

From: Dowdell, Jennifer
Sent: 10/21/2011 5:44:15 PM
To: 'Shori, Sunil' (sunil.shori@cpuc.ca.gov)
Cc: Doll, Laura (/O=PG&E/OU=CORPORATE/CN=RECIPIENTS/CN=LRDD);
Horner, Trina (/O=PG&E/OU=CORPORATE/CN=RECIPIENTS/CN=TNHC);
Ramaiya, Shilpa R (/o=PG&E/ou=Corporate/cn=Recipients/cn=SRRd); [Redacted]
[Redacted]

Bcc:

Subject: RE: Answers to Questions from Friday, October 14

Sunil,

Sorry for the delay in responding to these. Folks have been working diligently but it just took a little while. You will get a formal data response (SanBrunoGT-LineRuptureInvestigation_DR_CPUC_213), but thought I'd clip these to your email if that is more convenient.

Best regards,

Jennifer

1. Please confirm at what locations, along all of Line 132, PG&E has obtained and/or analyzed soil core samples in the last 20 years.

ANSWER 1

We are not aware of any soil core samples collected or analyzed in the last 20 years.

2. What level of seismic threat was determined as existing during the previous two integrity assessments performed on the segments comprising the section of pipe and how was the threat mitigated?

ANSWER 2

As part of the annual threat analysis on all covered segments, data are collected from a variety of sources, including seismic information along our transmission ROW. In 2004, Line 132 MP 42.13 -43.55 was determined to have a Weather and Outside Force Threat per RMP-04. The potential for seismic activity is one of the components used to determine the Weather and Outside Force Threat, and seismic activity was found to be a contributing factor in the threat determination process for this location. Specifically this segment is located in an area with the potential for ground acceleration $\geq 0.5g$. This estimated level of potential ground acceleration has been unchanged since 2004 when this threat was first determined.

To respond to an earthquake across the service territory, PG&E has developed and implemented a gas transmission response plan (RMI-04) to mitigate seismic events. This procedure is consistent with the acceptable prevention and repair methods in

ASME B31.8S Table 4. In addition, weather conditions are monitored per RMI-04A and the pipeline is leak surveyed and patrolled as prescribed by existing PG&E standards S4110 and S4111 respectively.

After the San Bruno accident, remote control capability was added to Healy Station at

Redacted

3. Please provide copies of all materials related to seismic studies performed for the section of pipe being replaced from Orange and "A"

Streets along Redacted **If no studies have been performed, please explain what soil geologic conditions changed, or events occurred, and when, that prompted PG&E to perform the recent soils studies;**

ANSWER 3

Attached is a copy of a report, SanBrunoGT-LineRuptureInvestigation_DR_CPUC_213-Q03Atch01, prepared for PG&E by Kleinfelder & Associates. This report will be included as part of a larger document being prepared on the video inspection of this line and Fitness for Service Evaluation. When completed, that document will be provided to the CPUC.

4. Please provide a listing of all other segments on Line 132 which have potential ground acceleration values of 0.4g or higher and have likelihood of 1/485 or higher?

ANSWER 4

The attached Excel file, SanBrunoGT-LineRuptureInvestigation_DR_CPUC_213-Q04-Atch01, includes a listing of all Line 132 segments with a maximum potential acceleration value of 0.4g or higher in the event of a major earthquake.

5. Please explain the transition differences at Redacted **and why only the north transition is included on the graph in Figure 2.**

ANSWER 5

The report covers two pipeline configurations. There is a generalized liquefaction case which covers straight pipe in the liquefaction zone. Additionally, there is analysis for the two most stringent design cases at Redacted, one for the sag bend and the other for the deep straight pipe at the northern transition. The resultant strains for these three cases are shown in Figure 2.

6. The Exponent report states: "This groundwater table is below loose deposit that has the potential to liquefy if the groundwater table were at a higher elevation." What this statement appears to imply is that the current level of ground water is at an elevation that does not present potential to liquefy loose deposit. Please confirm if my understanding is correct, or further clarify the

statement.

ANSWER 6

The understanding is correct. Total liquefaction would be worse than it is now if the water table was higher.

7. Please explain the term "average rate of return" and what bearing the values of 150 and 260 years have on the section of Line 132 that would

be replaced.

ANSWER 7

The "average rate of return" is the same as average return period. The values 150 and 260 years imply an average annual likelihood of 1/150 and 1/260.

-----Original Message-----

From: Shori, Sunil [mailto:sunil.shori@cpuc.ca.gov]

Sent: Friday, October 14, 2011 3:39 PM

To: Dowdell, Jennifer

Cc: Ramaiya, Shilpa R

Subject:

Jennifer,

Questions related to the meeting this afternoon regarding Line 132:

Please confirm at what locations, along all of Line 132, PG&E has obtained and/or analyzed soil core samples in the last 20 years;

What level of seismic threat was determined as existing during the previous two integrity assessments performed on the segments comprising the section of pipe and how was the threat mitigated?

Please provide copies of all materials related to seismic studies performed for the section of pipe being replaced from Orange and "A"

Streets along [Redacted]. If no studies have been performed, please explain what soil geologic conditions changed, or events occurred, and when, that prompted PG&E to perform the recent soils studies;

Please provide a listing of all other segments on Line 132 which have potential ground acceleration values of 0.4g or higher and have likelihood of 1/485 or higher?

Please explain the transition differences at [Redacted] and why only the north transition is included on the graph in Figure 2;

The Exponent report states: "This groundwater table is below loose deposit that has the potential to liquefy if the groundwater table were at a higher elevation." What this statement appears to imply is that the current level of ground water is at an elevation that does not present potential to liquefy loose

deposit. Please confirm if my understanding is correct, or further clarify the statement;

Please explain the term "average rate of return" and what bearing the values of 150 and 260 years have on the section of Line 132 that would

be replaced.

Thanks, Jennifer.

Sunil Shori

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