with tool)	X		
Delamination is present on wood members	X		
Gap is present between ledger plate and structure wall (not due to curvature of wall)			X
Severe corrosion is present on steel components (metal flaking, severe pitting)			X

Attachment 3–10: Underground Transformers

Underground Transformer Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Tank wall temperature >265°F	X		
Tank wall temperature >155°F above ambient			X
Indications of overload, past or present (burned spades, paint)			X
Hole >1/8" diameter	X		
Transformer damaged		X	X
Corrosion per Corrosion Guide		X	X
Excessive noise			X

Attachment 3–11: Underground Capacitors

Underground Capacitor Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured or severely bulged capacitor units **Priority 1**	X		
Capacitor units or capacitor oil switches leaking, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage from capacitor units or oil capacitor switches, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X
Signs of tracking or arcing on capacitor units			X
Broken/damaged bushings or terminals on capacitor units, capacitor switches, fuseholders or control power transformer		X	
Single phase condition with bank still energized[a/] **Priority 1**	X		
Capacitor bank damaged, not functioning		X	
Loose or floating connections **Priority 1**	X		
Catastrophic or severely damaged capacitor switches, safety or reliability issue **Priority 1**	X		
Capacitor switches not secure, damaged, not functioning		X	X
Capacitor controller damaged			X
Antenna damaged		X	
Animal nest			X
Thermal criteria exceeded per DOM TE–5		X	X
Obstacles restricting operating clearance/access to compartments			X
Corrosion per Corrosion Guide		X	X
Blown fuse		X	
Incorrect fuse size		X	
Damage to control power transformer		X	
Damaged fiberglass boards or plexiglas panels		X	

[a/] A single phase condition can occur when one phase fuse is blown or when switch position indicators are not synchronized (that is, all open or all closed).

Attachment 3–12: Underground Switches

Underground Switches Condition Description		Reliability/Failure Risk: Component Failure Could Lead to System Failure	Reliability/Failure Risk: Component Has Failed No Significant Risk to System	Reliability/Failure Risk: Potential Component Failure
Oil — Subsurface				
Field oil test failure (<15kV) *Priority 2 (90 days) — see DOM TS–4*		X		
No oil at gauge and major leakage	**Priority 1**	X		
No oil at gauge and minor leakage			X	X
No oil at gauge but no evidence of leakage				X
Oil leak in wet structure	**Priority 1**	X		
Oil leak in dry structure		X		
Thermal failure per DOM TE–5	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
G&W RA style switches with aluminum cableheads manufactured from 1970–1973				X
Corrosion per Corrosion Guide			X	X
Solid Dielectric Vacuum Switch — Subsurface				
Switch Temperature >40°F above Cable Temperature	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
Corrosion per Corrosion Guide			X	X
Oil — Padmount				
Field oil test failure (<15 kV) *Priority 2 (90 days) — see DOM TS–4*		X		
No oil at gauge and major leakage	**Priority 1**	X		
No oil at gauge and minor leakage			X	X
No oil at gauge but no evidence of leakage				X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area	**Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area			X	X
Oil weepage indicated by oily film on tank surface				X
Thermal failure per DOM TE–5	**Priority 1**	X		
Mechanism frozen, inoperable		X	X	X
Corrosion per Corrosion Guide			X	X

Attachment 3–12: Underground Switches *(Continued)*

Underground Switches Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Gas Switches			
Gas switch: 0 psi in wet structure (DOM, SW–5) **Priority 1**	X		
Gas switch: < 5 psi or in **red zone** in wet structure (DOM, SW–5)	X		
Gas switch: < 5 psi or in **red zone** in dry structure (DOM, SW–5)		X	
Corrosion per Corrosion Guide		X	X
PMH/PME			
Hole > 1/8" diameter	X		
Evidence of previous electric flashover **Priority 1**	X		
Thermal failure per DOM TE–5 **Priority 1**	X		
Vegetation or debris inside structure	X		
Electrical clearance < 1-1/2" between barriers and energized parts	X		
Moisture barrier missing	X		
Mechanism frozen	X		
Corrosion per Corrosion Guide		X	X
ARC compressor caps missing or damaged		X	X
Remote-Controlled Switches			
Control damaged		X	X
Actuator damaged		X	

Attachment 3–13: Sump Pumps

Sump Pump Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Sump pump damaged and not operating		X	

Attachment 3–14: Underground Apparatus

Underground Apparatus Condition Description (Automatic Reclosers, Fault Interrupters, Network Protectors, Regulators, and Sectionalizers)	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Thermal failure per DOM TE–5 **Priority 1**	X		
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Hole >1/8" diameter	X		

Attachment 3–15: Blowers

Blower Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Blower damaged and not operating		X	

Attachment 3–16: Fault Indicator

Fault Indicator Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Unit has malfunctioned or has failed to operate when tested		X	
Visible damage that has caused a malfunction under test		X	
Units > 20 years in service			X

Attachment 3–17: Junction Boxes

Junction Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Debris or vegetation blocking proper access		X	X
Unable to secure **Priority 1**	X		
Structure damaged		X	X
Debris in structure requiring removal		X	X
Pavement in street has collapsed causing dangerous traffic conditions **Priority 1**	X		
Structure roof or walls in immediate danger of collapse, showing evidence of structural compromise, load cracks, flexing concrete **Priority 1**	X		
Casting frame/plug broken with dangerous traffic and/or pedestrian condition **Priority 1**	X		
Broken non-concrete covers of concrete structures in public area exposing the structure opening **Priority 1**	X		
Heavy Traffic — Roof has >20% delamination in any precast section		X	X
Heavy Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Roof has >30% delamination with exposed rebar at multiple corners and in the neck area		X	X
Light Traffic — Casting frame and plug have exposed rebar and/or failure cracking		X	X
Light Traffic — Wall concrete deteriorated with spalling, exposed rebar, and switch supports coming out of the wall		X	X
Light Traffic — Other structure conditions presenting an immediate danger to the public or workers		X	X
Structure settlement has caused pavement failure in traffic area; pavement still drivable but deteriorated			X
Light Traffic — Structure roof has spalling concrete at roof neck and/or joints with exposed rebar at any roof joint and/or delaminations in 10% or more of any roof section			X
Light Traffic — Concrete spalls have come off of walls at over 5 feet of any corner surface with accompanying areas of delamination, 25% or more in any section			X
Light Traffic — Casting frame and plug show cracking or minor spalling			X

Attachment 3–17: Junction Boxes *(Continued)*

Junction Box Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Non-Traffic — Heavily deteriorated structure has spalling concrete and delaminations on 30+% of any wall and roof section, or over 15 feet of exposed rebar in the roof section			X
Spalled concrete in danger of falling on equipment	X		

Attachment 3–18: Oil Fuse Cutouts

Oil Fuse Cutout Condition Description[a/]	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Corroded fuseholder		X	X
Oil leak not repairable		X	
Mechanism frozen	X		
Minor oil leak, but repairable			X

[a/] Oil fuse cutouts are obsolete. Replacement fuses are no longer available. The units must be replaced whenever opportunity exists.

Attachment 3–19: Underground PE Gears

Underground PE Gear Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Oil — Subsurface Type Switches			
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Thermal failure per DOM TE–5 **Priority 1**	X		
Mechanism frozen, inoperable	X	X	X
G&W RA style switches with aluminum cableheads manufactured from 1970–1973			X
Corrosion per Corrosion Guide		X	X
Oil — Padmount Switches			
No oil at gauge and major leakage **Priority 1**	X		
No oil at gauge and minor leakage		X	X
No oil at gauge but no evidence of leakage			X
Excessive oil leakage, oil reaches ground or public access or environmentally sensitive area **Priority 1**	X		
Minor leakage, oil remains on equipment, does not reach ground or public access or environmentally sensitive area		X	X
Oil weepage indicated by oily film on tank surface			X
Thermal failure per DOM TE–5 **Priority 1**	X		
Mechanism frozen, inoperable	X	X	X
Corrosion per Corrosion Guide		X	X
Gas Switches			
Gas switch: 0 psi in wet structure (DOM, SW–5) **Priority 1**	X		
Gas switch: <5 psi in wet structure (DOM, SW–5)	X		
Gas switch: <5 psi in dry structure (DOM, SW–5)		X	X
Corrosion per Corrosion Guide		X	X

Attachment 3–19: Underground PE Gears *(Continued)*

Underground PE Gear Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
PMH/PME Switches			
Hole >1/8" diameter	X		
External evidence of previous electric flashover **Priority 1**	X		
Corrosion per Corrosion Guide		X	X
Remote-Controlled PE Gear			
Control damaged		X	X
Actuator damaged		X	

Attachment 3–20: Fuse Cabinets

Fuse Cabinet Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Access or load-break elbow operational issue		X	X
Door does not secure (not sealed)	X		
External visual inspection failure		X	X
Hole >1/8" diameter	X		
Corrosion per Corrosion Guide		X	X
Elbow not properly seated or attached; that is, bail is missing **Priority 1**	X		
Elbow sparking, arcing, or noisy **Priority 1**	X		
Elbow swollen	X		
Elbow showing signs of tracking such as discoloration	X		
Elbow temperature >40°F above cable temperature **Priority 1**	X		
Elbow temperature 10–39°F above cable temperature		X	X

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CG–4: Underground Component Condition Guide

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CG–4: Underground Component Condition Guide

1.0 Attachments

Attachment 4–1: Underground Hardware/Framing

Underground Hardware/Framing Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Major equipment bracket broken/missing/worn out **Priority 1**	X		
Equipment brackets or braces cracked/damaged/loose		X	X
Cable, equipment, or termination failure due to lack of rack support**Priority 1**	X		
Cable racks and other equipment supports cracked, damaged or loose, or are hanging in concrete separated from the rebar		X	X
Racks and/or through bolts corroded but can still support cable and/or equipment			X
Ladder broken/missing/worn out; cracked, damaged or loose	X		
Corroded, missing or broken hardware		X	X

Attachment 4–2: Grounds

Ground Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ground grid has lost all embeds, or ground rod connection is gone			X
Grounds/bonds broken, missing or worn out		X	
Grounding of insufficient capacity			X

Attachment 4–3: Lids and Frames

Lid and Frame Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Lids/covers broken, missing, worn out and cannot be secured; subject to pedestrian traffic**Priority 1**	X		
Grade ring broken, missing, worn out and cannot be secured; subject to pedestrian traffic**Priority 1**	X		
Lids/covers cracked, damaged or loose, structure temporarily secured		X	
Grade ring damaged or missing, structure temporarily secured		X	
Corroded restraint hardware (turnbuckle, chains, anchors, and shackles)		X	X

Attachment 4–4: Retaining Walls

Retaining Wall Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Retaining wall damaged or undermined, requiring repairs	X		

Attachment 4–5: Underground Terminations

Underground Termination Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Potheads			
Pothead sparking, arcing, or noisy during normal “dry” weather conditions**Priority 1**	X		
Pothead swollen	X		
Pothead not properly attached to supporting structure	X		
Pothead leaking	X		
Pothead showing signs of tracking such as discoloration	X		
Porcelain pothead insulators chipped or broken	X		
Elbows			
Elbow not properly seated or attached; that is, bail is missing**Priority 1**	X		
Elbow sparking, arcing, or noisy **Priority 1**	X		
Elbow swollen; subject to water intrusion between cable entrances and bushing interface	X		
Elbow showing signs of tracking such as discoloration	X		
Elbow temperature > 40F above cable temperature **Priority 1**	X		
Elbow temperature 10-39F above cable temperature		X	X

Attachment 4–6: Barrier Posts

Barrier Post Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Traffic barrier broken or missing and equipment contact imminent		X	X

Attachment 4–7: Pedestals

Pedestal Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged, unable to secure or lock	X		
Corrosion per Corrosion Guide	X		

Attachment 4–8: Handholes

Handhole Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Damaged handhole in public area	X		
High/low tripping hazard	X		

Attachment 4–9: Cables

Cable Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
50% or less of concentric neutrals remain		X	X
Visual and serious damage (open cracks) on the semiconducting shield		X	X
Cable temperature exceeds 240 degrees	X		
Wet, contaminant condition that could damage cable			X
Cable temperature exceeds 175 degrees			X
Secondary/service cable damaged		X	X
Visible signs of incorrect positioning of cable causing contact and/or damage (that is, cable movement, rubbing points)			X
Visible signs of burning of materials or external heat damage to cable or any of the visible layers	X		

Attachment 4–10: Streetlights

Streetlight Condition Description		Reliability/Failure Risk: Component Failure Could Lead to System Failure	Reliability/Failure Risk: Component Has Failed No Significant Risk to System	Reliability/Failure Risk: Potential Component Failure
Access plate missing — conductor exposed	**Priority 1**	X		
Broken glass ready to fall	**Priority 1**	X		
Fixture or fixture door ready to fall	**Priority 1**	X		
Structural/mechanical failure/vehicle hit pole	**Priority 1**	X		
Fixture/door cover missing			X	
Visible cracks in fixture			X	X
Broken/missing glass but no public safety hazard			X	
Mast arm weak and unsecured, but no public safety hazard			X	X
Unauthorized attachments			X	X
Pole mechanical damage and may fail soon			X	
Anchor bolts missing/rusted through			X	
Large multiple holes				X
Anchor bolts corroded, unremovable				X

Attachment 4–11: Splices

Splice Condition Description	Reliability/Failure Risk		
	Component Failure Could Lead to System Failure	Component Has Failed No Significant Risk to System	Potential Component Failure
Ruptured lead splice **Priority 1**	X		
Splice not properly seated or attached, that is, T-splice not secure **Priority 1**	X		
Splice sparking, arcing, or noisy **Priority 1**	X		
Splice swollen; subject to water intrusion between cable entrances and bushing interface	X		
Splice showing signs of tracking such as discoloration	X		
Splice temperature >40°F above cable temperature **Priority 1**	X		
Splice temperature 10–39°F above cable temperature		X	X
Leaking splice	X		

CG–5: Underground Equipment Corrosion Condition Guide

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CG–5: Underground Equipment Corrosion Condition Guide

1.0 Corrosion Evaluation Overview

Listed below are guidelines to assessing corrosion conditions. Utilize the Risk Assessment Matrix to determine reasonable time frame for any required action needed.

1.1 Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable terminations hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leak in a wet structure.
- ☐ Any condition that would indicate that a severe hazard exits.

1.2 Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment's surface, or the pitting exceeds 50% of the wall thickness.
- ☐ The cable termination hold-down bolts have corroded to a point where the threads have been obliterated.
- ☐ Equipment oil leak in a dry structure.
- ☐ Any other condition of the equipment that would indicate that a hazard exists.

1.3 Heavy Corrosion (Priority 2)

- ☐ There is discoloration, loss of paint, and deep pitting over 50% of the equipment's surface.
- ☐ There is pitting greater than 25% of wall thickness, but less than 50% of wall thickness.
- ☐ Switch operators are frozen and cannot be freed with simple field repair.

1.4 Moderate Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is discoloration, some loss of paint, and slight pitting (pencil-point-sized pits less than 25% wall thickness—that is, 1/16" maximum on R.A. switches).
- ☐ No sign of oil leaks.
- ☐ Switch operators are temporarily frozen but can be made operational with a minimum amount of effort.
- ☐ Bottom of equipment, or 25% of surface area is not accessible and corrosion is likely to occur (that is, wet structure and equipment does not have marine coating).

1.5 Light Corrosion

No action required; monitor during next inspection cycle.

- ☐ Equipment may be dirty but there is no sign of corrosion.
- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling is present over 75% of the equipment's surface.
- ☐ Switch operators work freely.
- ☐ No signs of oil leaks.

NOTE Once a corrosion evaluation has been established, that evaluation should not be changed as a result of cleaning, repairing, or painting. This policy is established since pitting cannot be repaired and the back, as well as the bottom, of the switch cannot always be cleaned and repainted.

2.0 Corrosion Examples

2.1 Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable terminations hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leak in a wet structure.
- ☐ Any condition that would indicate that a severe hazard exists.

NOTE Severe corrosion is described above. There are no pictures of severe corrosion in this manual revision. Corrosion conditions exceeding the conditions identified in Priority 2 images are considered Priority 1.

WARNING When a severe corrosion condition exists, the structure shall be closed and a sign shall be posted stating “DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.” The situation shall be made safe and the equipment shall be replaced as soon as possible.

2.2 Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment's surface, or the pitting exceeds 50% of the wall thickness.
- ☐ The cable termination hold-down bolts have corroded to a point where the threads have been obliterated.
- ☐ Equipment oil leak in a dry structure.
- ☐ Any other condition of the equipment that would indicate that a hazard exists.

WARNING When A Very Heavy Corrosion condition exists, the structure shall be closed and a sign shall be posted stating “DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.” The situation shall be made safe and the equipment shall be replaced within 90 days. See Figure 5–1.

Figure 5–1: Severe/Very Heavy Corrosion — CAUTION Sign

CAUTION

DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED.

SCE 14-174-150

Figure 5–2: Very Heavy Corrosion — Example 1 of 2

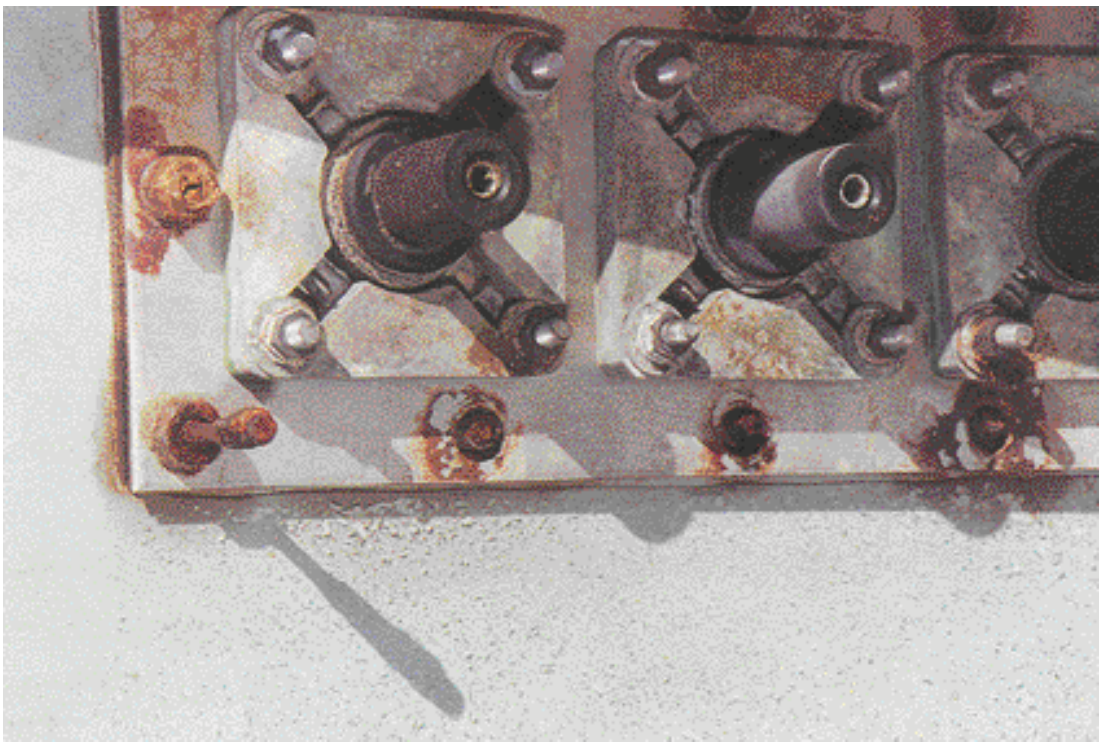
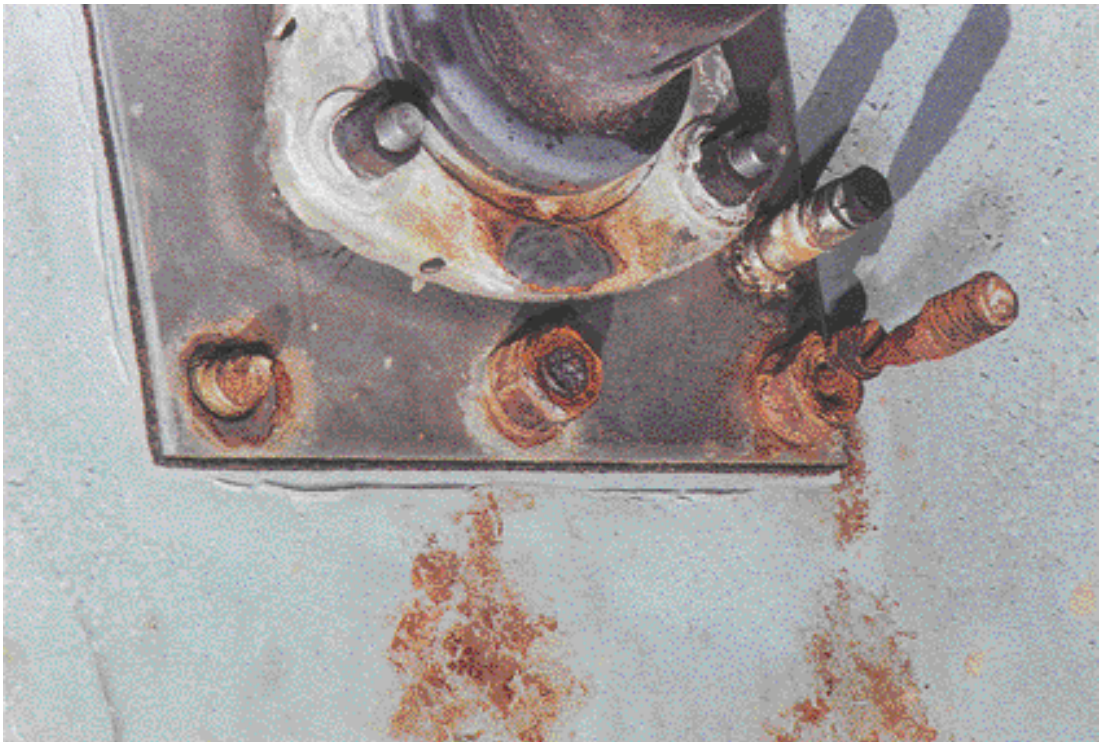


Figure 5–3: Very Heavy Corrosion — Example 2 of 2



2.3 Heavy Corrosion

- ☐ There is discoloration, loss of paint, and deep pitting over 50% of the equipment's surface.
- ☐ There is pitting greater than 25% of the wall thickness, but less than 50% of the wall thickness.
- ☐ Switch operators are frozen and cannot be freed with simple field repair.
- ☐ There is minor oil leakage, but it is repairable.

Figure 5–4: Heavy Corrosion — Example 1 of 3

Figure 5–5: Heavy Corrosion — Example 2 of 3

Figure 5–6: Heavy Corrosion — Example 3 of 3

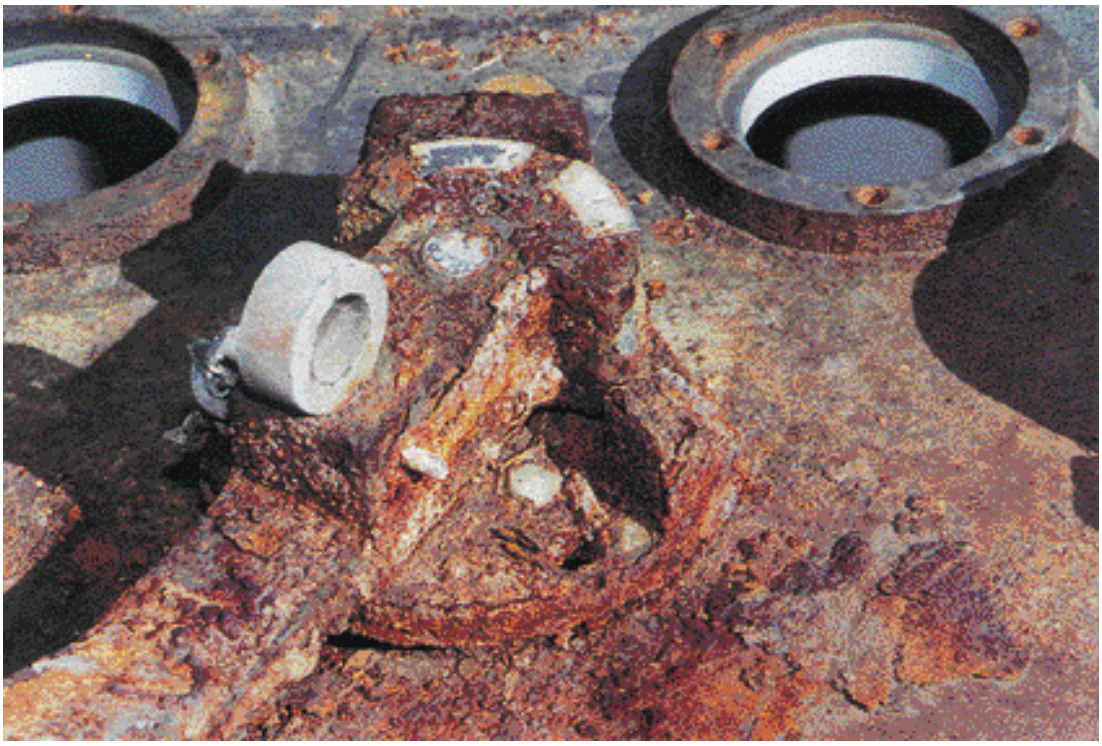
2.4 Moderate Corrosion

- ☐ There is discoloration, loss of paint, and slight pitting (pencil point-sized pits less than 25% of the wall thickness – that is, R.A. switches – 1/16" maximum depth).
- ☐ No signs of oil leaks.
- ☐ Switch operators are temporarily frozen but can be maintained and made operational with a minimum amount of effort.
- ☐ Bottom of equipment or 25% of surface area is not accessible and corrosion is likely to occur (that is, wet structure and equipment does not have marine coating).

Figure 5–7: Moderate Corrosion — Example 1 of 3

Figure 5–8: Moderate Corrosion — Example 2 of 3

Figure 5–9: Moderate Corrosion — Example 3 of 3



2.5 Light Corrosion

- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling is present over 75% of the equipment's surface.
- ☐ Switch operators work freely.
- ☐ No signs of oil leaks.

Figure 5–10: Light Corrosion — Example 1 of 3

Figure 5–11: Light Corrosion — Example 2 of 3

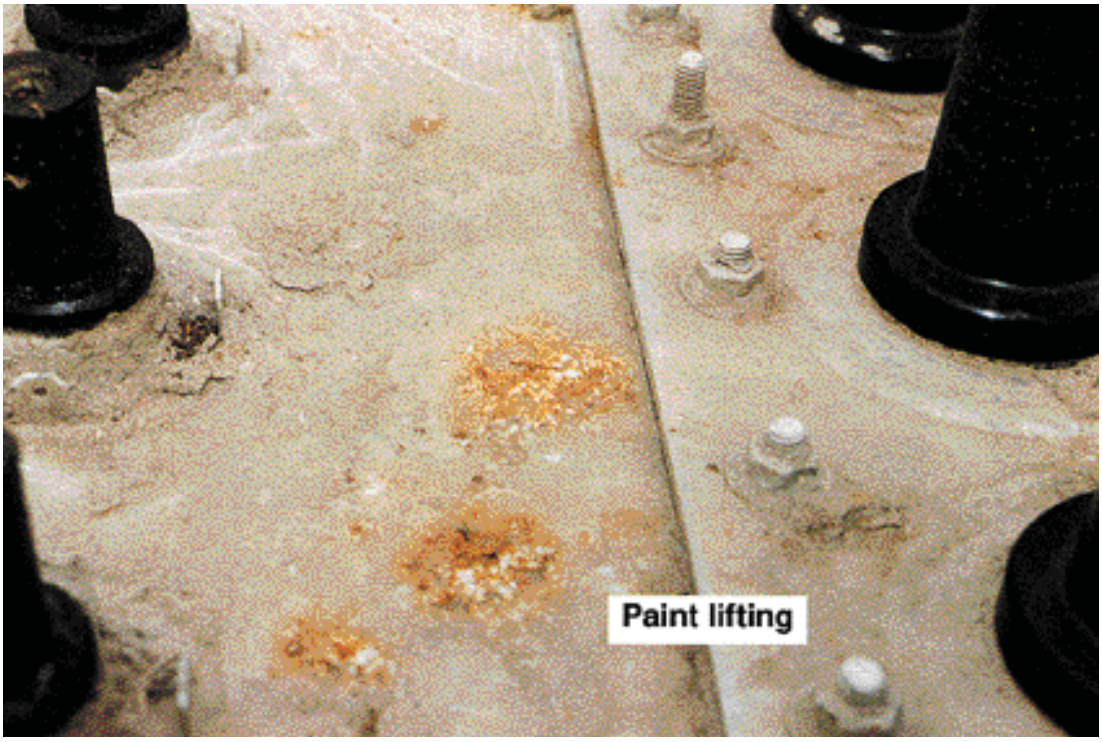


Figure 5–12: Light Corrosion — Example 3 of 3

2.6 Maintenance and Refurbishing

- ☐ Any “moderate” or “light” corrosion equipment should have the following repairs performed:
- ☐ The operating mechanism should be cleaned, greased (if required), and operate freely.
- ☐ The equipment tank, except for the back and/or bottom, should be cleaned of corrosion and coated with an approved material.
- ☐ The equipment tank, except for the back and/or bottom, should be cleaned of corrosion and coated with an approved material.
- ☐ To determine the level of corrosion and, in particular, the depth of pitting, the corroded material must be removed.
- ☐ To extend the life of equipment and ensure the operating mechanism functions properly.
- ☐ To inspire confidence in crew members when working in a vault or enclosure where the equipment has obviously been maintained.

Figure 5–13: Maintenance and Refurbishing — Example 1 of 4

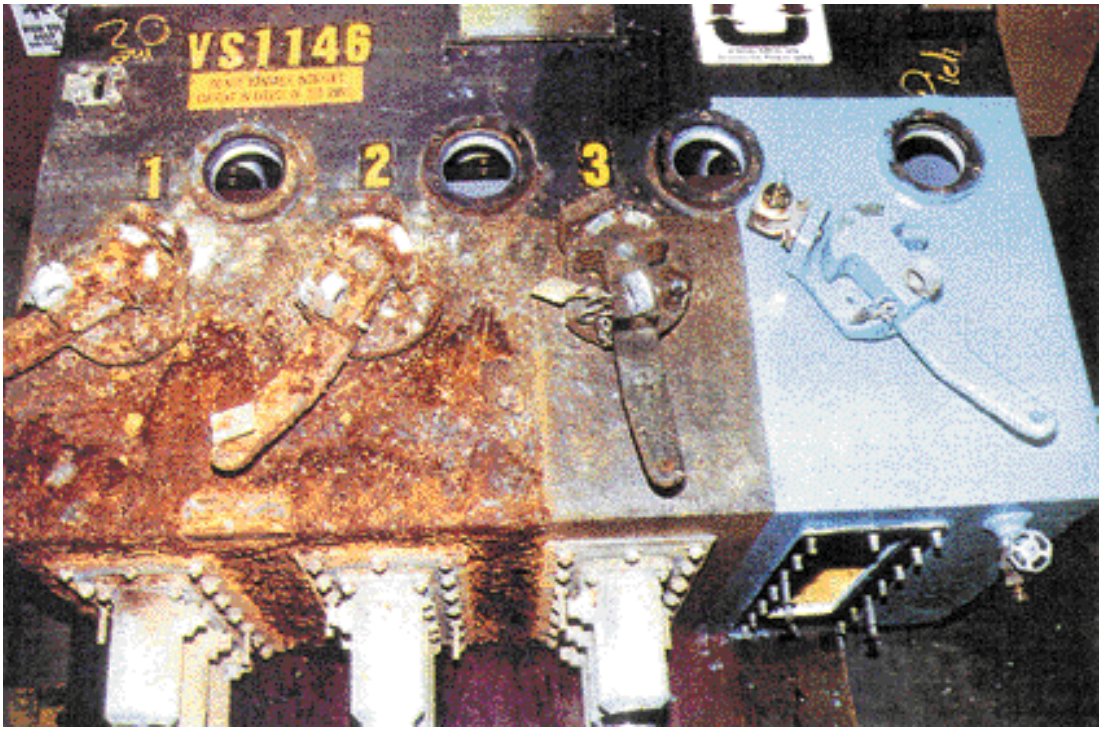


Figure 5–14: Maintenance and Refurbishing — Example 2 of 4

Figure 5–15: Maintenance and Refurbishing — Example 3 of 4

Figure 5–16: Maintenance and Refurbishing — Example 4 of 4

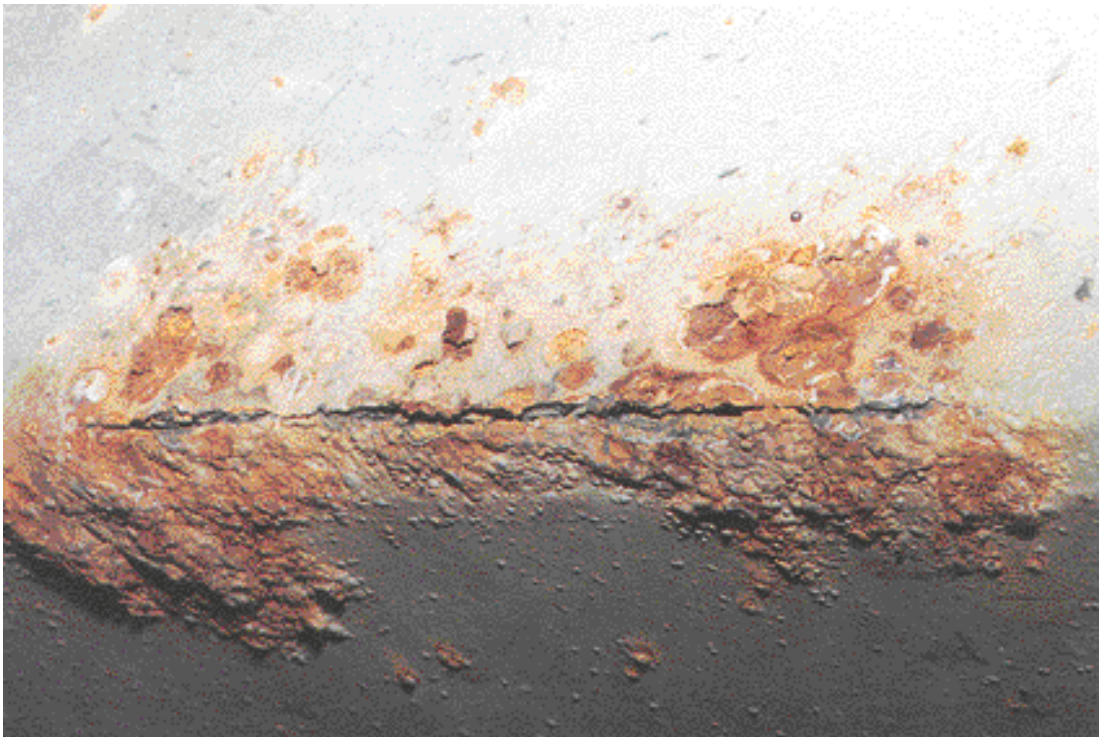
2.7 Typical Problems

A. This is an example of a switch oil drain valve assembly where the drain plug and nipple have corroded to the point that the assembly is inoperative.

Figure 5–17: Typical Problems — Example 1 of 4

B. This picture illustrates a weld seam that has possibly corroded to the extent that an oil leak may be imminent.

Figure 5–18: Typical Problems — Example 2 of 4



C. In some cases, there are aluminum-bodied terminators installed in areas where moisture is present. These terminators will normally be classified as “very heavy” or “heavy” corrosion, depending upon degree of corrosion.

Figure 5–19: Typical Problems — Example 3 of 4

Figure 5–20: Typical Problems — Example 4 of 4

CG–6: Aboveground Equipment Corrosion Condition Guide

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CG–6: Aboveground Equipment Corrosion Condition Guide

1.0 Corrosion Levels of Pad Mounts, Switch Enclosures, Transformers and Capacitors

1.1 Purpose

Listed below are guidelines to assessing corrosion guidelines. Utilize the Risk Assessment Matrix to determine reasonable time frame for any required action needed.

This procedure provides the requirements for establishing external and internal corrosion levels and the criteria for making necessary field repairs or replacements of padmounted (PMH/PME) switch enclosures, transformers, and capacitors.

1.2 Inspection

The following are the measures for detection and inspection of corrosive and deteriorating conditions of padmounted switch enclosures, transformers, and capacitors:

A. External Inspection

- ☐ Check paint for blistering, cracking, flaking, peeling, and any significant color changes.
- ☐ Check for evidence of corrosion at specific locations. These locations include but are not limited to weld seams, edges, corners, and around enclosure base.
- ☐ Open switch operating mechanism compartments in switch enclosures and check for hidden areas of corrosion.

B. Internal Inspection

- ☐ Check around door edges (including hinges), at areas where the door comes in contact with the enclosure, at base of door openings, and on component structural support members for evidence of corrosion.
- ☐ Check for evidence of standing water in structure below switch enclosure, transformer, or capacitor, and note in inspection report.
- ☐ Check for evidence of moisture condensation on internal surfaces.

1.3 Designating External and Internal Corrosion Evaluation

To evaluate the external corrosion evaluation of PMH/PME switch enclosures, transformers, or capacitors, scrape and wire brush the areas on the enclosure, operating mechanisms, and other metal components where corrosion is suspected so that the depth and extent of corrosion can be determined. Ensure proper safety measures are being taken. After scraping and cleaning, each enclosure shall have the corrosion level rated and maintenance priority established as described in the following:

NOTE

Once a corrosion evaluation has been established, that evaluation should not be changed as a result of cleaning, repairing, or painting. This policy is established since pitting cannot be repaired and the interior of the enclosure usually will not be repaired or repainted.

A. Severe Corrosion (Priority 1)

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable termination hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leakage is severe where routine repairs will not stop leakage.
- ☐ Any condition that would indicate that a severe hazard exits.

B. Very Heavy Corrosion (Priority 2)

- ☐ There is very heavy corrosion over most of the equipment, or the equipment enclosure has pits that are “near through” the wall thickness.
- ☐ There are openings completely through the enclosure wall.
- ☐ There is oil leakage that cannot be repaired.
- ☐ Any other condition exists that would indicate a hazard.

C. Heavy Corrosion (Priority 2)

- ☐ There is distinct corrosion, heavy loss of paint, and deep pitting over half of the equipment surface.
- ☐ There is pitting that exceeds one quarter of the original wall thickness.
- ☐ Metal is flaking away in nonhazardous locations.
- ☐ There is minor oil leakage, but it is repairable.

D. Moderate Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is distinct discoloration and significant loss of paint and/or moderate pitting (pencil point-sized pits no deeper than one quarter of the original wall thickness).
- ☐ There is no sign of oil leakage.

E. Light Corrosion

No action required; monitor during next inspection cycle.

- ☐ There is some discoloration and disruption to painted surfaces, but no serious pitting or scaling are present.
- ☐ Switch handles and mechanism are operational.
- ☐ There is no sign of oil leakage.
- ☐ There are only minor touch-up repairs required.

2.0 Corrosion Examples

2.1 Severe Corrosion

- ☐ Severe corrosion or pitting has eroded 100% of the wall thickness.
- ☐ Cable termination hold down bolts have corroded where they no longer support the cable.
- ☐ Equipment oil leakage is severe where routine repairs will not stop leakage.
- ☐ Any condition that would indicate that a severe hazard exits.

NOTE

Severe corrosion is described above. There are no pictures of severe corrosion in this manual revision. Corrosion conditions exceeding the conditions identified in "Very Heavy" images are considered Severe.

WARNING

When a severe corrosion condition exists, the structure shall be closed and a sign shall be posted stating "DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED." The situation shall be made safe and the equipment shall be replaced as soon as possible.

2.2 Very Heavy Corrosion

- ☐ There is very heavy corrosion over most of the equipment, or the equipment enclosure has pits that are "near through" the wall thickness.
- ☐ There are openings completely through the enclosure wall.
- ☐ There is severe oil leakage that cannot be repaired.
- ☐ Any other conditions exist that would indicate a hazard.

WARNING

When a very heavy corrosion condition exists, the structure shall be closed and a sign shall be posted stating "DO NOT ENTER WHILE EQUIPMENT IS ENERGIZED." The situation shall be made safe and the equipment shall be replaced as soon as possible.

Figure 6–1: Opening Completely Through the Enclosure Wall

Figure 6–2: Very Heavy Corrosion of Locking Assembly

Figure 6–3: Another Example of Metal Flaking Away at Nonhazardous Locations

2.3 Heavy Corrosion

- ☐ There is distinct corrosion, heavy loss of paint, and/or deep pitting over half of the equipment's surface.
- ☐ There is pitting that exceeds one quarter of the original wall thickness.
- ☐ Metal is flaking away in nonhazardous locations.
- ☐ There is minor oil leakage, but it is repairable.

Figure 6–4: Wall Corrosion at Top of Compartment Door, Covered when Other Door Closed

Figure 6–5: Wall Corrosion at Bottom of Compartment Door, Covered when Other Door Closed

Figure 6–6: Pitting Exceeding One-Quarter Depth of Wall Thickness

Figure 6–7: Distinct Corrosion of Component Structural Support Members

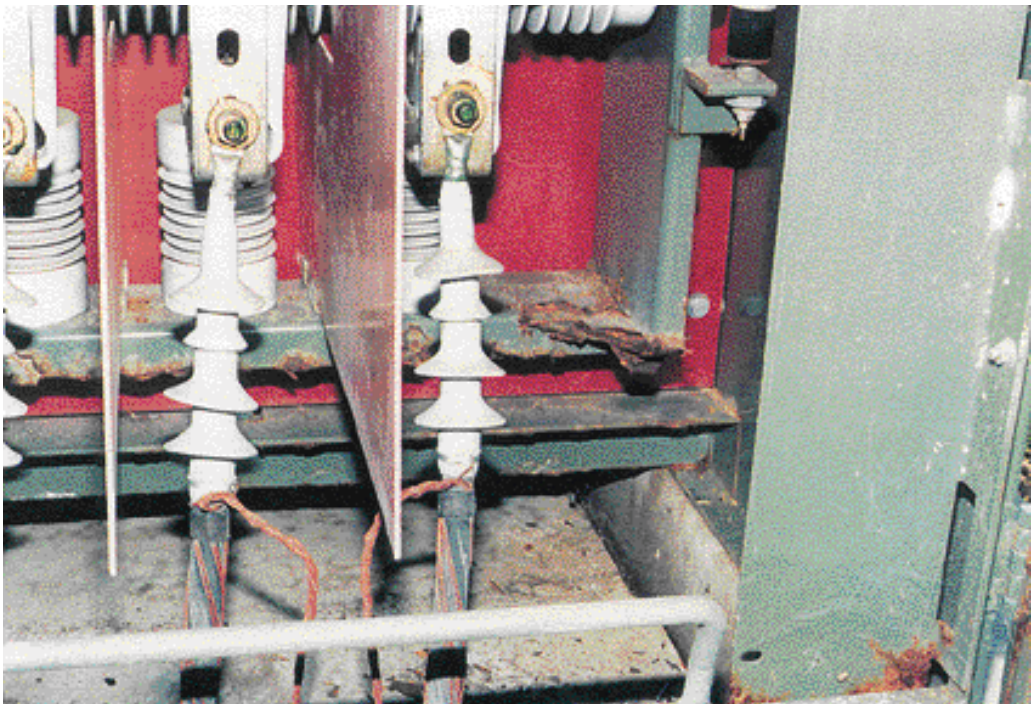


Figure 6–8: Metal Flaking Away at Nonhazardous Locations

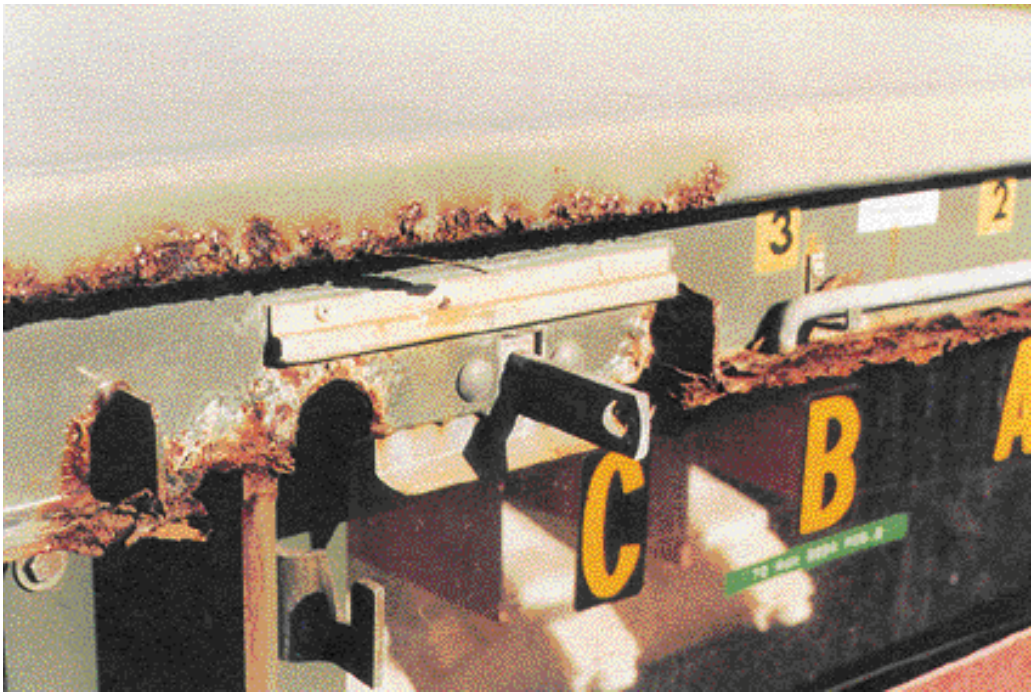


Figure 6–9: Another Example of Metal Flaking Away at Nonhazardous Locations

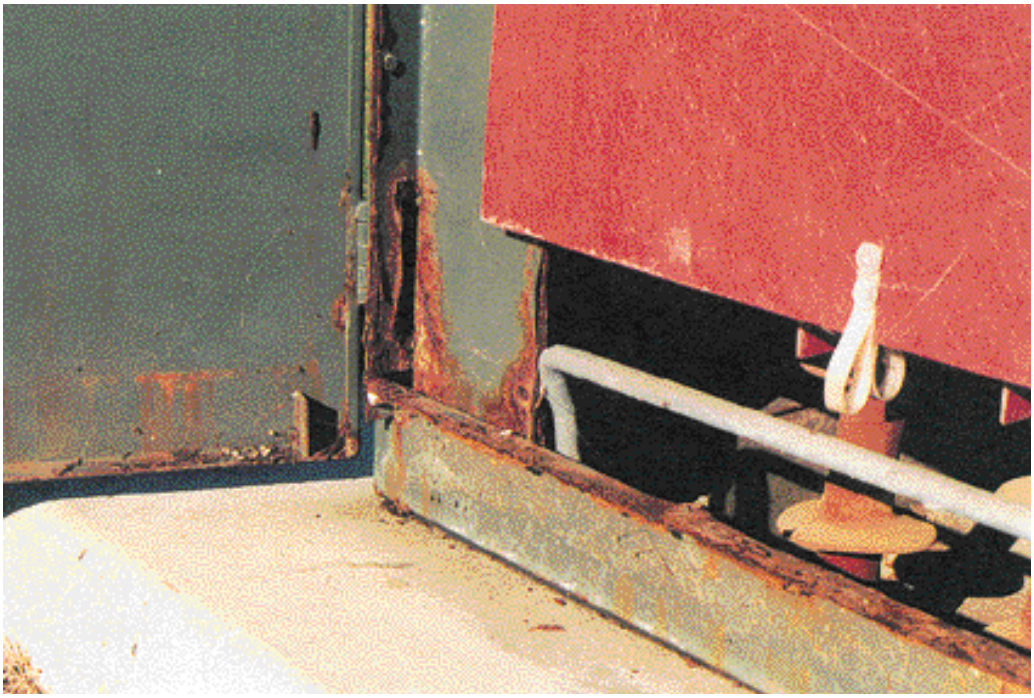


Figure 6–10: Heavy Corrosion with Deep Pitting, Exceeding One-Quarter of Original Wall Thickness

Figure 6–11: Another Example of Heavy Corrosion with Deep Pitting, Exceeding One-Quarter of Original Wall Thickness

2.4 Moderate Corrosion

- ☐ There is distinct discoloration and significant loss of paint and/or moderate pitting (pencil point-sized pits no deeper than one quarter of the original wall thickness).
- ☐ There is no sign of oil leakage.

Figure 6–12: Ineffective Prior Repairs

Figure 6–13: Significant Blistering of Paint

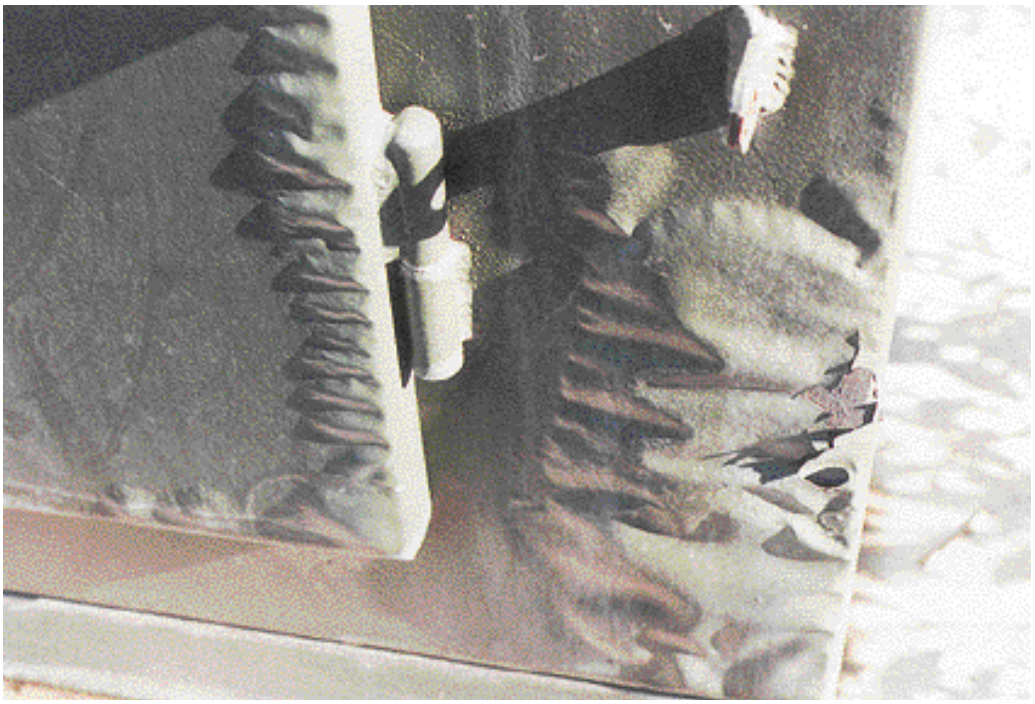


Figure 6–14: Moderate Corrosion with Pitting on Edge of Enclosure Top

Figure 6–15: Loss of Metal

Figure 6–16: Moderate Corrosion with Blistering, Pitting, and Discoloration in and around Vents

Figure 6–17: Moderate Corrosion with Pitting and Significant Loss of Paint

Figure 6–18: Moderate Corrosion with Significant Loss of Paint at Base

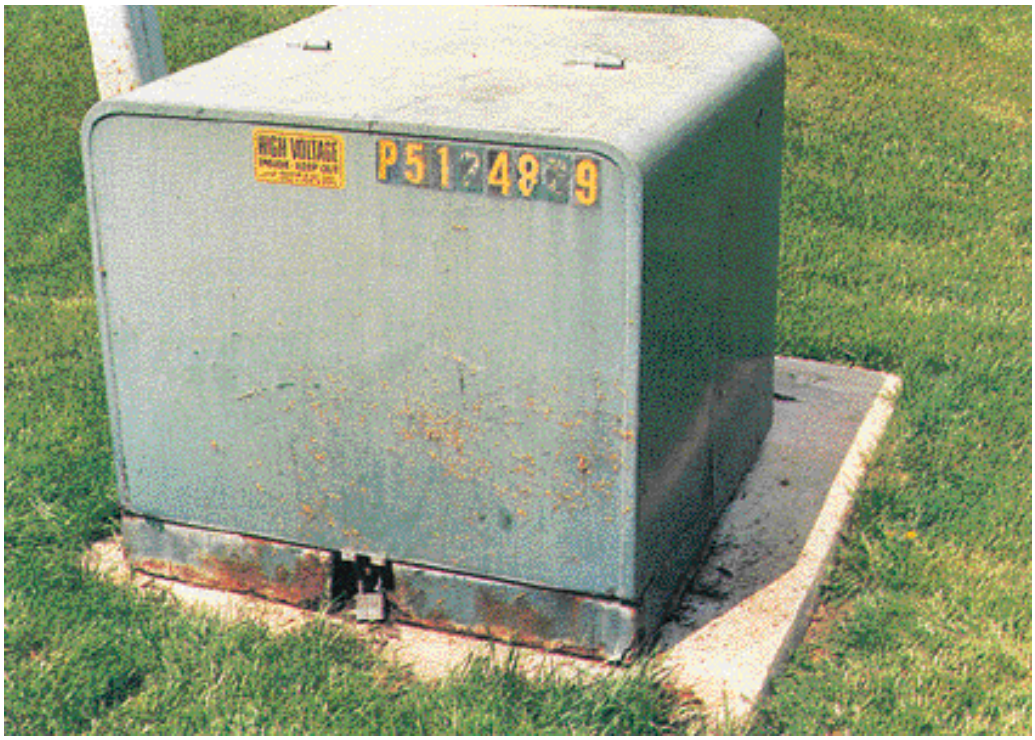


Figure 6–19: Interior Blistering, Flaking, Corrosion, and Discoloration

Figure 6–20: Peeling of Paint with Moderate Pitting

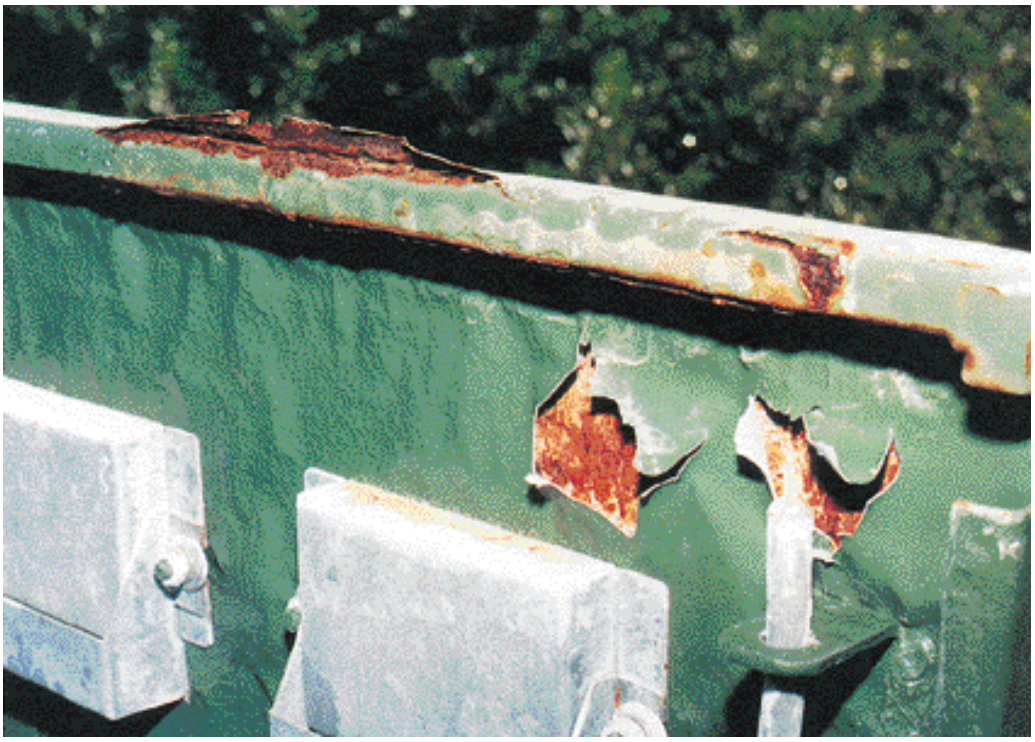
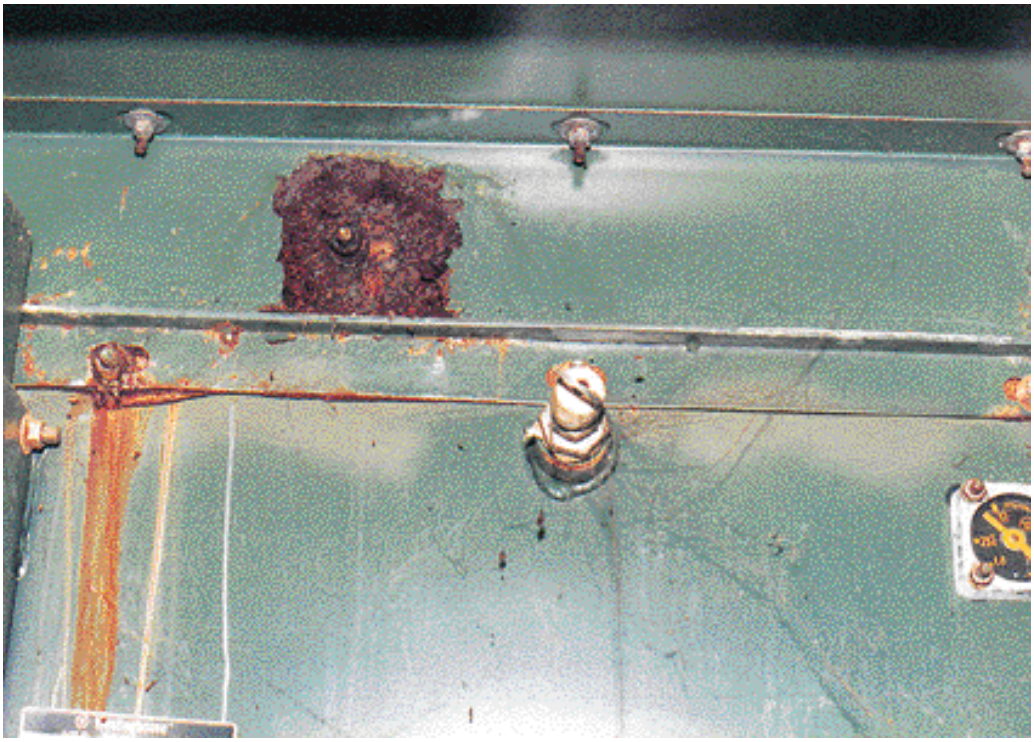


Figure 6–21: Moderate Corrosion of Interior with Significant Pitting



2.5 Light Corrosion

- ☐ There is some discoloration and disruption of painted surfaces but no serious pitting or scaling are present.
- ☐ Switch handles and mechanisms are operational.
- ☐ There is no sign of oil leakage.
- ☐ There are only minor touch-up repairs required.

Figure 6–22: Light Corrosion on Bottom of Door (No Serious Pitting)

Figure 6–23: Close-Up of Light Corrosion on Bottom of Door (No Serious Pitting)

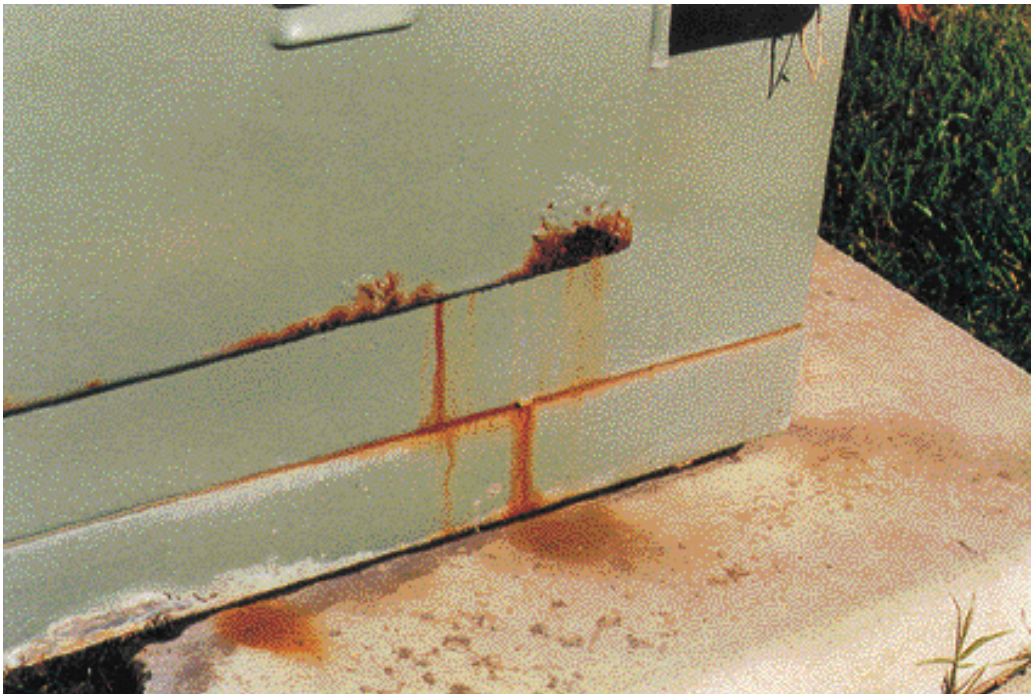


Figure 6–24: Light Corrosion within Manual Switch Operating Mechanism Compartment (No Serious Pitting)

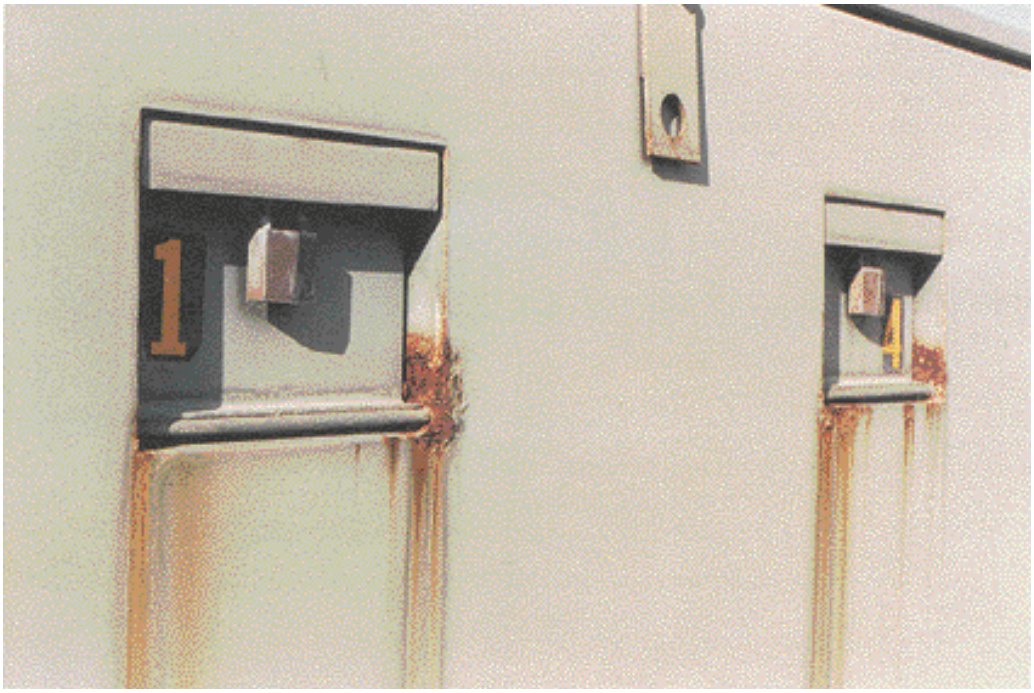


Figure 6–25: Light Corrosion at Louver Openings and at Base of Cabinet (No Serious Pitting)

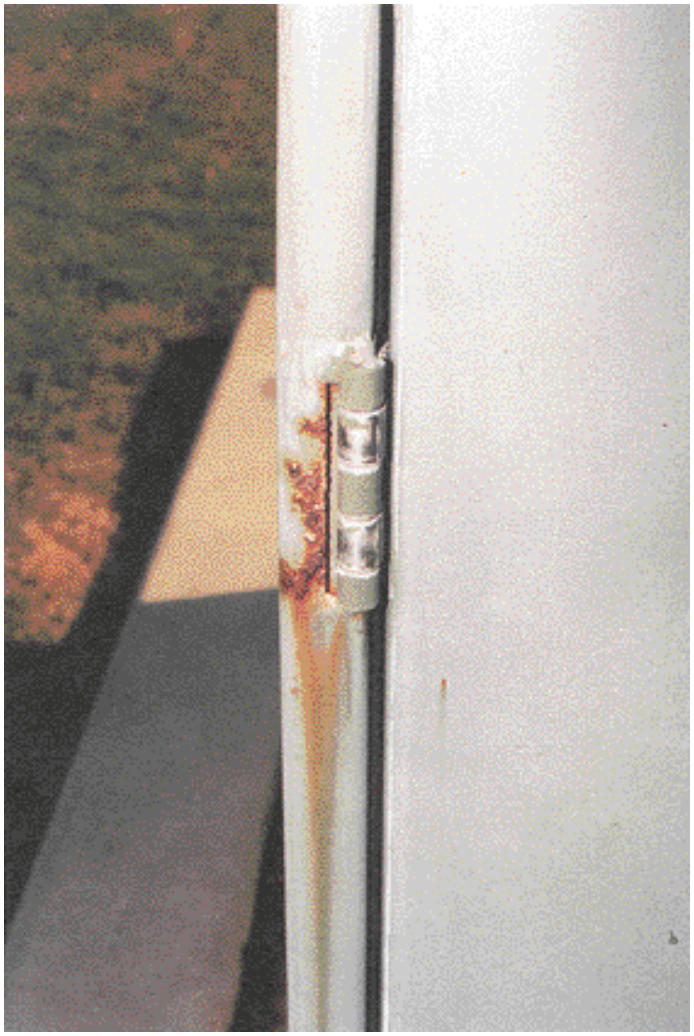
Figure 6–26: Limited Peeling of Paint

Figure 6–27: Light Corrosion of Adapter Cover Plate (No Serious Pitting)

Figure 6–28: Light Corrosion at Lower Edge of Top Cover and Brackets (No Serious Pitting)

Figure 6–29: Light Corrosion at Weld Seam
(No Serious Pitting)

Figure 6–30: Light Corrosion at Hinges



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CG–7: Field Painting of Pad-Mounted Equipment

TABLE OF CONTENTS

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CG–7: Field Painting of Pad-Mounted Equipment

1.0 Moderate Corrosion

Perform routine maintenance within three years. Touch up exterior of equipment rated as Corrosion Level 4 as necessary using the following material coded items:

- Paint Thinner, SCE Item 303
- Valspar Chromox Primer, SCE Item 105 (Manufacturer's No. 13-R-50)
- Paint, SCE Item 214, Bell Telephone Green

NOTE

Refer to Corrosion Prevention maintenance instructions (CP-2, 1.0) for field repainting of padmounted equipment.

2.0 Light Corrosion

Opportunity maintenance is identified (but not required) prior to the next inspection cycle.

3.0 Surface Preparation

The following photographs illustrate three stages of surface preparation recommended for repainting of PMH/PME switch enclosures, transformers, and capacitors.

- Stage **A** — Condition as found before scraping or cleaning.
- Stage **B** — Condition after scraping and cleaning.
- Stage **C** — Finished condition with primer undercoat.

Figure 7–1: Field Painting of Pad-Mounted Equipment (1 of 12)

Figure 7–2: Field Painting of Pad-Mounted Equipment (2 of 12)

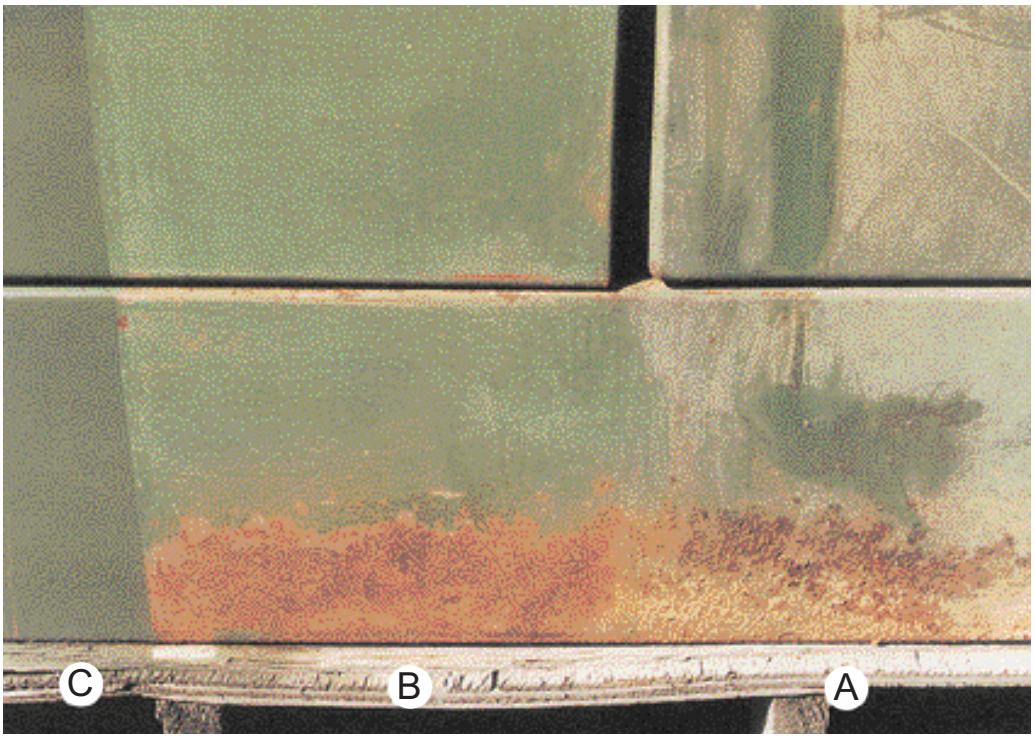


Figure 7–3: Field Painting of Pad-Mounted Equipment (3 of 12)

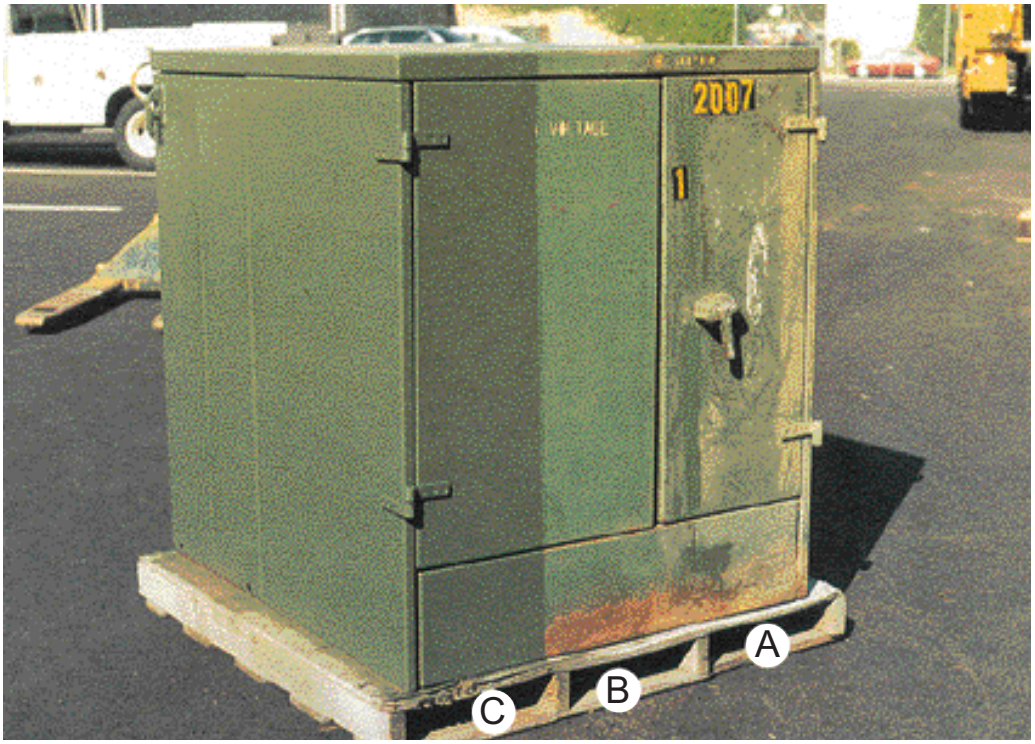


Figure 7–4: Field Painting of Pad-Mounted Equipment (4 of 12)

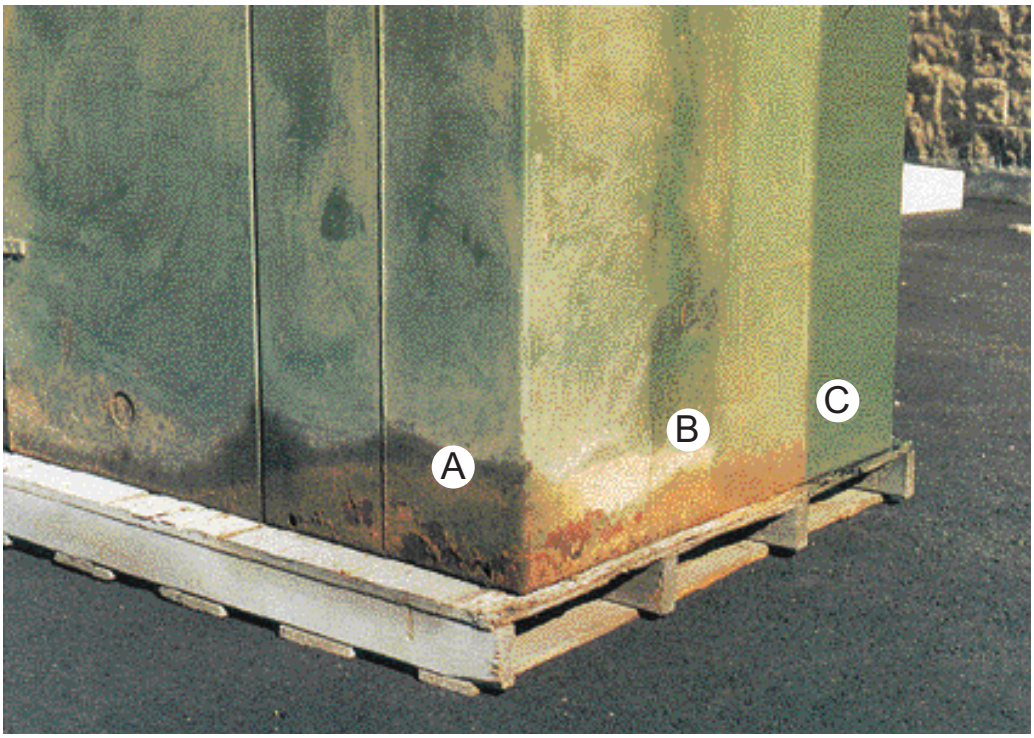


Figure 7–5: Field Painting of Pad-Mounted Equipment (5 of 12)

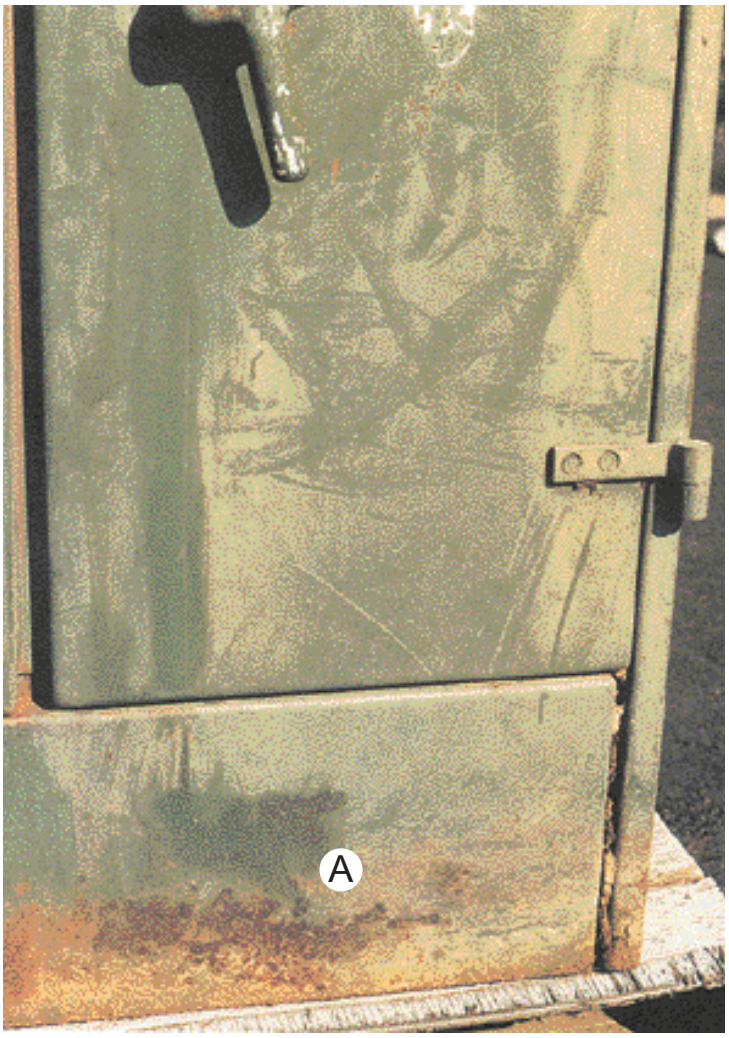


Figure 7–6: Field Painting of Pad-Mounted Equipment (6 of 12)

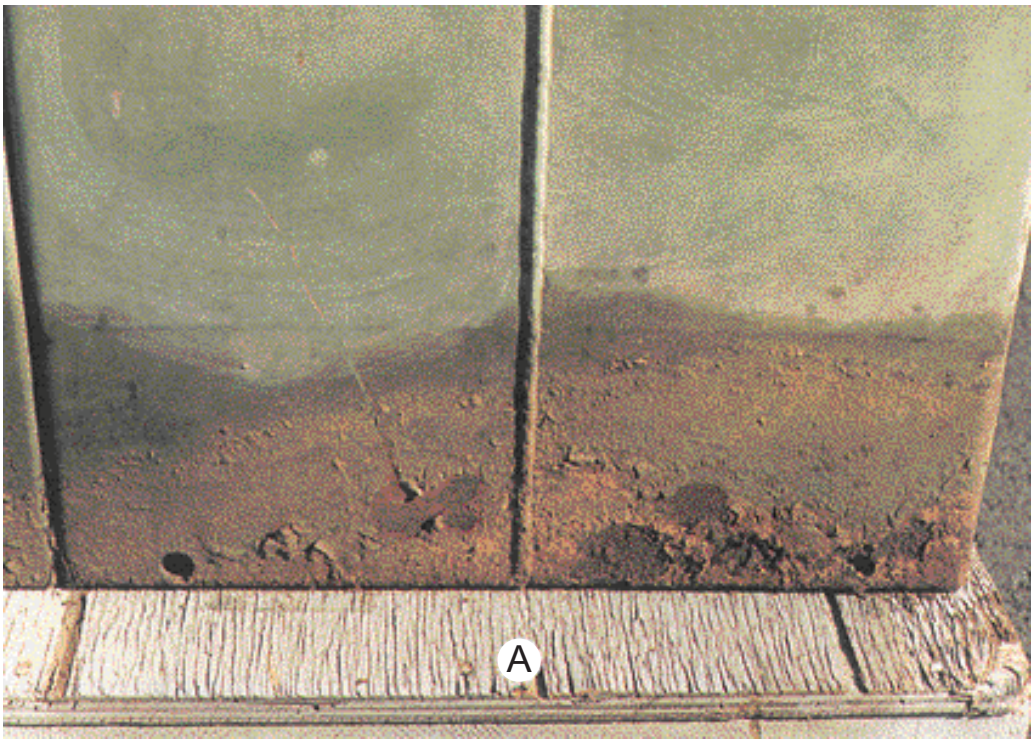


Figure 7–7: Field Painting of Pad-Mounted Equipment (7 of 12)

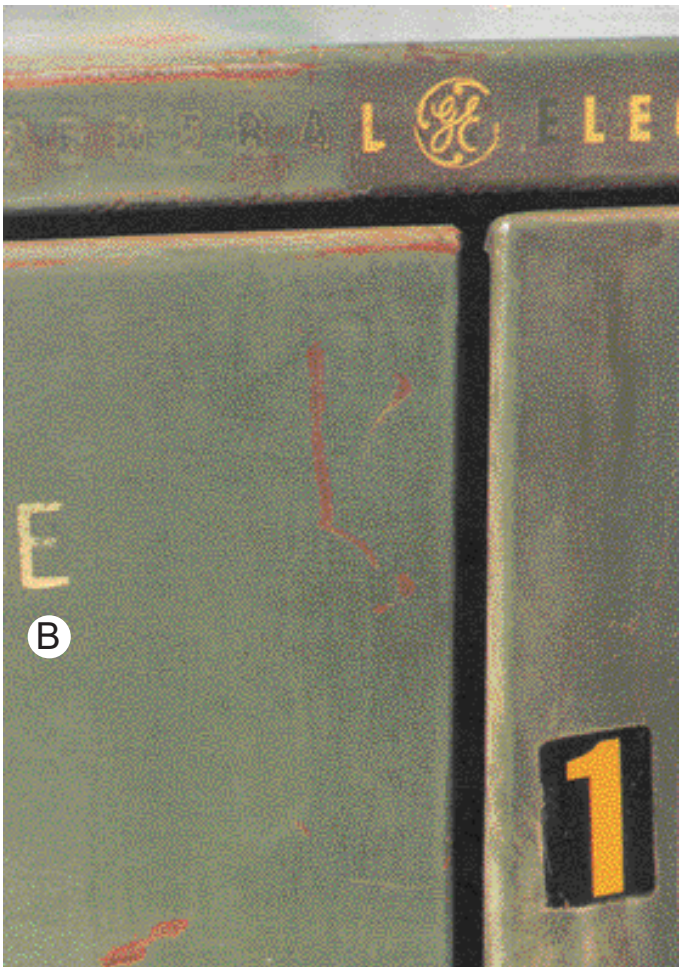


Figure 7–8: Field Painting of Pad-Mounted Equipment (8 of 12)

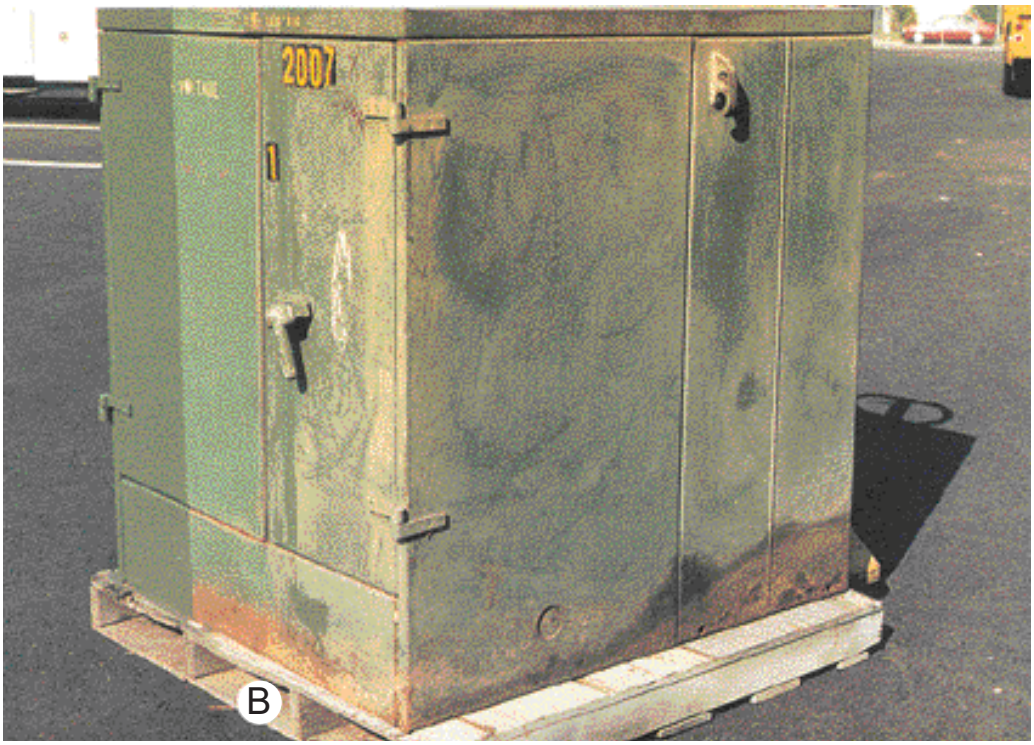


Figure 7–9: Field Painting of Pad-Mounted Equipment (9 of 12)

Figure 7–10: Field Painting of Pad-Mounted Equipment (10 of 12)

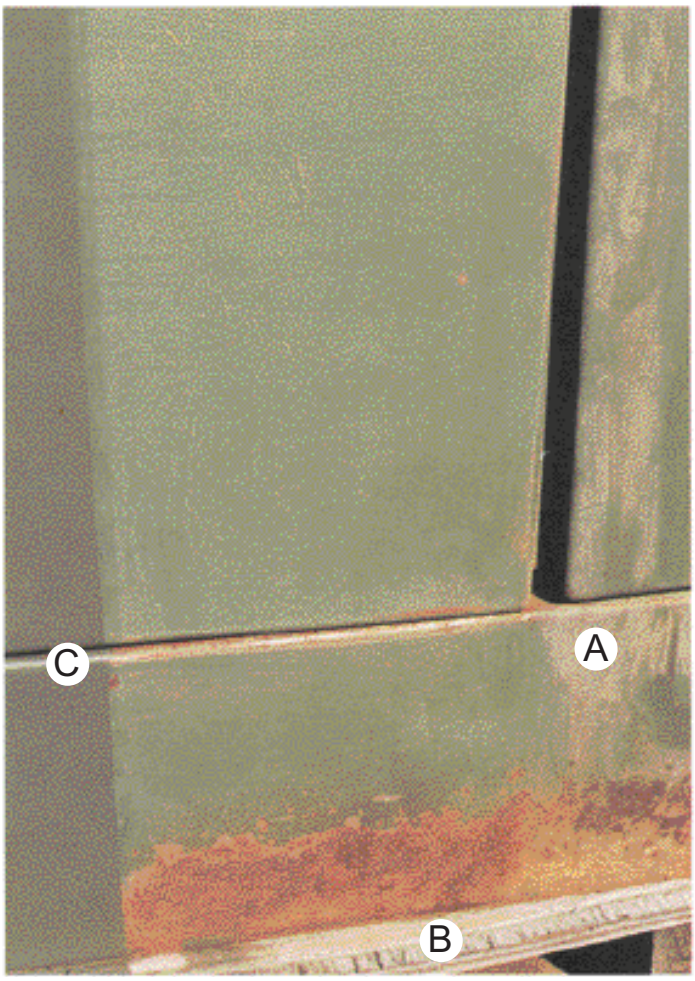
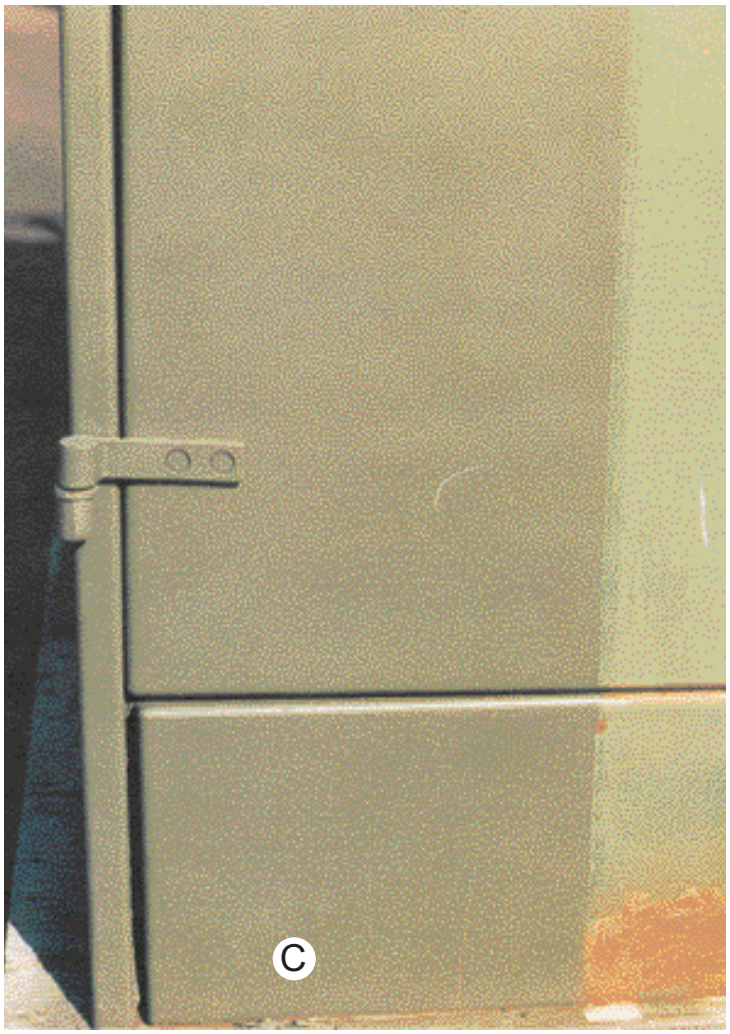


Figure 7–11: Field Painting of Pad-Mounted Equipment (11 of 12)

Figure 7–12: Field Painting of Pad-Mounted Equipment (12 of 12)



SEE SEPARATE ATTACHMENT

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Jeff Lawrence
Job Title: Senior Manager
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 02. d:
Regarding SCE's Asset Inspection Program

d. On average, how many detailed inspections are completed by inspectors per day?

Response to Question 02. d:

On average, in 2023, SCE is completing 14.8 detailed inspections per crew/per day with our new 360-degree inspection. Our 360-degree inspection is a combined detailed ground and aerial inspection of our distribution assets in SCE's High Fire Risk Area (HFRA).

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Jonathan Wuo
Job Title: Sr Manager, Data Science
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 03:
Regarding Top 20% Circuits:
a. In relation to risk model output, provide the number of circuit segments that fall under the top 20% based on risk ranking.
b. Provide the associated total mileage from part (a).
c. Provide the associated total mileage from part (a) broken out by year in which SCE has planned covered conductor installation.

Response to Question 03:
Based on IWMS risk ranking, the values below reflect the top 20% highest risk (under IWMS) segments/miles of bare overhead distribution conductor in HFRA:

a. 19,053 segments
b. The cumulative length of the segments in part a. is approximately 1,312 miles
c.

Total 2023-2025 Planned Covered Conductor Installation (miles)*	2023 (miles)	2024 (miles)	2025 (miles)
837.4	687.3	63.0	87.1

* Planned construction dates could change due to factors including construction priority, environmental constraints, and resource plans.

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Maria Rios
Job Title: Sr. Advisor
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 04:
Regarding Annual Communications Tests
a. On page 536 of SCE's 2023-2025 WMP, SCE states that it "performs annual communications tests in advance of the peak wildfire season." Please explain what these communications tests entail and provide any reports describing the results of these tests for 2021, 2022, and 2023 (if available).

Response to Question 04:
In advance of fire season, SCE conducts two communication exercises with Public Safety Partners (PSPs). In 2023, the first communication test was conducted on April 26, 2023. The communication test sends a test message to PSPs twice a year to test their communication preference.

PSPs are notified via their communication preference as text, email or voice call. After conducting the test, SCE reviews notifications that were not delivered due to a bad email or phone number and requests that the PSP update the contact information.

The next test is scheduled for August 16, 2023.

For 2023: 5,638 unique device count of which 2% failed, which represents 164 unique device count.

For 2022: 5,052 unique device count of which 8% failed, which represents 436 unique device count.

For 2021: 4,218 unique device count of which 8% failed, which represents 351 unique device count.

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Crystal Chambers
Job Title: Senior Manager
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 05:
Regarding Key Gaps and Limitations in Emergency Preparedness Plan
a. SCE's Table 8-37 "Key Gaps and Limitations in Integrating Wildfire- and PSPS-Specific Strategies into Emergency Plan" (page 537) lists "training" and "after-action report reviews" as gaps or limitations.
i. Please provide further details on what the specific limitations are related to SCE's training and after-action reports (i.e., how does SCE's training and after-action report review limit the evaluation, development, and/or integration of wildfire- and PSPS-specific strategies into SCE's overall emergency preparedness plan?).
ii. Please also provide further details on how the remedial action plans will resolve these specific limitations.
iii. Are there any other factors limiting the evaluation, development, or integration of wildfire- and PSPS-specific strategies into SCE's overall emergency preparedness plan, beyond training and after-action report reviews?

Response to Question 05:

i. Please provide further details on what the specific limitations are related to SCE's training and after-action reports (i.e., how does SCE's training and after-action report review limit the evaluation, development, and/or integration of wildfire- and PSPS-specific strategies into SCE's overall emergency preparedness plan?).

SCE would like to clarify that although "training" and "after-action report reviews" are included in SCE's Table 8-37, SCE listed these activities as general and ongoing efforts to continually learn and improve from each exercise and real-world instance rather than in reference to specific gaps or limitations of the Emergency Plan. While specific protocols and procedures are required for PSPS – many as a result of regulatory requirements – SCE has aligned these PSPS specific protocols with its All Hazards Plan such that no material gaps or limitations exist between the two. SCE's All Hazards Plan provides the overarching governance, guidance, and framework for all emergency responses regardless of hazard type. The PSPS specific protocols are developed to specifically address unique actions or notifications for PSPS. These PSPS specific protocols and plans are complimentary to and in alignment with the All Hazards Plan and do not replace the fundamental processes and policies of the All Hazards Plan.

ii. Please also provide further details on how the remedial action plans will resolve these specific limitations.

The remedial action plans continue training and after-action reporting in order to continually improve the overall process. As part of the AAR, the issue and description are listed along with a proposed resolution and timeline for completion to help ensure any listed action item is addressed and resolved.

iii. Are there any other factors limiting the evaluation, development, or integration of wildfire- and PSPS-specific strategies into SCE's overall emergency preparedness plan, beyond training and after-action report reviews?

See response to sub-part i.

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Robert Stiens
Job Title: Senior Advisor
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 06. i:
Regarding Community Outreach Objectives – Verification Methods
a. For SCE's 3- and 10-year Community Outreach objectives, some methods of verification are unclear.
i. Objective (3-year): Actively collaborating with stakeholder networks and partnerships to better understand customer, community and stakeholder specific needs and develop tailored solutions, including AFN.
Method of Verification: See Table 8-44 and Table 8-59
(1) The referenced tables provide lists of state and local agencies and community partners that SCE collaborates with, including the collaborative roles. Is there another form of documentation or reporting that SCE uses as a means of verifying progress toward this objective?
(a) If so, what is that documentation?
(b) If not, how does SCE verify progress toward "better understand[ing] customer, community and stakeholder specific needs and develop[ing] tailored solutions" as a result of this collaboration?

Response to Question 06. i:

SCE collaborates with a variety of community partners. As part of the 3-year objective, there are various means SCE uses to gauge collaboration with stakeholders and address their needs. These efforts can be documented through the tables previously identified, and also through related surveys and reports, as discussed below. For collaboration with city and county local elected officials and leadership, please see attachment titled *2023 04 PG SCE wildfire risk reduction MEMO.pdf* for survey results on SCE's wildfire reduction work and the PSPS program.

As part of sce.com, there is an area dedicated to Wildfire Communications where customers can access important Wildfire Safety and PSPS related customer communications. There are areas for Customer and Community engagement, including information on Community Safety Meetings (upcoming and recordings of past meetings) allowing for customer feedback and questions during the meetings. In addition, after-meeting surveys are conducted that help inform if customers have a better understanding of SCE's wildfire mitigation activities and PSPS practices.

To better understand the needs of Access and Functional Need (AFN) customers, SCE collaborated with community stakeholders and partners as part of the 2023 AFN Core Planning Team which was comprised of 13 organizations representing the diverse needs of the AFN community. The planning

team identified goals and objectives to measure the impacts of PSPS events on individuals with AFN, which include awareness of PSPS support resources, ability to use necessary medical equipment during PSPS events, and satisfaction with the support services offered. The progress of these goals and objectives are reported both in SCE's AFN Plan[1] and the associated Quarterly Updates.[2]

[1] AFN Plan Appendix A (page 71-79): https://www.sce.com/sites/default/files/AEM/Supporting%20Documents/2023-2025/AFN%20Plan.pdf

[2]Q4 QUARTERLY UPDATE TO 2022 AFN PLAN FOR PSPS SUPPORT Appendix B. page 80 Microsoft Word - Cover Pleading for 2023 AFN Plan and 2022 Q4 Update.docx (ca.gov)

ATTACHMENT

primegroup

To: Southern California Edison (SCE)

From: Prime Group

Date: April 2023

Re: Wildfire risk reduction research

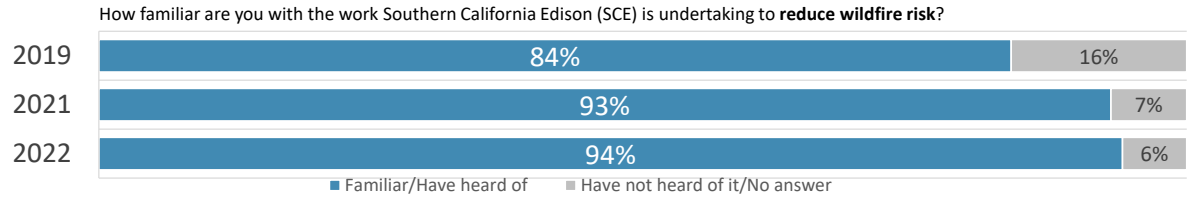
Methodology

Prime Group, on behalf of SCE, conducted an online survey from September 21 – October 25, 2022 with city and county local elected officials and leadership. The survey used a census approach, so all local officials in the SCE service area with email addresses received an invitation to participate. A total of 2,016 survey invitations were sent and n=270 local leaders participated, a response rate of 13%. One hundred and eighty-four (184) survey participants represent high-fire risk areas (HFRAs).

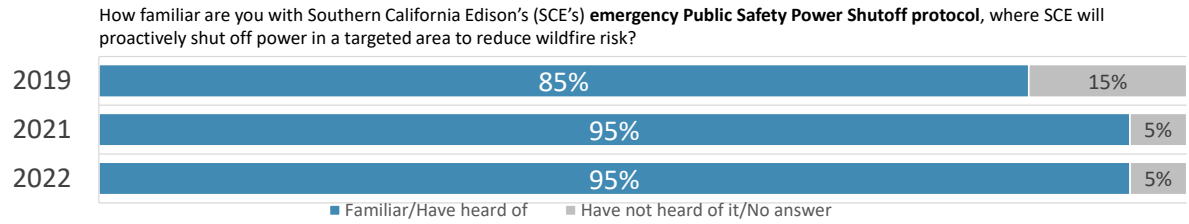
This is the fourth annual survey of local elected officials and leadership conducted by SCE. The three most recent surveys – 2019, 2021, and 2022 – include questions focused on wildfire risk reduction, the results of which are detailed below.

Familiarity with Wildfire Risk Reduction Work

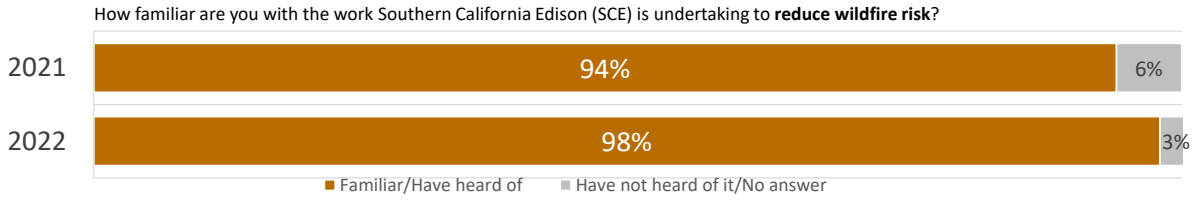
Over nine-in-ten (94%) of local leaders are familiar with or have heard of the work SCE is undertaking to reduce wildfire risk. This is consistent with 2021 (93%) and a ten percentage point increase from 2019.

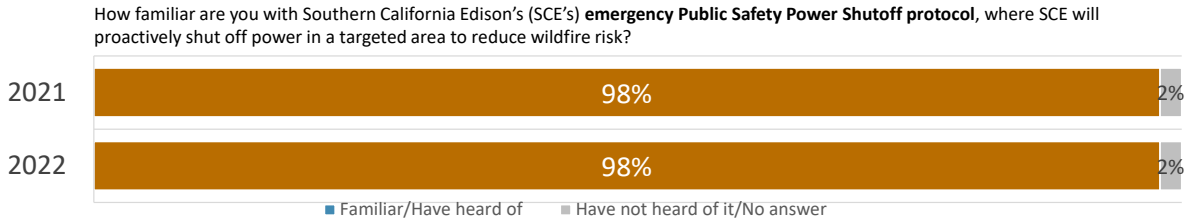


Familiarity with Public Safety Power Shutoff (PSPS) has also remained extremely high. Nearly all leaders (95%) are familiar with or have heard of PSPS, in line with 2021 (95%) and a ten percentage point increase over 2019 (85%).



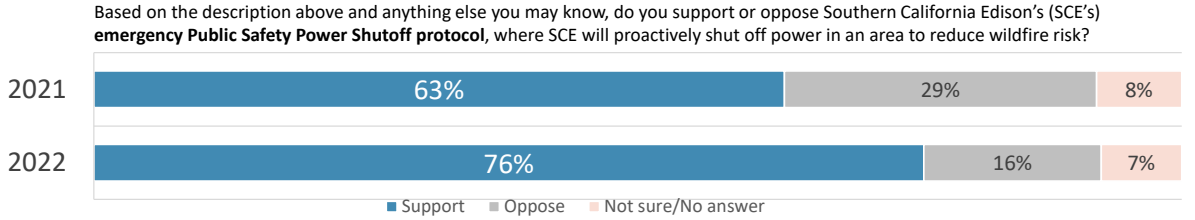
Among HFRA respondents, the familiarity levels are slightly higher – 97% are familiar with or have heard of SCE work to reduce wildfire risk, and 98% are familiar with or have heard of PSPS.



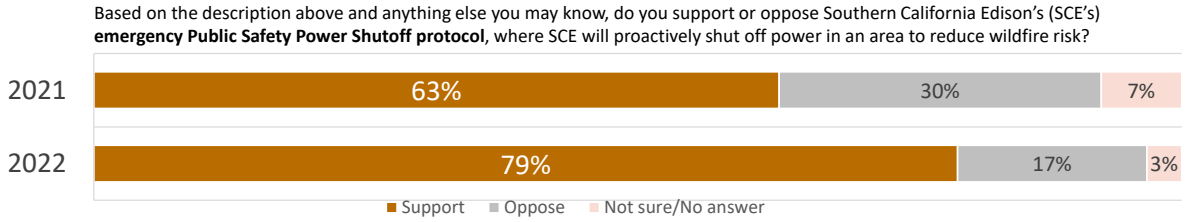


Support for Public Safety Power Shutoff

Support for PSPS among local leaders has improved from 2021 to 2022. In 2021, about six-in-ten (64%) local leaders say they strongly support (23%) or somewhat support (41%) SCE's Public Safety Power Shutoff protocol (PSPS). In the current survey, over three-in-four (76%) strongly support (31%) or somewhat support (45%) PSPS. *(This question was not asked in the 2019 survey.)*



Support is even higher among leaders representing HFRAs, with 79% either saying they strongly support (31%) or somewhat support (48%) PSPS. This is a substantial increase in support over 2021 (63% support).



Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 5

To: Energy Safety
Prepared by: Hen Ly
Job Title: Senior Advisor
Received Date: 5/25/2023

Response Date: 5/31/2023

Question 06. ii:
Regarding Community Outreach Objectives – Verification Methods
a. For SCE's 3- and 10-year Community Outreach objectives, some methods of verification are unclear.
ii. Objective (10-year): Continue to look for ways to expand engagement with agencies outside of CA, including supporting IWRMC's efforts to expand utility membership base and appoint leaders to its Executive Steering Group.
Method of Verification: Engagements with outside agencies
(1) What specific documentation or reporting is SCE referring to as a means of verifying its "expand[ed] engagement with agencies outside of CA"?

Response to Question 06. ii:

Per Section 8.5.5 of SCE's 2023-2025 Wildfire Mitigation Plan, SCE continues to seek improvements to its wildfire mitigation approaches and further reduce wildfire risk by increasing opportunities to collaborate and exchange ideas with other utilities, technology developers, communities and governmental agencies. This includes memberships in industry organizations such as the International Wildfire Risk Management Consortium (IWRMC) which has members from the United States, Canada, South America, and Australia. IWRMC's mission is to facilitate a system of working and networking channels between members of the global utility community to support ongoing sharing of data, information, technology, and practices, and proactively address wildfire risk through learning, innovation, analysis, and collaboration.

SCE participates in monthly working team meetings, quarterly webinars, and an annual in-person conference as part of the IWRMC. The monthly working team meetings are intended to enable acceleration of learning and information sharing among its members. There are focused discussions on current topics relevant to the specific working group (e.g., vegetation management, operations & protocols), member presentations sharing their practices/protocols, and open round tables to highlight critical urgent issues.

Monthly meeting notices with agendas are sent by the IWRMC in advance of sessions. 2023 working group meeting dates include 1/8, 3/22, 4/27. There were no working team meetings in February due to the annual IWRMC conference which occurred 2/13 – 2/16 in San Ramon, CA. SCE sent representatives to participate in the annual conference which was dedicated to topics such

as climate change resilience and emerging technologies for wildfire risk mitigation.

SCE's engagement with outside agencies in these activities can be verified through documentation noting SCE's attendance and participation at IWRMC events and meetings, SCE's presence on agenda (if applicable), calendar entries and potentially other means over time.