

June 27, 2023

VIA ELECTRONIC MAIL

Leslie Palmer, Director
California Public Utilities Commission
Safety and Enforcement Division
505 Van Ness Avenue
San Francisco, CA 94102-3298
ESRB_CompplianceFilings@cpuc.ca.gov

**RE: PacifiCorp (U 901 E), 2022 General Order 174 Substation Inspection Program
Summary and Annual Report on Completed Substation Inspections**

Dear Leslie Palmer,

In accordance with General Order (GO) 174, PacifiCorp, d/b/a Pacific Power (PacifiCorp or Company) submits its Substation Inspection Program Summary and the annual report on Completed Substation Inspections.

Section 40.1 of GO-174 provides that no later than July 1, each electric utility shall submit an Inspection Program Summary. In addition, changes to the program summary are required to be reflected in the Inspection Program Summary. The Company's Substation Inspection Program Policy is provided as Appendix A (Policy 034). Appendix B provides the Substation Inspection Form (3274F), Appendix C provides the Substation Security Inspection Form (3274S-PP), and Appendix D provides the Substation Inspection Intervals.¹ Since the last GO-174 report was submitted for calendar year 2021, there have been no changes to the Substation Inspection Program Policy.

GO-174, Section 40.2, requires each electric utility to provide a report summarizing the number of completed and past due substation inspections. Please refer to Appendix E. There are no past due inspections from 2022. These inspections are internal forms from by PacifiCorp.

If you have any questions concerning this report, please contact Pooja Kishore, Regulatory Affairs Manager, at (503) 813-7314.

Sincerely,



Matthew McVee
Vice President, Regulatory Policy and Operations

Enclosure

¹ This is an excerpt from Pacific Power Policy 001 (Rev 1) and is provided to show the intervals for substation inspections in California.

Appendix A
Substation Inspection Program Policy

SUBSTATION INSPECTION

Asset Management Policy No. 034

Author (R3):	Jon Moulton
Approval:	Amy McCluskey, Pacific Power
Approval:	Joshua Jones, Rocky Mountain Power
Authoring department:	Asset Management
Approved location:	J:\Publications\FPP\SUB\POL
File number-name:	034-Substation Inspection.docx
Revision number:	4
Revision date:	12/17/19

Revision Log

1	1/6/2005	
2	2/6/2012	Reformat – revise interval reference.
3	11/1/2012	Clarify field load reading requirements.
4	12/17/2019	Incorporate Berkshire Hathaway Energy (BHE) Mission 3 requirements into policy.

Document Security Category

	Confidential		External
	Restricted		BES Cyber System Information (BCSI)
X	Internal		

SUBSTATION INSPECTION

Asset Management Policy No. 034

1 Purpose

This policy provides the general requirements and objectives for the performance of physical inspections of substation facilities associated with the transmission and distribution system owned by PacifiCorp.

2 References

- PacifiCorp Policy No. [001](#), *Maintenance Intervals for Apparatus, Relay and Communication Equipment*
- PacifiCorp Policy No. [166](#), *Maintenance and Inspection Records*
- PacifiCorp Form [3274F](#), *PacifiCorp T&D Substation Inspection*
- PacifiCorp Form [3274S](#), *Substation Security Inspection*

3 Objective

Substation inspections include a visual inspection of substation components, performance of minor testing or operational tasks, performance of minor housekeeping tasks and the recording of various equipment readings and measurements. The purpose of these tasks is to check the security of the substation, note obvious defects in equipment installation or performance, verify the physical operation of certain equipment and record data that is used by others for load planning or maintenance planning purposes. Discrepancies or issues found during the performance of inspections may be corrected on site immediately, or noted on the inspection documentation and prioritized for later repair.

- 3.1** Intervals: Substations shall be inspected on a periodic basis per the intervals and requirements listed in Policy 001, *Maintenance Intervals for Apparatus, Relay and Communication Equipment*.
- 3.2** Scope: The requirements for the scope of substation inspections are as listed on forms 3274F and 3274S. Field offices may use these forms, or their functional equivalents, which may be customized for each individual substation. The scope of a substation inspection includes:
1. Substation security inspection
 2. Substation physical inspection / operational tests
 3. Recording operational counters and load readings
- 3.3** Frequency: The frequency of inspections and/or their components are determined by Policy 001. However, substation security inspections are not to be longer than six months apart.
- 3.4** Deficiencies: Where applicable, deficiencies identified during the substation security inspection pertaining to substation security controls will be corrected within 30 days to ensure adherence to Berkshire Hathaway Energy Mission 3 cybersecurity requirements. Where 30-day correction of this subset of deficiencies is not possible, compensating controls must be implemented to mitigate associated risks until the deficiency can be corrected. The specific subset of deficiencies pertaining to

- substation security controls that require this 30-day correction are noted on Form 3274S.
- 3.5** Documentation : Inspection records shall be stored and retained per the requirements of Policy 166, *Maintenance and Inspection Records*.
- 3.6** Use of SCHOOL System: It is preferred that load readings be recorded with the use of SCHOOL handheld computers. The readings are then uploaded to the SCHOOL system. As an alternative, readings may be taken manually and then entered into SCHOOL using the Manual Logger PC Software. For stations with SCADA where readings are entered into school directly from the SCADA system, field readings need not be taken.

Appendix B
Substation Inspection Form 3274F



Asset Management Form No. 3274F

PACIFICORP T&D SUBSTATION INSPECTION

Author: Brandon Prescott

Approval: Jack Vranish

Authoring Department: Asset Management

Approved Location: PacifiCorp.us\Dfs\Pdxco\Shr04\Eng\Publications\FPP\SUB\FORMS

File Number-Name: 3274F-FORM-PacifiCorp T and D Substation Inspection.xlsx
Revision Number: R10
Revision Date: 3/9/2015

[http://idoc.pacificorp.us/content/dam/intranet/doc/ap/policies_and_procedures/eamp/sc/fpp/\[3274F.xlsx\]](http://idoc.pacificorp.us/content/dam/intranet/doc/ap/policies_and_procedures/eamp/sc/fpp/[3274F.xlsx])

The most current version of this document is posted to PacifiCorp's engineering websites.

Modification of this document must be authorized by engineering publications, (503) 813-5096.

Form # 3274F Rev 10 3/9/15	PACIFICORP T&D SUBSTATION INSPECTION		
Substation Name:	Date: / /	Inspector:	Work Order #:

Type of inspection conducted: Minor Inspection Major Inspection

Instructions:

- Complete a Substation Security Inspection Form for all inspections.
- For **Minor Inspections** complete the Substation Security Inspection Form and all fields except those labeled "only required for Major Inspections".
- For **Major Inspections** complete the entire packet.
- All completed inspection forms shall be given to the local substation manager.
- See Policy 001 for inspection interval requirements.

Substation Operations Manager Review

Manager:	Date: / /	Signature:
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SUBSTATION INSPECTION FORM

For Results use A = Acceptable, D = Deficiency Noted, C = Corrected, and N/A = Not Applicable

For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

EMERGENCY GENERATORS

		RESULTS	COMMENTS
1	Block heater functioning properly	A D C N/A	
2	Check room heaters	A D C N/A	
3	Check air louver operation		
4	a. Closed if unit is off	A D C N/A	
5	b. Open if unit is running (do not start generator)	A D C N/A	
6	Check for any alarms	A D C N/A	
7	Record level of fuel in tank (indicate Gallons or Inches)		
8	Check engine oil level	A D C N/A	
9	Check radiator fluid level	A D C N/A	
10	Check for oil and water leaks	A D C N/A	
11	Check battery water level	A D C N/A	
12	Sweep / clean area and perform any necessary housekeeping		

STATION and SELF-CONTAINED BREAKER BATTERY BANKS

	Company ID	Company ID	Company ID
13	Visual Bank Inspection (leaks / corrosion)	A D C N/A	A D C N/A
14	Record Bank Voltage		
15	Record Charger Current (if available)		

***** Remainder of page only required for *Major Inspections* *****

BATTERY BANK TESTING

Note: On 125V banks, if voltage drops below 111V at any time turn charger on immediately. On 48V banks, if voltage drops below 44V at any time turn charger on immediately. Contact manager for further testing instructions if battery drops below these threshold voltages. Ensure voltage has returned to normal for each bank prior to leaving substation.

	Company ID	Company ID	Company ID
16	Turn Off Charger	<input type="checkbox"/>	<input type="checkbox"/>
17	Record Bank Voltage		
18	Leave Charger Off For 15 Minutes	<input type="checkbox"/>	<input type="checkbox"/>
19	Record Bank Voltage		
20	Turn On Charger	<input type="checkbox"/>	<input type="checkbox"/>
21	Record Charger Voltage		
22	Record Charger Current		
23	Battery water levels	A D C N/A	A D C N/A
24	Scan battery/connections with IR device	A D C N/A	A D C N/A
25	Alarms clear	A D C N/A	A D C N/A
26	Battery Ground Present	Yes No	Yes No

COMMENTS:

SUBSTATION INSPECTION FORM

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For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

CONTROL HOUSE

		RESULTS	COMMENTS
1	Annunciator alarms (Document alarms and notify dispatcher and local manager. Clear alarms if possible.)	A D C N/A	
2	Abnormal condition log book available (If not, tag and log conditions and notify dispatcher and local manager)	A D C N/A	
3	Check SCADA alarms prior to leaving (Contact dispatch to check for SCADA alarms)	A D C N/A	
5	Hot Stick inspection current	A D C N/A	
6	Security Inspection forms completed and filed (dispose after 7 years)	A D C N/A	
7	Heater / Air Conditioner function (heater set at 70°, A/C set at 78°) Temperature should be 60°F - 80°F.	A D C N/A	

***** Remainder of page only required for Major Inspections *****

8	Telephone function	A D C N/A	
9	Doors / Windows locked and in good condition	A D C N/A	
10	Painting (Inside and outside) condition	A D C N/A	
11	Roof condition	A D C N/A	
12	Lighting condition / spare bulbs available	<input type="checkbox"/>	
13	Spare transformer fuse(s) condition Fuse Types:	A D C N/A	
14	Spare PT fuse(s) condition Fuse Types:	A D C N/A	
15	One-line diagram available (Revision #)	A D C N/A	
16	Entry log book available / used properly	A D C N/A	
17	SPCC Inspection form completed	A D C N/A	
18	Clearance tags available	<input type="checkbox"/>	
19	1-Year switching order history stored onsite (discard older orders)	A D C N/A	
20	AC and DC panels – No tripped breakers	A D C N/A	
21	Panel meters functioning	A D C N/A	
22	Circuit breaker/switch indication lights working (Red or Green)	A D C N/A	
23	Hot line indication lights	A D C N/A	
24	Panel switches in normal position or tagged Reclosing, ground, SCADA Control, etc.	A D C N/A	
25	Spare lamps available for control lights (red, green amber, white)	A D C N/A	
26	Electronic meters alarm lights cleared	A D C N/A	
27	Relays alarm lights cleared and recorded	A D C N/A	
28	Relay targets logged and cleared	A D C N/A	
29	Communication equipment alarms (note if present only)	A D C N/A	
30	Update relay cards (Pacific Power only) Note Any Targets Without Associated Breaker counts	A D C N/A	
31	Trip coil indicator lights	A D C N/A	

COMMENTS:

SUBSTATION INSPECTION FORM

CIRCUIT BREAKERS / CIRCUIT SWITCHERS / TRANSRUPTERS

For Results use A = Acceptable, D = Deficiency Noted, C = Corrected, and N/A = Not Applicable

For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

*** Meter readings required only if they have not been recorded using Subview or other data collection methods. Inspectors may use alternate data collection sheets if available.**

	Company ID	Company ID	Company ID	Comments
1	READINGS (reset drag hands after readings)			
1	Record/Reset Relay Targets			
2	* Amp Demand - A Phase			
3	* Amp Demand - B Phase			
4	* Amp Demand - C Phase			
5	* Amp Demand Multiplier			
6	* MegaWatt Max Demand			
7	* MegaVAr Max Demand (+/-)			
8	A D C N/A	A D C N/A	A D C N/A	
9	A D C N/A	A D C N/A	A D C N/A	
10	A D C N/A	A D C N/A	A D C N/A	

***** Remainder of page only required for **Major Inspections** *****

11	Operations counter			
12	Fault operations (Pacific Power only)			
13	Air compressor hours			
14	A D C N/A	A D C N/A	A D C N/A	
15	Lube compressor air intake			<input type="checkbox"/>
16	Drain water from air tank (only when average temperature is above freezing)			Yes No Yes No Yes No
17	SF6 compressor hours			
18	A D C N/A	A D C N/A	A D C N/A	
19	A D C N/A	A D C N/A	A D C N/A	
20	Hydraulic pump hours			
21	Hydraulic pump starts			
22	High Ok Low	High Ok Low	High Ok Low	
23	A D C N/A	A D C N/A	A D C N/A	
24	A D C N/A	A D C N/A	A D C N/A	
25	A D C N/A	A D C N/A	A D C N/A	
26	A D C N/A	A D C N/A	A D C N/A	
27	A D C NA	A D C NA	A D C NA	A D C NA
28	High Ok Low	High Ok Low	High Ok Low	
29	A D C N/A	A D C N/A	A D C N/A	
30	A D C N/A	A D C N/A	A D C N/A	
31	High Ok Low	High Ok Low	High Ok Low	

COMMENTS:

SUBSTATION INSPECTION FORM

TRANSFORMERS / REGULATORS / LTC'S / REACTORS

For Results use A = Acceptable, D = Deficiency Noted, C = Corrected, and N/A = Not Applicable

For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

*** Meter readings required only if they have not been recorded using Subview or other data collection methods. Inspectors may use alternate data collection sheets if available.**

READINGS (reset drag hands after readings)	Company ID	Company ID	Company ID	Company ID
1 LTC counter				
2 Average daily counts (note 1)				
3 Drag hands - Max Raise (reset after reading)				
4 Drag hands - Max Lower (reset after reading)				
5 Main tank infrared temp				
6 LTC tank infrared temp				
7 Main tank - LTC Tank (note 2)				
8 Winding temp. max (reset after reading)				
9 Oil temp. max (reset after reading)				
10 * Amp Demand - A Phase				
11 * Amp Demand - B Phase				
12 * Amp Demand - C Phase				
13 * Amp Demand Multiplier				
14 * KWHr				
15 * MegaWatt Max Demand				
16 * MegaVAr Max Demand (+/-)				
17 * MegaVAr Min Demand				
18 Visual inspection for oil leaks, contamination and corrosion	A D C N/A	A D C N/A	A D C N/A	A D C N/A
19 Nitrogen bottles above 200 psi (less than 200 requires replacement)	A D C N/A	A D C N/A	A D C N/A	A D C N/A

Note 1 - Calculate the average daily counts since the previous inspection, notify manager if above 30 per day.

Note 2 - Temperature differential = main tank temp - LTC tank temp in °C. Notify manager if much lower than previous reading

COMMENTS:

***** Page 2 only required for **Major Inspections** *****

SUBSTATION INSPECTION FORM

TRANSFORMERS / REGULATORS / LTC'S / REACTORS

***** This page only required for **Major Inspections** *****

For Results use A = Acceptable, D = Deficiency Noted, C = Corrected, and N/A = Not Applicable

For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

	Company ID	Company ID	Company ID	Company ID
20 LTC present position				
21 Test raise controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22 Test lower controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LTC ran through neutral manually (if acceptable voltage can be maintained)	Y N N/A	Y N N/A	Y N N/A	Y N N/A
24 LTC desiccant	A D C NA	A D C NA	A D C NA	A D C NA
25 LTC oil filter pressure				
26 Oil temperature max				
27 Condition of gauges	A D C NA	A D C NA	A D C NA	A D C NA
28 Test fans / pumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29 Record xfmr tank N2 blanket pressure				
30 Gas monitor	A D C NA	A D C NA	A D C NA	A D C NA
31 Cabinet vents clear	A D C NA	A D C NA	A D C NA	A D C NA
32 Cabinet heaters operable	A D C NA	A D C NA	A D C NA	A D C NA
33 Cabinet door seal / operation	A D C NA	A D C NA	A D C NA	A D C NA
34 No inappropriate CT shorts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35 Bushing condition	A D C NA	A D C NA	A D C NA	A D C NA
36 Bushing oil level	A D C NA	A D C NA	A D C NA	A D C NA
37 Main oil tank level	A D C NA	A D C NA	A D C NA	A D C NA
38 LTC oil level	A D C NA	A D C NA	A D C NA	A D C NA
39 Lightning arrestors	A D C NA	A D C NA	A D C NA	A D C NA
40 Oil leaks present	A D C NA	A D C NA	A D C NA	A D C NA
41 Tank grounded	A D C NA	A D C NA	A D C NA	A D C NA
42 Paint condition	A D C NA	A D C NA	A D C NA	A D C NA

COMMENTS:

SUBSTATION INSPECTION FORM

***** This page only required for **Major Inspections** *****

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For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

MOABS / AIR BREAK SWITCHES

	Company ID	Company ID	Company ID	Comments
1 Blade engaged properly	A D C N/A	A D C N/A	A D C N/A	
2 Handle mechanism grounded	A D C N/A	A D C N/A	A D C N/A	
3 Locked	A D C N/A	A D C N/A	A D C N/A	
4 Visual inspection of motor operator	A D C N/A	A D C N/A	A D C N/A	
5 Broken or chipped insulator skirts	A D C N/A	A D C N/A	A D C N/A	
6 Insulator contamination / corrosion	A D C N/A	A D C N/A	A D C N/A	
7 Switch arcing horns / bottles / whips	A D C N/A	A D C N/A	A D C N/A	

CAPACITOR BANKS

	Company ID	Company ID	Company ID	Comments
8 Control in auto mode (PP only)	Y N N/A	Y N N/A	Y N N/A	
9 Fuse condition	A D C N/A	A D C N/A	A D C N/A	
10 Spare cap fuses available	Y N N/A	Y N N/A	Y N N/A	
11 Spare bank fuses on site	Y N N/A	Y N N/A	Y N N/A	
Spare cap cans on site (note quantity in comments)	Y N N/A	Y N N/A	Y N N/A	
12 Bulging / leaking cans present	Y N N/A	Y N N/A	Y N N/A	
13 Bushing condition	A D C N/A	A D C N/A	A D C N/A	
14 Barriers and DANGER signs on gates of energized racks	A D C N/A	A D C N/A	A D C N/A	
15 Visual inspection of capacitor bank	A D C N/A	A D C N/A	A D C N/A	
16 Broke or chipped insulator skirts	A D C N/A	A D C N/A	A D C N/A	
17 Insulator contamination or corrosion present	A D C N/A	A D C N/A	A D C N/A	

COMMENTS:

SUBSTATION INSPECTION FORM

***** This page only required for **Major Inspections** *****

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For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

SUBSTATION YARD and BUSWORK

		Results				Comments
1	Equipment and structure grounds in place and tight	A	D	C	N/A	
2	Signs of over-heating or arcing. No excessive corona noise	A	D	C	N/A	
3	Broken or chipped insulator skirts	A	D	C	N/A	
4	Insulator contamination / corrosion present	A	D	C	N/A	
5	PCB labels attached as needed	A	D	C	N/A	
6	High voltage cable condition	A	D	C	N/A	
7	Ground grid exposed	A	D	C	N/A	
8	Lightning arrestors	A	D	C	N/A	
9	Cable terminations free of leaks, damage or signs of heating	A	D	C	N/A	
10	Free of nests (i.e. Insects, Birds, Snakes, Squirrels)	A	D	C	N/A	
11	Wood structures – connection hardware tight	A	D	C	N/A	
12	Wood structures – timber sound	A	D	C	N/A	
13	Steel structures - visual inspection	A	D	C	N/A	
14	Concrete foundations - major cracks / spalling	A	D	C	N/A	

COMMENTS:

Appendix C
Substation Security Inspection Form 3274S-PP

PACIFIC POWER SUBSTATION SECURITY INSPECTION
Pacific Power Asset Management Form No. 3274S-PP

Author (R3): Megan Buckner (earlier author: Jon Moulton)
Approval: Kevin Freestone, Amy McCluskey, Brad Ryan
Authoring Department: Asset Management
Approved Location: PacifiCorp.us\Dfs\Pdxco\Shr04\Eng\Publications\FPP\SUB\FORMS
File Number-Name: 3274S-FORM-Pacific Power Substation Security Inspection.xlsx
Revision Number: R4
Revision Date: 9/18/2020

Z:\Maintenance_Planning\Audits and Inquiries\California_GENERAL ORDERS\GO174 Annual Report\GO174 2021\Policies and Forms\[3274S-PP.xlsx]Security

The most current version of this document is posted to PacifiCorp's engineering websites.

*Modification of this document must be approved by the authoring department and processed by engineering publications,
eampub@PacifiCorp.com.*

PACIFIC POWER SUBSTATION SECURITY INSPECTION FORM

Substation Name:	Date: / /	Inspector:	Work Order #:
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For Results use A = Acceptable, D = Deficiency Noted, C = Corrected and N/A = Not Applicable

For any items marked "D" or "C", a detailed explanation shall be provided in the comments section.

M3 = Mission 3*

SIGNAGE - EXTERIOR FENCE		
	RESULTS	COMMENTS
(M3)* WARNING sign(s) installed and readable	A D C NA	
(M3)* WARNING sign(s) location <small>Signs should be every 65 ft. on all sides and on each gate</small>	A D C NA	
(M3)* Substation ID sign installed and readable	A D C NA	

FENCE / GATES / CONTROL HOUSE ENTRY		
	RESULTS	COMMENTS
Electrical grounds condition	A D C NA	
(M3)* Gap between gate and finished grade (4" max in Oregon)	A D C NA	
(M3)* Fence gate(s) and control house entry locks	A D C NA	
(M3)* Door alarms tested independently	A D C NA	

FENCE & YARD		
	RESULTS	COMMENTS
Electrical grounds condition	A D C NA	
(M3)* Height of fence <small>Fabric 6 ft. minimum and a total height of 7 ft. with barbed wire</small>	A D C NA	
(M3)* Gap between fabric and finished grade (2" max in Oregon)	A D C NA	
(M3)* Fabric condition	A D C NA	
Masonry wall or other barrier condition	A D C NA	
Bottom tension wire condition	A D C NA	
(M3)* Barbed wire condition	A D C NA	
Fence isolation <small>All neighboring/adjoining fences within 10 feet electrically isolated</small>	A D C NA	
Fence clearance <small>No objects which could be used to climb fence within 5 feet. See page 2 for interior fence electrical clearance requirements</small>	A D C NA	
Vegetation clearance <small>No overhanging limbs or climbable vegetation</small>	A D C NA	
Yard condition <small>Free of broken glass/porcelain, weeds, nests and debris</small>	A D C NA	
Substation lighting condition	A D C NA	
Stored materials <small>Only substation spare equipment shall be stored within the fence</small>	A D C NA	
Gravel condition	A D C NA	
Drainage condition	A D C NA	
Oil containment / Oil tank condition	A D C NA	

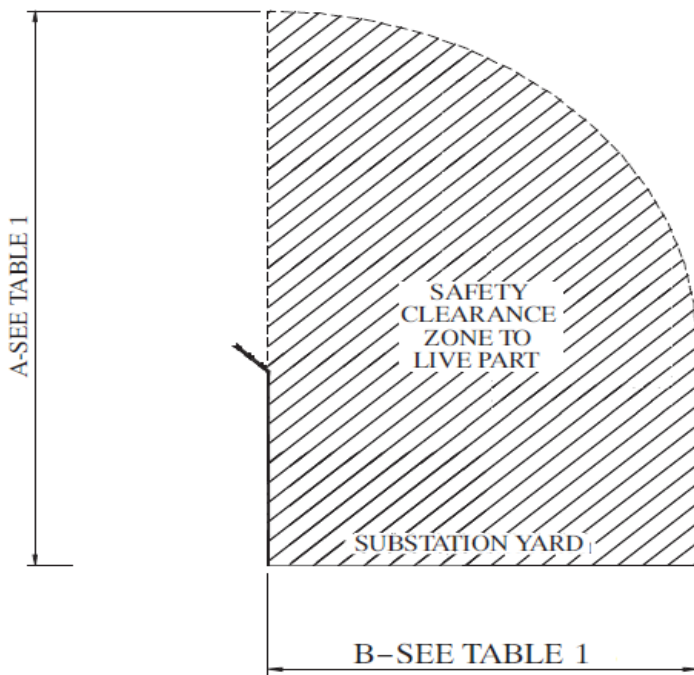
COMMENTS:

Substation Operations Manager Review

Manager:	Date: / /	Signature:
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COMMENTS (continued):

Substation Fence to Live Part Clearance Requirements



Nominal voltage phase to phase	Dimension A	Dimension B
	Feet	Feet
0.1 - 34.5	15.6	10.6
46	16.0	11.0
69	16.6	11.6
115	18.0	13.0
138	18.7	13.7
161	19.3	14.3
230	20.4	15.4
345	21.4	16.4
500	26.6	21.6

Note: These dimensions apply only to facilities constructed in 1997 or later

Appendix D
Substation Inspection Intervals (001-PP)

MAINTENANCE INTERVALS FOR APPARATUS, RELAYS, METERS, LINE PATROL/INSPECTIONS AND COMMUNICATIONS EQUIPMENT

Pacific Power Asset Management Policy 001

Date	Revision no.	Notes
6/21/2021	0	First version of Policy 001 specific to Pacific Power
		Updated Communications man hours. Removed WMA maintenance task
6/20/2022	1	Added local transmission infrared line inspections (wires tab)
		Updated to include distribution breaker overhaul plans for large customers (apparatus tab)
		Added grid resilience equipment/storage facility inspection and maintenance task (apparatus tab)
		RAS SPS1 maintenance interval changed from four years to six years (relay tab)
		Added B1_B2 maintenance to RAS SPS1 maintenance tasks (relay tab)
		Local transmission infrared testing - removed Washington; pertains to OR/CA only. (wires tab)

Author: various contributors; updated by Sheila Andreatta

Approval: Jonathan Connelly

Authoring Department: Asset Management

Approved Location: J:\Publications\FPP\DIS\POL

File Number-Name: PP-001-Maintenance Intervals.xlsx

Revision number: 1

Revision date: 6/20/2022

The most current version of this document is posted to engineering's policy websites.

Revisions to this document must be approved by the authoring department and processed by engineering publications, eampub@pacificorp.com

Column Definitions

Column Name	Column Definition
Equipment Type	Type of equipment or facility maintenance plan applies to.
Equipment Description	Further information to describe equipment or facility in more detail.
Equipment Use	Application equipment or facility is used for.
Business Unit	Company business unit that oversees equipment or facility.
**Equipment Model	Information that describes a particular model or type of equipment.
**Voltage	Equipment or facility rating.
Requires Commissioning	Indicates if equipment requires start up commissioning.
Equip.Code	SAP Code that identifies equipment category.
Maintenance Task	Maintenance task description.
Maintenance ID	ID used in SAP to identify maintenance task. First three letters identify business unit, next four letters represent equipment and maintenance task, next three numbers indicate interval between maintenance in months
Interval	Scheduled Time period in-between consecutive maintenance tasks***.
Counter (Ops/Fault)	Numbers of recorded equipment operations or faults before maintenance order is called
EC PM MAT	ID used to identify maintenance material activity type for distribution equipment.
EC Repair MAT	ID used to identify repair material activity type for distribution equipment.
MG/LOC PM MAT	ID used to identify maintenance material activity type for transmission equipment.
MG/LOC Repair MAT	ID used to identify repair material activity type for transmission equipment.
Notes	Any applicable notes.

**This information is only provided on the worksheet if the specific information impacts plan frequency or counter operations. If cell is blank it can be assumed that all types are included.

*** See maintenance basis discussion for clarification of time period/intervals and how they are applied to determine maintenance due dates. Intervals for tasks and asset associated with NERC Reliability Standards and Oregon / California Inspection programs and other regulatory requirements are firm intervals unless otherwise modified in the individual asset maintenance policies. Intervals for other assets and maintenance tasks are recommended and may be revised or modified during course of operations.

MAINTENANCE INTERVAL LIST
Apparatus Equipment

Equipment Type	Equipment Description	Equipment Use	Equipment Model or Manufacturer	Operating Ratings	Maintenance Task	Equip. Code	Maintenance ID	Interval Years (months)	Interval Months	Counters (Ops/Fault)	Notes
SUBSTATION	Substations – all others Including Mobiles				Sub Safety/Operational Inspection		XXX-SBIN-001	monthly	1		Periodic substation security and operational inspection, load and counter reads/minor/major scope performed periodically. NOTE: Company policy requires a minimum of 7 inspections be performed annually, with no more than 120 days between consecutive monthly or 180 days between the more detail major inspections.

Appendix E
Completed and Past Due Substation Inspections

PacifiCorp
General Order 174
Substation Inspections
2022
Annual Report

The total completed and past due substation inspections performed in the State of California for calendar year 2022 is as follows:

Inspection Type	2022 Completed Inspections*	2022 Past Due Inspections**
GO-174 Substation Inspections	444	0

*Completed Inspections – Actual number of GO 174 inspections performed for the reporting period. Does not include outstanding inspections from prior reporting periods.

**Past Due Inspections – The number of GO 174 inspections not performed for the reporting period. Does not include outstanding inspections form prior reporting periods.