PACIFIC GAS AND ELECTRIC COMPANY
Gas Pipeline Safety OIR
Rulemaking 11-02-019
Data Response

PG&E Data Request No.:	DRA_001-01		
PG&E File Name:	PSEP-Update_DR_DRA_001-Q01		
Request Date:	May 3, 2013	Requester DR No.:	DRA-TCR-1
Date Sent:	May 17, 2013	Requesting Party:	Division of Ratepayer Advocates
PG&E Witness:	Joe Medina	Requester:	Tom Roberts

SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 1

Provide all PG&E management approved procedures used to ensure the MAOP validation process results in accurate and complete pipeline data for use in the PSEP update application.

ANSWER 1

Certain attachments to this response have been marked CONFIDENTIAL and are submitted pursuant to Section 583 of the Public Utilities Code because they include employee names.

On April 9, 2013, PG&E provided to parties, including DRA, documents supporting (1) its Quality Control (QC) and Quality Assurance (QA) process and (2) process maps for Pipeline Features List (PFL) uploads and Geographic Information System (GIS) Spatial Alignment.

Attached please find the following supporting documentation and procedures related to PG&E's Maximum Allowable Operating Pressure (MAOP) Validation Project that are used to ensure the MAOP validation process results in accurate and complete pipeline data for use in the PSEP Update Application.

Attachment Name	Attachment Description
PSEP-Update_DR_DRA_001-Q01Atch01	Presentation to the Safety and Enforcement Division of PG&E's MAOP Validation Effort
PSEP-Update_DR_DRA_001-Q01Atch02	Field Retrieval QC Checklist
PSEP-Update_DR_DRA_001-Q01Atch03CONF	PFL Checklist for PG&E Build &

	PG&E QC
PSEP-Update_DR_DRA_001-Q01Atch04	PFL Engineering QC Process
PSEP-Update_DR_DRA_001-Q01Atch05	MAOP Phase III QA Plan
PSEP-Update_DR_DRA_001-Q01Atch06CONF	MAOP Phase III QA Procedure – Document (PFL) Preparation
PSEP-Update_DR_DRA_001-Q01Atch07CONF	MAOP Phase III QA Procedure – Retrieval
PSEP-Update_DR_DRA_001-Q01Atch08CONF	MAOP Phase III QA/QC Procedure – Document Preparation
PSEP-Update_DR_DRA_001-Q01Atch09CONF	QA Plan for PFL Build
PSEP-Update_DR_DRA_001-Q01Atch10CONF	MAOP Phase III QA Procedure – MAOP Validation Report

Attachment PSEP-Update_DR_DRA_001-Q01Atch01 provides an overview of the MAOP data validation process. The quality processes are described in detail for each of the steps, particularly in PFL build. In addition, the attachment summarizes the QA program for PFLs. Below are some highlights and supporting documentation/examples.

Page 10 of PSEP-Update_DR_DRA_001-Q01Atch01 shows the QC points for the document collection/preparation process, which breaks down into five sub-processes:

1. Transmission plat walk
2. Distribution plat walk
3. Field document retrieval
4. PFL prep
5. PFL folder delivery

The process map shows that each of the steps has a “check” point to ensure quality and completeness of work. Attachment PSEP-Update_DR_DRA_001-Q01Atch02 shows the Retrieval QC checklist used for the project.

Pages 11 through 16 of PSEP-Update_DR_DRA_001-Q01Atch01 describe the build QC process in detail. The quality processes include:

- 100% PFL check process with flow chart (page 11)
- PFL quality enhancement tools, such as data validation macro and image check macro (page 11)
- Build and QC checklist to ensure traceable, verifiable, and complete documentation (page 13; see also attachment PSEP-Update_DR_DRA_001-Q01Atch03)

- "Issues-Errors" communication to allow for feedback and communication between upstream and downstream teams about individual PFLs (page 14)
- PFL quality metrics to track completeness and accuracy of each PFL build vendor (page 15)

Page 17 of PSEP-Update_DR_DRA_001-Q01Atch01 provides an overview of the PFL engineering process. The detailed PFL engineering QC instructions are shown in attachment PSEP-Update_DR_DRA_001-Q01Atch04.

Page 18 of PSEP-Update_DR_DRA_001-Q01Atch01 describes the QA program that was performed on the MAOP Validation Project. QA analysis was performed within each of the 5 steps of PFL production. The full description of the QA process and reporting is provided in attachments PSEP-Update_DR_DRA_001-Q01Atch05CONF through PSEP-Update_DR_DRA_001-Q01Atch10CONF.

In addition to the processes and procedures described above, the MAOP Validation Project also ensures quality by leveraging a PG&E internal website to provide PG&E's MAOP builders and engineers with all the resources and guidance in one location.

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PG&E Witness:	Todd Hogenson	Requester:	Tom Roberts

SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 2

Provide all PG&E management approved procedures used to ensure the PSEP update application uses only accurate and complete data, and is consistent with D.12-12-030 and PG&E management approved engineering standards.

ANSWER 2

PG&E is in the process of documenting procedures that are being used to ensure the PSEP Update Application uses only accurate and complete data. PG&E will provide the procedures when they are finalized and approved.

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PG&E Witness:	Todd Hogenson	Requester:	Tom Roberts

SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 3

The following questions relate to specific "project deviation codes" provided by PG&E on April 23, 2013.

a. "Piggability" – Provide the criteria used by PG&E to determine if a pipline diameter must be changed, or a pipe replaced, to provide inline inspection.

b. "Piggability" – If not addressed in the response to the preceding question, describe the specific inline inspection instruments to be accommodated, and instrument carrier mechanism used.

c. "Short lengths" – Provide the cost analysis that supports PG&E's classification and treatment of "short segments."

d. "Less than 1 mile gap" - Does this logic mean that footage for this gap is included in the project cost?

e. "Less than 1 mile gap" - Does this apply independent of the total length of the hydrotest, such that a 1 mile gap might be included in a 1.2 mile project?

f. "Non-PSEP" – What is the "BASE budget"?

g. "Non-PSEP" – In addition to the "BASE budget," describe all proceedings or funding mechanisms which would be used to obtain cost recovery for "Non-PSEP" work.

h. "Recently replaced/tested" – What is the disposition of these segments?

i. "Other" –Will specific details be provided in the comment field for each of these segments which justify the deviation to CPUC staff and PSEP parties?

j. "Additional Threats" – Will specific details be provided in the comment field for each of these segments which justify the deviation to CPUC staff and PSEP parties?

k. "Constructability (Repl to test)" – Will specific details will be provided in the comment field for each of these segments which justify the deviation to CPUC staff and PSEP parties?

l. "Downrate to distribution" – What is the disposition of these segments, removed from Phase 1 scope?

m. "Replace with distribution" – What is the disposition of these segments, removed from Phase 1 scope?

n. "Committed" – What is the disposition of these segments, kept in Phase 1 scope?

ANSWER 3

a. Piggability decisions are based on existing Magnetic Flux Leakage (MFL) / In-Line Inspection (ILI) tool capabilities (i.e. bend radius, diameter changes).

PG&E responded to a similar question concerning PG&E's August 26, 2011 PSEP Application, in GasPipelineSafetyOIR_DR_DRA_072-Q01, dated February 29, 2012, Question 1 (a-e). Single Diameter Axial Magnetic Flux Leakage (MFL) Tools exist for 6" through 42" diameter pipelines. Several MFL tools can collapse 20-25%, which enables them to inspect pipeline segments of varying diameters in one inspection run. Multi-diameter Axial MFL tool technology is currently available in the following diameter ranges : 12"-16", 14"-18", 20"-26", 24"-30", 30"-36". PSEP pipeline replacements are sized to accommodate future axial MFL inspections.

PG&E also responded to ILI questions in our PSEP rebuttal testimony dated February 28, 2012, Chapter 3, Section F, PG&E Proposed Pipeline Diameter Changes Are Warranted, pages 3-22 through 3-24.

b. PG&E responded to a similar question in PG&E Data Request Response No. DRA_072-Q01, dated February 29, 2012, Question 1 (a-e). Axial Magnetic Flux Leakage (MFL) tools will be used to address internal corrosion, external corrosion, and latent third party damage. Transverse Flux Inspection (TFI) tools are used to detect cracks and defects within the long-seam. TFI and ultrasonic tools can only inspect a single pipeline diameter; they cannot inspect a multi-diameter pipeline.

Axial MFL, TFI and Ultrasonic tools are propelled using natural gas pressures and flows within the pipeline being tested.

c. PG&E did not develop specific cost analysis for how to treat "Short Segments." The decision on whether to pressure test or replace a short pipeline segment is based on PG&E's estimating and construction experience along with project cost estimates and calculations used in the development of PSEP Workpapers. August 26, 2011 PSEP Testimony, Page 3-41, explains, "For project execution, operational impact and cost-efficiency purposes, PG&E established minimum project lengths for strength testing. Pipeline projects less than these prescribed minimums will be replaced instead of strength tested."

- PG&E outlined pipeline parameters for determining "short length" in the original filing testimony. For pipeline segments 12" in diameter or smaller, and project lengths 600 feet or less, the pipeline will be replaced.

- For pipeline segments 16" in diameter or larger, and project lengths 300 feet or less, the pipeline will be replaced.

d. Yes, "Less than 1 mile gap" is used when a segment does not result in a decision tree result of phase 1 action, but is between filed phase 1 work areas and is no longer than 1 mile. The description is most commonly used for tests.

e. Yes, "Less than 1 mile gap" segments would be included in the total length of a test. (i.e., seg 100 = 2000'(M4), seg 101 = 2000' (C3-Less than 1 mile gap), seg 102 = 2000' (M4); test length is 6000', not 4000')

f. Base budget refers to the amounts authorized in Decision 11-04-031 as part of PG&E's 2011 Gas Transmission and Storage (GT&S) Rate Case, Application 09-09-013.

g. The GT&S Rate Case and PSEP decisions are the only funding sources for PG&E's gas transmission related work. Other costs such as the overall company level of administrative and general expenses, uncollectible, medical and pension costs and cost of capital are determined in other regulatory proceedings.

h. This represents any work performed outside of PSEP. No further action is planned for these segments in phase 1 unless it is less expensive to include them in a project than to exclude them.

i. Yes, specific details will be provided in the comment field for each of these segments which justify the deviation.

j. Yes, specific details will be provided in the comment field for each of these segments which justify the deviation.

k. Yes, specific details will be provided in the comment field for each of these segments which justify the deviation.

l. These pipe segments will be downrated from transmission pressure to gas distribution pressure (nominally 60 psig). The costs to convert these segments from Transmission to Distribution will be attributed to PSEP. However, the cost of conversion is typically significantly less than the cost to replace the existing gas transmission pipeline.

m. These pipe segments will be replaced with the installation of new gas distribution pipe (nominally 60 psig). The costs to convert these segments from Transmission to Distribution will be attributed to PSEP. These pipe segments will be a Gas Distribution asset once placed into operation. The cost to install a gas distribution pipe is typically significantly less than the cost to install a new steel gas transmission pipeline.

n. Yes, they will be kept in phase 1 for either test or replacement and will be described in the workpapers and the PSEP database.

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PG&E Witness:	Todd Hogenson	Requester:	Tom Roberts

SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 4

The following questions refer to the segment level spreadsheet provided by PG&E on April 23, 2013.

a. Will all columns of data from the original PSEP database, and all the original data, be in the updated PSEP database?

b. Which data columns will be used in the cost models?

c. How will the segment database and the cost models be linked?

d. What is the tab "Change Codes 01.02.13", and where and how are the change codes used?

e. This file in linked to another file. Is this link essential, or can it be avoided in the database provided with the application?

f. Three colors are used for rows of data as discussed in the workshop and explained in the legend. These colors do not appear to be assigned based on conditional formatting. Is it possible to use conditional formatting to do this? If so, which column(s) of data will drive the color?

g. Many colors are used for row headings. Do these colors have meaning that can be explained in the legend?

h. Why include footage in Column DR if "most entries are incorrect" per the legend?

i. What is the data in column GS?

j. How does the data in column GS relate to the segment footages used in column DR?

k. Columns EW to GR are currently blank. How will they be populated, and how will these columns be used?

l. The logic of decision points 1H, 2F, and 3A refer to column **EN** data, which is titled "Pressure test met PSEP", which is further described in the legend as "to be calculated by PSEP engineers." Data in this column is a manual YES or NO entry, which does not provide visibility into what specifically leads to a YES entry, or the ability to confirm that the rational is correct.

m. What procedure will PG&E use to populate field **EN**?

n. The cost allocation refers to column **EM** data, which is titled "Pressure test met code", which is further described in the legend as "to be calculated by PSEP engineers." Data in this column is a manual YES or NO entry, which does not provide visibility into what specifically leads to a YES entry, or the ability to confirm that the rational is correct.

o. What procedure will PG&E use to populate field **EM**?

ANSWER 4

a. For the most part, yes. All of the key pipeline attribute information (year of install, diameter, wall-thickness, Specified Minimum Yield Strength (SMYS), seam-type, test pressure, test date, test duration, test media, PSEP decision tree outcome, etc.) has not been modified and will be included within the updated PSEP database. However, some of the data columns that had no bearing on the PSEP program that were deemed redundant or unnecessary have been removed. The PSEP database has constantly evolved and columns have been added to include pipeline segment attribute information from MAOP data validation.

b. Columns DF (REPL PSRS Number), DQ (Validated Install date), EQ (Validated Project Type), DR (Validated pipeline footage) used for hydrotests, EM (Validated Test Met Code), DE (Test PSRS Number), DO (Validated diameter), and DL (Planned replacement diameter) will be used in the cost models. There will be a field added to reflect the urban congestion for new segments. As the database continues to be modified, the exact placement of these columns within the database may change and as the workpapers are developed, it may be determined that additional fields are required as well.

c. For the Expedited Update Application, the cost calculators will be within the same workbook as the project's segments. These segments will be copied from the database and pasted into the workbook.

d. The change code tab is used to provide a list of possible entries for column DJ (CHNG_CODE) and is used to categorize changes in actual work compared to the original PSEP filing.

e. It is not essential and it will not be linked in the updated database submittal.

f. No, it is not possible to use conditional formatting to reproduce all the colors.

g. There are a lot of columns in the database. Colors were used to group data for ease of locating columns at different points in the progression of the project but there are no rules about the meaning of each color.

h. At the time of the initial validation effort, it was noted many of these entries were incorrect. In the Expedited Update Application, these will have been corrected and will be used for Hydrotest footages.

i. Column GS is used to give the segment a geospatial length in GIS.

j. There is no relation between column GS and DR.

k. Columns EW-GL will be used as needed to capture summary info for split segments; children segments will populate them. Columns GM-GR are placeholders to be used for fatigue analysis.

l. The engineers who perform the data validation manually run through file "GasPipelineSafetyOIR_DR_Joint-DT_Oral001-Q01Atch02" and enter a "yes" or "no". This attachment shows the requirements to meet PSEP criteria and criteria at the time of the test. We are exploring automating this process.

m. Column EN will be populated as mentioned in response to part l.

n. Column EM will be populated as mentioned in response to part l.

o. Column EM will be populated as mentioned in response to part l.

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SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 5

Provide the management approved procedures used by PG&E staff to group pipe segments into PSEP projects.

ANSWER 5

PG&E does not have a specific written management approved procedure to group pipe segments into PSEP projects. However, the process followed to define PSEP project scopes is described in various sections of the August 26, 2011 PSEP prepared testimony in Chapter 3, specifically sections A.3 (a-e, g(1-3)), A.5, C.9, and D.1. For the Expedited Update Application, PG&E will use the same process to group pipe segments into PSEP projects that it used for the August 26, 2011 PSEP Application.

Once the validated pipeline segment data is processed through the Decision Tree (DT), DT outcomes are reviewed and grouped together and combined into unique projects (replacement or strength-test). PSEP Engineers will also review adjacent pipeline segments looking for project synergy and Program efficiencies. As part of the engineering review process, PG&E may take an action that deviates from the Decision Tree results.

Decisions to deviate from the Decision Tree results are documented by Deviation Codes at the segment level. If the validated project scope differs from the original PSEP filing, the updated project scope is documented, and presented to both the Engineering and Program Management Office (PMO) Change Control Boards for review and approval (PSEP Testimony Chapter 7, Section D.2.d Program Management Office). This process ensures updated/revised PSEP project scopes are reviewed and approved by the Work Stream Leads and PSEP PMO for consistency and adherence to the overall PSEP Program.

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PG&E Data Request No.:	DRA_001-06		
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SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 6

Will the same excel spreadsheets be used to generate project level costs as were used to support the original application? If not, what changes will be made to the spreadsheets?

ANSWER 6

The excel spreadsheet cost calculators will differ slightly from the ones used in the original PSEP filing. They will utilize validated pipeline segment data and will be linked to project specific segments rather than the entire database. Unit costs will not change.

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SUBJECT: PG&E'S PROPOSAL FOR UPDATED APPLICATION

QUESTION 7

The following questions refer to the disallowance tabs of the segment level spreadsheet provided by PG&E on April 23, 2013.

a. Will project "disallowances" be calculated and applied to project costs in the same files, and in the same basic way as in the original application? (it is understood that different disallowance logic will be used)

b. Are MP1 and MP2 data is used to calculate the disallowance?

c. Is there a reason why these logical disallowance tests can't be applied within the segment database for each segment, then summed for a project level disallowance?

d. For total project footage, does the logic apply correctly even when a project has many discontinuous sections, such as with TAP and DFM projects?

e. Mother segments are excluded from the calculations based on a "split" entry in column DQ. This is correct, but "split" is used in many columns. How will the "split" designation be entered into the database?

f. How will PG&E ensure that this "split" designation is applied correctly to all the required columns for a split segment (e.g. how to ensure that "split" is correctly entered into columns DP, DQ, and DS, but not DR?)

g. When calculating disallowances for hydrotests, he first logic criteria checks for the relevant hydrotest number in column CL, then the second criteria checks for a "Test" designation in column EQ. Why are both checks required?

h. What situations would result in a hydrotest number in CL, but no "test" designation in EQ?

i. Why does PG&E use "Test Number" as the project identifier for hydrotests, but "PSRS" number for replacement projects?

j. Cost allocation calculations are based on the original segment length in column L of the segment database. If this is not the same data used in the cost models, explain why different data is being used.

k. Do the "+" signs in the calculation of replacement footages result in a "or" logical statement, where a segment is counting in the project footage and disallowed footage if column EQ contains REPL, OR RTMT, OR ABD, OR TSFR?

l. What is the meaning of "ABD" in the previous question?

m. Why are segments transferred to distribution, retired, or abandoned counted when determining cost responsibility for replacement projects?

ANSWER 7

a. Yes, the same cost calculators will be used to calculate disallowances, but the fields used will come from the validated data rather than the original GIS data.

b. No. Segment footage will be used to determine length.

c. Yes, project costs will be based on data validated DT footage or engineered installed/tested pipe footage depending on the stage of each project when the updated workpaper is developed. Specific disallowances (yes/no) will be determined at a segment level but actual disallowance cost will be a function of the total project length.

d. Yes.

e. The "split" designation will be entered using data validation that will be imported upon completion.

f. A Quality Control review will be performed on all data validation and the information will be looked at carefully to make sure the segments have "split" in the correct columns and that the mother segment's footage is equal to the sum of all its child segments.

g. The hydrotest number in column CL was scheduled prior to data validation and checking EQ for "test" shows which segments after data validation remain in the hydrotest.

h. If a test was planned, but data validation shows valid test records or that the project can be moved out of phase 1, then column CL will be populated but column EQ will not show "test". The segment could also be planned as part of a hydrotest but then moved to replacement.

i. Test numbers were established for hydrotesting projects because many of the projects had to be sub-divided into separate tests during engineering/design in order to maintain service to customers and to better manage test water storage, treatment and disposal. For the Expedited Update Application, all hydrotest projects will roll up to unique PSRS project identifiers.

j. Column L will not be used because data validation is providing more accurate footage (column DR) from the Pipeline Features Lists (PFLs) and this will be used for cost allocation calculations.

k. Yes.

l. "ABD" stands for abandon but it is being substituted with "RTMT," which stands for retirement.

m. As stated in CPUC Decision 11-06-017 (page 1), Implementation Plans must be designed "to achieve the goal of orderly and cost effectively replacing or testing all natural gas transmission pipeline that have not been pressure tested. The Implementation Plan may include alternatives that demonstrably achieve the same standard of safety…". Also as stated in CPUC Decision 12-12-030, Conclusion of Law, Item 34, "The Commission should impose strong incentives on PG&E to encourage efficient construction management and administration of the Implementation Plan."

   After pipe segment data validation, the Pipeline Engineer reviews the pipeline attribute data, Decision tree (DT) results, upstream and downstream adjacent pipe segments, the purpose, demand and use of the line (e.g., customers served, adjacent gas distribution system and demands). There are occasions where PG&E believes it makes sense to down-rate gas transmission pipeline segments from transmission pressure to gas distribution pressure (nominally 60 psig). The same methodology applies to retirements, abandonments and gas transmission replacements through a new gas distribution pipeline. The costs to down-rate, abandon, retire or replace gas transmission pipe with gas distribution pipe is being charged to PSEP because PG&E is doing this work in order to comply with the new CPUC regulation, not a preexisting regulatory requirement (see PG&E Rebuttal Testimony, R.11-02-019, Policy Chapter page 1-1), in lieu of hydrotesting or replacement with a new gas transmission pipeline. The costs to down-rate, abandon, retire or replace gas transmission pipe with gas distribution pipe is usually significantly less than the cost to install a new steel gas transmission pipeline.