Pacific Gas and Electric Company

INTERFERENCE TEST FORM
(Form must be completed in Non-erasable Ink)

GT&D
01/09
FO-16-E

☐ **Transmission** ☐ **Distribution** ☐ **Both**

PREVENTIVE MAINTENANCE NO. (FM OR PLM)	AREA	DIVISION/DISTRICT	LOCAL OFFICE	CP. SYSTEM NO.

RECTIFIER

LOCATION		CITY	
MANUFACTURER	TYPE	MODEL	SERIAL NO.
PRIMARY RATING VOLTS		ACTUAL PRIMARY VOLTAGE VOLTS	
DC RATING AMPS VOLTS		DC SETTING AMPS VOLTS	

CIRCUIT RESISTANCE (for deep well anodes only)

TOTAL CIRCUIT RESISTANCE = VOLTAGE / CURRENT (R=E/I)	OHMS

SOIL RESISTIVITY (for shallow bed anodes only)

AVERAGE SOIL RESISTIVITY	OHMS/CM

PIPE-TO-SOIL POTENTIALS

	Location	On	Off
PROTECTED STRUCTURE			
NON PG&E PROTECTED STRUCTURE			
NON PG&E PROTECTED STRUCTURE			
NON PG&E PROTECTED STRUCTURE OWNER		TELEPHONE	

SHOW LOCATION OF RECTIFIER AND ANODE(S) AND PERTINENT DIMENSIONS

DATE	PREPARED BY	LAN ID
DATE	REVIEWED BY	LAN ID

[redacted] [redacted]

"INTERFERENCE TEST FORM" INSTRUCTIONS

RECORD

Transmission/Distribution/Both:	Check the appropriate box for the type of gas facility that the rectifier is protecting.
Preventative Maintenance No.:	Record the rectifier's preventative maintenance number, FM or PLM.
CP System No.:	Record the cathodic protection system number for the rectifier.
Area/Division/District/Local Office:	Record the names of the area, division, district, and local office where the rectifier is located.

RECTIFIER

Location:	Provide details of the rectifier's location.
City:	Record the name of the city.
Manufacturer/Type/Model/Serial No.:	Complete the rectifier manufacturer's information.
Primary Rating:	Record the unit's input voltage rating per manufacturer's specifications.
Actual Primary Voltage:	Complete the unit's input actual primary voltage rating as measured in the field.
DC Rating:	Record the manufacturer's rating for the rectifier (amperes and volts)
DC Setting:	Record the maximum amperes and volts at the time of the interference test

CIRCUIT RESISTANCE

Circuit Resistance:	Rectifier Voltage divided by Rectifier Current (R=E/I) in OHMS

SOIL RESISTIVITY

Soil Resistivity:	Record soil resistivity for the shallow or deep well anodes as applicable to the test in OHMS/CM

PIPE-TO-SOIL POTENTIALS

Pipe–to–Soil Potentials on Protected and Non–PG&E Structure:	After setting up an interrupter, record "ON" and "OFF" P/S potentials on the protected facility (e.g., PG&E Gas Main) and any non–PG&E structures that could be affected by the rectifier.
Non–PG&E Structure Owner and Telephone:	Record the name of the owner of non-PG&E structure and a local telephone number.
Location Sketch:	Include a detailed sketch of the location of the rectifier and the anodes. Ensure the sketch is precise enough to enable a person to locate those structures in the field.
Corrective Action Taken:	Record the corrective action taken, if any, needed to mitigate any interference situations.
Date/Prepared by:	Record the date, name and LAN ID of the person who conducted the interference test.
Date/Reviewed by:	Record the date, name and LAN ID of the person who reviewed the interference test.

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INTERFERENCE TEST PROCEDURE FOR SHALLOW BED AND DEEP WELL ANODE INSTALLATIONS

1. Ensure that the CPA is clear of contacts.
   - Use PCM or hard wire spanning.
2. Take interrupted pipe-to-soil potentials on the closest gas service or test station. Locate the electrode directly over the protected structure when possible.
   - Pipe-to-soil potentials should be no more than -1,600 mV on our gas structure.
   - If the Pipe-to-soil potential exceeds -1,600 mV on our gas structure, additional testing is required to ensure the polarized "instant off" potential does not exceed -1,200 mV. Contact corrosion engineering personnel for information on this test and approval.
3. Take interrupted pipe-to-soil potentials on the closest foreign underground metallic structure. When performing an interrupted test, set the interrupter at 4 seconds on and 1 second off to minimize depolarization.
   - The **ON** potential should be more negative, in most cases, than the **OFF** potential when doing an interruption.
   - If the **ON** potential is more positive (less negative) than the **OFF** potential then a degree of interference is present on the foreign structure.
4. Transfer Circuit Resistance and/or Soil Resistivity test data from the Cathodic Protection Station Report, if no data was previously recorded mark **N/A** in the space provided.
5. Make a detail drawing of the location and include all measurements of where potentials were measured on the interference form. Show all distances between metallic structures.
6. Refer to Corrosion Control Gas Standard 0-16, page 6 of 14, G. "Rectifier Adjustment."

IF ANODIC INTERFERENCE IS SUSPECTED ON A FOREIGN STRUCTURE, FOLLOW THIS PROCEDURE:

1. Turn down the rectifier while trying to keep P/S readings above –850mV.
2. Water shallow bed anodes or flush deep well anode installations to lower the ground bed resistance, which will lower the voltage gradient of the anode bed.
3. If after turning down the rectifier and watering or flushing the anodes, CP cannot be maintained, try installing galvanic anodes at the lowest read potentials, or try to find a shallow bed location. (This step may require relocating the bimonthly read locations.)

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