BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

COMMISSIONER MICHEL PETER FLORIO,
COMMISSIONER CATHERINE J.K. SANDOVAL,
COMMISSIONER MARK J. FERRON and
ADMINISTRATIVE LAW JUDGE MARIBETH A. BUSHEY,
co-presiding.

	ORDER TO SHOW CAUSE
Order Instituting Rulemaking on the Commission's Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms.	Rulemaking 11-02-019

REPORTER'S TRANSCRIPT
San Francisco, California
September 6, 2013
Pages 2420 - 2517
Volume 16B

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PUBLIC UTILITIES COMMISSION, STATE OF CALIFORNIA
SAN FRANCISCO, CALIFORNIA

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SAN FRANCISCO, CALIFORNIA

06 SEPTEMBER 2013 - 1:37 P.M.

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ADMINISTRATIVE LAW JUDGE BUSHEY: The Commission will come to order.

This is the time and place set for the order to show cause hearing on the ruling of the assigned Commissioner and assigned Administrative Law Judge directing Pacific Gas and Electric Company to appear and show cause why all Commission Decisions authorizing increased operating pressures should not be stayed pending demonstration that records are reliable.

Good afternoon. I'm Administrative Law Judge Maribeth Bushey, the assigned Administrative Law Judge assigned to this proceeding. Also presiding with me this afternoon are three Commissioners, Commissioner Ferron; the assigned Commissioner Florio; as well as Commissioner Sandoval.

Our order of the proceeding this afternoon will be to first check with the Commissioners to see if any of them have opening statements that they would like to make? No?

COMMISSIONER FLORIO: Just briefly.

ALJ BUSHEY: Commissioner Florio?

COMMISSIONER FLORIO: Yes. I think one of the reasons we're here -- there are technical compliance issues and operational issues, but I think also there's a question of public confidence. And I think it's important for PG&E to present not just what it did and what -- what it is doing going forward, but to the extent you think it's justified, try to restore the confidence of people who are a little bit shaken by this latest -- latest incident. So you know, what we're all concerned about is is the system safe and are there any other hidden surprises out there. So to the extent that you're able to address that, say little more broadly than just this specific case, I would certainly appreciate that.

ALJ BUSHEY: Thank you, Commissioner Florio.

Other Commissioners? No? All right.

Then we'll get right down to business. Mr. Malkin, would you like to call your first witnesses?

MR. MALKIN: Yes, your Honor. PG&E calls Kirk Johnson and Sumeet Singh.

ALJ BUSHEY: Put your things down.

Both of you raise your right hand.

MANLEY KIRK JOHNSON and SUMEET SINGH, called as a witness by Pacific Gas and Electric Company, having been sworn, testified as follows:

WITNESS SINGH: I do.

WITNESS JOHNSON: I do.

ALJ BUSHEY: Please be seated. State your full name for the record. Spell your last name.

WITNESS JOHNSON: My name is Manley Kirk Johnson, J-o-h-n-s-o-n.

WITNESS SINGH: My name is Sumeet Singh, S-i-n-g-h.

ALJ BUSHEY: Mr. Malkin, please proceed.

MR. MALKIN: Thank you, your Honor.

DIRECT EXAMINATION

BY MR. MALKIN:

Q Mr. Johnson, you submitted a verified statement to the Commission last Friday that sets out your present position, but would you please describe your responsibilities as Vice President, Gas Transmission, Maintenance, and Construction?

WITNESS JOHNSON: A I am responsible for all the construction and maintenance activities associated with PG&E's gas transmission lines, and I am also the lead

officer for PG&E's Pipeline Safety Enhancement Plan. That includes the engineering, project management, and construction of all the PSEP activities, including hydrostatic testing, pressure testing, valve automation, pipeline replacement, and making our lines piggable.

Q Mr. Singh, you did not submit a statement last Friday, so I'm going to ask you a few more questions about your background. Could you please describe for the Commission your educational and professional background?

WITNESS SINGH: A I have a bachelors of science in civil engineering from UC Berkeley. I'm a Registered Professional Engineer in the State of California. I also have my masters of business administration from UCLA.

In regards to my professional background, I've been employed with PG&E for a combined of 11 years, 9 of which has been with gas operations.

Q What is your current position with PG&E?

A My current position is I'm the Senior Director of Asset Knowledge Management in Gas Operations.

Q How long have you held that position?

A A little over 18 months.

Q What was your position before that?

A Prior to this position, I was the Director of Engineering for our MAOP Validation Project.

Q And your current position as Senior Director Asset Knowledge Management and Gas Operations, what with your job responsibilities?

A My job responsibilities include overseeing our records verification and management programs, including the MAOP validation project, also our production mapping organization, who is responsible for updating our maps and our asset management information systems, as well as deploying technology and tools in gas operations.

Q Okay. Now that we've given a little background on the two of you, I want to turn to the substance. And as described by ALJ Bushey, the focus of today's hearing is -- and as Commissioner Florio said, reassuring the Commission and the public that PG&E's pipelines are safe and its records reliable so that the Commission doesn't feel that it needs to suspend the pressure

restoration orders that it has issued. And that's how I'm going to try to focus my questions.

So Mr. Johnson, I'd like to start with you. In the 2011 filing to restore the pressure on Lines 101, 132A, and 147, you certified that in your professional judgment, those lines were safe to operate at 365 pounds. Do you remember that?

WITNESS JOHNSON: A Correct, I do.

Q Now today, knowing what you know about the errors that we reported we found in the MAOP validation of Line 147 and Line 101, is that still your opinion?

A Yes, it is.

Q Can you tell us briefly why that is your opinion?

A Well, first and foremost, I base that judgment based on the very fact that every one of those pipeline segments that we're referring to both on Line 147, 132A, and Line 101 -- all of the segments of pipelines had been pressure tested or hydrostatically tested for all of those segments. So right there we have a significant margin of safety built in, and I think we all agree that that's the gold standard for checking the integrity of a

pipeline.

In addition we have an operating history of those pipelines that indicate they can certainly operate well above the 365 pounds that we requested in that particular proceeding. And in addition, we did review the MAOP validation records activities associated with those pipelines to ensure that they met our expectations. So in my mind, that pipeline -- the pipelines were operating safely then and continue to operate safely today.

Q Okay. Now, you mentioned in your answer the fact that have you pressure tests on all of these pipelines. I put up on the screen -- hopefully it's in front of everybody, and we handed out hard copies to the parties here.

First, what is up here now is a graph entitled, "Line 147, Segment 109 MAOP Analysis." And Segment 109 is one of those on which an error was found; is that right?

A That's correct.

Q Okay. Could you please describe what this graph shows and how it gives you confidence about the safety of this segment of pipe?

A Okay. First, let me articulate a

couple of acronyms that we use a lot on the engineering side of the house for those that may not be intimately familiar with this work. I'll use the term MAOP on many occasions. That stands for Maximum Allowable Operating Pressure of the pipeline or the pipeline segment in this case. And also the term SMYS, or S-M-Y-S, is used extensively. That stands for Specified Minimum Yield Strength or the strength a piece of pipe has before it would start to deform or yield.

On this particular graph for Line -- for Segment 109, the chart -- the bar on the left is our MAOP per design. That is if we were to operate this segment of pipeline at a hundred percent SMYS or a hundred percent Specified Minimum Yield Strength, what the pressure would be. And I need to point out that this number, the 660 pounds, is utilizing our current, very conservative assumptions that we have in place as part of our MAOP validation exercise.

Q Okay. Let me interrupt you there.

A Okay.

Q When you say, "using the current, very conservative assumptions," are you saying that is after making the correction to

the prior assumption that was found to be erroneous?

A That's correct. It is -- it is utilizing the information we have today after we've fixed that error, and it includes, again, very conservative assumptions based on analysis we've done as part of our MAOP. So the assumptions are very conservative compared to what we physically know may be there.

In this specific case, the calculation allows for 600 -- I'm sorry. In this particular case, the analysis allows for 660 pounds if we're to operate at a hundred percent SMYS. The test pressure that this segment of pipe underwent, the lowest test pressure any segment of this pipe saw was 607 pounds. That does not include the spike test that was also conducted on this pipeline. So the pressure test itself actually went to a much higher level than what is showing here. But this is the lowest pressure of any segment at the highest level saw during the test.

If we utilized just the factor of 1.5 for Class 3 location, the third bar shows that just utilizing the test pressure alone on a standalone basis, the operating pressure

for this pipeline could be 404 pounds. If we operated it only looking at the maximum allowable percentage SMYS, it can operate in a Class 3 location "one class out," that's 60 percent. 60 percent of the 600 -- 60 percent of the 607 is -- excuse me -- of the 660 is 396 pounds.

And we are currently operating the pipeline at 330 pounds, which is 50 percent SMYS. So well below what we tested the pipeline at and well below the other criteria one might look at. At 365 pounds on the right, what this shows is the operating margin is at least 40 percent when compared to the original request of 365 pounds. And again, that does not include the spike test that went into the pressure test itself.

Q When was this pressure test done?

A This pressure test was done in 2000 -- this particular one was done in 2011. There was a previous pressure test in its original installation in 1957.

Q The -- the next graph shows bars for Segment 103 on Line 147. Are these bars -- do they -- are they made up in the same way -- derived in the same way as you just described for Segment 109?

A Yes. It's essentially the same

information we have for Segment 109. And I just went through -- and again on the right-hand side, it shows the same safety factor -- or 40 percent safety factor comparing the hydrostatic test that occurred on this segment compared to the request we had originally of 365 pounds. And again, the 612 pounds does not include the spike test that this segment also saw.

Q And then the next graph is for Segments 103.1 and 103.6 on Line 147 that are also discussed in your verified statement. What does this show in brief with respect to those segments?

A This is again the same information I shared on Segment 109, again showing on the right-hand side that if you compare our request of 365 pounds to what that segment -- this segment saw during its hydrostatic test -- most recent hydrostatic test, there's a 40 percent margin of safety if you don't take into consideration the additional spike test this segment also saw.

Q And last, there is a graph with respect to Line 101, Segment 167.2 that is also discussed in your verified statement. And what does this show?

A This -- this is a -- in essence the

same information that we saw on Segment 109. This is a slightly different issue, but again, the SMYS -- the request that we had of 365 pounds for this particular line and the level of the pressure test again showing the 44 percent margin of safety between the two pressures. And this also shows both the MAOP of 396 if it is to operate "one class out." And what the MAOP of that line is if it operates within class if it were a new pipeline today of 330 pounds.

Q Now, from -- in your engineering judgment, does the data that you just discussed on these four slides with respect to the hydro tests on the pipe segments that the company reported to be erroneously included or to have erroneous information included in the October 31, 2011 pressure restoration filing -- does this information from an engineering standpoint lead you to a conclusion as to whether or not those errors raised a safety issue?

A Yeah, in my opinion those errors did not raise a safety issue. These pipelines saw the same pressure test regardless of that information, and the pressure test is what we ultimately rely on to show that our pipelines are safe.

Q Okay. And would it be fair to say that that engineering judgment is independent of whether the pipeline regulations would let you operate at the 365 level?

A Correct. We are -- I am looking at this from an engineering and safety perspective, and in my opinion it's safe to operate these pipelines given that we have this hydrostatic or pressure testing information.

Q In this morning's session, which you were not present for, there were questions raised as to whether the error with respect to Segments 103, 103.1, and 103.6 on Line 147 -- where the MAOP validation report incorrectly listed seamless pipe was the same type of error and raised the same issues as on Segment 180 of Line 132 where the accident took place. Is it the same?

A No, I don't believe they have anything in common. This particular pipeline has seen a hydrostatic test. It has seen one with a spike on top of it. So it's a current test at the highest pressures you're going to see, and it has been tested well in excess of anything that is currently operating. So in my opinion, they're not similar in any way, shape, or form.

Q All right. I want to change subjects now, Mr. Johnson, and ask you since the receipt of the order showing cause -- order to show cause setting this hearing, have you done anything to assess the impact if any of the Commission immediately suspending all of the pressure restoration orders?

A Yes, I requested our Gas System Planning Group to go back and share with me what the implications to our system would be if we were to rescind all of those pressure increase orders.

Q And does this chart that's now up on the screen -- does that contain the results of the analysis done by system planning?

A It does. This is -- this is the chart that they responded to my request with.

Q Okay. And can you just briefly tell us what this chart shows about the potential impact on the system of the Commission immediately suspending the pressure restoration orders?

A So this is -- this is the analysis of what would happen if we were to reduce the pressure on Line 101, Line 147, line 132A, Line 131 and the toll all of the pressure

restoration requests that PG&E has submitted. If you move from left to right -- well, let me first start with the system. The system is -- there's four systems impacted by this activity. The first one is the San Francisco Peninsula, that's essentially everything north of Milpitas as we move towards San Francisco. The San Jose, Morgan Hill area is obviously south of Milpitas and to the west. The East Bay incorporates everything going up the East Bay section from Milpitas up to the area of Oakland. And then the central coast is down through the Santa Cruz area.

On a typical winter day, as you can see by all the green boxes, everything would continue to operate normally. We would be able to meet the needs of all of our core and noncore customers. The same holds true if we just see a typical winter day -- a cold winter day as we call it, which happens approximately every one in two years. So we would be able to meet all our core and noncore customer needs also in all those three areas -- all those four geographical areas.

As we get colder, as we start to get toward what we call an abnormal peak day, a one in 90 year event and one in 10 year

event, which is somewhat the mid point between a cold winter day and abnormal peak day, we start to see the same type of impacts to our core and noncore customers that we discussed when we first started requesting these -- the ability to raise the pressure on our pipelines.

Specifically to the Peninsula, with all of these pressure reductions, we have core curtailments to the city of San Francisco. This situation hasn't changed in the last three years. We have 100 percent curtailment to all of our Peninsula noncore customers. That includes all the schools that are noncore, the hospitals, some of our large steam plants that produce steam for heat in the area, and about 240 megawatts of power generation or co-generation facilities up and down the San Francisco Peninsula also. It's a significant concern for obviously the Peninsula area.

For the other geographical territories, it shows that the -- of the noncore customers in those regions, they would be required to curtail 50 percent of their gas usage or reduce 50 percent of their gas usage during this time period. And below that it indicates how many megawatts of power

would be impacted by such an order.

I just want to caveat that with the note at the bottom that obviously before we take these actions, we work with the ISO and make sure what would happen and how we would cycle those. But it's a pretty significant event if we got past a cold winter day should we rescind or suspend all of these pressure restoration orders. And quite frankly, all of these pipelines have been pressure tested as we stated earlier. And in my opinion, there is no need for any of these -- any of these orders to be suspended.

Q Last couple of questions for now at least from me, Mr. Johnson. From your perspective as Vice President Gas Transmission, Maintenance, and Construction, are PG&E's gas transmission records reliable?

A Yes. As I sit here today, I have a system that is available to me that covers all 6,750 miles of PG&E's gas transmission system for which I can find records to validate any segment of the pipeline in the system, and they have proven to be strong. I believe they are some of the strongest records we would find in the business.

Q Mr. Singh, please take the microphone. As disclosed in the July

submission, which in this morning's session was marked as OSC Exhibit 1 and discussed in Mr. Johnson's verified statement that we filed last Friday, PG&E identified errors in the MAOP validation to four segments of like 147. You were in charge of the MAOP Validation Project at that time, correct?

WITNESS SINGH: A That is correct.

Q Is it fair to say this happened on your watch?

A It did.

Q Now, before we talk specifically about these errors, I'd like to make sure that we all have kind of an overall understanding of PG&E's MAOP validation effort. So would you please give us a brief overview of that effort from the beginning to today? And I'm going to put up here a diagram, I'll call it, that may help to help you discuss that topic and illustrate what was done.

A Well, I'd be happy to do that, Joe.

So we're going to start with left to right, and we'll cover the bottom part of the chart and then we'll move to the top part of the chart. The MAOP Validation Project was initiated as a result the NTSB recommendations that PG&E received beginning

of January of 2011. It shortly became a CPUC directive. And the NTSB recommendations and the directive stated for PG&E to aggressively and diligently search for as-built records, which includes design drawings, material specifications, testing records, and other construction-related records to validate the MAOP of pipeline in HCAs or High Consequence Areas, defined as any pipeline in Class 3 and 4 or High Consequence Area in Class 1 and 2 without prior hydrostatic strength tests.

Those were the NTSB recommendations and the CPUC directive at the time of the beginning of January of 2011. From that point in time, PG&E embarked on aggressively and diligently following that order, which included first identifying and obtaining the actual strength test records for the pipelines in the High Consequence Areas, traceable, verifiable, and complete strength test records as stated in the NTSB recommendation. That effort lasted from January through March of 2011. And on March 15th, 2011, PG&E made a filing to the CPUC.

And the reason why we embarked on first identifying our strength test records is because in order to comply with the NTSB

recommendation of doing MAOP validation for where we did not have a hydrostatic test, we first needed to know where did we have hydrostatic test in order answer with the traceable, verifiable, and complete records. In March, we also made a supplemental filing on the 21st of 2011, which included the MAOP validation methodology that PG&E was going to follow for meeting the requirements of the CPUC directive and the NTSB recommendation. At that point in time, we also established a compliance plan with CPSD then, Safety and Enforcement Division now as part of this process.

Q What was the compliance plan just to be clear?

A The compliance plan covered the CPUC directive that was issued the beginning of January of 2011, which was in accordance with the NTSB recommendation, which I cited earlier the description of.

At that point in time, PG&E embarked on reviewing all of the material specifications associated with construction records, material specifications using an interim safety measure of MAOP validation based on design specifications to identify if we were commensurate and operating the

pipelines commensurate in accordance with the existing MAOPs.

This effort was not a substitute for strength test records or doing a strength test. We completed that commitment in August of 2011. And beyond August of 2011, we continued to validate the MAOP for the rest of our system. And between August of 2011 and January of 2012, we completed the MAOP validation of all HCA pipelines, which included the pipelines where we had prior strength test records and which was above and beyond the scope of the initial NTSB recommendations.

Starting in January of 2011 or 2012, we continued the validation effort for all of our non-HCA pipelines, which continued through April of 2013. And what I'd like to explain there is why you see the graph go back down to zero is because as we did the MAOP validation for our HCA segments during the first year in 2011, the validation was done on a segment-by-segment basis. And these segments are noncontinuous segments across our entire 6,750-mile system.

As part of our non-HCA effort, we not only did the non-HCA segments, we went back and did the HCA segments because the

most efficient way to do the MAOP validation is from a pressure-limiting station to a pressure-limiting station. An example would be from Line 101 Milpitas Terminal to the Lomita Park Station. This also allowed us to leverage the learnings from the first year of our MAOP validation process. This was a continuous improvement and a continuous enhancements that were being made as part of this overall process.

The process as we've looked and discussed with other operators was an unprecedented effort, unique in its nature. We did not have the luxury to go to another operator and leverage a process that they already have in place. However, what we did not do as part of the February 2012 to April 2013 timeframe is go back and redo Line 101, 132A, and Line 147 because at the time, we had completed those validations from pressure-limiting station to pressure-limiting station. That's the bottom part of the graph as well as the lines that you see on the charts which correlate to the mileage of HCA and non-HCAs.

Next, I'd like to move to the top part of the chart. And before I get into the acronym of QA, I want to take a step back and

define QC, which stands for quality control, versus QA, which is quality assurance, and how PG&E applied both of those elements as part of this process. What you don't see on this chart, which we'll get to in subsequent slides is quality control. Quality control is embedded within the process, and we'll see a graphic of that in the next several slides. And the objective of quality control is to ensure that it's meeting the overall objectives that have been outlined by this respective process.]

And that objective was to meet and to speak recommendation with the methodology that we submitted to the Commission March 21st of 2011 and applied that same methodology for our entire system.

Quality assurance has been used. And how we've applied it here is to ensure that the quality control elements that are embedded within the process are effective and are rendering the desired results of the process. Quality assurance is performed by an independent audit firm throughout the duration of this project.

However, the quality assurance evolved over time both in breadth as well as depth as the process evolved. It was quality

assurance as part of the initial strength test record research work that was done. It was quality assurance implemented as part of the subsequent MAOP validation work that was done in various aspects of our process.

And we did have and continued spirit of process improvements continuous enhancements to introduce additional quality assurance over the course of this project. We'll touch on those again in the next several slides.

Q Just to make one thing crystal clear, from this graphic, the dashed line roughly in the middle of the timeline -- what does that represent?

A That represents the date that we submitted the pressure restoration filing for Line 101. And it should state 132A -- not 132 -- and Line 147.

Q Would it be correct to say, then, that the MAOP validation for those three pipelines was done by your team prior to the time of the filing?

A That is correct.

Q How, if at all, does the MAOP validation process deal with additional information that may, for example, come from hydrotesting or other pipeline excavations?

A So MAOP validation is not a one-time method. It's not a "one and done." This is the baseline. And it's a system and a process that we implement.

What does that mean in the case of the question that you posed is as new information comes in through field excavations because every time we open up a pipe either to do strength test or for some other operational purposes, we have an opportunity to obtain knowledge about our assets. That's exactly what happened on Line 147.

We identified a discrepancy. The discrepancy was communicated to the appropriate subject matter experts. It wasn't a blind eye that was taken to it that this is maybe an anomaly. Went back and rereviewed the entire line, Line 147. Further expanded that to Line 101, 132A, 131, Line 300A section side. So all pressure restoration lines. And it's a continuous system that we have implemented of find it and fix it because when it comes to safety, our work is never done.

Q The order to show cause suggests that finding the error in the MAOP validation record for Segment 109 on Line 147 was

fortuitous.

Do you agree with that characterization?

A I do not agree with that characterization.

Q Why is that?

A If you actually go to the next slide -- before you go to the next slide --

Q Are you trying to get ahead of me?

A The reason why it's not fortuitous --

Q Fortuitous.

A -- thank you -- is because of the concept that I was just explaining. It's part of a safety management system. Finding it and fixing it.

We had a delineation or an assessment that was made by an engineer as part of the MAOP validation process, which was included in our records as part of our leak survey process, which is our normal ongoing process for operations and maintenance. We identified a leak. Took action to repair that leak.

As part of that leak repair process, engineer identified that there was a discrepancy between what was in the record versus what's in the field. Flagged it.

Communicated it to the appropriate subject matter experts.

And that information was then used to identify is that an insular issue? Or do we have additional issues on that same segment or same section of the pipeline, entire pipeline, Line 147?

And as a result of that rereview and that additional diligence, we identified additional segments that did not -- based on what was in the field versus what was in the records, did not match. And those are segments that Mr. Johnson earlier alluded -- Segment 103, 103.1, 103.6.

Q Would you say that this is an indication of a process working or a breakdown?

A I would say that this is how the process works. And that's how we know we have made changes within the company. It's a model of find it and fix it. And we're going to continue to find it and fix it.

Q You mentioned earlier the March submission that the company made. I believe it was on March 21st of the MAOP validation process it planned to follow. In Decision 11-06-017, decision determining Maximum Allowable Operating Pressure methodology and

requiring filing of natural gas transmission pipeline replacement for testing implementation plans, the Commission ordered PG&E to proceed with that.

And in Finding of Fact 4, the Commission said -- and I quote -- "MAOP determined by component calculation is useful for prioritizing segments for interim pressure reductions and replacement or pressure testing. But MAOP determined in this manner is not reliable enough for permanent pipeline operations."

Do you agree with that statement?

A I do agree with that statement.

Q And is that how PG&E has used the MAOP validation?

A That is exactly how PG&E has used the MAOP validation process. And as a result of the MAOP validation process, we identified over 200 different instances that resulted in a pressure reduction and were subject to a pressure reduction. That correlates to approximately 500 miles of our system, which is made up of 6,750 miles. It's about seven percent of the system.

Q Okay. Now, I want to transition to talk about the errors not so much to dig down into the weeds on those errors, but so that

the Commission will understand them in context and in the context of what degree of confidence they should have in the overall MAOP validation effort and the company's records.

First of all, let me ask you we have errors in four segments on Line 147. Was all of that MAOP validation work done by a single engineer? Or were these multiple engineers?

A It was all done by single engineer at that same point in time following same process.

Q So now let's turn to the Segment 109 error. And we put up here a diagram entitled "MAOP Validation Process, Line 147, Segment 109 Engineering Analysis." The first question I'd like to ask you before you walk through this is in the top left upper left portion, it says October 2011 process.

What does that signify?

A What this signifies this is the process for engineering analysis that was followed during the time of the pressure restoration filing. And that's evolved over time as we'll see when we get to December 2011.

Q Okay. With that explanation, would you please describe for us what this I'll call it flow diagram shows both about the MAOP validation process and the errors that were made with respect to Segment 109.

A So before I walk into this detail, let me just take a quick step back and discuss at a high level four phases or four major steps in the MAOP validation process. First step starts with records collection. Second step is what we call a pipeline features list abbreviated as PFL. And what that is is reviewing all of the records in detail that are available as part of the as-built records for that respective pipeline, transposing each of those features into a spreadsheet.

An example of a feature is a pipe, a valve, a bend, all of the respective components of a pipeline including the associated materials specifications as well as the strength test information that ties back to an actual strength test record. There are no assumptions made as part of that pipeline features list built process.

The next step to the third step of the process includes engineering analysis. And that's what I want to walk through here.

And the fourth and final step which is actually shown up there is after we go through the engineering analysis, it goes through MAOP validation.

With that framework and that context, let's do a deep dive into the engineering analysis process. So starting from the left, if there are any specifications that are unknown as part of the records process is the first question that the engineer in this step asks. If the specifications are known based on the records, go through and do the MAOP validation.

If the specifications are unknown, next question engineer asks is was this pipeline acquired from another operator? Or was it a pipeline that PG&E engineered and procured and provided the oversight for construction?

If the answer is pipeline was acquired, the assumptions that are used are in accordance with the federal code or those that are minimum values based on the manufacturing information for this specific industry.

However, if the pipeline was engineered by PG&E, then move on to the next

step in the process. And it's at this point an engineer asks do they have any information about that pipeline? If they don't have any information, they go back to the federal code assumptions.

However, if the engineer does have information regarding the installation here, the outer diameter, examples of some specifications that we typically found on most of our records. The engineer proceeded to use our conservative engineering standards which are based on a historic material specifications as outlined in our March 21st, 2011, filings.

The engineer also looks at related job documents. So the documents associated with the pipeline features list. They also look at and use their engineering and construction knowledge and rely on field excavation results, if they're available or called for a field excavation as part of the process.

So the engineer makes the assessment, goes through a peer engineer review. The engineering QC then moves on to the MAOP validation process.

In the case of Segment 109, a couple of things happened. First, the

engineer assumed a value of joint efficiency of 1.0. And reason why this happened is they incorrectly applied the conservative engineering assumption standard which states 0.8. Had that been appropriately applied, the value the engineer would have used here was 0.8 instead of 1.0.

In addition to that, the engineer failed to identify that this was an assumption. So as part of the subsequent review process had that taken place, that would have been a flag for the reviewer.

Third thing that happened here is the peer engineer review and the engineering QC review -- we were not able to identify any documentation that those two steps occurred as part of this process.

Q Okay. You used a couple of terms in there that I want to make sure everybody is clear about. The first one you used was joint efficiency factor. And some of us know from prior proceedings what that means, but not everybody.

Could you briefly explain what that is?

A The joint efficiency factor is based on the seam type of the pipeline. And it correlates to the strength of the long

seam weld of the pipe.

Q And what does a joint efficiency factor of 1.0 signify?

A It signifies that the long seam weld is as strong, if not stronger, than the base parent metal.

Q Does that mean then that a 0.8 would indicate that the seam is assumed to be less strong than the base metal of the pipe?

A That is correct.

Q And how is that joint efficiency factor used in determining the MAOP of a particular portion of pipe?

A It's used as an input in the MAOP of design or what's also known as the bar load equation, which shows up in Section 192.105 of the federal code.

Q So applying that mathematically, if I use a 0.8, I would come up with a lower MAOP than if I used a 1.0; is that right?

A That is correct.

Q Now, you also refer to in this diagram has a blue box entitled MAOP validation. What does that stand for in your process steps? What does that do?

A That step of the process looks at three values of the MAOP: the MAOP of record, which is what is the MAOP that the

pipeline is currently operating at; the MAOP of the design, which I referenced to earlier; and MAOP established based on a strength test. I believe Mr. Johnson already covered that issue.

Q When you refer to the MAOP of design, is that calculated as a result of the MAOP validation process engineering analysis?

A That is correct. The data for that equation comes from as an input from the engineering analysis process.

Q Now, you said that the MAOP validation looks at these three values.

What does it do with them?

A As part of this process, it compares the MAOP of design to the MAOP of record. And if the MAOP of design is lower, then we take corrective action including pressure reductions or going out and doing field excavations to validate the actual specifications of the pipe.

Also, in this step of the process, we compare the MAOP established by the test to the MAOP of the record to ensure the MAOP of the test is also greater than the MAOP of the record.

Q Would it be accurate to say that the MAOP that you use at the end is the

lowest of these three values?

A That is correct.

Q Have you now explained the error that was made on Segment 109?

A Yes, I have.

Q Let's turn then to talk about the error that was made with respect to Segments 101, 1 -- excuse me -- 103, 103.1, and 103.6.

Would you please explain that with reference to the diagram that is now up on the screen?

A So this is the same process that we talked about before. So I'll focus your attention on the items that are highlighted in red on the right-hand side of that flow diagram.

In this instance, the engineer had a purchase record or purchase order for these specific segments which identified the pipe that was purchased as part of this installation job was seamless. And seamless gets a joint efficiency factor of 1.0 in the code as well.

There was another document which we call a transmission plat. And it's referenced as a secondary source of a document. And why we reference it as a secondary source is because it's not the

original as-builts. And we did not have the original as-builts for these segments of the pipe. The transmission plat is a secondary source where over time a mapping organization has referenced the as-builts and transposed them into what we call transmission plats.

And what the transmission plats showed was a designation of seamless and, on certain sections, a designation of VW, stands for butler. The engineer identifies this at that point in time, used the information as an input, and proceeded to use the purchase order that's more of primary source of the document in this case and used a joint efficiency factor of 1.0 and designated that specific section of pipe to be seamless.

Q Now, what should the engineer have done in the face of having two records that had inconsistent definition?

A The engineer should have used the lower of the value and used a value of 0.8. Engineer recognizes this and made a comment as part of the analysis that the strength test to be done in October of 2011 will validate the integrity of the seam.

Q And was that comment and judgment consistent with the procedures that the engineer should have followed under the MAOP

validation process?

A Any time in the process there were conflicts, records, or unknowns, the process required the engineer to identify the basis of the information. That's exactly what the engineer annotated as part of this. And the engineer also annotated that they used the purchase order for the respective joint efficiency.

Q I thought you said earlier that the process required in the face of conflicting information in the records to use the lower value. Did I misunderstand that?

A No. That is correct. You should have used 0.08. However, the engineer provided justification for what they believed to be the appropriate information in their judgment, the incorrect judgment.

Q You said incorrect?

A Incorrect judgment.

Q So it was an error --

A That is correct.

Q -- made by the same engineer who made the error on Segment 109?

A That is correct.

Q Now, you also indicated that the peer engineer review in engineering QC steps have errors here.

What was the nature of those?

A This is same exact issue as the prior segments because these weren't processed as separate segments. So think about Line 1473.8 miles as a spreadsheet -- Excel spreadsheet which has -- each of its rows has a pipe feature and it included all of the segments on Line 147. And that's what the engineer was assigned to do. And it followed the same exact process.

Q Now, we already talked before the fact that the MAOP validation work for Line 147 where these errors occurred was done prior to the end of October 2011.

At any time after October of 2011, did you make any changes in the MAOP validation process?

A Yes, we did.

Q I'm putting up another graphic that shows the same workflow and has some additional boxes rectangle and oval, I think that's called, which to my eye appears to be a light blue.

Using this diagram, can you explain -- well, actually, before I ask that, the heading at the top here where it] previously said October 2011 Process, here it says Enhanced Process-December 2011. What

does that mean?

WITNESS SINGH: A So what that means is, drawing back on my prior to statement, as part of this process, did not just set up the process and walk away from it. We implemented the process, we implemented quality control, quality assurance so that we can continuously understand where we can continue to enhance our processes, where do we have the potential for human error entering into the process because the reality of the situation is we had humans who did this work. And human error cannot be eliminated but it can be managed and controlled. And that's the ledge that we approached the MAOP validation process from. We brought in process experts. Some of you know the Lean Six Sigma methodology. Bringing in folks that look at processes, identify where do we have controls, the desired output, how effective are the controls, and how can we continue to enhance the process.

And that's what this shows here is in December 2011, we identified the engineering analysis step in the process as an opportunity for us to further implement greater controls and rigor and

standardization in this step of the process.

Q And before we get to that step, Mr. Singh, let me ask you a question that somebody's going to ask you which is, this enhanced process you implemented in December of 2011, that's only two months after the completion of the Line 147 MAOP validation. Is there any causal connection between the 147 analysis and the errors that we know today exist and your implementation of that enhanced process in 2000 -- in December?

A No. It was agnostic of that because the errors weren't identified until October, November time frame of 2012.

Q So now that we're clear on that, could you please go ahead and explain what enhancements you made in December 2011 to the engineering analysis portion of the MAOP validation process.

A We made several enhancements. We implemented a automated assumptions tool so when this allowed engineers to do is instead of going to our book of conservative engineering standards, use the automated tool to identify what is the conservative assumption for that respective unknown specification. And this tool, instead of

becoming just a toolkit for the engineer to solve the unknown, it was required to be mandatory as part of this step of the process.

In addition to that, we implemented a second tool which we call our engineering data validation tool. What this tool does is it looks at business validation rules and identifies do we have any anomalies in our data set, an example being do we have pipelines greater than a certain diameter that are seamless, in addition to other validation checks which we know from an industry manufacturing standpoint never existed. These are the types of tools that were -- the two tools that were mandatory as part of this step of the process.

In addition to that, we implemented and expanded the role of our independent audit team to also begin and initiate a QA process within the engineering analysis phase not only to ensure that the tools were implemented but also to ensure that each of these steps from a QC standpoint were implemented in terms of peer engineer review and engineering QC.

Q Let me ask you a few follow-up questions on that.

First of all, am I correct that it was as of December 2011, the use of these two tools that are -- that you described and that are identified in the blue rectangle on this flow diagram went into effect, that became mandatory December of 2011?

A Correct.

Q Now, I want to make sure that we all understand what the automated assumption tool does.

So Mr. Johnson's verified statement describes that on Segment 109, the part of the pipeline features list that was pulled off of the existing documents identified it as unknown greater than four inch. Do you remember that?

A I do.

Q And so if this automated -- if this process that went in in December 2011 had been run against the pipeline features list for Line 147, what would it have shown with respect to the joint efficiency factor for that Segment 109?

A It would have showed a value of .8 and also flagged the engineer that the assumption that the engineer made was inappropriate and not in accordance with our conservative engineering standard.

Q So when you say this is an automated tool, it's not altogether clear to a layperson what that means. Can you elaborate a little bit more on what you mean by automated. And you've just given us an example of what it would do, how it does that.

A Sure. I'll give you a before automation and a after automation example just so that keep it in reference.

Before the automation tool, the engineer is required to review our conservative engineering standard which we call pipeline resolution of unknown features. It's a 40 to 50 page document which includes the compilation of our historical procurement practices and material specifications. In this scenario, the engineer would have identified the outside diameter from that pipe when was it installed, go to the standard and identify based on the appropriate table that's referenced in the standard of what value should be used. That showed .8.

What the automated tool does is it takes that logic that I just walked through and automates that so that all the engineer has to do is click a button in Excel and it

automatically uses that logic and populates that value in accordance with our standards.

Q Would it be accurate to say then the automated tool eliminates the possibility of an engineer going to the paper document that had all those conservative assumptions and landing on the wrong value?

A That is correct.

Q All right. Now, the last piece of the enhanced process that you described for December 2011 was adding the quality assurance at the engineering analysis stage. Did that QA process at that stage provide you with any indication of the accuracy of the engineering analyses that were being done?

A Yes, it did. And the engineering analysis QA wasn't done after the project was completed. It was done on a weekly basis based on the population of the features list completed during that week using a statistically valid sample to identify the accuracy results. And what that shows is a overall error rate of less than 1 percent, which was .9 percent, for all of the pipeline features list that were reviewed as part of this process. And what was reviewed as part of this process applying what you see here,

which I've covered in my first slide, is when we went back and did the non-HCA sections, we also redid the HCA sections following this process with these controls in place. So the number that I just mentioned to you includes and encompasses the HCA and the non-HCA.

Q Now you told us earlier that when you did that revalidation, if I may call it that, of the HCA pipelines as part of completing the non-HCA starting in January of 2012, you didn't do it for the pressure restoration pipelines. Have you since done anything to revalidate the MAOP validation of Lines 101, 132A and 147?

A Yes, we have. We have not only gone back and applied these tools as a result of the issue identified back in October-November of 2012, we have also gone back and rereviewed all of the records associated with those three pipelines. And that rereview effort is what identified the additional issues on 103, 103.1 and 103.6 segments from Line 147. In addition to that, we've also done a similar process for Line 131, Line 300A suction side, and we're going back and rereviewing our entire data set again, which initially has already gone

through this process but going back and reapplying the automated assumptions tools for the entire 6750 miles, also going back and reapplying the engineering data validation tool.

Q Focusing just on the pressure restoration pipelines -- so Line 101, Line 132A, Line 147, Line 131, the Topock compressor station -- did that rereview identify any specification changes other than the ones that have been reported as errors here that caused the MAOP of any single feature or segment of any of those pipelines to decrease?

A No, it did not.

Q Now at the beginning of your testimony, Mr. Singh, I kind of put you on the spot by saying these errors occurred on your watch. And that kind of seems harsh, but I wanted to underscore you're the man who's responsible for this process. And so I want to ask you now that we've gone through all this, based on everything you know about the MAOP validation including the errors that we've identified and the current state of PG&E's records, do you have an opinion as to whether or not the company's gas transmission records are reliable?

A Yes they are, in my opinion.

Q And why is that your opinion?

A First, in excruciating detail we have reviewed more than 3.8 million documents associated with 6,750 miles. That correlates to half a million, more than half a million pipeline components, several million MAOP specifications to identify traceable and verifiable records using a process that has layers of review, including an independent audit firm that's done the quality assurance.

And not only that, we have implemented a change in the culture, in my opinion, which consists of find it and fix it. And that's exactly how this came about. It identified the issue in 147, identified what are the associated implications to those specific lines to the rest of the system. And we're going to continue to do that. And we're also going to continue to be open and transparent.

MR. MALKIN: Thank you.

That's all the questions I have, your Honor.

ALJ BUSHEY: Thank you, Mr. Malkin.

I assume we have cross-examination. Estimates of cross-examination?

MR. GRUEN: Well, your Honor, this is

Darryl Gruen for Safety and Enforcement Division.

COMMISSIONER FERRON: Microphone.

MR. GRUEN: Yes, sir. Thank you, Commissioner Ferron.

Thank you.

Your Honor, Darryl Gruen for the Safety and Enforcement Division.

Certainly in light of this presentation, it's a robust amount of direct testimony that we're being -- that parties other than PG&E are being exposed to for the first time. Safety and Enforcement Division, we could proceed with the cross-examination we had prepared to explore and probe the statement that had been provided prior to -- last week and we could do some cursory questions now, but we would ask to go back and have the opportunity to do -- to look at the transcripts, review the presentation in more depth, and do more in-depth discovery on what has been presented on direct at this time.

ALJ BUSHEY: Do the other parties agree with Safety and Enforcement Division?

MS. PAULL: DRA does, your Honor.

ALJ BUSHEY: We'll be off the record.

(Off the record)

ALJ BUSHEY: We'll be back on the record.

While we were off the record --

I'm sorry. We'll be back off the record.

(Off the record)

ALJ BUSHEY: We'll be back on the record.

While we were off the record, we set the schedule for the cross-examination from the other parties. That will take place on a date to be set some time after October 15.

In the meantime, the other parties will propound discovery to PG&E. PG&E will endeavor to respond in ten days.

For today, we'll have questions from the commissioners who have attended today's hearing.

Who would like to begin? Commissioner Ferron.

EXAMINATION

BY COMMISSIONER FERRON:

Q Thank you very much.

Thank you gentlemen for attending.

Mr. Singh brought up in his closing statement the issue of culture change as being one of the key considerations in why

the people of California should be able to rest safely or securely that the pipeline system is safe. I'd like to address that to Mr. Johnson.

I understand you've been with PG&E for a number of years.

WITNESS JOHNSON: A I have.

Q And I would imagine that PG&E's approach to the issue of safety and importantly the public's perception of safety has changed recently. I just wonder if you could characterize the nature of PG&E's approach to safety and the transparency as with regards the public.

A Certainly.

Yes, I have been with PG&E for quite some time. 33 years and counting.

I would say the approach to safety we have today is -- Sumeet mentioned find it and fix it. I would say from my perspective in terms of maintenance and construction is find it before it finds you.

So we spent an enormous amount of time and energy looking for any possible issues that could cause us any safety concerns or, frankly, operational concerns on our gas transmission pipeline and our distribution system. And I think we have

turned a corner in terms of our employees doing exactly that.]

We see it each and everyday. We see pictures sent in from employees with their concerns. We see people raising issues up that may not have been raised up in the past. And frankly, I think while we are certainly unhappy with the issues we're talking about today, both Sumeet and myself, I think what we saw happen on Line 147 is a very good example of what our team is doing and what we expect them to do, which is they go out in the system and ask the very questions we want them to ask. Is this safe? If not, what do I need to do? And if I see something different than I'm expecting, how do I get it fixed?

So I believe it's changed significantly. We have a ways to go we still have a lot of testing to do, but we've made progress.

Q I guess I would like a little more organizational context. Who do you report to in the organization?

A I currently report to Jesus Soto, Senior Vice President of Gas Transmission.

Q And Mr. Soto reports to?

A Nick Stavropoulos.

Q And Mr. Stavropoulos reports to?
A Chris Johns.
Q Your verified statement laid out in some detail the timeline of events surrounding Line 147. When were you informed of the discrepancy relating to that line?
A I don't remember the exact date, but it was either late October, early November, shortly after the leak was found and dug up. So it was very near the time period where the crews have dug up the leak to inspect it at first.
Q So I think Item 27 in your testimony talks about October 18th the crew exposing the pipe and realizing that there's a long seam weld. And then it looks like a week later, it was confirmed that it's AO Smith pipe. So you would think it would be around that time?
A It was certainly very close to that timeframe. A leak on the transmission system is not a common event. I would certainly expect to hear about any of them. And since this was a unique situation of how we repaired it, certainly I was aware of that.
Q And there was an e-mail from the pipeline engineer on November 14th. Do you recall if you would have received that

e-mail?

A I saw that e-mail. It wasn't sent directly to myself, but I did see that e-mail.

Q Okay. So if I could, when you were first informed of that information, who did you inform up the chain of command?

A I honestly don't recall exactly who I would have told at that time. That was sometime ago.

Q But presumably it would have been Mr. Soto in the first instance?

A It would have presumably been Mr. Soto.

Q And Mr. Stavropoulos?

A I -- I don't know.

Q Do you think this particular piece of information which came to light in November was a significant -- you describe it as unique. Would you describe it as a significant safety concern?

A At that present time, it was not a safety concern at all. The pipeline was operating at 300 pounds. It was well below even the MAOP at that point. Our engineer -- the first thing that they are trained to do and know to do is when we're going into a situation where there's a leak or some other

activity is to make sure the pipeline is safe. They run a calculation that indicates what pressure the pipeline can operate it. It was operating well below the associated pressure given the information the engineer had, so there was no safety concerns at all when we ultimately dug that pipe up.

Q But in turn going back to the issue about public perception of safety, do you think that the public had a reason to be informed concerning that situation?

A Frankly, I wasn't thinking that way and wasn't concerned about that. We have reduced pressure on well over a thousand miles of pipe over the last year-and-a-half. We do it as a routine course of business, whether it's findings from our MAOP activity, findings of leaks, parties hitting our pipelines, parties working over top of our pipelines. It's just a routine event for us, and frankly we don't normally communicate with the communities that we're lowering pressures in the pipeline. It is a very routine event.

Q How frequently have you found the discrepancies between what you understand to be in the ground and what you find upon just kind of investigation?

A This -- this particular one is the only one I'm aware of that happened as the event of routine maintenance, if you will, or routine work. And we have laid out every other finding of significance we have had in my -- in my statement.

Q So there -- to your knowledge, there are no other such circumstances similar to this?

A I'm not aware of anything else. We've reviewed the MAOP documents for all of the pipelines that we've requested pressure increases, and I believe we've laid out every instance where we found anything of significance in this document.

Q I have to say I'm -- I'm somewhat disturbed that this event is -- is so unique, and yet to some extent in the public's mind, I could see how at the core of their concern is the -- the very terrifying reality that PG&E did not know what kind of pipeline it had in the ground.

And this is an instance of that -- of exactly what one would be concerned about, which is the presumption of seamless pipe turning out to have longitudinal seem. And I'm also surprised that this wouldn't have gone to the top of the organization and you

would have remembered that. It's certainly the sort of thing that I would think would stick in one's memory.

A Well, I -- and in all due respect, -- and I certainly understand the concerns the public might have. There is an enormous amount of work going on in our system. We are currently replacing 64 miles of pipe, automating valves, hundreds of miles of hydro testing, 300 excavations a year, routine maintenance. There is a lot of activities going on to. This isn't in itself the only thing that we were focusing on.

And as Sumeet pointed out earlier in our conversations, we've had numerous pressure reductions associated with findings that are coming about from the MAOP validation exercise. So we have had a lot of ongoing activities happening, and we continuously lower the pressure on our pipelines if we believe there's any safety activities associated them at all.

Q So in general you talk about a number of these instances, pipeline reduction -- I'm sorry pipeline pressure reduction and the like. How often have you informed Mr. Stavropoulos or Mr. Johns of these reductions?

A I think there's a -- there are some periodic reporting that we do, and we have a -- a notification that goes out when we reduce pressure. But I -- and I don't remember the exact number. I believe we have it -- have it with us here today, but there's probably in the range of 60, 70 of these events where we've lowered pressure.

WITNESS SINGH: A Specifically as a result of MAOP validation efforts, correct. There's the additional reasons that Mr. Johnson identified that we lowered pressure.

Q So it would have been 60 or so of these events?

WITNESS JOHNSON: A 60 or so of these events associated with MAOP activity. There has been numerous events where we lowered pressure just in the course of business somebody, working on top of the pipeline, somebody striking the pipeline, or having to do routine maintenance on the pipeline.

Understood. So out of these roughly 60 events or so, how frequently would you inform Mr. Stavropoulos and Mr. Johns?

A I can't specifically state how often that is done. There's a recurring -- we have a recurring notice that goes out to

the parties of all the pressure reductions in our system so everybody knows the status of those. It's probably on average once a month.

Q Okay. These events happen once a month?

A No, we update the system so all parties know about them once a month. It's a running total of all the activities in our system.

Q And how often do you meet with Mr. Stavropoulos and Mr. Johns to talk about the -- this overall validation process?

A In terms of the MAOP validation process?

Q Well, in general to give them a status update, you know, as -- in -- in your normal role as -- I'm sorry. I don't have your title here. As Vice President Gas Transmission, Maintenance, and Construction, how often would you meet with Mr. Stavropoulos and Mr. Johns to give them an update?

A I would normally meet with the -- we have a Pipeline Safety Enhancement Plan executive meeting every month that includes all the senior officers or their delegates for PG&E. Mr Stavropoulos and Mr. Soto

attend those. So at least once a month.

We also have Mr. Stavropoulos also holds a meeting with all of his direct reports once a month and directors and below, and information of this nature is also shared there. So I would say on average it's at least twice a month that those two parties are involved in discussions.

Q Okay. So it's reasonable to expect that given the weakness of this particular occurrence, he would have been informed in one of those two meetings in the next couple months following the event?

A I would say it's highly likely that it was discussed in one of those two meetings.

COMMISSIONER FERRON: Okay. That's all I have. Thank you.

ALJ BUSHEY: Thank you, Commissioner.

EXAMINATION

BY COMMISSIONER SANDOVAL:

Q Thank you so much, and thank you for being here today.

I have a -- I have a question about the representations made to the Commission in the document that was characterized as an errata regarding the finding of these issues on Lines 101 and 147.

So I don't believe you were here this morning, but Mr. Malkin characterized the statements on page 1 in that errata as an engineering conclusion. The statements are -- I'm reading from the errata. It says, "The errors," referring to the errors on Lines 101 and 147 -- "The errors do not raise a safety issue as each affected segment has been successfully hydro tested to a pressure that supports the prior MAOP."

Is it your understanding that that is purely an engineering conclusion and that it invokes no legal issues in terms of the interpretation of your duties under federal or state law with regard to -- to the pressure at which something may be operated or to any other duties in light of -- my understanding is that based upon federal law that you take into account not only validations such as MAOP, but characteristics of the pipeline.

So in light of the discrepancy that you have found, do you agree that this -- this statement that these errors do not raise a safety issue is purely an engineering conclusion, that it invokes no legal interpretation?]

WITNESS JOHNSON: A Well, I'm certain

not an attorney. I am an engineer. And so all of my conclusions are based on my engineering background. And what I would articulate is the errors that we found specific to, say, Line Segment 109, when we look at those issues from an engineering perspective, they do not raise any safety concerns.

Q Okay. So I think part of what you're trying to say is you're not in a position to say that this doesn't raise any legal issues. You looked at it as an engineer does it raise safety concerns?

Is that what you're saying?

A I'm saying that I am not an attorney. So, no, I can't speak to the legal issues. What I would convey from my position is that those issues -- those errors we found did not raise any safety concerns from an engineering point of view. The pipelines had been pressure tested at pressures well in excess that they were operating at.

If those pipelines -- pipelines historically operate as percentages of SMYS very similar to this one in very safe conditions. And so from that perspective, there is no engineering concerns or safety concerns from that perspective.

Q Okay. So let me just ask you a couple questions about that engineer assessment. So is it your understanding first of all that both the federal and state rules require you to take into account pipeline characteristics as evident by any physical evidence, the pipeline characteristics as well as documentation, in determining what the pressure should be?

Is that correct?

A Yes. In terms of calculating the Maximum Allowable Operating Pressure, I believe, for example, you need to know things like the wall thickness, the strength of the pipe, the diameter of the pipe, that sort of thing.

Q Okay. So is it your understanding then in terms of your engineering assessment that if you have an MAOP that shows that at least for an MAOP validation task such as a pressure test and/or spike test, that survival of that test would therefore obviate the need to consider the actual pipeline characteristics?

Is that your understanding of your engineering duty?

A I'm not sure I understand the question. But the engineering

characteristics always play into the engineering analysis of a piece of pipe. And that is one of the things you look at when you hydrostatically or pressure test it. So we want to know those features in general so that we don't test the pipe at, say, too high of a pressure.

So that information is important. It's considered when we look at our engineering analysis. But at the end of the day, what you really want is not a calculation, but you want a test that shows the pipe is good for pressures well in excess of what you would normally operate it at. We refer to that as pressure test, or lot of people talk about hydrotest.

Q Okay. So let me attempt to capture what you said in a way that hopefully better phrases my question so that what you're saying is that while you may rely on a hydrotest pressure test pipe test to do the maximum operating pressure validation, that does not eliminate the need and indeed the duty to consider what in fact are the actual pipeline characteristics?

A Yes. So what I would state is the actual pipeline characteristics are important ingredient of looking at the operating

pressure of that pipeline. And things you would look at in addition to that would be things like pressure testing and other issues associated with that.

Q But pressure testing alone doesn't substitute for knowledge about the actual pipeline characteristics. It may be one indicia of the ability of a pipeline to withstand certain pressure, but it doesn't substitute for knowledge about the pipeline characteristics?

A Well, it does not substitute for knowledge. But I think it's important to understand that a pressure test is I think the standard by which we put in front for purposes of operating our pipelines. And so when we talk about things like MAOP validation and records, I think it's well known in the industry that many operators do not have perfect records.

And, in fact, if you look at records from 1957, the things we would ask about today didn't even ever kept. Seam pipe, for example. If you look at a record back in 1957, seam pipe isn't even oftentimes listed on a strength test pressure report, if you will, whereas today you would see all sorts of excruciating detail.

But, ultimately, the information you have about your pipeline when you calculate the MAOP, that is an engineering calculation. The test is what verifies the pipe can operate safely at that level. So it's what we've termed I think previously as it's an interim safety measure until you can actually conduct a test on the pipeline.

Q Okay. I think part of where we're getting the rub here is that I think that the tests have been important but that the tests don't necessarily substitute, as you indicated, for what are the actual facts of the pipeline. So the tests are one indicia of strength and ability to withstand pressure, but the rules say that you're supposed to have facts -- accurate facts about the pipeline characteristics.

And that's I would imagine the pipeline characteristics -- I don't know enough about all the intricate operations, but they may be relevant not simply to pressure, but possibly to other issues. I'm thinking we're here, whatever.

But what I'm saying is that the validation through pressure testing one part of the process, but it's not the only part of the process?

A No. I would say it's the most important part of the process. So as Sumeet pointed out earlier, you would run a calculation on what the pipe could do knowing its specifications. You would pressure test that. And through the code, there are safety margins that are put into place. And you would pick the lower of those two to normally operate at.

But at the end of the day, a pressure test is the standard by which you want to operate your pipelines to. You don't want to fall back onto a calculation and say the pipe is safe.

Q Okay. Let me move on to a couple other categories of questions and a few other questions. So I appreciate your extensive efforts to do validation. And you said that you have investigated a number of pipes.

Does PG&E dig up every pipe with a Class 1 leak to verify the pipeline type?

A Well, first off, we normally have to dig up all pipelines with Class 1 leaks or Class 2 leaks to make the repair. So when we're doing a repair, any time we excavate a pipeline, we will go in and take a look at that pipeline and validate the information that we have. So whether we do it for a leak

repair or for opening up for construction reasons, say, to tie a pipeline in to do a pressure test or to do a dig just to do our integrity management system, all of those digs, if you will, all those excavations result in information about the pipeline that is fed back into our information management system so that we constantly keep it up to date and it gives us additional pieces of information.

To the extent we pull pieces of pipe out of our system, we oftentimes test those pieces of pipe to again give additional information about that pipe. And I think we talk about Line Segment 109 in this particular case where we're actually able to pull a piece of that pipe out as part of the long-term repair and actually tear it apart and physically prove to ourself that, one, it has strength well in excess of what we assumed in our calculations, our conservative assumptions, and that its seam factor is well in excess of what we did in our conservative assumptions.

So we're constantly taking all the information we have and comparing it to what our beliefs are and what our systems show for underground.

Q Okay. So that's helpful to know. And then related to that, you said that the information I believe it was about 147 that it didn't raise a safety concern because the pipeline was operating at 300 psi.

So my question though is did this or do you -- okay. Let's phrase from did this in the past however raise a safety concern for you about the discrepancy between the records that showed it was double submerged arc-welded versus what it actually turned out to be? There's a distinction here between a safety concern about psi versus a safety concern about the records.

Did it raise a records concern for you?

A It did raise a records concern. It did not raise a safety concern. I see those as very separate issues. As we've already discussed, we had tests on this pipe. We knew what it was capable of doing. Those tests are very very new tests including spikes.

So from a safety perspective, there were no issues. And the pipe was already operating at 300 pounds, well below even the MAOP, given the new conservative assumptions we put into place.

It did raise a records concern. And that's exactly why we went through the process that we identified in my statement about let's rereview this whole thing, what happened and what went wrong here. And I think Sumeet went into excruciating detail on what went wrong and what we found. But, yes, it raised a records concern.]

Q Okay. So maybe you've identified part of the rub here, which is do you believe a records concern is a safety concern?

A No. I believe they are separate or can be separate.

In this particular case because of the situation, there was no safety concerns.

Q Okay, once again I think we've identified part of the rub here.

So can you imagine a circumstance in which a faulty record would lead to a safety problem?

A Yes.

Q Right. So now with the benefit of the hindsight, can you see that a record discrepancy of this magnitude could raise a larger issue about the safety concern about records and thus your operation to the extent that your operations are relying on that record?

A I think I understand the concern that the public has about hearing that there's a records discrepancy again. No doubt about that. I don't want to minimize in any way, shape or form.

What I was trying to articulate is from a safety perspective, this did not raise a concern. Had we been operating a pipeline or if there was a scenario where the pipeline was operating at a very high pressure and we dug up a pipe and find it not to be what we thought, maybe a thinner wall than what was in our records, that would be a safety concern. That would merge us into immediately reducing the pressure in that pipeline.

In the case of Line 147, we didn't have that problem because the pressure was already reduced significantly from where it previously operated at.

Q Okay. So I think that this is part of the fundamental rub is that we might have a difference of opinion about whether a record discrepancy raises a larger safety concern. Because even though the operational pressure on that particular segment might be lower, does it raise a bigger concern about the accuracy of the records and thus

the operations for other parts of the system.

And so to the extent that there are such record discrepancies, I would suggest that a bigger flag needs to go up about the safety issues and to connect those two, to not treat those two as separate issues but as integral issues.

Is it your approach to treat records concerns as safety concerns?

I mean, is that your intent going forward, to treat record discrepancies as safety concerns, that we're going to make you do a systematic assessment of the system?

A Well, I think from our perspective, if you find records issues going forward -- and as we dig up pipe, we may indeed find where our records say one thing and it's something else -- we will be looking for mechanisms in our effort to continuously get better to, okay, we found the circumstance; how do we make sure it doesn't exist anywhere else on our system.

That's just part of any process of continuous learning.

So from that perspective, that's exactly what we tried to adopt and I think that's what Sumeet tried to lay out today is we found a problem. There's no -- this is

what we found, how do we make sure it doesn't exist anywhere else?

If this same situation or something similar showed up somewhere else for whatever reason, we're going to have to go through that exact same analysis: What can we do to make sure that it's nowhere else?

It's about getting better and better every day.

Q So my very last two points, one just on that.

I wanted to laud the people who were involved with, you know, doing the leak detection and recognizing the significance of this and escalating this. And I'm very happy to hear that employees are sending in pictures and are feeling free to report, and that there is action and response to all of that. That is an important cultural change and an important safety change.

So I just wanted to recognize that and laud that.

But then also, we need to make sure that it goes up the food chain, that it doesn't just get put in the category of, oh, this is a records issues. That it's also recognized as a safety issue.

And to the extent particularly

the records issue affects Commission decisions either about records or about what a psi should be, that there's a separate duty to raise those facts.

So and then the last thing would be a request to the assigned commissioner -- or suggestion perhaps a better way to say it, to the assigned commissioner as well as the administrative law judge about the phraseology in terms of the ruling on the Order to Show Cause about whether or not pressure should be stayed pending the demonstration that records are reliable.

PG&E, in your statement, Mr. Johnson, in the filed statement, cites pages 3 and 4 of the Order to Show Cause ruling to say in footnote 1 that -- trying to be find it, but to say --

COMMISSIONER FLORIO: Two.

COMMISSIONER SANDOVAL: Okay, thank you. Page 2. Thank you very much.

Q So in paragraph 6, your affidavit, your verified statement says: SED has agreed that our operational actions with regard to Lines 147 and 101 have addressed all public safety issues. And then cites in a footnote the particular Assigned Commissioner Ruling and Assigned Administrative Law Judge Ruling

at pages 3 and 4.

And when you look at pages 3 and 4, it says: The Safety and Enforcement Division emphasizes the importance of pressure testing to guard against any recordkeeping shortcomings and agreed that all public safety issues have been addressed by PG&E's operational action.

I compare that to the Order to Show Cause relating to the Rule 1.1. And on page 2 there it says: The Safety and Enforcement Division confirmed PG&E's representations and agrees so long as properly conducted pressure tests were performed as represented, Lines 147 and 101 can be operated consistent with General Order 112-E at the reduced MAOP. The assigned Commissioner and Administrative Law Judge are holding separate hearings to address the substantive issues raised by the July document.

My suggestion would be to conform -- I don't know what the procedural process is to put out a new ruling or amended or corrected or something, but would be to conform the language on pages 3 and 4 to the language that was used in the Rule 1.1 document because I think that the -- I don't think that you necessarily meant to put forth

a legal conclusion that all public safety issues have been addressed by PG&E's operational action. And it is evident that PG&E seems to be relying on that sentence to say all public safety issues have been addressed.]

So to preclude -- and if that is your legal conclusion, please feel free to correct my indication, and I think that is something else that we could discuss. But it would be my suggestion to perhaps revise it to conform to this other language or to do something to -- to suggest that this should not be relied on to substantively state that all public safety issues have been addressed because I think as we have discussed here that to the extent that there is a recordkeeping discrepancy, that that might raise a certain set of issues which need investigation.

So I think this is really a suggestion for the assigned Commissioner and Administrative Law Judge. So I'm not trying to put you on the spot to try to respond right now but that's my suggestion.

ALJ BUSHEY: And we'll have an opportunity to address that issue in the Decision on the order to show cause, so we

can address that there. We'll have a vehicle for making those -- those clarifications.

Commissioner Florio?

COMMISSIONER FLORIO: Yes, I have a few questions. And this -- at the outset, I would request that PG&E circulate to the Commissioners and the parties the slides that have gone up today. Those are very helpful, but if we don't have them after today, we won't -- it won't be as helpful.

EXAMINATION

BY COMMISSIONER FLORIO:

Q Good afternoon, gentlemen. Thank you for coming today.

WITNESS JOHNSON: Good afternoon.

Q I wanted to try to move us back to where we were in early 2011 or actually -- yes, early 2011. The Commission launched the MAOP validation -- or directed PG&E to -- to do the MAOP validation with the knowledge that that was going to require some use of assumptions; is that correct?

A That's correct.

Q And then followed up with the directive for pressure testing and other measures now embodied in the PSEP to go beyond that and not have to rely on those assumptions as to the same degree.

Okay. So would it be correct to interpret your testimony that if a line has been pressure tested to a level well in excess of where it's being operated and is planned to be operated, that from a safety perspective you're comfortable with doing that?

A Yes, I would say that having a pressure test on a line with a significant safety margin gives you great comfort in terms of understanding how that pipeline will operate and will operate safely.

Q And in this instance, it seems like going back and correcting the records led you to lower the MAOP. But it was still at a level well below where the line had been tested?

A That's correct. The MAOP is about 35 pounds less than it was when we made the request to upgrade the pipe. But it is still significantly below, obviously, the pressure test.

Q Okay. If you had known then what you know now about the characteristics of the pipe, might that have affected the level which you would have pressure tested and might it have been somewhat less than what you actually did?

A I don't -- I would have to go back and look at that. I doubt it, but I would have to go back and look at all the assumptions. When we do a pressure test, we have to look at every segment involved with that pressure test to determine what is our -- what is our limiting factor. And we try to get to factors of 1.5 or greater than the operating pressure, plus a spike test. And so this pipeline saw a very high pressure test level and I don't know that we would have done it lower had we known this information.

Q Yeah. I'm trying to remember back to the Topock situation. I think there were some limiting factors that you couldn't go all the way to 1.5 because you would have been over SMYS or something?

A That was -- the Topock situation was obviously a little different than some of the our pipelines. It was station piping, and it has a lot of fittings and flanges and other pieces of equipment by which when you pressure test the pipe, those fittings are staying the same pressure and you may over-pressurize those fittings. And that becomes a limiting factor on how you pressure test stations.

Q Is there a -- for a pipeline segment that we're talking about here, is there sort of a limit, sort of 90 percent of SMYS or 95 percent that you don't go beyond pressure testing?

A We try very hard -- we don't go beyond a hundred percent SMYS based on the pipe as we know it.

Q Sure.

A And we try not to go above the pressure by which the pipe has previously been tested in the mill. So for some 1950s pipe, for example, a lot of those pressure tests were held at 85 or 90 percent SMYS. And we don't see the value in going above is that and testing it. There are obviously public safety concerns that a hydro testing is safe. So you want to weigh those circumstances.

Q Okay. Going to your report, paragraph 6 on page 2, Commissioner Sandoval was asking you about this. You say, "SED has agreed that our operational actions with regard to 147 and 101 have addressed public safety issues."

Are those operational actions the pressure reductions that we've been talking about?

A I think it's a combination of all the actions we've taken since this finding, including repairing the leak, digging it up, doing the revalidation, and lowering the pressure.

Q Okay. In your opinion, was the pressure lowering necessary to maintain safety, or simply necessary to comply with regulations?

A Well, the -- the pressure reduction that occurred when we found the leak had already taken place for operational reasons, so we had reduced the pressure down to roughly 300 pounds or below so that we could operate our system during the summertime with low flows.

We had around enormous amount of construction work, so it made our ability to take pieces of pipe out of service much more efficient. That's why that pressure reduction was taking place. So when we found the leak and walked into the situation and dug it up, that pipe was well below its MAOP, even knowing the information we know today, which is 330 PSI.

Q Okay. Paragraph 14 on page 4, you say there "The decrease from 365 to 330 is not due to safety or engineering concerns,

but rather the effort to ensure strict code compliance." I guess that means that you think that the code is actually stricter than safety and engineering standards would suggest is necessary?

A Well, this particular instance on Line 101, it's a -- it's a segment of pipe that has a unique situation, what we call "one class out." And so we have looked at this "one class out" scenario, and come to a very, very conservative conclusion that if a pipe saw a class change prior to the installation of the federal code, you couldn't do a pressure test after 1974 and operate "one class out." So that's what that reference is.

There is -- there's no change of the pipe at all. There's no change in the engineering practice. Had this pressure test in this particular case, which happened in 1989 as I recall, occurred in 1974, there would be no code compliance issues. But as we tried to continue becoming the most -- more and more conservative in our views and adopting the most conservative assumptions, we chose to take this pipeline down -- this segment of the pipeline down to 330 pounds due to this very strict code compliance issue

that we currently interpret.

Q And that goes to this issue of a more recent test would logically seem to be more reliable than one happening 20 years ago. But because of the way the code is structured, it allows you to count the older one and not count the newer one?

A It's -- certainly from an engineering point of view, a more recent pressure test is more valuable than an older pressure test, particularly one back in 1970. But there are some quirks in the code that put us in this unique circumstance. But it is not a safety issue. Pipes in this circumstance will operate at -- in this situation 60 percent SMYS at 365 pounds, that's a very, very common situation through out the industry.

Q Okay. Over on page 6, paragraph 23, you indicate that the highest actual pressure on Line 147 was 355.4 on May 19th of last year. I take it that was below the old MAOP but actually above the revised MAOP; is that correct?

A Yeah, that's correct. The -- the regulator and the monitor set are established in Milpitas, so we have the ability to obviously track the pressures along the

pipeline system. And this is simply the highest pressure that pipeline has ever seen since the Commission gave us the authority to raise the MAOP to 365.

Q Okay. And then a little further down you say, "In December of 2012, we increased the operating pressure of Line 101 to meet winter load." Do you happen to know what the highest pressure reached was on that line?

A I don't off the top of my head. We can certainly look at it and see if we can figure out what the highest pressure that segment of pipe saw. The segment of pipe that is reducing the -- the MAOP to 330 pounds is just south of Lomita Park regulator station. It's about 30 miles north of Milpitas Station. And so we were actually doing some work in that area to try to put regulations so we can operate the pipe at 365. And then this segment would operate at 330 pounds. But we can take a look at that.

Q Turning to the question of service reliability on the Peninsula and in the City of San Francisco, are these current pressures and the revised MAOP sufficient in your view to maintain full service to customers? You had the chart earlier showing, you know, some

problematic situations. Do we avoid that by -- at the 330, or is that still a problem?]

A No. There are -- even at 365 pounds, there are still significant limitations to noncore customers in the San Francisco peninsula. And I believe we discussed that at the last pressure. When we requested the pressure increase, it does eliminate the need to ever curtail poor customers, which is obviously one of our primary concerns. But it does still require curtailments even at 365 pounds and the use of LNG for noncore customers including the hospitals, schools, and the power plants up and down the peninsula.

Q Now, I'm trying to recall when the Potrero Power Plant shut down. But that was I believe in 2011 that was maintaining service to that plant was still a major consideration.

A At the time we made the request to go to 365 pounds, we had already factored in that Potrero would not operate. And we already had an agreement with that plant that the conditions by which they could operate, given our circumstances. We had significant reduced flow and obviously a segment of pipe out of service.

Q Okay. Just trying to get -- trying to figure out what power plants we're talking about here. I guess there's some cogeneration facilities on the peninsula?

A We can certainly share the names of the power plants with you. We just in this forum it wasn't appropriate to share the customers' names.

Q Sure. And I was thinking about there are now is at least one power plant down in San Jose that I think was recently upgraded from a simple cycle to a combined cycle.

Would that be affected by this? Or is that located off a different line?

A I believe if it's in the San Jose territory, it's going to be impacted. The noncore customers are all treated somewhat equally. And so when you curtail -- and when I say curtail, I mean reduce their flow. It doesn't mean you have to go to zero now. It pretty much treats everyone equally. So they would be impacted.

Q Is from October, November 2011 to today a lot more of the system has been pressure tested than was the case back then almost two years ago. If you've completed a pressure test on a segment, does that pretty

much resolve your concerns about safety on that segment assuming you operate lower? Or are there other -- well, setting aside dig-ins or something like that, is the level of concern greatly reduced at that point? Or are there other factors that you need to consider?

A No. I think getting a pressure test in with a spike test that we're using gives you great comfort. It's almost as good as replacing the entire pipeline. So between replacing pipelines and pressure testing which is ongoing effort by PG&E, part of the Pipeline Safety Enhancement Plan, that gives us great comfort around the safety of our pipeline, certainly over and above pipelines that have not been pressure tested in the past.

Q And to the extent that you're making lines piggable, how does pigging rank on that hierarchy of comfort?

A Well, I think the standard that we would love to reach and will aspire to is to have every one of our pipelines pressure tested and have the ability to pig them at the same time so you have not only baseline by which you can say that pipe is good and strong and certainly capable of handling that

pressure and it takes -- alleviates all those issues.

And then if you have an ongoing pigging situation, you can constantly look for any changes to that pipeline that may have occurred whether it be a dig-in or something else that's happened. So the combination of those two would be the gold standard. And we were certainly aspiring to get there.

Q May take a while?

A It will take a while. We have a lot of work ahead of us.

COMMISSIONER FLORIO: Yeah. That's all I have at this moment. Maybe when we come back, I may have some more.

ALJ BUSHEY: We'll have another chance.

MR. LONG: Your Honor, can I just offer a couple of brief comments that follow on Commissioner Sandoval's and Commissioner Florio's questions. Comments, not questions.

ALJ BUSHEY: Should I swear you in?

MR. LONG: No, no. Just couple comments. First, there were indications that PG&E may be providing information in response to some of Commissioner Florio's questions. And just hope those will be circulated to the entire Service List and not just shared with

the Commission privately. I'm sure that will be the case.

And then on this issue of the Commissioner Sandoval raised about the language of the OSC, the Order to Show Cause we're dealing with now, and the conclusion about all safety issues being resolved, Commissioner Florio then in Paragraph 6 -- pointed to Paragraph 6 of Mr. Johnson's statement where there's a statement that he makes saying SED has agreed that "Our operational actions with regard to Lines 147 and 101 have addressed all public safety issues," citing to the Order to Show Cause.

And as Commissioner Sandoval's questions indicated, that that's at least if I'm understanding her remarks, it's not resolved in her mind. It's certainly not revolved in our minds. And it seems like a prejudgment of an important issue. And it raises a concern about the transparency of the process.

I mean, here PG&E is reporting that they've had a private conversation with some unknown persons at SED. And SED has given them a clean bill of health on safety issues. And where is the public in all of that? The public is not present. A conclusion is being

made about safety. And we're left out of it.

That doesn't seem right. And so I just want to support Commissioner Sandoval and her remarks and hope that that kind of statement will be something that parties will have an opportunity to weigh in on.

Intervenors have been told they should be more concerned about safety. We are. We've always been. And we continue to be. But if we're left out of the room, then what's our role in the process? That's the question here. And so we hope that the Commission will take heed of these comments.

ALJ BUSHEY: Thank you, Mr. Long.

Do any of the other intervenors have comments? Mr. Gruen.

MR. GRUEN: Your Honor, if I may, just to clarify, since SED is also represented in this room, I as the advocate for SED am also not privy to the indication in Item 6. And I think my colleague who's been working on this as well is not privy to that. So I just wanted to draw that distinction between the advocacy arm of SED and the advisory one who PG&E has been communicating with. And then there's a wall between us in terms of communications. So that's all.

ALJ BUSHEY: Thank you.

Mr. Meyers.

MR. MEYERS: One final comment, if I might. Procedural matter. I don't think that this has been marked as OSC-4. I think that was the intention of Mr. Malkin.

You wanted to introduce this as evidence in this proceeding, Mr. Malkin, your exhibits?

MR. MALKIN: Yes. Actually, I was -- when I got a chance, I was going to say consistent with Commissioner Florio's request. We have handed out the slides to all the parties. I think it does make sense to mark it as an exhibit and provide copies to certainly three commissioners who are here and to provide extra copies that you can give to the remaining two commissioners.

MR. MEYERS: My second point, if I might, Judge, is you made an admonition to the parties at the end of this morning's OSC that this was adjudicatory proceeding and therefore no ex parte contacts were permitted. I'm presuming that still applies to this portion of the OSC.

ALJ BUSHEY: Yes.

MR. MEYERS: Thank you.

ALJ BUSHEY: Ms. Paull?

MS. PAULL: I would just like to say

that the points that Mr. Long just made about prejudgment and participation and --

ALJ BUSHEY: Can you speak into the microphone?

MS. PAULL: Commissioners, ALJ Bushey, I would just like to say that the points that Mr. Long just made about prejudging the conclusions about safety risks and participation of the parties in the safety assessment and the public -- making those decisions in a public way are very important. And I couldn't agree more. I just wanted to get that on the record.]

ALJ BUSHEY: Thank you.

Any other final comments?

(No response)

ALJ BUSHEY: All right then. Just to review our schedule so we will receive as, I guess we'll continue our numbering, so it will be OSC-4, the exhibit provided by Mr. Malkin today.

(Exhibit No. OSC-4 was marked for identification.)

(Exhibit No. OSC-4 was received into evidence.)

ALJ BUSHEY: And I'll remind the parties that they are responsible for discovery as soon as possible; PG&E to turn

it around as quickly as possible, ideally within ten days.

And I will be announcing a date for cross-examination after October 15.

So, anything further to come before the Commission?

(No response)

ALJ BUSHEY: Hearing none then, this evidentiary hearing is concluded and the Commission is adjourned. Thank you.

(Whereupon, at the hour of 4:00 p.m., this matter having been continued to a date and time to be determined at San Francisco, California, the Commission then adjourned.)

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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms.	Rulemaking 11-02-019

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I, Alejandrina E. Shori, Certified Shorthand Reporter No. 8856, in and for the State of California do hereby certify that the pages of this transcript prepared by me comprise a full, true and correct transcript of the testimony and proceedings held in the above-captioned matter on September 6, 2013.

I further certify that I have no interest in the events of the matter or the outcome of the proceeding.

EXECUTED this 6th day of September, 2013.

_____
Alejandrina E. Shori
CSR No. 8856

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

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Wendy M. Pun
CSR No. 12891

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms.	Rulemaking 11-02-019

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Michael J. Shintaku
CSR No. 8251