RESURVEY ASSESSMENT SHEETS

CPA Resurvey File Review Form

Required Reviews At a minimum, complete the "Initial CPA Assessment Worksheet"(Attachment 1) and, if required, a "CPA Field Resurvey Checklist" (Attachment 2) in conjunction with this "CPA Resurvey File Review Form" to ensure the objective is accomplished

Objective Use this worksheet to determine if a Cathodic Protection Area (CPA) file folder has an adequate *"record of each test, survey, or inspection required by this subpart in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist."*[1]

CPA. B43-1 **Date:** 9-29-08

Yard: Richmond **Division:** East Bay

Note Review the CPA final folder for the following information All items must be reviewed concerning completeness, legibility, and accuracy, and updated as needed All items must be completed before the CPA is considered resurveyed

1. Cathodic Protection Report Sheets

Bi-monthly CPA monitoring sheets showing the complete history of the CPA

2. Final Maps of the CPA

Separate maps can be used for pipe-to-soil (P/S) saturation reads and the final current data (Due to legibility issues, do not use maps with scales larger than 1"=500' Scales from 1"=200' to 1"=500' are strongly recommended) Color-coded overall map with all closeout data, including the P/S locations, rectifier locations, and boundary points The maps must clearly differentiate between protected and unprotected facilities and plastic tied to the CPA Also, all closeout data (P/S saturation reads, rectifier reads, current span, and/or Pipeline Current Mapper [PCM] data) must be included on the final maps The color-coded maps must contain a legend and the corrosion mechanic's initials and date

3. Cathodic Protection Station Report

Rectifier drawings must contain all updated data and accurate measurements (If the data differs from what is shown on the plat maps, forward the changes to Mapping)

4. Interference Test Data

Include all P/S readings on all accessible foreign facilities in the general area (typically 50 feet) Take P/S readings on the nearest gas structure (P/S readings must not exceed –1,600 millivolts [Mv] on the protected gas structure)

5. Steel Main Footage Data and Associated Current Requirement Data

For resurveys using this form after 2005, the current requirement sheets on file must have the main by size and footage, the number of protected steel services, and the number of tied copper services The main is differentiated between distribution (60 pounds per square inch gauge [psig] maximum allowable operating pressure [MAOP] or less), and transmission (over 60 psig MAOP) Further clarification can be found in UO Standard S4110, "Leak Survey and Repair of Gas Transmission and Distribution Facilities"

6. External Corrosion Leak Repairs

Does a review of the external corrosion leaks records in the CPA indicate that a significant external corrosion levels exists? (Retain a copy of the leak data report at least for the previous 6 years in the CPA folder)

7. CPA Assessment Sheets

Ensure that all of the documented assessment history is completed and includes the supervisor's initials and the date

All the information above is complete and accurate at this time

Completed By (signature) _____ (Lan ID) [redacted] Date 9-29-08

~~Reviewed By (signature)~~ _____ (Lan ID) [redacted] Date 9-30-08

[1] From US Federal Code, Section 49 CFR 192 491 (c)

S5467 Attachment 3: Initial CPA Assessment Worksheet (for 2006 on)

OBJECTIVE Use this worksheet to determine if a CPA is under adequate cathodic protection and has an adequate *"record of each test, survey, or inspection required by this subpar, in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist."* [1]

#	SOURCE DOCUMENT	REFERENCE PARAGRAPH	STEPS	OBSERVED OR DOCUMENTED RESULT	SOURCE OF INFORMATION	CONCLU-SION	INITIALS	DATE
			CPA PERFORMANCE ASSESSMENT					
			Review the following questions for the CPA If the criteria cannot be met and cannot be adequately explained to ensure that the CPA is providing adequate protection a complete field resurvey may be required to ensure that adequate cathodic protection is being achieved in the CPA All the below questions need to have a **Yes** answer or be able to be explained adequately to ensure that the CPA is performing adequately					
			Does the CPA meet all of the following criteria?					
1	49 CFR 192	192 463(a)	1 The lowest pipe-to-soil on-potential in the CPA is at least as negative as 850 millivolts with reference to a saturated copper-copper sulfate electrode		AREA MAP	OK	HR	9/30/08
2	O-16	2 I	2 The number of pipe-to-soil on-potential readings on the most recent saturated pipe-to-soil potential map are a minimum of one per block, or as deemed necessary by the PG&E corrosion supervisor *Acceptable correction without a full resurvey Take extra pipe-to-soil readings at the end of the system or as needed*		AREA MAP	OK	HR	9/30/08
3	Gas Compliance Review	4 5	3 All pipe-to-soil potentials of routine bimonthly monitoring points in the CPA are within +/- 200 millivolts of their readings of the last resurvey date as measured on a similar month-to-month basis (e g , compare winter readings with winter readings, summer readings with summer readings)		C.P MAINT REPORT	OK	HR	9/30/08
4	Suggested PG&E Best Management Practice		4 External corrosion leakage (as measured by corrosion leak repairs per mile of protected main and services per year) has not exceeded one leak per mile per year If the leakage rate has exceeded one leak per mile per year, this does not dictate that a long resurvey needs to be conducted, just that this data needs to be critically reviewed and evaluated by the Gas Operations engineer or a Gas Distribution engineer It may be determined that no additional field work is required A pipe replacement project may be planned that will resolve the situation and make a long resurvey of little or no value		IGIS REPORT	OK	H.R	9/30/08

[1] From US Federal Code Section 49 CFR 192 491 (c)

S5457 Attachment 3: Initial CPA Assessment Worksheet, continued

#	SOURCE DOCUMENT	REFERENCE PARAGRAPH	STEPS	OBSERVED OR DOCUMENTED RESULT	SOURCE OF INFORMATION	CONCLU-SION	INITIALS	DATE
			GAS FACILITIES DOCUMENT REVIEW					
Review the following questions for the CPA If the related gas facilities documents for the CPA indicate significant changes to the CPA that are likely to significantly affect the CP within the CPA since the last assessment/review, which have not been addressed to ensure the CPA is adequately protecting all pipe, then a complete or a partial field resurvey may be required to ensure that adequate cathodic protection is being achieved in the CPA								
			Does the CPA meet all of the following conditions					
5	O-16	Par 7	1 Does a review of the most recent plat sheets for the CPA indicate no jobs involving main installations deactivations, or replacements occurring in the time period since the last CPA resurvey of the area that would likely affect the CP levels within the CPA? (Ensure all current requirement changes caused by plastic main installations are accounted for and take pipe-to-soil on-potential readings on potentially isolated sections of steel)		PLATS	OK	H.R.	9/30/08
6	O-16	Par 7	2 Does a review of the external corrosion leak records in the CPA indicate that no significant external corrosion levels exist? (a copy of the leak data report shall be retained in the CPA file)		IGIS REPORT	OK	H.R	9/30/08
			PG&E MANAGEMENT REVIEW AND APPROVAL					
7	O-16		Does the PG&E **corrosion supervisor or the GD&TS construction specialist** concur with this assessment? Indicate if CPA needs to be field resurveyed Use the "CPA Field Resurvey Checklist " to help conduct field resurvey If the "Initial CPA Assessment Worksheet" or subsequent CPA assessment indicates that the CPA is providing adequate levels of cathodic protection, conduct a CPA file review, using the 'CPA Resurvey File Review Form"			OK	JR	9/30/08

Comments (Include any comments about work done, observations, things to check in the next assessment/resurvey)

S5467 Attachment 4: CPA Field Resurvey Checklist

OBJECTIVE Use this checklist to determine if a CPA is under adequate cathodic protection and has adequate *"records of each test, survey, or inspection required by this subpart, in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist "* [1]

#	Task	Reference	Who? (Initial when complete)	Date Completed
1	Ensure that the CPA has been assessed for performance using the "Initial CPA Assessment Worksheet " Ensure that CPA needs a complete field resurvey	"Initial CPA Assessment Worksheet"	Corrosion Supervisor JR	9/29/02
2	Review updated code requirements	49 CFR 192, Subpart I	Corrosion Mechanic (CM) JB	9/29/02
3	Review updated PG&E requirements	(GS&S O-16)	CM JB	9/29/02
4	It is suggested that a new set of full size plat sheets for the CPA be used to validate the latest CPA maps in Step 5 below	Maps	Mapping JB / BV	9/28/02
5	Color code the final CPA maps (these maps should be scaled so as to allow the entire CPA to be readily viewed, usually a 1"=500' scale is used)		Mapping/ CM JB	9/29/02
6	Verify all CPA boundaries in the field		CM JB	9/29/02
7	Verify that the CPA boundaries in the field match the CPA boundaries shown in the CPA file and the CPA boundaries on the CPA map file records used by the Mapping department		CM JB	9/29/02
8	Recalculate current requirements based on all substantial changes to CPA, including new boundaries, newly installed or reconstructed piping and services (as needed)		Estimating/ Engineering/ CM JB	9/29/02
9	Field test (e g , PCM spanning, field measurements, etc) and clear all contacts in the CPA		CM JB	9/25/02
10	Compare actual rectifier current output with current requirements as calculated in Step 8 Investigate and clear any significant discrepancies		CM JB	9/29/02
11	Take all final on-P/S reads (one per block or less if deemed appropriate by the corrosion supervisor)		CM JB	9/25/02
12	Take all final spans, noting measurements on plats		CM JB	9/25/02
13	Identify all interference problems in the area		CM JB	9/25/02
14	Identify all steel mains in the CPA that are not protected		CM JB	9/25/02
15	Investigate the feasibility of protecting unprotected steel mains in an area		Engineering/ CM JB	9/29/02

[1] From US Federal Code, Section 49 CFR 192 491 (c)

S5457 Attachment 4: CPA Field Resurvey Checklist, continued

#	Task	Reference	Who? (Initial when complete)	Date Completed
16	Ensure that the CPA is now adequately protected because all of the following conditions are now met		JB	9/29/05
17	1 The lowest pipe-to-soil on-potential in the CPA is at least as negative as 850 millivolts with reference to a saturated copper-copper sulfate electrode	49 CFR 192 463(a)	CM JB	9/25/02
18	2 The number of pipe-to-soil on-potential readings shall be a minimum of one per block as documented on a saturated pipe-to-soil potential map, or as deemed necessary by the PG&E corrosion supervisor	GS&S O-16 2 I	CM JB	9/25/02
19	3 The current flow shall be accounted for down to 0 05 amps (or less when deemed necessary by the PG&E corrosion supervisor) when using hardwire spanning or 15 mA when using the PCM	GS&S 0-16, 2I	CM JB	9/25/02
20	Ensure the CPA file folder is complete with all required updated information as listed in the "CPA Resurvey File Review"	"CPA File Resurvey Review"	CM JB	9/29/02

Comments