

**PIPELINE SAFETY SINCE SAN BRUNO
AND OTHER INCIDENTS**

HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION
AND MERCHANT MARINE INFRASTRUCTURE,
SAFETY, AND SECURITY

OF THE

**COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE**

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

—————
OCTOBER 18, 2011
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ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

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PIPELINE SAFETY SINCE SAN BRUNO AND OTHER INCIDENTS

TUESDAY, OCTOBER 18, 2011

U.S. SENATE,
SUBCOMMITTEE ON SURFACE TRANSPORTATION AND
MERCHANT MARINE INFRASTRUCTURE, SAFETY, AND SECURITY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:32 p.m. in room SR-253, Russell Senate Office Building, Hon. Frank R. Lautenberg, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM NEW JERSEY

Senator LAUTENBERG. I call the hearing to order. We have the excellent opportunity to hear from our distinguished colleague from California.

I welcome everybody to today's hearing, which will address pipeline safety since last year's explosion in San Bruno, California, as well as broader concerns about the safety of America's 2.3 million miles of pipeline.

Now, these pipelines, which move oil and gas within states and across the country, are one of the safest forms of transportation. But when an accident occurs, the consequences can be deadly.

We witnessed this last year: a natural gas pipeline ruptured below the ground in San Bruno, igniting a blaze that killed eight people and destroyed dozens of homes.

Now other recent oil pipeline accidents in Michigan and along the Yellowstone River spilled thousands of barrels of oil into sensitive waterways, causing severe damage in both areas. These tragedies remind us that we have a responsibility to keep our country's pipelines safe and reduce the frequency of accidents.

And that's why I'm proud that last night that the Senate passed my Pipeline Transportation Safety Improvement Act, which will help us implement critical safety improvements to our Nation's pipeline networks.

The bill requires companies to keep better records detailing the maximum pressure levels that their pipelines can safely handle.

It also requires apartment buildings and commercial facilities to add excess flow valves, which can automatically shut off a pipeline if a major spike in pressure is detected.

Now, these valves will help us reduce the likelihood of tragedies like the one we experienced in my home state of New Jersey—in

Edison, New Jersey—in 1994 when a natural gas pipeline exploded and destroyed 14 apartment buildings.

Additionally, the bill will boost the amount of information available to the public on pipeline inspections, stiffen penalties for companies that fail to follow the rules, and put more pipeline inspectors on the job.

The bill is funded through a combination of fees and other assessments paid for by the industry, which supports this bill and its approach to funding pipeline safety improvement.

Safety advocates have also rallied behind this bill, which enjoys broad bipartisan support. The bottom line is the Pipeline Transportation Safety Improvement Act makes the sensible, cost-effective safety improvements that our country needs.

And now that it's passed the Senate, it should be passed by the House without further delay.

And I know that this issue is particularly important to Senator Feinstein and Senator Boxer. I thank Senator Boxer for her efforts and I will continue working with her and our colleagues to make our country's pipelines safer.

I also look forward to hearing from today's witnesses.

But first we're going to turn to other members for their opening statements.

And I ask Senator Wicker, the Ranking Member, to give his statement now.

**STATEMENT OF HON. ROGER F. WICKER,
U.S. SENATOR FROM MISSISSIPPI**

Senator WICKER. Thank you very much, Senator Lautenberg. And I'm sure all of my colleagues on the Committee are delighted to have our colleague from California, Senator Feinstein, with us as our first witness today.

As the Chair mentioned yesterday, by unanimous consent the Senate passed a pipeline safety bill that will be of great benefit to the safety of our pipeline infrastructure in the United States.

I'd like to thank Senator Lautenberg for his leadership on this issue, and for working closely with the minority to craft a bill that will make needed improvements while ensuring that pipeline operators will continue to provide a high level of service.

Because they are rarely seen, it's easy to forget about the importance of pipelines. They're important to the national economy, and to our daily lives. Pipelines are the circulatory system for the Nation's energy needs, moving natural gas, petroleum, and other vital fuels from the point of production to people's doorstep. They provide the transportation for the fuel that does everything from warming our homes, to fueling our factories, to generating electricity.

Of course, as with any transportation of hazardous materials, we must do our best to ensure the safety of our pipeline system. And pipelines do present some unique challenges.

With millions of miles of pipeline in the United States, it is a particularly difficult task to identify the lines that are most likely to fail and to mitigate the risks.

The Office of Pipeline Safety, within the Pipelines and Hazardous Materials Safety Administration, is charged with overseeing

the safety of the Nation's pipeline system. And the office's effectiveness is demonstrated by the improving safety performance of the Nation's pipelines.

Since OPS is funded through user fees paid by industry, it operates at minimal cost to the government. I'm interested to hear from the PHMSA administrator about the recent initiatives in the office. NTSB has also done an admirable job in investigating recent pipeline accidents, and I look forward to hearing what we can do at the congressional level to make the system even safer.

Senator WICKER. Thank you, sir.

Senator LAUTENBERG. Thank you, very much. We'll go on to Senator Boxer for her statement.

**STATEMENT OF HON. BARBARA BOXER,
U.S. SENATOR FROM CALIFORNIA**

Senator BOXER. Thank you, Senator Lautenberg. Senator Feinstein and I will never forget what hit our state, and I'm going to go through this with some photos so, my colleagues, you can see this.

At 6:11 p.m. on September 9, 2010, a PG&E transmission pipeline exploded beneath a densely populated neighborhood in San Bruno, California, and eight people lost their lives and another 52 were injured. And of course our hearts go out to all the victims.

The inferno destroyed 38 homes and damaged 70 homes. And you can see the destroyed homes are in red—38, damaged homes, 70, in the yellow.

And I'll show you some pictures of the devastation, because I walked that neighborhood and it's just—when you know this was such a thriving community, this is what you saw—only a few chimneys, charred vehicles, and debris were left behind.

So this is what you saw—the chimneys standing—and here you can see the charred vehicles that were standing afterwards.

Most disturbing of all, this accident and this tragic loss were entirely preventable. Because we know it—because the NTSB's investigation reveals that there were numerous points at which this accident could have been prevented.

First, PG&E installed a faulty, poorly welded pipeline back in 1956 that would not have met industry standards at the time, even. Its flaws would have been visible to the naked eye. Proper quality control procedures could have prevented the installation of the pipeline, or in-line inspection could have detected its flaws later.

Second, PG&E's poor recordkeeping led them to believe they had a seamless pipe in this location, which didn't even exist in 1956. So it couldn't have been a seamless pipe. A proper integrity management program or pressure testing would have uncovered this error, or, at the very least, required a 30 percent reduction in the maximum allowable operating pressure for the pipeline.

Third, prior excavations of this pipeline found various data errors, leaks, and other problems, but PG&E didn't address this and didn't even update its records to include these discoveries. Again, a proper integrity management program would have raised red flags about the pipeline and warranted further testing

Fourth, poorly planned electrical work at the Milpitas terminal triggered the pressure surge that led to the rupture of the faulty pipeline.

You can see that the pipe split open along the seam. Proper work clearance procedures and contingency planning would have allowed PG&E's control center to anticipate this potential complication and reduce the pressure in the pipeline before it was too late.

Finally, once the accident occurred it took PG&E an hour and a half to shut off the gas. Look at what was happening on the ground here. An hour and a half to shut off the gas, while the fire continued to burn like a blowtorch, increasing the amount of the damage.

So, proper emergency response protocols and the use of automatic or remote controlled shutoff valves would have reduced this time significantly, saving homes and maybe even lives.

This litany of failures was not just attributable to PG&E, but also to serious failures by state and Federal regulators. Again, according to the NTSB's report, the CPUC, the California Public Utilities Commission, audited PG&E in 2005 and again only 4 months before the explosion. Yet, and I quote from the NTSB, "failed to detect the inadequacies in PG&E's integrity management program," even though they went on to say, "many of them should have been easy to detect."

Meanwhile, PHMSA repeatedly gave CPUC an A plus for its oversight. And NTSB says this raises strong doubts about the quality and effectiveness of enforcement at both the Federal and the state levels.

Unfortunately, although San Bruno was particularly severe, the accident was not at all unusual. And I ask unanimous consent to place in the record the recent pipeline explosions throughout the country that we have flagged in my opening statement.

An average of 42 serious gas pipeline incidents per year over the past decade, resulting in an average of 14 deaths, 16 injuries, and over \$32 million in property damages each year.

So, Roseville, Sanger—I'm just quoting—in Pennsylvania, Allentown, in Wyoming near Gillette, in Ohio, in Kentucky.

So Senator Feinstein and I introduced legislation to strengthen pipeline safety. I joined her—she took the lead. I'm so proud that similar legislation passed the Senate last night.

But even after this legislation is signed into law, there's more work to be done. So I look forward today to hearing about what PHMSA's doing to strengthen its regulation enforcement and what PG&E and the pipeline industry are doing to strengthen their own safety programs.

And we don't want to see anything like this again, this out-of-control horror that hit a beautiful, middle-class, strong community in our state. We want to spare that to everyone, and so we hope that this hearing will lead us in that direction.

Senator BOXER. Senator Lautenberg, Senator Wicker, thank you so much for your help in getting this out here today.

Thank you.

[The information referred to follows:]

Roseville News—Wednesday, September 28, 2011

ROSEVILLE GAS LEAK SPOUTS FLAMES ON ROAD

Submitted by Maneeza Iqbal

ROSEVILLE, CA—Pacific Gas and Electric crews are trying to seal of a broken section of a 4-inch gas distribution line that developed a leak and then caused a fire at 6:50 p.m. Tuesday.

UPDATE: As of 5:22 a.m. Wednesday, the fire was extinguished and most lanes of Riverside Ave. and Cirby Way were open to traffic. Only the westbound lanes of Cirby Way between Orlando Avenue and Riverside Avenue remained closed to through traffic. Through traffic was being diverted onto Orlando

The fire burned in middle of the intersection of Cirby Way and Riverside Avenue, Roseville Assistant Chief Jeff Carman said.

Carman said the flames were six feet above the ground and that there is some concern the gas could build up and cause an explosion.

“We’re worried about the buildup possibly accumulating in sewer pipes and storm drain pipes,” Carman said. “So, our hazmat team’s on scene and they’re taking readings every few minutes to make sure we’re not getting that buildup.”

Most nearby businesses were closed by the time the fire started, but the seven that were still open had to be closed and the employees evacuated.

A few homes and apartment units are nearby, but they do not need to be evacuated, according to Carman.

The intersection was closed off to traffic.

City of Roseville spokeswoman Dee Dee Gunther said Riverside Avenue was closed off between the Interstate 80 exchange and Kenroy Lane. Cirby Way has been closed between Melody Lane and Orlando Avenue.

PG&E crews are on scene and will work through the night.

Drivers are being urged to avoid the area during the morning rush hour and possibly even later into the day.

The intersection was the scene of another gas leak about a year ago. A PG&E spokesperson said that leak was caused by a crack in a section of plastic pipe, but would not speculate on why this latest leak happened so close by just one year later.

Dave Marquis dmarquis@news10.net contributed to this story.

The Fresno Bee—Thursday, Sep. 15, 2011

6 SANGER HOMES EVACUATED WHEN GAS LINE RUPTURES

A construction crew working in northeast Sanger on Thursday afternoon ruptured a natural gas line, forcing the evacuation of six homes, said Greg Tarascou, the city’s interim fire chief.

The gas leak happened about 2:30 p.m. near Church and Harrison avenues, Tarascou said. Pacific Gas & Electric Co. workers capped the line about 7:30 p.m.

No illnesses or injuries were reported and the residents who were evacuated were allowed back into their homes shortly after the line was capped, Tarascou said.

The Mercury News—Posted: 09/02/2011 12:02:04 PM PDT—Updated: 09/02/2011 12:30:52 PM PDT

BLAST ROCKS CUPERTINO HOME; PG&E CREWS FIND SEVEN PIPE LEAKS

By Mike Rosenberg

A day after federal investigators chastised PG&E for a “litany of failures” in last year’s San Bruno blast, a loud explosion blew away a Cupertino home’s garage door, and several underground gas pipes in the area were found leaking, authorities said Thursday.

Pacific Gas & Electric crews found seven leaks in the 2-inch pipes that distribute gas to homes in the area near the explosion. But investigators are still unsure exactly what caused Wednesday’s blast.

PG&E has more than 42,000 miles of the distribution pipes running beneath properties in the Bay Area and beyond—and a similar explosion killed a man inside his Sacramento-area home three years ago.

The resident of the Cupertino townhome near the Homestead Square Shopping Center had left the home 15 minutes before the explosion, which badly damaged the residence. No injuries were reported, and firefighters said they saved a pet dog hiding under a bed inside.

State regulators are investigating the blast. In addition, PG&E President Chris Johns and the utility's head of gas operations are taking part in the probe.

"We got a lot of people looking into this to find out exactly what happened." PG&E spokesman Dave Eisenhauer said.

A day after the fire, investigators were still piecing everything together.

About 12:25 p.m., people from Cupertino to Sunnyvale flooded 911 call centers to report a boom, said Deputy Chief Don Jarvis of the Santa Clara County Fire Department.

"The people who were calling didn't know exactly where it was; they just heard it," Jarvis said.

The explosion partially engulfed the townhome in flames at 20299 Northwest Square, Jarvis said. When firefighters from Sunnyvale and Cupertino arrived, they found the garage door lying in the driveway and the side door of the garage off its hinges, lying in the bushes.

The firefighters quickly extinguished the blaze, which began in the garage and advanced into the second story and the underside of the roof. They moved to evacuate the two adjacent four-plex townhouse units as a precaution—although no one was home there, either.

Firefighters noticed gas was leaking near the damaged home—overhead TV cameras caught footage of flaming pipes—and PG&E crews responded by shutting off the gas flow.

On Thursday, Eisenhauer said, the utility's investigators who were working all night found six more gas leaks in the area and repaired them.

Both PG&E and fire crews said it could take a while to determine the cause of the blast, a complicated process. Both the California Public Utilities Commission and the National Transportation Safety Board have been notified about the fire. Investigators were also trying to find out whether anyone reported smelling gas before the blast.

The smaller distribution pipes that were leaking receive gas from the larger transmission lines, like the one that blew up in San Bruno, killing eight people and destroying 38 homes.

Since the tragedy, oversight groups and consumers have focused on the big pipes, which carry much more gas. But PG&E also has 42,141 miles of the smaller distribution pipes, about seven times the length of its bigger transmission lines. And the smaller pipes explode on occasion, too.

ABC News—Feb. 10, 2011

ALLENTOWN, PA., EXPLOSION LEAVES FIVE DEAD—

By Lyneka Little and Alan Farnham

Five people are dead after a powerful gas line explosion ripped through downtown Allentown, Pennsylvania.

Authorities say the five victims are a couple in their 70s, a 4-month-old boy, a 16-year-old girl and one of the children's parents. The victims are from two families who lived in the two townhouses that were destroyed by the blast.

The explosion rocked the neighborhood at 10:45 p.m. on Wednesday, touching off fires that blazed into the early-morning hours as firefighters combed through snow and ice to stop an underground pipeline from feeding the flames.

Authorities said at least six homes will not be salvageable and two homes were entirely leveled. Forty-seven homes and ten businesses were damaged by the explosion, fire or ice.

Utility workers inspected the area the day before the explosion and detected no leaks. The pipe that fed the explosion was installed in 1928 and Ed Pawlowski, the mayor of Allentown, said old and dangerous pipes run under many cities.

"Lines built over 150 years ago are still servicing a lot of these buildings today," Pawlowski said. "When you have constant thawing and freezing you're going to have problems . . . and lead to disasters like this."

Utility workers were called in to assist and get the gas lines shut off after the explosion on the 500 block of North 13th Street. Snow piles and ice hampered firefighters as they attempted to put out the flames. UGI Corporation, the local gas utility, was unable to shut off the gas until 3:45 a.m.

The magnitude of the explosion and flames forced the evacuation of hundreds of residents. The cause of the explosion is being investigated.

"I think we are going under the assumption that it is a gas explosion, but it has not been confirmed to be the case," Joseph Swope, a UGI spokesman told the Morning Call.

He said the 12-inch low pressure main involved in the incident hadn't had any history of leaks.

The powerful blast sent a computer monitor crashing into the home of one person in the neighborhood, according to The Associated Press.

"I thought we were under attack," Antonio Arroyo told the AP. "What I saw, I couldn't believe." Arroyo and his wife sought refuge in a shelter after the explosion destroyed their home. The couple expects to return to their home to see what can be salvaged but every keepsake they own may be lost.

"This is a real tragedy," Mayor Ed Pawlowski told the Morning Call. "Our thoughts and prayers are with the families."

The tragedy follows another explosion that rocked the West Coast last year.

The explosion that leveled a San Bruno, California, neighborhood in September sent flames 300 feet into the air after a ruptured natural gas pipeline—in that case, one belonging to the Pacific Gas & Electric Company.

San Bruno's fire and explosion destroyed 53 homes and damaged 120 more. It killed seven and injured more than 50. "The central ball of fire," said a reporter for the San Francisco Chronicle, "ragged past nightfall before abating. By then, houses on several blocks and thick stands of trees were engulfed in flames."

The death toll wasn't the worst in pipeline history. An incident 10 years ago in Carlsbad, New Mexico, killed 12. Pipeline blasts in the past five years have killed 60 and injured 230.

Though roughly half these incidents were the fault of parties other than utilities (builders or cable companies that accidentally dug into underground pipes), pipeline operators dug into their own pipes in at least two dozen cases. Other incidents for which they were responsible involved corrosion, faulty equipment and operator error.

The San Bruno incident was caused by a pipe that ruptured because of regular changes in gas pressure, according to federal investigators.

The age of a pipeline matters less than inspection and maintenance, said Carl Weier, head of the Pipeline Safety Trust, a government-financed watchdog group. "Most of the pipelines in this country are 40 to 50 years old. If properly maintained, they don't present a danger."

But even a new pipeline, he said, will fail if not well-inspected and maintained. Corrosion caused the Carlsbad event, according to inspectors who examined the wreckage. Weier said the danger of future explosions could be defused by better and more frequent inspection, especially in rural areas, where pipelines get a thorough going-over only once every seven years.

The Associated Press contributed to this story.

trib.com—Posted: Friday, July 22, 2011 3:00 am

NATURAL GAS PIPELINE EXPLODES NEAR GILLETTE

By Jeremy Fugleberg—Star-Tribune energy reporter

A natural gas pipeline west of Gillette exploded Wednesday night. It shook nearby homes and echoed at least 30 miles away but didn't cause any injuries or property damage, officials and a resident said.

The blast ripped open a 60-foot section of the Bison Pipeline and shot several pieces of 30-inch-diameter pipe around the bluffs on land about 20 miles west of Gillette at about 7:30 p.m.

The explosion's shock wave slammed Dan and Candy Mooney's home, about a mile from the rupture, as well as his brother's house not far away.

The earth-shaking rattling and boom were followed by what Dan Mooney described as a "terrible roar" as natural gas under high pressure burst from the broken pipe.

"If you've ever heard a jet fighter going off, like an F-16 or something like that, it sounded like many of them going off at the same time," he said. "It roared, it just screamed."

Mooney said a friend from Recluse, about 30 miles north of Gillette, called in to say the explosion could be heard that far away. Several residents in and near Gillette dialed emergency dispatchers to report "sounds of rockets going off, whooshing sounds and some explosions," said David King, Campbell County Emergency Management Agency coordinator.

The roaring stopped as the pipeline system detected the drop in pressure from the rupture and closed off the flow of gas within 15 minutes of the breach, according to Terry Cunha, spokesman for TransCanada Corp., which owns the pipeline.

King as well as other county emergency responders traveled to the site, but waited for a TransCanada team to check the area for natural gas pockets before anyone got close to the explosion site—a crater in the ground and pipeline pieces blown well clear of the pipe trench.

A 40-foot piece of the pipe, split along its length and spread open with jagged ends, lay almost 70 feet away from the pipeline path said Rod Warne, Campbell County Fire Department assistant chief, who visited the site. In the gathering dark, he saw at least one other piece of pipe blown nearby.

“I’ve never been to one that had that big of a pipe, that big of a chunk blown out that far,” he said.

All officials and Mooney said the explosion didn’t cause any injuries or property damage other than to the pipeline.

It’s not yet clear what caused the pipeline to explode, and there’s no clear timeline for when the company will rebuild the line and get it back into use, said Cunha, the TransCanada spokesman.

“Unfortunately this incident happened, but we’ll do a thorough review and work with regulatory agencies to investigate the cause of this and ensure we prevent it from happening again,” he said.

It’s not yet clear how much natural gas was vented, but the pipeline was transporting natural gas on Wednesday at a rate of 365 million cubic feet a day, Cunha said.

The 303-mile line was designed to transport up to 477 million cubic feet a day of natural gas from the Powder River Basin northeast through Montana to the Northern Border Pipeline in North Dakota for transport to customers in the Midwest. The pipeline went on line in January and is owned by TransCanada Corp. through its interest in TC PipeLines.

TransCanada was able to provide 50 percent of the pipeline’s volume to customers on Thursday, but the pipeline will be shut down starting today as the investigation continues, Cunha said.

While the closure of the pipeline might cause some problems for a day or two, other pipelines will quickly pick up the slack, said Brian Jeffries, executive director of the Wyoming Pipeline Authority.

The state’s natural gas production is about what it was before the Bison Pipeline came on line, so the state’s pipeline system has other ways of moving the gas, he said.

“I expect any impact on production and flow to be relatively short-lived,” he said.

Fox8.com—10:44 AM EST, February 11, 2011—Hanoverton, Ohio

GAS EXPLOSION LIGHTS UP SKY IN COLUMBIANA COUNTY

A gas pipeline explosion rocked Columbiana County, creating a fireball so huge that people saw it for many miles, Fox 8’s Stacey Frey reports.

A county official says people many miles away from a natural gas pipeline explosion saw a glow in the sky and reported hearing a sound similar to a blowtorch.

Columbiana County Commissioner Jim Hoppel said Friday he could see the sky “all lit up” from the county seat in Lisbon, about 20 miles from Thursday night’s explosion and fire near Hanoverton. He says from about the same distance, others heard a crackling that reminded them of a blowtorch.

Officials say they had no reports of injuries. El Paso Corp., which operates Tennessee Gas Pipeline, says one house was damaged.

Company spokesman Richard Wheatley says the explosion involved the “failure” of a 36-inch, buried transmission line that carries natural gas through the region.

LEX 18—Posted: Sep 21, 2011 5:25 AM—Updated: Sep 21, 2011 7:26 AM

CLARK CO. GAS LINE RUPTURE HEARD SEVERAL COUNTIES AWAY

People across several counties heard the rumbling sound early Wednesday morning. It shook the ground and rattled windows.

A gas line ruptured just after midnight in Clark County, near the Powell County line. People as far away as Lee County heard the noise, and the LEX 18 newsroom was flooded with calls.

Herman Cole lives nearby.

“All I heard was a big pop sound and a big roar sound. I thought it was a motorcycle outside my door. So it was pretty loud,” he said. “It was really roaring and it got louder and louder. No major explosion or anything,” he said.

The rupture occurred in a commercial transmission line near Irvine Road. It took crews several hours to find the break and shut off the flow of gas. But officials say there was never an actual explosion. There were no injuries or evacuations, and since the line does not serve the public, there was no interruption of service.

Crews from the Tennessee Gas Company continue working to inspect and repair the line. Officials with the company have not given a timetable for repairs.

Fire officials say this wasn't the first incident involving these particular gas lines. There was a rupture four years ago and a deadly incident 50 years back.

Senator LAUTENBERG. Thank you very much, Senator Boxer. And we welcome our colleague, Senator Dianne Feinstein.

Senator Feinstein's a strong advocate for improving pipeline safety, and she's committed to ensuring that we do everything that we can to avoid tragedies like what we witnessed in San Bruno in the pictures that we just witnessed saw here that tell us about the horror of these things.

Again, fortunately in the big New Jersey explosion, we didn't have the fatality consequences that you had in California.

But there are terrible consequences when this happens, and we look forward to hearing your views, Senator Feinstein.

**STATEMENT OF HON. DIANNE FEINSTEIN,
U.S. SENATOR FROM CALIFORNIA**

Senator FEINSTEIN. Thank you very much, Mr. Chairman, Senator Wicker, my friend and colleague, Senator Boxer.

I think Senator Boxer's statement really expressed it very well.

I happened to be at home around the evening news time, turned on the news, and saw this explosion. And I watched it, and I watched it for 10 minutes, 15 minutes, a half-hour, 45 minutes, an hour, an hour and 39 minutes.

What was interesting is the explosion didn't abate. And there was a lot of discussion—did a plane, taking off from San Francisco International, crash there? What happened? And no one really knew.

Well, I went to the scene on the Sunday after the explosion with then-CEO and Chairman of PG&E, and looked at the scene, and it was one of—as Senator Boxer's chart showed—absolute devastation, with people who were shocked and shattered and couldn't believe that this huge transmission line was running right under the streets of a residential subdivision.

We actually saw the part of the line, and so you could see the outside weld. One of the problems was the weld was only on one side, and it went both circularly as well as longitudinally.

So there were a number of questions. First: how did a pipeline, owned and operated by a 106-year-old utility, and regulated by the California Public Utilities Commission, in compliance with Federal safety standards, blow up without warning? And second: why did the fire rage so long?

The National Transportation Safety Board—that's an agency that continues to impress me. They're straightforward, there is no guile, they say it like it is, and they're really to be commended.

Well, they've completed an investigation of the explosion, and the report concludes that the pipeline failed along a faulty and incomplete seam weld, when pressure spiked to unusually high levels.

The NTSB found this accident could have been prevented. And I think that's what is important to us. And the report reaches a

simple conclusion: no one knew whether the pipeline under San Bruno was safe—not the utility, not the state regulators, and not the Federal regulators.

The first problem was that PG&E's records of the pipeline under San Bruno were wrong. They showed a seamless pipe, when in fact the pipe had a seam. Because no seam was recorded, the strength of that seam was never inspected.

Second, because the pipe was installed before 1970, when pressure testing for new pipes was established, the pipeline had never undergone a strength test, a pressure test.

Like 61 percent of all pipelines in the United States, the pipeline had been grandfathered. Sixty-one percent of all pipelines have been grandfathered, meaning regulators and the industry assumed it was safe to continue operating the pipeline at pressures used in the past.

No safety buffer was established, as would have been established during a normal pressure test that pushes the pipe to 125 percent of the approved maximum allowable operating pressure.

In fact though, the San Bruno pipe failed when pressure spiked just above the historic operating levels, and far less than 125 percent above historic operating levels.

The third problem was that the pipeline had never undergone an inline inspection with a smart pig. A smart pig may have found both the existence of the unreported seams as well as their faults.

Like many older pipelines, this pipe had too many twists and turns to be inspected, and had never been upgraded to allow for such an inspection.

Fourth, the pipeline had inaccessible manual shutoff valves. First responders didn't know how to cut off the gas, and utility employees were stuck in traffic as the inferno raged, devastating a once idyllic neighborhood.

So, let me be clear. The problems that led to tragedy in San Bruno are not unique to that neighborhood, or that pipeline. They are widespread throughout the United States.

Many older pipelines in urban areas have inaccurate and incomplete records, have never been pressure tested, or inspected by smart pigs, and lack automatic or remote control shutoff valves capable of limiting damage following a rupture.

At the NTSB's recommendation, California law—Governor Brown has just signed it—requires now that utilities throughout the state establish a traceable, verifiable, and complete set of pipeline records.

Thus far, utilities throughout the state have found incomplete records for as much as 30 percent of the system. So almost a third of the system, with 38 million people in it, have no records.

I really thank the Committee for including in its pipeline safety bill a nationwide review, which Senator Boxer and I proposed in our bill. I think this will go a long way, and I want to thank you for it.

The NTSB also found that 61 percent of all transmission pipelines in America were grandfathered from current pipeline strength tests, such as hydrostatic pressure tests under DOT regulations. So, 61 percent is grandfathered.

I'm pleased that the Committee has accepted the amendment worked out with Senator Paul requiring that all pipelines that have never undergone a pressure test undergo a viable and effective strength test.

These tests would verify the safety of current maximum allowable operating pressures, and establish pressure safety buffers on older pipes for the very first time.

The Department of Transportation should also consider ordering untested pipelines to lower their pressures to establish a safety buffer, as the California Public Utilities Commission has chosen to do.

The bill would also require deployment of automatic shutoff valves on new and replacement pipes. I believe we should require these valves on all pipelines, as California has done now. But requiring them on new pipes is at least a step in the right direction.

Bottom line: the San Bruno tragedy may have been prevented had the seams been properly recorded and inspected, or had the pipeline strength ever been established with a pressure test.

And, as you know, and I had the pleasure of talking with the new CEO this morning, Mr. Early, and there's another problem, and it's plastic pipe. And there's 1,200 miles of PG&E's plastic pipe that the company is now going to pull.

I believe there have been some 11 accidents with this pipe, that, as Mr. Early described to me this morning, under pressure—underground for some period of time—that pipe becomes brittle, and therefore a rock, a change in the ground, can rupture it and then you have a gas leak.

And so there have been, I think, 11 accidents in California from that pipe. So I would just like to say to this committee, first of all, I think your first step has at least been partially accomplished—the bill was hot lined, it has passed the Senate. I think that's very good news.

But I would really encourage you to look further. This is expensive for the companies, and I know it's expensive for them, but we're earthquake country, with 38 million people. These pipes are all underground. They're in dense places—you know, all throughout San Francisco, a relatively old city when it comes to cities in California.

So there are a lot of reasons to worry about this, and I think there are a lot of reasons to continue to do extraordinary due diligence on this particular issue.

So, Senators, the three of you have made a major step forward and I, for one, am very grateful and I thank you.

[The prepared statement of Senator Feinstein follows:]

PREPARED STATEMENT OF HON. DIANNE FEINSTEIN,
U.S. SENATOR FROM CALIFORNIA

I happened to be at home around the evening news time, turned on the news and saw this explosion. And I watched it. And I watched it for 10 minutes, 15 minutes, a half hour, 45 minutes, an hour, an hour and 39 minutes.

What's interesting is the explosion didn't abate. There was a lot of discussion: Did a plane taking off from San Francisco International crash there? What happened? And no one really knew.

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tered and couldn't believe that this huge transmission line was running right under the streets of a residential subdivision.

We actually saw the part of the line and you could see the outside weld. One of the problems was the weld was only on one side and it went both circularly as well as longitudinally.

So there are a number of questions.

First, how did a pipeline owned and operated by a 106-year-old utility and regulated by the California Public Utilities Commission—in compliance with Federal safety standards—blow up without warning?

And second, why did the fire rage so long?

The National Transportation Safety Board—and that's an agency that continues to impress me, they're straightforward, there's no guile, they say it like it is, and they're really to be commended—well, they've completed an investigation of the explosion. And the report concludes that the pipeline failed along a faulty and incomplete seam-weld when pressure spiked to unusually high levels.

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And the report reaches a simple conclusion: No one knew whether the pipeline under San Bruno was safe. Not the utility, not the state regulators and not the Federal regulators.

The first problem was that PG&E's records of the pipeline under San Bruno were wrong. They showed a seamless pipe when in fact the pipe had a seam. Because no seam was recorded, the strength of that seam was never inspected.

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No safety buffer was established, as would have been established during a normal pressure test that pushes the pipe to 125 percent of the approved Maximum Allowable Operating Pressure.

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I really thank the Committee for including in its pipeline safety bill a nationwide review, which Senator Boxer and I proposed in our bill. I think this will go a long way and I want to thank you for it.

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Bottom line: the San Bruno tragedy may have been prevented had the seams been properly recorded and inspected, or had the pipeline strength ever been established with a pressure test.

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So I would just like to say to this committee, first of all, I think your first step has been at least partially accomplished. The bill was hotlined, it has passed the Senate, I think that is very good news.

But I would really encourage you to look further. This is expensive for the companies, and I know it's expensive for them. But, we're earthquake country. We have 38 million people. These pipes are all underground, they're in dense places. All throughout San Francisco, a relatively old city when it comes to cities in California.

So there are a lot of reasons to worry about this and I think there are a lot of reasons to really to continue to do extraordinary due diligence on this particular issue.

So senators, the three of you have made a major step forward. And I, for one, am very grateful, and I thank you.

Senator LAUTENBERG. Senator Feinstein, my little state doesn't compare in population numbers, but in population density we win the prize. And thusly, if something happens in New Jersey, it invariably affects a lot of people.

And this explosion we had, I mentioned, 14 buildings were destroyed. Luckily, we had a fatality that resulted from a health condition the person was having, but this is too heavy of a hazard to just be lying there ready to pop open when the pressure, as you indicated, gets high enough.

So, thank you very much, and we'll certainly excuse you and continue to work together with our colleagues here to make sure that we get as much of a bill as we possibly can here.

I think we've got a good start, and having crossed the Capitol is a giant step. But our work is not over by a long shot.

Senator FEINSTEIN. Thank you.

Senator BOXER. Can I say one thing before Senator leaves?

Senator LAUTENBERG. Please.

Senator BOXER. I just wanted to say one thing to my friend and colleague. I remember right after this explosion we had a hearing here, and we were so bound and determined to do something. And I just wanted to add my voice of thanks to Senators Lautenberg and Wicker, and the rest of the Committee, and Chairman Rockefeller—though he's not here.

I mean, they really moved heaven and earth. We know how hard it is for a bill to become a law—it's not as easy as it sounds in the textbooks. It takes a lot of perseverance and a lot of people have to help us.

So I wanted to join you in thanking this committee for its work. And I know if we keep this bipartisanship going, we'll do a lot more

in this arena. And I thought that your testimony was absolutely right on the mark. Thank you.

It was a “ten” as you would say.

[Laughter.]

Senator LAUTENBERG. And I point out that it was unanimously passed, and I credit that thusly to Senator Wicker for being forthcoming and silent at the right time.

[Laughter.]

Senator FEINSTEIN. Thank you, Senators. Thank you very much.

Senator LAUTENBERG. And now we are calling the witnesses to the table. Each one brings significant experience and expertise to the issue of pipeline safety.

Cynthia Quarterman, Administrator of the Pipeline Hazardous Materials Safety Administration—she’s going to be discussing her agency’s work to improve pipeline safety in the United States.

Deborah Hersman, Chairman of the National Transportation Safety Board, will update us on her agency’s review of recent pipeline accidents.

Mr. Nick Stavropoulos is Executive Vice President of Pacific Gas and Electric. And he’s going to discuss his company’s response to the San Bruno explosion.

And Rick Kessler, Vice President of the Pipeline Safety Trust organization.

Donald Santa Jr., President and CEO of Interstate National Gas Association of America.

Christina Sames is Vice President of Operations and Engineering for the American Gas Association.

And I thank all of you for coming today and we’re going to try to adhere to the 5-minute rule. So, please let us hear from you, and I will not put the brakes on too fast, but I will put them on.

We look forward to hearing testimony and we would first ask Ms. Quarterman to give us her views.

**STATEMENT OF HON. CYNTHIA L. QUARTERMAN,
ADMINISTRATOR, PIPELINE AND HAZARDOUS
MATERIALS SAFETY ADMINISTRATION,
U.S. DEPARTMENT OF TRANSPORTATION**

Ms. QUARTERMAN. Chairman Lautenberg, Ranking Member Wicker, and members of the Subcommittee, thank you for providing me with the opportunity to discuss our Nation’s pipeline safety program.

I would also like to congratulate the Senate for unanimously passing Senate Bill 275 regarding pipeline safety last night. This bill will strengthen our oversight and regulatory enforcement authority.

As you know, just over a year ago, a tragic pipeline incident occurred in San Bruno, California, resulting in serious consequences. This incident, and other recent pipeline incidents, demonstrate that, while our Nation’s pipeline infrastructure is an efficient means of transporting energy, we need to be more vigilant in preventing pipeline failures and minimizing the severity of failures that do occur.

My testimony today focuses on several issues relevant to the San Bruno accident, the Department’s plan to address the safety issues

raised by that incident, and legislation that will help them address these issues.

PHMSA has preemptive regulatory authority over interstate pipeline facilities under the pipeline safety laws, but states are permitted to regulate the safety standards and practices for intrastate pipeline facilities.

The California Public Utility Commission serves as the principal regulator of intrastate gas pipelines in California. PHMSA provides funding to the CPUC, and conducts annual audits to review the use of those funds. PHMSA also conducts field audits and annual performance reviews of the CPUC's gas pipeline safety program. PHMSA accepts full responsibility for administering the state pipeline certification program.

In light of recent incidents, including the San Bruno pipeline failure, we will be conducting a full and comprehensive review of our state program, including the CPUC's oversight.

PHMSA, CPUC, and the National Transportation Safety Board acted quickly after the explosion to organize a coordinated response and launch an investigation. In the months since the incident, PHMSA has provided subject matter expertise, advice, and counsel in support of both the NTSB and the CPUC.

As a result of the San Bruno pipeline failure, PHMSA has conducted a thorough review of its regulations, policies, programs, and procedures.

Even though this incident and failure investigation fall within the purview of the state of California, it has prompted PHMSA to take a fresh look at ways to strengthen Federal regulations that must be adopted by our state partners, and to reexamine our role in auditing and funding state pipeline programs.

This review has led to a number of new initiatives. For example, in November of 2010, PHMSA issued an advisory bulletin to remind operators of gas and hazardous liquid pipeline facilities, that they must make their pipeline emergency response plans available to local emergency responders.

This April, Secretary LaHood issued a Call to Action to pipeline safety stakeholders asking pipeline owners and operators to conduct a comprehensive review of their oil and gas pipelines to accelerate the repair, rehabilitation, or replacement of the highest-risk pipelines.

In July, PHMSA held workshops on managing challenges with seam failures and improving pipeline risk assessment and record keeping.

And in August, PHMSA issued an advanced notice of proposed rulemaking on improving the safety of onshore gas transmission lines, which encompasses many of the NTSB's recommendations.

During my time as administrator, PHMSA has also conducted an internal and independent audit of its state certification program.

The NTSB recently issued its pipeline accident report for the San Bruno pipeline failure. In addition to the actions already planned, my written testimony identifies several other planned actions.

While PHMSA is confident that it already has the authority to fully respond to the San Bruno pipeline failure, and address NTSB's recent recommendations, the pipeline safety bill passed by the Senate yesterday will help us to address some other issues.

In particular, the bill includes provisions to increase the maximum administrative civil penalty, to increase the number of pipeline safety inspectors, and to address gaps in current statutory authority. The incentives in this bill are very similar to the legislation that the administration transmitted to Congress last fall and earlier this year.

And PHMSA is pleased to see bipartisan support for such an important issue. Mr. Chairman, members of the Subcommittee, I assure you that PHMSA, through appropriate regulation and oversight, will issue—will use its full enforcement authority to ensure that operators meet pipeline safety standards.

In the meantime, I thank you for moving forward on your pipeline safety reauthorization bill. Thank you.

[The prepared statement of Ms. Quarterman follows:]

PREPARED STATEMENT OF HON. CYNTHIA L. QUARTERMAN, ADMINISTRATOR, PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Chairman Lautenberg, Ranking Member Wicker, and members of the Subcommittee, thank you for providing me with the opportunity to discuss our Nation's pipeline safety program.

As you know, thirteen months ago a tragic pipeline accident occurred in San Bruno, California, resulting in eight deaths, numerous injuries, and the destruction of 38 homes. This accident and other recent pipeline failures demonstrate that while our Nation's pipeline infrastructure is an efficient means of transporting energy, we need to be ever vigilant in seeking to prevent pipeline failures and to minimize the number and severity of failures that do occur.

My testimony today will focus on several issues relevant to the San Bruno accident and the Department's plan for addressing the safety issues raised by that accident. First, I will provide an overview of the pipeline safety program, including the role of States in ensuring the safety of intrastate gas pipelines. Second, I will discuss the actions that PHMSA has already taken to address some of the factors that caused or contributed to the San Bruno accident. Third, I will provide our preliminary responses to the National Transportation Safety Board (NTSB) Accident Report. Last, I will briefly discuss some of the critical provisions in the pending pipeline safety reauthorization bill that will further enhance our statutory authority to prevent pipeline accidents. I thank you for moving forward with that legislation and look forward to its presentation to the full Senate.

Pipeline Safety Program

Congress has authorized Federal regulation of the safety of gas and hazardous liquid pipelines and liquefied natural gas (LNG) facilities in the pipeline safety laws (49 U.S.C. §§ 60101 et seq.), a series of statutes that are administered by the U.S. Department of Transportation (Department), Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA has used that authority to prescribe the pipeline safety regulations, a set of minimum Federal safety standards for the design, construction, testing, operation, and maintenance of such facilities (49 C.F.R. Parts 190–199).

PHMSA has preemptive regulatory authority over interstate pipeline facilities under the pipeline safety laws, but the States (including Puerto Rico and the District of Columbia) are permitted to regulate the safety standards and practices for intrastate pipeline facilities. The States must submit an annual certification to PHMSA to exercise that authority. The States can also receive authorization from PHMSA to serve as an agent for inspecting interstate pipeline facilities. PHMSA can reject a certification or terminate an agreement if a State is not taking satisfactory action to ensure pipeline safety.

Most State pipeline safety programs are administered by public utility commissions. As noted above, these State authorities are required to adopt the Federal pipeline safety regulations as part of the certification process, but can establish more stringent safety standards for intrastate pipeline facilities. PHMSA is prohibited by statute from regulating the safety standards or practices for an intrastate pipeline facility if and to the extent that a State has a current certification to regulate such facilities (49 U.S.C. § 60105(a)).

The California Public Utilities Commission (CPUC) serves as the principal regulator of intrastate gas pipelines in California, having obtained that authority by submitting an annual certification to PHMSA. As a certified State authority, CPUC has complied with its obligation to adopt the minimum Federal gas pipeline safety standards and drug and alcohol testing requirements. CPUC has also exercised its discretion to establish supplementary state pipeline safety standards, including additional reporting requirements for the construction of new and reconditioning of existing pipelines and for proposed increases in the maximum allowable operating pressure (MAOP) of higher stress pipelines; and additional leak survey and valve maintenance requirements for gas distribution systems. Following the San Bruno accident, CPUC adopted additional pressure testing requirements for verifying the MAOP of older intrastate gas transmission lines and determining whether those pipelines need to be replaced.

PHMSA provides funding to the CPUC through the grant allocation formulas listed in 49 C.F.R. Part 198 and conducts frequent audits to review the use of these funds. PHMSA also conducts field audits and annual performance reviews of the CPUC's gas pipeline safety program.

With the exception of Alaska and Hawaii, state pipeline safety agencies are the first line of defense in assuring the safety of intrastate gas pipelines in American communities. States have always been the cornerstone of the pipeline safety program on intrastate gas pipelines. States are responsible for oversight of virtually all gas distribution pipelines, gas gathering pipelines and intrastate gas transmission, as well as serving as our agents for 20 percent of the interstate gas pipelines. PHMSA maintains primary responsibility for the remaining gas pipelines. States employ approximately 63 percent of the total pipeline inspector workforce.

PHMSA accepts full responsibility for administering the state pipeline certification program. In light of recent accidents, including the San Bruno pipeline failure, we will be conducting a full and comprehensive review of our state program.

San Bruno Pipeline Failure

The San Bruno pipeline accident, which occurred on September 9, 2010, involved the rupture of Line 132, a 30-inch natural gas intrastate transmission line operated by the Pacific Gas and Electric Company and regulated by CPUC.

PHMSA, CPUC, and the National Transportation Safety Board (NTSB) acted quickly after the explosion to organize a coordinated response and launch an investigation. The first PHMSA investigator arrived on the scene on September 10, and a second PHMSA investigator arrived three days later. Shortly thereafter, I personally visited the accident site, where I witnessed the devastating consequences of the accident firsthand and met with counterparts from NTSB, the CPUC, and other State regulatory agencies.

In the months since the accident, PHMSA has provided subject matter expertise, advice, and counsel in support of NTSB and CPUC, including the dedication of staff and resources from our offices in Ontario, California; Denver, Colorado; Kansas City, Missouri; and Washington, D.C.

PHMSA Initiatives and Actions

PHMSA has conducted a thorough review of its regulations, policies, programs, and procedures as a result of the San Bruno pipeline failure. Even though this accident and failure investigation fall within the purview of the State of California, it has prompted PHMSA to take a fresh look at ways to strengthen Federal regulations that must be adopted by our state partners and to reexamine our role in auditing and funding state pipeline programs.

This review has led to a number of new initiatives, including:

November 2010	PHMSA issued an Advisory Bulletin to remind operators of gas and hazardous liquid pipeline facilities that they must make their pipeline emergency response plans available to local emergency response officials. PHMSA recommended that operators provide their emergency response plans to officials through their required public awareness liaisons and activities. PHMSA also stated that it will be evaluating the extent to which operators have provided their emergency plans to local emergency officials during upcoming public awareness inspections scheduled through December 31, 2012.
January 2011	PHMSA issued an Advisory Bulletin to remind operators of gas and hazardous liquid pipeline facilities of their responsibilities under the Federal integrity management (IM) regulations to perform detailed threat and risk analyses that integrate accurate data and information from their entire pipeline system, especially when calculating Maximum Allowable Operating Pressure (MAOP) or Maximum Operating Pressure (MOP). PHMSA also reiterated that operators must utilize these risk analyses in the identification of appropriate IM assessment methods, and preventative and mitigative measures.

April 2011	Following several fatal pipeline accidents, including one that killed five people in Allentown, PA, Secretary LaHood issued a Call to Action on Pipeline Safety asking pipeline owners and operators to conduct a comprehensive review of their oil and gas pipelines to identify areas of high risk and accelerate critical repair and replacement work. Secretary LaHood also called on Congress to pass Federal legislation aimed at strengthening oversight on pipeline safety and holding operators accountable for pipeline violations. Secretary LaHood also launched a new webpage to provide the public—as well as community planners, builders and utility companies—with clear and easy to understand information about their local pipeline networks.
April 2011	PHMSA assisted CPUC in performing a review of the Risk Assessment and Threat Identification portion of its Gas Integrity Management Audit of PG&E.
July 2011	PHMSA and the National Association of Pipeline Safety Representatives (NAPSR) held a workshop, entitled “Improving Pipeline Risks Assessments and Recordkeeping,” to exchange information on identifying threats and improving risk assessments and record keeping for onshore pipelines. More than 560 representatives from U.S. and Canadian pipeline safety regulatory agencies, state agencies, standards developing organizations, technology vendors, service providers, pipeline operators, trade organizations, steel pipeline manufacturers, independent contractors and the general public attended in person and via webcast. The panelists discussed the critical need for an accurate pipeline-specific risk assessment illustrating that good data supports effective integrity programs and that recent pipeline incidents are raising concern over operator risk assessments. The panelists also highlighted some of the major aspects of risk assessment that continue to need improvement, including addressing interactive threats, vintage/legacy pipe, recordkeeping, and data integration.
July 2011	PHMSA and NAPSR held a workshop, entitled “Managing Challenges with Pipeline Seam Welds,” to exchange information as part of a multi-year research effort on the integrity of pipeline seam welds. More than 250 representatives from U.S. and Canadian pipeline safety regulatory agencies and State/Provincial agencies, standards developing organizations, technology vendors, service providers, pipeline operators, trade organizations, steel pipeline manufacturers, independent contractors and the general public attended in person and via webcast. The forum facilitated discussion on how anomalies in seam welds are identified and managed. Panelists agreed that hydrotesting was the preferred method to find threats in seam welds for most operators, but recent improvements with in-line inspection technology were noted as well. Actions taken by regulators and standards developing organizations have also kept a focus on mitigating threats associated with seam weld defects.
August 2011	PHMSA issued an Advance Notice of Proposed Rulemaking (ANPRM) on improving the safety of onshore gas transmission lines. PHMSA is seeking public comment on the following potential regulatory changes: repealing the regulatory exemption from the hydrostatic pressure testing requirements for pipelines installed prior to 1970; revising the definition of a high-consequence area (HCA); imposing additional restrictions on the use of certain pipeline assessment methods; revising the requirements for mainline valves, including valve spacing and installation of remotely operated or automatically operated valves; modifying the corrosion control requirements for steel pipelines; revising the requirements for collecting, validating, and integrating pipeline data; and adopting new requirements for management of change and quality control.

During my time as Administrator, PHMSA has also initiated two separate audits of its state certification program. The results of these audits will be considered in making future improvements to this program.

National Transportation Safety Board Pipeline Accident Report

The National Transportation Safety Board (NTSB) recently issued its Pipeline Accident Report for the San Bruno pipeline failure. NTSB found that the probable cause of the accident was (1) inadequate quality assurance and quality control by PG&E during its relocation of Line 132 in 1956, which allowed the installation of a substandard and poorly-welded pipe section with a visible seam weld flaw to grow to a critical size and cause the pipeline to rupture 54 years later during a pressure increase stemming from poorly-planned electrical work at the Milpitas Terminal; and (2) an inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section.

NTSB further found that CPUC and DOT contributed to the accident by failing to require hydrostatic pressure testing of “grandfathered” gas pipelines and to detect the inadequacies in PG&E’s pipeline integrity management program. NTSB also found that the lack of either automatic shutoff valves or remote control valves on Line 132, and PG&E’s flawed emergency response procedures and delay in isolating the rupture to stop the flow of gas, contributed to the severity of the accident.

NTSB issued new safety recommendations for the Secretary and PHMSA. The Secretary will respond by:

- Conducting an independent audit to evaluate the effectiveness of PHMSA’s oversight of its performance-based safety standards, enforcement policies and procedures, and annual state certification programs.

- Ensuring that PHMSA takes appropriate action to address the results of these audits.

In addition to the actions already taken, PHMSA will respond by:

- Proceeding with the August 2011 ANPRM and issuing a notice of proposed rule-making with appropriate amendments to the gas pipeline safety regulations.
- Ensuring adequate implementation of PHMSA's new control room and distribution integrity management requirements.
- Reviewing PHMSA's drug and alcohol testing requirements and proposing a clarifying amendment, if necessary.
- Revising PHMSA's integrity management inspection protocols.
- Issuing Advisory Bulletins on the development of pipeline emergency response plans and performance of post-accident drug and alcohol testing.
- Holding additional forums on pipeline emergency response and use of automatic shutoff valves and remotely controlled valves.
- Assisting CPUC in conducting a comprehensive audit of its state gas pipeline safety program and in performing an upcoming evaluation of PG&E's Public Awareness Program.
- Improving CPUC's understanding and enforcement of the Integrity Management Requirements.
- Consulting with NAPS and the National Association of Regulatory Utility Commissioners (NARUC) on ways to improve State oversight of intrastate pipeline operators.

Legislation

While PHMSA is confident that it already has the authority to fully respond to the San Bruno pipeline failure and address NTSB's recent recommendations, we note that the Committee has passed legislation, S.275, sponsored by Senators Rockefeller and Lautenberg, which will assist the agency in these efforts. In particular, the bill includes provisions to increase the maximum administrative civil penalties for the most serious types of violations from \$100,000 per day not to exceed \$1 million for a related series of violations to \$250,000 per day not to exceed \$2.5 million for a related series of violations; on the use of automatic shutoff valves and remotely-controlled valves, increased public awareness of PHMSA inspection activities and operator's emergency response plans, improved incident and accident notification requirements for state and local officials and first responders, State implementation of their pipeline safety programs, and verification of pipeline records and confirmation of the MAOP of gas pipelines. It would also provide authorization for the hiring of 39 additional employees. The initiatives in this bill are very similar to the legislation the Administration transmitted to Congress last fall and earlier this year.

Conclusion

Mr. Chairman, Members of the Subcommittee, I assure you that PHMSA, through appropriate regulation and oversight, will use its full enforcement authority to ensure that operators meet pipeline safety standards. In the meantime, I thank you for moving forward on the reauthorization bill and we look forward to the presentation of the legislation to the full Senate.

Senator LAUTENBERG. Thank you very much.
Ms. Hersman, I call on you, please.

STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD

Ms. HERSMAN. Good afternoon Chairman Lautenberg, Senator Boxer, and committee staff. I'm joined today by NTSB staff who produced the report, as well as members Sumwalt and Rosekind, who are in the audience.

On October 30, the NTSB held its board meeting on the pipeline rupture that occurred on September 9, 2010, in San Bruno, California. As you've heard today, that accident killed eight people, injured dozens more, and destroyed 38 homes.

The NTSB findings include flawed pipeline, flawed operations, and flawed oversight. In total, the board issued nearly 40 recommendations associated with this accident investigation, including recommendations to improve recordkeeping, eliminate the grandfathering of older pipelines, install automatic or remote control shutoff valves, require in-line inspections of pipelines, and improve risk-management programs and their oversight.

I'd like to show a brief video that tells the story of this accident investigation.

[The prepared statement of Ms. Hersman follows:]

PREPARED STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN,
NATIONAL TRANSPORTATION SAFETY BOARD

Chairman Lautenberg, Ranking Member Wicker, members of the Subcommittee, thank you for the opportunity to address you today concerning the National Transportation Safety Board's (NTSB) investigation and recently issued accident report on the pipeline rupture and fire in San Bruno, California, 13 months ago. This tragic accident was particularly devastating to the City of San Bruno and its 41,000 residents. It resulted in the deaths of eight people, 58 injuries, destroyed 38 homes, damaged 70 more homes, caused the evacuation of many more residents from their homes.

Today, I will discuss the results of the NTSB's investigation and its findings, probable cause determination, and series of far reaching safety recommendations. Mr. Chairman, the troubling lessons learned from the San Bruno pipeline rupture compel that all necessary steps be taken to minimize the safety risks that underground pipelines present.

We also need to understand that the oil and gas pipeline network in the United States is pervasive—consisting of 2.5 million miles—with a significant amount of new pipeline design and construction activity underway. The unacceptable safety risks present at San Bruno certainly apply to aging pipelines but some of the NTSB's finding also extend to newer pipelines, particularly in light of lax Federal and state pipeline safety oversight and operators' ability to exploit regulatory and enforcement deficiencies.

The Accident

On September 9, 2010, about 6:11 p.m. Pacific Daylight Time, a 30-inch-diameter segment of an intrastate natural gas transmission pipeline known as Line 132, owned and operated by the Pacific Gas and Electric Company (PG&E), ruptured in the Crestmoor neighborhood in San Bruno, California. The rupture occurred at mile point 39.28 of Line 132, at the intersection of Earl Avenue and Glenview Drive. The rupture produced a crater about 72 feet long by 26 feet wide. The section of pipe that ruptured, which was about 28 feet long and weighed about 3,000 pounds, was found 100 feet away from the crater. PG&E estimated that the rupture released 47.6 million standard cubic feet of natural gas—enough to serve 1,200 residential homes for 1 year—which ignited and resulted in the intense and deadly fire.

More than 900 emergency responders from the City of San Bruno and surrounding jurisdictions executed a coordinated emergency response. Once the flow of natural gas was interrupted, this response included defensive operations, search and evacuation, medical operations, and firefighting operations that continued for 2 days. Overall, the emergency response was well coordinated and effectively managed by local responders.

However, PG&E took over 90 minutes to stop the flow of gas and to isolate the rupture site—a response time that was excessively long and contributed to the extent and severity of property damage and increased the life-threatening risks to the residents and emergency responders. The NTSB found that PG&E lacked a detailed and comprehensive procedure for responding to large-scale emergencies such as a transmission pipeline break, including a defined command structure that clearly assigns a single point of leadership and allocates specific duties to supervisory control and data acquisition (SCADA) staff and other involved employees. PG&E's SCADA system limitations caused delays in pinpointing the location of the break. The use of either automatic shutoff valves or remote control valves would have reduced the amount of time taken to stop the flow of gas.

The NTSB's Investigation

The NTSB determined that the probable cause of the accident was PG&E's (1) inadequate quality assurance and quality control in 1956 during its Line 132 relocation project, which allowed the installation of the substandard and poorly welded pipe section with a visible scam weld flaw that, over time grew to a critical size, causing the pipeline to rupture during a pressure increase stemming from poorly planned electrical work at PG&E's Milpitas Terminal where Line 132 originates—approximately 39 miles south of where the rupture occurred; and (2) an inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section.

Contributing to the accident were the actions taken decades ago by the pipeline safety regulator within the state of California, the California Public Utilities Commission (CPUC), and the U.S. Department of Transportation (DOT) to grandfather pre-1961 and pre-1970 pipelines, respectively, from the regulatory requirement for pressure testing, which likely would have detected the installation defects. Also contributing to the accident was the CPUC's failure to detect the inadequacies of PG&E's pipeline integrity management program. Additionally contributing to the severity of the accident were the lack of either automatic shutoff valves or remote control, valves on the line and PG&E's flawed emergency response procedures that delayed the isolation of the rupture to stop the flow of gas.

The NTSB's investigation found that the rupture of Line 132 was caused by a fracture that originated in the partially welded longitudinal seam of one of six short pipe sections, which are known as "pups." The fabrication of five of the pups in 1956 during the relocation of Line 132 would not have met generally accepted industry quality control and welding standards today or at the time of installation, indicating that those standards were either overlooked or ignored. The weld defect in the failed pup would have been visible when it was installed. The investigation also determined that a sewer line installation in 2008 near the rupture did not damage the defective pipe.

Even prior to completion of the San Bruno investigation, in early January of this year, the NTSB issued six safety recommendations to PG&E and CPUC—five of which were designated as "Urgent." One "Urgent" safety recommendation was also issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA). These safety recommendations pointed out the need for PG&E to address inaccuracies in its records for the accident pipe, including the need to search aggressively and diligently for records concerning the pipeline system components for PG&E natural gas transmission pipelines in high consequence areas that had not had a maximum allowable operating pressure established through hydrostatic pressure testing. Also, after the NTSB's investigative hearing on the accident, it issued two additional recommendations to PHMSA regarding issuing guidance to pipeline operators on the importance of sharing system-specific information with emergency response agencies and one recommendation to PG&E to require its SCADA operators to notify immediately the appropriate 9-1-1 emergency call center when there is a possible pipeline rupture.

Unfortunately, the NTSB had seen these problems at PG&E before. Several deficiencies revealed by the NTSB investigation, such as PG&E's poor quality control during the pipe installation and inadequate emergency response, were also factors in the 2008 explosion of a PG&E gas pipeline in Rancho Cordova, California and a 1981 PG&E gas pipeline leak in San Francisco that were also investigated by the NTSB. In Rancho Cordova, PG&E installed the wrong pipe, and its emergency response was inadequate with PG&E dispatching untrained personnel. In the San Francisco accident, PG&E's inaccurate record-keeping, dispatch of personnel who were not trained or equipped to close valves, and unacceptable delays in shutting down the pipeline led to the flow of natural gas from a ruptured pipeline lasting for over 10 hours.

More importantly, the NTSB's accident report, adopted on August 30, depicts PG&E's longstanding multiple deficiencies in its operational procedures and management controls and failure to recognize and correct them as key factors leading to the persistence and growth of hazardous circumstances over time until an accident occurs—in this case, a rupture of a 30-inch pipeline. These higher-order, or organizational accident factors, which the NTSB views as a systemic problem, must be addressed to improve PG&E's safety management practices. In general, organizational accidents have multiple contributing causes, involve people at numerous levels within a company, and are characterized by a pervasive lack of proactive measures to ensure adoption and compliance with a safety culture. Moreover, organizational accidents are catastrophic events with substantial loss of life, property, and environment; they also require complex organizational changes in order to avoid them in the future.

Performance-Based Pipeline Safety Programs

In 2003, PHMSA promulgated gas pipeline safety regulations that implemented various statutory requirements enacted the previous year. PHMSA, with the support and assistance of the pipeline industry, added to its prescriptive regulatory scheme a performance-based regulatory scheme with broad performance goals as the basis for its pipeline safety program, most notably with respect to integrity management programs, and to a lesser extent, to public awareness programs. This new regulatory scheme applies to gas transmission and distribution systems and to hazardous liquid pipeline systems. Under performance-based regulations, the fundamental premise is that an individual pipeline operator knows its system best, and thereby is best able to develop, implement, execute, evaluate, and adjust safety priorities and measures. Within this regulatory framework, pipeline operators have a great deal of flexibility and responsibility to develop their individual programs and plans, determine the specific performance standards, implement their plans and programs, and conduct periodic self-evaluations that best fit their particular pipeline systems.

Integrity management programs for hazardous liquid and gas transmission pipelines typically require operators to assess the condition of their pipelines. Use of “in-line” inspection tools that travel through the pipeline and pressure testing are two effective methods to detect and identify internal defects, including the type of weld defects that caused Line 132 to rupture. Prior to the accident, no in-line inspections had been performed on Line 132. PG&E’s pipeline integrity management program, which should have ensured the safety of the system, was deficient and ineffective because

- it was based on incomplete and inaccurate pipeline information;
- did not consider the design and materials contribution to the risk of a pipeline failure;
- failed to consider the presence of previously identified welded seam cracks in Line 132 as part of its risk assessment;
- resulted in the selection of an examination method that could not detect welded seam defects; and
- used internal assessments of the program that were superficial and resulted in no improvements.

The effectiveness of performance-based pipeline safety programs is dependent on the diligence and accountability of both the operator and the regulator—the operator for development and execution of its plan, and the regulator for oversight of the operators. However, as is evident in this investigation, the PG&E integrity management and public awareness programs failed to achieve their stated goals because performance measures were neither well defined nor evaluated with respect to meeting performance goals. By overlooking the existence of, and the risk from, manufacturing and fabrication defects under its integrity management program, PG&E took no actions to assess risk and ultimately was unaware of the internal defects that caused the rupture of Line 132.

The NTSB’s investigation also determined that CPUC failed to detect the inadequacies in PG&E’s integrity management program and that PHMSA’s integrity management inspection protocols need improvement. Because PHMSA has not incorporated the use of effective and meaningful metrics as part of its guidance for performance-based management pipeline safety programs, its oversight of state public utility commissions regulating gas transmission and hazardous liquid pipelines could be improved. Without effective and meaningful metrics in performance-based pipeline safety management programs, neither PG&E nor CPUC was able to properly evaluate or assess PG&E’s pipeline system.

NTSB’S Recommendations

In addition to the already discussed recommendations issued before the final report was completed, the NTSB made 29 new safety recommendations in its report, for an unusually high total of 39 recommendations stemming from this accident. Recommendation recipients include the Secretary of Transportation, PHMSA, PG&E, CPUC, the Governor of the State of California, the American Gas Association, and the Interstate Natural Gas Association of America.

Four of the recommendations call on the Secretary of Transportation to conduct audits of the effectiveness of PHMSA’s oversight of performance-based pipeline safety programs, its enforcement policies and procedures, and its state pipeline safety certification and grant programs. We addressed thirteen of our new recommendations to PHMSA. These included:

- requiring operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide more system-specific information to emergency responders and communities where the pipelines are located and to ensure their SCADA centers are equipped with tools to immediately pinpoint the location of leaks and control room operators immediately notify 9–1–1 emergency call centers when a possible pipeline rupture is indicated.
- amending the Pipeline Safety Regulations to require that automatic shutoff valves or remote control valves be installed in areas with the highest potential for risk; remove the provision that exempts gas transmission pipelines constructed before 1970 from hydrostatic testing to determine the line's maximum allowable operating pressure; and require post-construction hydrostatic pressure tests of at least 1.25 the maximum allowable operating pressure in order for manufacturing- and construction-related defects to be considered stable.
- requiring that all natural gas transmission pipelines be configured so as to accommodate in-line inspection tools, with priority given to older pipelines.
- developing and implementing standards for integrity management and other performance-based safety programs that require operators of all types of pipeline systems to regularly assess the effectiveness of their programs.
- working with state public utility commissioners to implement pipeline oversight programs that employ meaningful metrics available in a centralized database and to identify and correct deficiencies in these oversight programs.

The NTSB directed eight recommendations to PG&E that included:

- establishing comprehensive emergency response procedures.
- identifying the likelihood and consequence of failures associated with planned work activities and developing contingency plans.
- expediting installation of automatic shutoff valves and remote control valves in high consequence areas.
- assessing every aspect of its integrity management program and implementing a revised program that, at a minimum, addresses issues including consideration of all defect and leak data for the life of each pipeline, including its construction, a revised risk analysis methodology, and an improved self-assessment process.

The NTSB addressed two recommendations to the CPUC:

- conduct a comprehensive audit of all PG&E's operations, with assistance from PHMSA.
- require PG&E to correct all deficiencies identified as a result of the NTSB's San Bruno accident investigation, as well as additional deficiencies identified as a result of the recommended CPUC comprehensive audit, and verify that all corrective actions are completed.

The NTSB also recommended that the Governor of the State of California evaluate the authority and ability of CPUC's pipeline safety division to enforce effectively state pipeline safety regulations and that the American Gas Association and the Interstate Natural Gas Association of America report to the NTSB on their progress in developing and introducing advanced in-line inspection platforms for use in gas transmission pipelines not currently accessible to existing in-line inspection platforms.

Closing

The accident in San Bruno was a horrific and tragic event. Particularly regrettable is the history of Federal and state ineffectiveness in overseeing pipeline safety, identifying systemic safety problems, and the lack of meaningful enforcement. Equally troubling is the failure of the regulators to identify PG&E's safety and emergency response deficiencies and carefully audit and inspect pipeline operations even after past deficiencies had been identified and documented. I believe if the NTSB recommendations are implemented, the safety of pipelines and surrounding communities across the country will be vastly improved so that we are not investigating a similar accident in the future.

This concludes my testimony, and I would be happy to answer any questions you may have.

Senator LAUTENBERG. Mr. Stavropoulos, we'll call on you.

**STATEMENT OF NICK STAVROPOULOS,
EXECUTIVE VICE PRESIDENT, GAS OPERATIONS,
PACIFIC GAS AND ELECTRIC COMPANY**

Ms. STAVROPOULOS. Thank you, Mr. Chairman.

Good afternoon. My name is Nick Stavropoulos, Executive Vice President of Gas Operations for PG&E. Thank you for this opportunity, and thank you for your focus on this critical issue.

As someone who has spent over 32 years in the natural gas business, it's my view that it's never been more important to reevaluate, reinforce, and reaffirm our collective focus on pipeline safety.

The Pipeline Transportation Safety Act of 2011, approved by this committee last night—approved by this committee and last night by the full Senate—represents a major step in that direction, and we at PG&E strongly support it. And we applaud and thank the Committee for its leadership in advancing this legislation.

Several serious accidents around the country have recently underscored why this renewed attention on safety is so important. And none of these—none of these—was more tragic than the explosion and fire on our pipeline in San Bruno, California: eight lives lost, many people badly burned and injured, dozens of homes destroyed in a community that's been changed forever.

No one can convey in words the full tragedy of September 9, 2010. What I hope to convey is our tremendous sorrow and our profound sympathy to the families whose lives will never be the same.

What we can also do is stand by our promise to help San Bruno recover, and we can stand by our pledge to do everything necessary to prevent another accident like this from ever happening again.

That's our goal; that's our commitment. It's the charge that I accepted when I joined PG&E in June of this year to run the gas business. And I want to briefly outline some of the steps we are now taking.

Many of those, of course, go directly to the important recommendations that Chairman Hersman and the NTSB recently issued, as well as priorities raised by Senator Boxer, Senator Feinstein, and the leadership of this committee.

Chairman Hersman, I want to thank you for the meticulous work by your team on the San Bruno investigation, and for the recommendations in your final report, all of which PG&E fully embraces.

I also want to share with the Committee that PG&E today is announcing that former NTSB Chairman Jim Hall has agreed to be an outside advisor to PG&E. He's going to help assure that the steps we are taking are as responsive to the NTSB's recommendations, and as effective as they can possibly be.

Chairman Hall will also be available to provide the California Public Utilities Commission with independent reports on our progress.

Broadly speaking, PG&E's efforts fall into several areas, including verifying our records and conducting extensive pressure testing to validate that our lines are running at safe pressures, installing new equipment and technology to provide better monitoring, and emergency shutoff capabilities such as automated valves, retrofitting certain pipelines so they can be inspected from inside using smart pigs, increasing our information sharing with local commu-

nities including residents, fire departments, and other local public safety officials, and also adopting more rigorous work safety procedures to match and surpass the best in the industry.

In all of these areas we're moving forward. We've undertaken an unprecedented program to pressure test or replace any pipe that doesn't have complete pressure test records, and validate the safe pressures for all the pipelines through a rigorous records-based analysis.

We've validated safe pressures on hundreds of miles of lines throughout this documentation, and we're on track to complete hydrotesting on as much as 160 miles of line this year. And so far, all of our lines have fully passed our hydrotests. We're also on track to install 29 automated shutoff valves in key locations by the end of this year.

However, we know that we're on the front end of what must be a longer-term effort to modernize our system, and really set new standards for operational and public safety. That's why we're working with the California regulators in an effort that will make California pipeline safety requirements the toughest and most comprehensive of any state in the country.

We recently presented our long-term pipeline safety enhancement plan to the CPUC. The first phase is targeting pipelines in highly populated areas that have vintage seam wells that don't meet modern standards and that were grandfathered under previous regulations and have not been strength tested.

By the end of this first phase, PG&E plans to replace 186 miles of pipe, strength test more than 780 miles, retrofit about 200 miles to permit inline inspections, and to install 228 automated valves.

We look forward to the California Commission's decision on this plan. We believe that these measures are the right thing to do, and it's the right time to do it. In the meantime, we continue to move forward with the actions I mentioned earlier, and we continue to do whatever is necessary to protect the public safety.

Thanks again for this opportunity, and I'm pleased to be available for questions.

[The prepared statement of Mr. Stavropoulos follows:]

PREPARED STATEMENT OF NICK STAVROPOULOS, EXECUTIVE VICE PRESIDENT,
GAS OPERATIONS, PACIFIC GAS AND ELECTRIC COMPANY

Good afternoon Chairman Lautenberg, Ranking Member Wicker, Senator Boxer and other members of the Subcommittee. My name is Nick Stavropoulos and I am executive vice president of Gas Operations for Pacific Gas and Electric Company or PG&E. PG&E is one of the largest combined natural gas and electric utilities in the United States. Headquartered in San Francisco with nearly 20,000 employees, the company delivers electricity and natural gas to approximately 15 million people in Northern and Central California. PG&E's extensive natural gas system integrates more than 42,000 miles of natural gas distribution lines and more than 5,700 miles of natural gas transportation (or transmission) pipelines.

I want to thank you for providing me with the opportunity to be here today to participate in this hearing on the current state of pipeline safety following the San Bruno accident and other recent pipeline incidents in other parts of the country.

The Committee's focus on this issue is critically important; the events of the evening of September 9, 2010 are a stark reminder of that. On that evening, PG&E's natural gas transmission line running through the Crestmoor neighborhood of San Bruno, California ruptured and the results were devastating. As has been widely reported, eight people lost their lives and dozens of people were taken to local hospitals and treated for serious burns and injuries. Thirty-eight homes were

destroyed and many more were damaged. In total, more than 375 households were forced to evacuate.

The 13 months since that accident have been an ordeal for the Crestmoor community; most of us cannot truly comprehend what they experienced that night and continue to go through today.

My heart goes out to all the families and people affected by this tragedy. We know that it has been a long road to recovery and that it is not over. We want to reiterate PG&E's commitment to stand by the people and community of San Bruno. We have tried to do what's right to help rebuild the community—and to help people rebuild their lives—and we will continue to do so. We are also moving forward aggressively to make the necessary changes and upgrades in our natural gas system to make sure this does not happen again.

For these reasons, I want to thank this Committee's leadership on the issue of pipeline safety. PG&E strongly supports the Pipeline Transportation Safety Improvement Act of 2011, which was approved unanimously by the Committee, and now awaits action by the full Senate. It includes provisions that are critically important to enhancing the safety of the Nation's pipeline system, including those related to the validation of the maximum allowable operating pressure (MAOP) for pre-1970 pipelines, the installation of remote control or automated valves, and excess flow valves. These are important policies that will help enhance the safety of anyone who lives or works around natural gas pipelines and facilities. We hope this legislation can soon be passed by Congress and signed into law.

NTSB Recommendations and PG&E Actions

The National Transportation Safety Board (NTSB) recently completed a meticulous review of the San Bruno accident. I want to thank the NTSB for providing PG&E with a thorough set of recommendations and findings. We fully share the NTSB's commitment to ensuring that such a horrific accident never happens again.

Toward that end, PG&E' embraces *all* of the NTSB recommendations and those of other major investigations of this accident, such as the Report of the Independent Review Panel, which was ordered by the California Public Utilities Commission (CPUC). In the year since the tragedy, we have taken numerous actions including many recommended by the NTSB and others.

The balance of my testimony will be devoted to reviewing the steps we have taken to build a safer and more reliable natural gas system. Attached to my testimony is a document (Attachment A) that summarizes actions taken in direct response to the NTSB recommendations.

In order to successfully implement the NTSB's recommendations, our number one priority and overarching focus is building a "safety first" culture at PG&E—both public and employee safety. Public and employee safety must describe not only what we *say* we believe in, it must be reflected in our *actions*, values and priorities. Every employee must understand how their actions contribute to the safe operations of our system, and they must never doubt the imperative need to report and act upon any concerns they may have.

A first step we took to build a "safety first" culture at PG&E was to benchmark against industry leaders to see how we compare and determine what we need to do to become a leading utility. We also separated PG&E's gas and electric operations and associated functions to ensure clear roles and responsibilities. Now the organizational structure within PG&E's gas function mirrors the work and precisely defines roles and accountabilities. We are in the process of putting new standards and practices in place that support employee and public safety.

In addition to making organizational and structural changes, we have taken numerous other actions, several of which were recommended by the NTSB, including the following:

- *Validating and Modernizing Our Records.* PG&E must understand its assets inside and out. Having accurate asset knowledge and a robust integrity management process are fundamental to operating a safe and reliable natural gas transmission and distribution system. Specifically, we have:
 - Retrieved and scanned more than 2.1 million paper documents dating back to the 1920s to validate the maximum allowable operating pressure (MAOP) of all pipelines in Class 3 and Class 4 locations, and Class 1 and Class 2 high consequence areas (HCAs);
 - Verified strength test documentation for more than 1,150 miles of HCA pipeline;
 - Validated the MAOP for more than 750 miles of high priority pipelines in HCAs without prior strength tests; and

- Video inspected pipe in various locations throughout the transmission system.
- *Strength Testing Our Pipes.* PG&E has embraced the idea of eliminating the “grandfathering” of older pipelines and is in the process of an extensive strength testing and reviewing of our pipeline system. Starting with pipes that have similar qualities to the pipe that ruptured in San Bruno, we have successfully completed pressure tests or identified strength test records for approximately 97 miles of pipeline and are on track to complete testing between 144 and 160 miles this year. As of September 30, more than 85 transmission pipeline miles have been hydrostatically tested or replaced. As part of our Pipeline Safety Enhancement Plan (PSEP) that we filed with the CPUC, we propose pressure testing approximately 783 miles of pipe over the next five years.
- *Automating Our System.* PG&E recognizes the importance of modernizing our system and using technology to help us identify potential issues and address them quickly. As part of our efforts, we are installing automated shut-off valves (ASVs). We are on track to install 29 automated valves in 2011, targeting areas of high seismicity on the Peninsula, and have proposed to install a total of 228 ASVs as part of our PSEP.

PG&E applauds Senator Boxer, Senator Feinstein and Representative Speier for calling attention to the important role that ASVs can play in promoting pipeline safety, and for making provisions related to ASVs a legislative priority. We are also enhancing our Supervisory Control and Data Acquisition (SCADA) information system by including information related to pipeline pressures, valve position and gas flow.

- *In-Line (ILI) Inspection.* Through 2011, PG&E will have retrofit close to 1,000 miles of pipe to accommodate ILI tools. By the end of 2014, PG&E expects to have a total of approximately 1,480 miles (24 percent) of the gas transmission pipe retrofitted to accommodate ILI tools.
- *Sharing Information and Improving Our Emergency Response Procedures.* PG&E recognizes that it is our responsibility to ensure that first responders have the information they need to do their jobs and that, as a company, we have clearly established processes and procedures for first responder engagement. Since September 2010, PG&E has:
 - Required gas control room operators to notify 911 emergency call centers of affected communities immediately and directly when a possible rupture of any pipeline is indicated;
 - Updated emergency response plans to reflect current best practices and is training employees on the plan;
 - Conducted emergency planning exercises with public officials and first responders to simulate gas curtailment scenarios and prepare for potential events;
 - Launched a secure website for first responders detailing the location of PG&E’s gas transmission pipelines and mainline valves;
 - Mailed more than two million letters to individuals who live within 2,000 feet of a natural gas transmission line and providing them with information regarding natural gas safety.

PG&E is in the process of updating the SCADA system to provide operators in PG&E’s Gas Control Center with the tools and training to identify and improve response time in the event of a pipeline rupture.

- *Improving Work Clearance Procedures.* The investigation of the events leading up to the San Bruno accident revealed that changes need to be made to PG&E’s work clearance procedures. PG&E has taken steps to:
 - Develop and implement a comprehensive controls framework based on industry best practices. This framework will focus on proactive practices to assess, prevent, detect and respond to potential threats (*e.g.*, physical, logical and personnel) to PG&E’s system. We have sought subject matter experts to advise us on these issues and have incorporated their expertise;
 - Establish standardized procedures to effectively deal with abnormal and emergency operating situations;
 - Improve the quality of information available to operators by providing increased pipeline pressure and flow information; and
 - Upgrade alarm management software systems.

The initiatives outlined above are in addition to steps we took immediately following the accident, which included reducing the operating pressure on a significant number of our gas transmission lines, increasing leak surveys and patrols for segments of transmission pipeline, and conducting weekly ground patrols on the local San Francisco Peninsula transmission system.

PG&E's Pipeline Safety Enhancement Plan

While we have taken many actions to date to improve the overall safety of our system, we know that there is much more to do. The state of California is working toward codifying the most aggressive pipeline safety standards of any state, and we are wholly supportive of those efforts. As part of its pipeline safety efforts, the CPUC directed the state's investor-owned utilities to submit plans to enhance and improve the safety and operations of their natural gas systems. On August 26, 2011, PG&E submitted the Pipeline Safety Enhancement Plan, which represents a clear break from the way California and its utilities approached pipeline safety in the past, and the way it will be approached in the future. The result of this effort will be tougher standards for pipeline safety that will better serve the public and PG&E customers.

The gas pipeline infrastructure in California and across the United States contains a wide range of pipeline types and vintages. Like other parts of our country's infrastructure, natural gas transmission pipelines were generally built with the best design tools, technology, materials and techniques available at the time they were constructed and installed. Over time, as those methods and materials improved, the regulations and codes governing the construction of the pipelines have also evolved to require more effective inspection control techniques, resulting in better quality and confidence in pipeline integrity. One of those changes, adopted by Federal regulators in 1970, required all new gas transmission lines to have their MAOP established through pressure testing and records validation.

Following the San Bruno accident, the CPUC has rightly insisted on a more rigorous standard for older pipelines, consistent with the NTSB recommendations. PG&E fully supports this new policy direction. As previously indicated, we have undertaken a massive and unprecedented program to pressure test or replace every pipeline that does not have complete pressure test records, and validate the MAOP of older pipelines through a rigorous, records-based analysis.

The actions and investments outlined in the PSEP are the roadmap for taking PG&E's pipeline safety to this new level. They are consistent with and encompass many of the NTSB's recommendations and include four main components:

- Pipeline Modernization
- Valve Automation
- Pipeline Records Integration
- Interim Safety Enhancement Measures

The PSEP has two phases. Phase 1, which has already begun, will carry through 2014. It targets pipeline segments that are in highly populated urban areas, have vintage seam welds that do not meet modern manufacturing, fabrication, or construction standards or were "grandfathered" under previous regulations, and have not been strength tested. During this phase, PG&E plans to replace 186 miles of transmission pipelines, strength test more than 780 miles, retrofit about 200 miles to permit in-line inspections, and in-line inspect over 200 miles. In addition, 228 valves will be replaced with automated valves. In Phase 2, PG&E will expand the program to cover the remainder of our gas transmission system.

The PSEP is currently pending before the CPUC, where stakeholders have the opportunity to comment on what we have proposed. We are hopeful that the CPUC will issue a final decision in the first quarter of next year. In the meantime, we continue to move forward with actions to enhance the safety of our system and to take steps to prevent another accident like San Bruno from occurring.

I would like to thank the Committee for providing me with the opportunity to appear and provide testimony at this very important hearing. I would be pleased to answer any questions that members of the Committee may have.

ATTACHMENT A

PG&E Actions Relating to NSTB Safety Recommendations**I. Records, Maximum Allowable Operation Pressure (MAOP) Validation, and Strength Testing (NTSB P-10-2, P-10-3, and P-10-4)**

Summary of Safety Recommendation: (1) Diligently search for traceable, verifiable and complete records for transmission pipelines in class 3 and 4, and class 1 and 2 high-consequence area (HCA) locations for which the MAOP has not been established by a pressure test; (2) calculate valid MAOP for such transmission pipelines based on those traceable, verifiable and complete records; and (3) establish a valid MAOP by hydrostatic pressure test for any transmission pipelines for which the MAOP cannot be validated by steps (1) and (2).

PG&E Actions Related to Safety Recommendations:

- *MAOP Validation Project:* Validated the MAOP for more than 750 miles of high priority pipelines in HCAs without prior strength tests. MAOP validation work will continue on all remaining HCA pipelines in 2011 and the first part of 2012 with work commencing on all non-HCA pipelines thereafter.
- *Strength Tests:* Strength testing between 144 and 160 miles of pipeline in 2011. As of September 30, more than 85 transmission pipeline miles have been hydrostatically tested or replaced.
- *Video Inspections:* Video inspected approximately six miles of pipe in various locations throughout the transmission system.
- *Specialized In-Line Inspection (ILI) Tools:* PG&E will have retrofit nearly 1,000 miles of pipe to accommodate ILI tools through 2011. By the end of 2014, PG&E expects to have a total of approximately 1,480 miles of the gas transmission pipe retrofitted to accommodate ILI tools.
- *Pipeline Safety Enhancement Plan:* Ultimately PG&E will pressure test all transmission lines not previously tested, including strength testing on 783 miles of pipe in Phase 1 of the program and replacing 186 miles of pre-1970 pipe (single-submerged arc welded (“SSAW”), low frequency electric resistance welded (“LF-ERW”), joint efficiency (“JE”) < 1.0) in High Consequence Areas in Phase 1 of the program.
- *Interim Safety Measures:* Reducing pressure in some pipelines to ensure an adequate margin of safety until MAOP is validated through on-going and future corrective action, such as records validation, pressure tests or pipe replacement. Currently, pressure has been reduced on 29 primary pipelines totaling approximately 1,600 miles.

II. 911 Notification by Gas Control (NTSB P-11-3)

Summary of Safety Recommendation: Requires gas control room operators to notify immediately and directly 911 emergency call center(s) for affected communities when a possible rupture of any pipeline is indicated.

PG&E Actions Related to Safety Recommendations:

- *Gas Control Room:* As addressed in PG&E’s August 26, 2011 response to Safety Recommendation P-11-3, PG&E has established and implemented a Gas Control Room Process (911 Notification Process) in response to this NTSB recommendation. The new 911 notification process provides guidance to Gas Control and requires that the responsible 911 Emergency Response Center(s) be notified during any emergency incident that may affect the safety of the public, property or the environment.
- Related and continuing actions include:
 - *Gas System Operators:* Gas System Operators to take the lead to further assess best practices for emergency response and 911 contacts in connection with pipeline events.
 - *Outreach and Partnering:* Outreach to and partner with 911 agencies to determine best practices to give and receive information to establish situational awareness so that all first responders, utility and agencies are in unified command; ultimate goal to reduce response time and thereby improve opportunity to safeguard the public.
 - *Gas Dispatch and Gas Control:* Evaluate possible co-location of Gas Dispatch and Gas Control to facilitate information sharing; consider establishing col-

laborative process whereby Gas Control determines need to call 911 and Dispatch initiates communications at Gas Control's direction.

- *GPS Locators*: Evaluate GPS locators on every PG&E first responder vehicle with real-time visibility to Dispatch and Gas Control.
- *Distribution Gas Control and Transmission Gas Control*: Establish a Distribution Gas Control center separate from Transmission Gas Control.

III. Work Clearance Procedures and Supervisory Control (NTSB: P-11-24, P-11-26)

Summary of Safety Recommendations: (1) Include requirements for identifying the likelihood and consequence of failure associated with the planned work and for developing contingency plans; (2) Equip supervisory control and data acquisition (SCADA) system with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.

PG&E Actions Related to Safety Recommendations:

- *Comprehensive Controls Framework*: Developing and implementing a comprehensive controls framework consisting of industry best practices. This framework will focus on proactive practices to assess, prevent, detect and respond to potential threats (e.g., physical, logical, and personnel) to PG&E's system. Areas of focus include access control for both the Industrial Control Systems (ICS) and underlying infrastructure; training of operators on proper use of controls and reporting; enhanced monitoring of controls and system configuration; independent assessments; and business continuity and disaster recovery capabilities.
 - *Subject Matter Experts*: Identified subject matter experts knowledgeable in ICS, Geographic Information System (GIS), Information Technology (IT), and related security controls and incorporated their expertise
- *Standardized Procedures*: Establishing standardized procedures to effectively deal with abnormal and emergency operating situations. Examples include: station start-up, operational protocols, electrical maintenance, controls construction, and the retention and accessibility of critical station documentation.
- *Quality and Accessibility of Information*: Improving the quality of information available to operators by providing increased pipeline pressure and flow information.
- *Alarm Management Systems*: Upgrading alarm management software systems to improve alarm analysis.

IV. Emergency Response (NTSB: P-11-25)

Summary of Safety Recommendation: Establish a comprehensive emergency response procedure for responding to large-scale emergencies on transmission lines.

PG&E Actions Related to Safety Recommendations:

- *Increased SCADA Capability*: Updating and expanding SCADA system by installing more pressure and flow monitoring points; deploying real-time and situational SCADA viewing tools to improve gas control monitoring and response abilities; developing new shut-down protocols for emergency response.
- *Benchmarking*: Incorporating information gained from benchmarking with 25 other utilities and first responders to identify best practices and industry standards.
- *Enhanced Emergency Response Capability*: Organizational changes to support emergency planning and response and implementation of mobile command centers.
- *Training and Outreach*:
 - Developed contact list for all local first responders to facilitate future communications and notifications
 - Launched PG&E first responder password-protected website
 - Provided maps, GIS data and other information to first responders
 - PG&E completed in-house Incident Command System training and regionally-based training for fire departments and other agencies in coordination with PG&E employees

- PG&E is conducting Gas Controller training regarding the use of automated isolation valves in emergency response
- PG&E also plans to improve processes for dispatching first responders to the scene of a natural gas emergency (See actions taken in response to NTSB P-11-3 above)

V. Installation of Automated Valves (NTSB: P-11-27)

Summary of Safety Recommendation: Expedite the installation of automatic shut-off valves and remote control valves on gas transmission lines in HCAs, and in class 3 and 4 locations, and space them at intervals that consider the factors listed in Title 49 Code of Federal Regulations 192.935(c).

PG&E Actions Related to Safety Recommendations:

- *Isolate or Shutdown Pipe Segments:* Install automated and remotely operated pipeline safety valves to enable PG&E's to isolate or shutdown pipeline segments in an emergency.
- *Automated Valves and SCADA:* Installed automated valves and SCADA capability at Line 132/109 cross-ties.
 - Automating 29 valves in 2011 on the San Francisco Peninsula.
 - Planning to install a total of 228 automated valves over the next three years as part of PG&E's proposed Pipeline Safety Enhancement Plan.

VI. Post Accident Toxicological Testing (NTSB: P-11-28)

Summary of Safety Recommendation: Revise PG&E's post accident toxicological testing program to ensure that testing is timely and complete.

PG&E Actions Related to Safety Recommendations:

- *Post-Accident Training:* Conducted Department of Transportation (DOT) Gas Post-Accident training to all PG&E'S Gas Maintenance & Construction management team and first-line supervisors.
- *Procedures, Controls and Training:* Clarified procedures, established controls and ongoing training of the on-call procedure binder, procedural checklist and DOT contact; conducted DOT training on July 18, 2011 for all supervisors and on-call engineers.

VII. Integrity Management Program (NTSB: P-11-29, P-11-30, P-11-31)

Summary of Safety Recommendations: (1) Assess every aspect of Integrity Management program and implement a revised program; (2) conduct assessments using revised risk analysis methodology incorporated in (1) and report results to the CPUC; (3) develop and incorporate into public awareness program written performance measurements and guidelines for evaluating the plan and for continuous program improvement.

PG&E Actions Related to Safety Recommendations:

- *Review and Modify Integrity Management Program:*
 - Conducting a comprehensive review of Gas Transmission Integrity Management Program.
 - Benchmarking Integrity Management Program against industry leaders.
 - Updating prioritization methods to incorporate structured risk assessment across facilities and functions.
- *Improving Integrity Management Program Through Records Management:* Establishing a technology infrastructure to ensure data reliability, improve risk and integrity management, strengthen record and data analysis, and aid in decision-making.
- *Training:* Providing additional training to ensure employees can execute and meet highest standards related to PG&E's Integrity Management Program.
- *Quality Assurance:* Established clear audit and review procedures to ensure work is:
 - Performed according to established standards
 - Improvement actions identified through audits are effectively implemented and tracked

Senator LAUTENBERG. Thank you very much. Rick Kessler, the familiarity here is justified. Rick was on my team for some time be-

fore he joined this organization. With all of the informality, Rick, come up.

**STATEMENT OF RICK KESSLER, VICE PRESIDENT,
PIPELINE SAFETY TRUST**

Mr. KESSLER. Thank you, Mr. Chairman, and thank you, Ranking Member Wicker, Senator Boxer, and the members of the Subcommittee.

I want to thank you for inviting the Pipeline Safety Trust back again to speak on the important subject of pipeline safety, focusing on the pending legislation—or, no longer pending legislation over here—and the recent NTSB recommendations.

I want to congratulate the Committee and to commend the Senate, and particularly Senators Rockefeller, Hutchison, you, Mr. Chairman, you, Senator Boxer, Senator Wicker, Senator Thune, and Senator Udall, for coming together and passing S. 275 by unanimous consent.

It's good legislation. We support it; we hope it will be enacted. We also hope that the House will follow the Senate's lead and move quickly to pass that, or H.R. 2937, legislation based upon and substantially similar to your bill.

That legislation was crafted on a bipartisan basis by Chairman Upton and former Chairman Dingell, and it was approved by an overwhelming, bipartisan vote of 51-nothing that included conservative Republican Tea Party caucus members and liberal, progressive caucus members on the Democratic side.

Now, while neither bill incorporates all the improvement we believe are necessary to reform the Federal pipeline safety program, both have the support of all stakeholders, including industry and public safety advocates and provide a clear path forward to quickly make meaningful and immediate improvements to our Nation's pipeline safety program.

Now according to PHMSA's own statistics for the past 10 years, pipeline accidents kill or hospitalize at least one person in the U.S. every 8.7 days, and cause more than \$407 million in property damage per year.

And given the tragedies in Montana, Michigan, Pennsylvania, and California, people now question whether the industry and Federal and state regulators are really doing all they can to keep people, property, and the environment safe. They're right to do so, especially in light of the rapid aging and apparent deterioration of our pipeline system.

As you review the state of pipeline safety since the San Bruno explosion, the horrific Allentown disaster and other pipeline tragedies, perhaps the best place to start is the recent NTSB report on San Bruno, and particularly its numerous critical findings and safety recommendations, which we join PG&E in fully supporting.

The NTSB report certainly provides us all another significant opportunity to review the DOT pipeline safety program and pending legislation, and augment them to resolve some of the shortcomings identified by the board.

Now I think a lot of people have already gone over the specifics of what the NTSB found, so let me skip ahead to say that blame for San Bruno clearly falls squarely on the shoulders of PG&E.

However, I would note that they have taken at least some actions that appear to be very serious first steps to address management and safety program failings. While PG&E's activities should continue to be closely scrutinized, the utility was clearly not the only entity implicated in this deadly failure.

NTSB found that the California Public Utilities Commission failed to detect inadequacies in PG&E's integrity program, and our characterization of CPUC's role in this is less charitable because it appears there was little to no oversight or regulation prior to San Bruno.

At a minimum we've learned that we can't assume anything about state oversight of pipeline safety. We don't know what we don't know, and what we don't know can be deadly.

Of course, one of the reasons we don't know what a bad job CPUC was doing was because PHMSA appears to have handed off responsibility to the state while never appearing to have possibly never done meaningful oversight. I am very grateful for Administrator Quarterman's comments today, and her commitment to review and reform that program.

Now, I want to get to some of the specific requirements in my few seconds left. We strongly support NTSB's recommendation to delete the grandfather clause that allows all gas transmission pipelines constructed before 1970 to be operated without being subjected to a hydrostatic pressure test that incorporates a spike test.

We also agree that pipeline safety regulations should be revised so that manufacturing and construction related defects can only be considered stable if a gas pipeline has been subjected to a post-construction test.

With regard to NTSB's remote and automatic shutoff valves recommendations, I'm just left wondering why it is that we shut off our televisions, we close our garage doors, and lock our cars by remote control, yet somehow we still find it acceptable to have someone drive an hour in traffic in a car, get out of the car, and turn a valve that's huge to shut off a raging inferno.

Seventeen years ago we were debating this, Mr. Chairman, on your legislation that would have required these valves. It's just time to stop the analysis and the regulatory paralysis and act on this recommendation.

We feel similarly about smart pigs, and the need to make existing pipelines able to be pigged or otherwise inspected. Too many aren't.

Let me just close by thanking you again for the opportunity to testify. At the end of the day, we note that many of the most important changes to the Federal pipeline safety program we have requested could be instituted by the Department of Transportation without further congressional action.

Many of these changes have been recommended time and time again. What we need is a President, a Secretary, and an agency that has the will to get the job done. The Pipeline Safety Trust hopes that Congress and the administration will seriously consider the concerns we have raised today and the requests we have made, including those in our written testimony. I thank you for your time and stand ready to answer any questions.

[The prepared statement of Mr. Kessler follows:]

PREPARED STATEMENT OF RICK KESSLER, VICE PRESIDENT, PIPELINE SAFETY TRUST

Good afternoon, Chairman Lautenberg, Ranking Member Wicker, Senator Boxer and members of the Subcommittee. My name is Rick Kessler and I am testifying today in my purely voluntary role as the Vice President of the Board of Directors of the Pipeline Safety Trust. My involvement and experience with pipeline safety stems from my years as one of the primary staff members on such issues in the House of Representatives and my subsequent work with the Pipeline Safety Trust.

Thank you for inviting the Pipeline Safety Trust back again to speak on the important subject of pipeline safety, focusing on pending legislation and the recent NTSB recommendations following the PG&E transmission line explosion in San Bruno, California. The Pipeline Safety Trust came into being after the 1999 Olympic Pipe Line tragedy in Bellingham, Washington that left three young people dead, wiped out every living thing in a beautiful salmon stream, and caused millions of dollars of economic disruption.

According to PHMSA's own statistics for the past 10 years, pipeline accidents kill or hospitalize at least one person in the U.S. every 8.7 days on average and cause more than \$407 million in property damage per year. Given the tragedies in Montana, Michigan, Pennsylvania, and California, people now question whether the industry and Federal and state governments are really doing all they can to keep people, property and the environment safe. They are right to do so, especially in light of the rapid aging and apparent deterioration of our pipeline system, particularly when even industry sources refer to transmission pipelines over 20 years old as "middle aged" stating that "even the best designed and maintained pipeline will become defective as it progresses through its design life." However, moving forward a strong bill to address the tragedies of the past year, and close gaps in pipeline safety that have been identified—particularly in the National Transportation Safety Board's (NTSB) recent report on the San Bruno tragedy—will help reduce the potential for more tragedies restore the public's trust.

Pipeline Safety Program Reauthorization and Reform

Since I last testified before the Committee, you have unanimously reported legislation to reauthorize and improve the Federal pipeline safety program. That legislation has stalled due to objections raised by Senator Paul of Kentucky that the bill fails to address some of the key NTSB recommendations arising out of the San Bruno tragedy including requiring retrofitting of existing pipeline segments with remote shutoff valves and to accommodate internal inspection devices, as well as deleting the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test. We agree with Senator Paul that this Congress should include such provisions in any legislation sent to the President for signature and stand ready to work with Senator Paul, this Committee and industry to craft language that would accomplish those goals in a manner that maximizes safety while minimizing costs to consumers and shareholders.

Now, while S. 275, as reported, does not incorporate all the improvements we believe are necessary to truly reform the program, we continue to support the bill and thank Chairman Lautenberg, Senator Thune, Senator Boxer and others for crafting balanced legislation that is worthy of enactment. We hope that as the process moves forward, there will be an opportunity to incorporate the key NTSB recommendations into S. 275 as well as perfect some of the bill's language to ensure adequate oversight of grants to states and extensions of statutory re-inspection periods.

Likewise, we strongly support H.R. 2937, legislation based upon and substantially similar to S.275 crafted by House Energy and Commerce Chairman Upton and former Chairman Dingell. Their legislation includes significant refinements and additions to the language of S. 275 to provide enhanced benefits for public safety and industry, such as a revised provision on CO₂ gas pipelines requested by industry and consensus language addressing problems identified in the wake of the Exxon pipeline spill into the Yellowstone River in Montana similar to that included in legislation introduced by Senators Tester and Baucus. Not surprisingly, H.R. 2937 was recently reported by an overwhelming full committee vote of 51-0 that included some of the most conservative Republican members of the Tea Party Caucus and some of the most liberal Democratic members of the Progressive Caucus. Like S. 275, the Upton-Dingell legislation enjoys the support of all the major industry stakeholders, environmental groups, the PipelinemSafety Trust and other public safety advocates.

Unfortunately, a third bill that was reported by the House Transportation and Infrastructure Committee, H.R. 2845, diverges sharply from the successful legislative recipe created by this Committee and adopted by the Energy and Commerce Com-

mittee. That bill fails to address in any meaningful way any of the issues raised by any of the all too numerous pipeline disasters of the past 18 months. We strongly oppose H.R. 2845 in its current form, and hope that Chairman Mica and Ranking Member Rahall will give serious consideration to adopting the formula that has proved so successful in both the Senate and House Commerce Committees.

NTSB's Report on the San Bruno Disaster

As you review the state of pipeline safety since the San Bruno explosion, the horrific Allentown disaster and other pipeline tragedies, perhaps the best place to start is the recent NTSB report on San Bruno and, particularly, its numerous, critical findings and safety recommendations. The NTSB report certainly provides us all another significant opportunity to review the DOT pipeline safety program and pending legislation and augment them to resolve some of the shortcomings identified by the Board.

As you know, the NTSB found that the leak that caused the San Bruno explosion resulted from "a fracture that originated in the partially welded longitudinal seam of one of six short pipe sections" installed in 1956. The welding, oversight and installation were done so poorly that they wouldn't have even met 1956 standards—which NTSB stated were probably "either overlooked or ignored." According to NTSB, PG&E took more than 1.5 hours to stop gas from flowing to the rupture and this unacceptably slow response time "contributed to the extent and severity of property damage and increased the life-threatening risks to the residents and emergency responders." The use of either automatic shutoff valves or remote control valves would have reduced the amount of time taken to stop the flow of gas. The Board also found that PG&E didn't have a detailed, comprehensive response plan for large-scale emergencies and labeled "deficient and ineffective" PG&E's pipeline integrity management program.

While blame for the San Bruno disaster falls squarely on the shoulders of PG&E, the utility was certainly not the only entity implicated in this deadly failure. NTSB also found that the California Public Utilities Commission (CPUC) "failed to detect the inadequacies in PG&E's integrity management program." Our characterization of the CPUC's role in this catastrophe is less charitable: it appears that there was little to no oversight or regulation of pipeline safety by the CPUC for at least a decade before the San Bruno explosion. At a minimum, we've learned that we can't assume anything about state oversight of pipeline safety: we don't know what we don't know and what we don't know could be deadly.

Of course, one of the reasons we didn't know how bad a job the CPUC was doing of running its program is because PHMSA appears to have handed off responsibility to the state, while possibly never having done any meaningful oversight of California or PG&E's program. NTSB's report is particularly critical of PHMSA's integrity management inspection protocols and cites the agency for "not having incorporated the use of effective and meaningful metrics as part of its guidance for performance-based management pipeline safety programs." In the case of PG&E's program NTSB determined that the program:

- Was based on incomplete and inaccurate pipeline information
- Did not consider the design and materials contribution to the risk of a pipeline failure
- Failed to consider the presence of previously identified welded seam cracks as part of its risk assessment
- Resulted in the selection of an examination method that could not detect welded seam defects
- Led to internal assessments of the program that were superficial and resulted in no improvements

This begs the question as to why these shortcomings had to be uncovered by NTSB after an explosion, rather than by the agency that is supposed to oversee industry integrity management programs before the terrible loss of life and destruction of property occurred. While this sounds bad on its own, this criticism is particularly disheartening in light of the fact that the integrity management program represents the best of what PHMSA has to offer in terms of managing pipeline safety.

Expanding the miles of pipelines that fall under the Integrity Management rules and improving PHMSA's oversight

The Pipeline Safety Trust agrees with NTSB's criticisms of PHMSA's integrity management program and its recommendation that the Secretary of Transportation carry out an audit assessing the effectiveness of PHMSA's oversight of performance based safety programs, including the integrity management programs. Such an

audit could be carried out simultaneously with PHMSA's study of mechanisms to expand the application of the integrity management programs, assuring that PHMSA's future oversight of the expanded performance based programs is effective and based on meaningful metrics backed up by complete and accurate data. If the Secretary is unwilling to take up this recommendation on his own, then we urge Congress to add language directing the Secretary or other another appropriate, objective entity to immediately undertake such an audit and make public its findings.

Despite the foregoing criticism, we do, however, continue to support expansion of integrity management to cover more areas. Congress required integrity management in High Consequence Areas (HCAs) as a way to protect the people who live, work and play near pipelines, as well to protect sensitive environmental areas and this Nation's critical energy infrastructure. Since these rules began to be implemented, over 75 percent of all the deaths caused by these types of pipelines have occurred in areas that fall outside of the current integrity management requirements, and more than 34,000 anomalies found in High Consequence Areas have been repaired based on integrity management requirements.

Yet these requirements do not apply to the vast majority of pipelines and today only about 7 percent of natural gas transmission pipelines and 44 percent of hazardous liquid pipelines fall under these important inspection programs. What this means is that outside of HCA's, a pipeline company can install a pipeline transporting huge quantities of often explosive fuel and leave it uninspected indefinitely—even for 50, 60, or 70 years.

It's important to note, too, that regardless of where a pipeline fails there will be a significant economic impact on the downstream markets—adversely affecting both our economic and energy security. For instance, when the El Paso natural gas pipeline failed in 2000 in a non-High Consequence Area, the staff of the Federal Energy Regulatory Commission estimated that the restriction in gas supply cost the people of California hundreds of millions of dollars. Every time a major liquid pipeline serving a refinery goes down the price of gasoline in the region skyrockets until the pipeline can be repaired and supplies returned to normal. When it comes to consumer's pocketbooks, and the welfare of the economy, every mile of pipeline is of high consequence, so every mile should be inspected so that the American people have reliable and safe pipeline infrastructure.

Many progressive pipeline operators already apply integrity management rules to significantly more miles of their pipelines than required by Federal regulations. These companies do this because they think it is good business, and we couldn't agree more. Unfortunately not all companies voluntarily provide these needed safety precautions, and even those that do are not required to respond to the problems found, as they would be if these areas were covered by the integrity management rules.

Elimination of the Exemption of pre-1970 Pipelines from Hydrostatic Pressure Tests

As previously stated, we strongly support NTSB's recommendation to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test. As Senator Paul noted, the lack of language addressing this recommendation is a serious shortcoming shared by both House and Senate Commerce Committee bills. Further, we agree that pipeline safety regulations should be revised so that manufacturing-and construction-related defects can only be considered stable if a gas pipeline has been subjected to a post-construction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.

Requiring automated shut off valves for gas and liquid transmission pipelines

Seventeen years ago, Congress was debating a requirement for remote or automatic shutoff valves on natural gas pipelines in the wake of the Edison, NJ accident and the two and a half hours it took to shut off the flow of gas that fed the fireball due to the lack of a remotely controlled shut off valve. In fact, Chairman Lautenberg's own legislation introduced in 1994 would have required the installation of automatic or remote shutoff valves on existing natural gas pipelines where technically and economically feasible and yet here we sit discussing it again. It is both puzzling and sad that we still have to debate the benefits of requiring remote or automatic shut off valves after another tragedy, this time in San Bruno, California.

How is it that we shut off our televisions, close our garage doors, and lock our cars by remote control, but somehow we still find it acceptable to shut off a large pipeline spewing fire into a populated neighborhood by finding someone with a key to a locked valve and have that person drive to the valve to shut it off manually?

In good weather in San Bruno that method took an hour and a half to shut off the flow of fuel. How long would that method take after an earthquake?

Existing language in S. 275 and H.R. 2937 directs PHMSA to develop rules for the installation of valves on new lines in certain circumstances. Language in HR 2937, which we support, goes further in that it calls for a review to determine the viability of replacing valves on existing pipelines. The NTSB recommendation to PHMSA is that automatic or remote controlled valves be required by rule in all HCAs and Class 3 and 4 areas. Again, Senator Paul has rightly highlighted the lack of such a requirement as an important deficiency in pending reauthorization legislation and, again, we agree. The Secretary of Transportation should be directed to immediately begin a study to determine the type, placement, feasibility and phase-in period for installation of automatic or remote controlled valves on existing and new lines, and proceed expeditiously with a rule-making requiring such installation.

It's important to note, that for liquid pipelines in 1992, 1996, 2002, and 2006, Congress required OPS to "survey and assess the effectiveness of emergency flow restricting devices. . .to detect and locate hazardous liquid pipeline ruptures and minimize product releases" with the first such requirement having a deadline in 1994 (17 years ago!). Following this analysis, Congress required OPS to "prescribe regulations on the circumstances under which an operator of a hazardous liquid pipeline facility must use an emergency flow restricting device."

OPS/PHMSA never issued a formal analysis on emergency flow restricting device (EFRD) effectiveness. Instead, in its hazardous liquid pipeline integrity management rule, OPS rejected the comments of the NTSB, the U.S. Environmental Protection Agency, the Lower Colorado River Authority, the City of Austin, and the Environmental Defense Fund and chose to leave EFRD decisions up to pipeline operators after listing in the rule various criteria for operators to consider. Such an approach to EFRD use does not appear to meet Congressional intent, partly because the approach is essentially unenforceable and not protective of important environmental assets such as rivers and lakes including those not considered High Consequence Areas.

Congress needs to reiterate its previous mandates to PHMSA on EFRD use on liquid pipelines and ensure they are followed to mitigate the extent of future pipeline releases.

Require Natural Gas Transmission Pipelines Be Able To Accommodate Smart Pigs

Again, we support NTSB's recommendation that pipelines be configured so as to accommodate in-line inspection tools—known as "smart pigs"—with priority given to older pipelines. While age is a risk factor in pipelines, just as it is in humans, proper inspection and maintenance can go a long way to lowering that risk. Yet, unless a pipeline is designed to accommodate an internal inspection device, corrosion and other threats that develop with age can't really be detected and evaluated. It is time to end the two decades of hand wringing by PHMSA over the need to replace pipeline segments to ensure the ability to inspect with smart pigs. Congress should include language ensuring implementation of NTSB's recommendation in any bill sent to the President's desk.

Developing and Implementing Enhanced Standards and Requirements for Leak Detection on Hazardous Liquid and Gas Transmission Lines

In its hazardous liquid transmission pipeline integrity management rule, PHMSA requires that operators have a means to detect leaks, but there are no performance standards for such a system. This is in contrast to the State of Alaska, for example, which requires that *all* crude oil transmission pipelines have a leak detection system capable of promptly detecting a leak of no more than 1 percent of daily throughput. PHMSA listed in the integrity management rule various criteria for operators to consider when selecting such a device. Again, such an approach is virtually unenforceable and not protective of important environmental assets such as rivers and lakes including those not considered High Consequence Areas.

Last year's Enbridge spill in Michigan and the Chevron pipeline release near Salt Lake City are examples of what can go wrong when a pipeline with a leak detection system has no performance standards for operations. In both those incidents the pipelines had leak detection systems as required by regulations, but neither system was capable of detecting and halting significant spills. We ask that Congress direct PHMSA to issue performance standards for leak detection systems used by hazardous liquid pipeline operators by a date certain to prevent damage from future pipeline releases.

Existing language in both S. 275 and H.R. 2937 directs the Secretary to study leak detection for one year, and implement the findings of the study within another

year. Again, H.R. 2937 language goes slightly farther, and includes a requirement for a study and report on leak detection technologies available for gas transmission lines. The language from H.R. 2937 could easily be amended to include language that meets the recommendations of the NTSB with regard to leak detection by providing that the study on leak detection technologies for gas lines be followed by a rulemaking requiring the SCADA systems of gas transmission operators to be equipped with tools to recognize and locate leaks.

Regulating Gas Gathering Pipelines

Significant drilling for natural gas has led to a large expansion of gathering and production pipelines in highly populated urban areas. For instance, in Fort Worth, Texas there are already 1,000 producing gas wells within the city limits and at least that many more planned. Development of advanced shale gas drilling methods has led to thousands of new wells being drilled and proposed in more populated areas of Texas, Arkansas, Louisiana, Pennsylvania and New York. Pipelines will connect to all of these wells, and the regulatory oversight of these pipelines is less than clear and in some cases non-existent. According to a recent briefing paper from PHMSA they only regulate 20,150 miles of onshore gathering lines, but they estimate that there are 230,000 miles of such lines. Many of these lines are the same size and pressure as transmission pipelines, but they are regulated far less, if at all.

To make matters worse, the standard (API RP 80) for determining what is and isn't a gathering line was written by the American Petroleum Institute and adopted into Federal regulations. The API standard provides too much wiggle room for gas producers to design their systems to avoid regulations. PHMSA's recent briefing paper also recognizes this problem saying "enforcement of the current regulations has been hampered by the uncertainties that exist in applying API RP 80."

We believe it is time to ensure that any gathering or production pipeline with similar size and pressure characteristics to transmission pipelines fall under the same level of minimum Federal regulations, including the integrity management requirements for those in high consequence areas. The current language in S. 275 and H.R. 2937 requires PHMSA to produce a study on the regulatory issues with onshore gas production and gathering pipelines, and institute a rule making based on the findings. This is language we support and hope to see enacted.

Regulating Unregulated Liquid Pipelines

Onshore oil wells and their associated pipelines have a troubling spill record and a highly inadequate oversight framework, which needs to be addressed by Congress and the Obama Administration. Recently, the Administration and BP agreed to a proposed civil settlement for 2006 pipeline spills on the North Slope of \$25 million plus a set of required safety measures on BP's federally unregulated North Slope pipelines. Under the requirements of the settlement, BP's federally-unregulated oil field pipelines, *i.e.*, three-phase flowlines (gas, crude, produced water mixture), produced water lines, and well lines, now will be subject to integrity management requirements largely similar to those that must be met by transmission pipelines in 49 CFR 195. While this settlement certainly is a welcome step for BP's lines and an important precedent, Congress in its pipeline safety act reauthorization and PHMSA need to move forward expeditiously on requiring such measures for lines operated by other companies in Alaska and the Lower 48.

BP's March 2006 spill of over 200,000 gallons was the largest crude oil spill to occur in the North Slope oil fields and it brought national attention to the chronic problem of such spills. Another pipeline spill in August 2006 resulted in shutdown of BP's production in Prudhoe Bay and brought to light major concerns about systemic neglect of key infrastructure. Lack of adequate preventive maintenance was not a new issue, however, as corrosion problems in Prudhoe Bay's and other oil field pipelines have been raised previously by regulators and others, including as early as 1999 by the Alaska Department of Environmental Conservation.

As additional evidence of the problems with upstream infrastructure, the State of Alaska completed a report in November 2010, which reviewed a set of over 6,000 North Slope spills from 1995–2009. This report showed that there were 44 loss-of-integrity spills/year with 4.8 spills greater than 1,000 gallons/year. Of the 640 spills included in the report, a significant proportion, 39 percent, were from federally unregulated pipelines.

We ask that Congress close the loopholes on these federally unregulated pipelines and direct PHMSA to move forward as fast as is practicable to put in place regulations similar to what was recently agreed to by BP on their unregulated North Slope pipelines.

Correcting the Pipeline Siting vs. Safety Disconnect, and Ensuring PHMSA's Ability to Provide Inspections When Pipelines Are Being Constructed

With thousands of new miles of pipelines in the works, the disconnect between the agencies that site new pipelines and PHMSA, the agency that is responsible for the safety of the pipelines once they are in service, has become quite apparent. While siting agencies go through supposedly comprehensive environmental review processes, these processes are functionally separate from the special permits or response plans or high consequence area analyses that are overseen by PHMSA. Many of the PHMSA determinations go through very limited public process (special permits), or processes that take place after the pipeline siting approval is granted (emergency response plans), and some are totally kept from the public (high consequence areas). How can local governments, citizens, or even other Federal agencies assess the real potential impact of a pipeline if the environmental review and the safety review processes are so disconnected?

A perfect example of this disconnect is currently taking place regarding the Presidential Permit that the U.S. State Department is considering for the Keystone XL pipeline. For months now national organizations have been asking specific pipeline safety questions related to the corrosiveness and abrasiveness of the product the Keystone XL will transport. The U.S. EPA questioned the State Department's SDEIS because not enough information was included regarding the proposed products to allow for an analysis of the effects if a spill should occur. While the State Department is in charge of granting the permit to allow the pipeline to be sited, PHMSA is the agency in charge of both pipeline safety and spill planning for the pipeline, yet it has been silent on these issues. As Senator Johanns from Nebraska said during a pipeline safety hearing last year "Of all the expertise relative to pipelines in the Federal government I can't imagine it would be at the State Department." Unfortunately the State Department seems to be getting precious little help from the agency in charge of pipeline safety –PHMSA. This disconnect between siting and safety needs to be corrected.

Two years ago, PHMSA held a special workshop to go over the numerous problems they found during just 35 inspections of pipelines under construction. These inspections found significant problems with the pipe coating, the pipe itself, the welding, the excavation methods, the testing, etc. PHMSA's findings, and stories we have heard from people across the country, call into question the current system—or lack of one—of inspections for the construction of new pipelines. This construction phase is critical for the ongoing safety of these pipelines for years to come. Since PHMSA has authority over the safety of pipelines once they are put into service, it makes sense to us that during construction they also are conducting field inspections and sufficiently reviewing records to ensure these pipelines are being constructed properly. Unfortunately, there is a built-in disincentive for PHMSA to spend the necessary time to ensure proper construction. Under current rules PHMSA receives no revenue from these companies until product begins to flow through the pipelines, so any staff time spent on these pre-operational inspections has to be paid for from money collected for other purposes from already operational pipelines.

For these reasons, the Pipeline Safety Trust asks that Congress pass new Cost Recovery fees, similar to those included in Section 17 of the PIPES act for LNG facility reviews, to allow PHMSA to recoup their costs related to providing safety information during the review process for all new pipelines and legitimate inspections during the construction phase without taking resources away from other existing activities. Hopefully this additional revenue will help PHMSA ensure that pipeline siting agencies adequately assess pipeline safety issues. The existing language in both House bills and the Senate dramatically limit cost recovery to review of new pipelines with costs exceeding \$1 or 3.4 billion dollars. We ask that the language from the Administration's bill be substituted into the Senate bill, allowing cost recovery for review of all lines, regardless of cost or technology used.

Continuing to Push State Agencies on Damage Prevention

Property owners, contractors, and utility companies digging in the vicinity of pipelines are still one of the major causes of pipeline incidents, and for distribution pipelines over the past five years excavation damage is the leading cause of deaths and injuries. Unfortunately, not all states have implemented needed changes to their utility damage prevention rules and programs to help counter this significant threat to pipelines.

In the PIPES Act of 2006 Congress made clear its desire that states move forward with damage prevention programs by defining the nine elements that are required to have an effective state damage prevention program. The Trust is pleased that

PHMSA has recently announced its intent to adopt rules to incorporate these nine elements, and its intent to evaluate the states progress in complying with them. We also support PHMSA's plan to exert its own authority to enforce damage prevention laws in states that won't adopt effective damage prevention laws. We hope Congress will encourage PHMSA to move forward with this proposed rulemaking in a timely manner, and make it clear to the states that Federal money for pipeline safety programs depends upon significant progress in implementing better damage prevention programs.

It may also be necessary for Congress to clarify important parts of good damage prevention programs. Many states have exemptions to their damage prevention "one call" rules for a variety of stakeholders including municipalities, state transportation departments, railroads, farmers, and property owners. We believe such exemptions, except in cases of emergencies, are unwarranted for municipalities, state transportation departments and the railroads, and urge both Congress and PHMSA to make it clear that these types of exemptions are not acceptable in an effective damage prevention program. While we are skeptical regarding exemptions of any type, limited exemptions for the farm community and homeowners in specific circumstances may be necessary to make the programs efficient, affordable and enforceable.

Although PHMSA likes to call itself a data-driven agency, there is a serious lack of data to determine the extent, causes, or perpetrators of excavation damage to pipelines. For example, because of the limited reporting requirements, the PHMSA incident database only includes about 70 total pipeline incidents nationwide in 2008 caused by excavation damage. Yet the Common Ground Alliance's 2008 DIRT database reports well over 60,000 excavation events that affected the operation of natural gas systems alone.

For these reasons, the Trust asks that Congress direct PHMSA to correct this substantial data gap by ensuring more accurate reporting and a database for excavation damage to ensure that the effort and money being spent is well targeted and effective. Because most states have taken on the responsibility of operating state-based damage prevention programs it may well be easiest to just have PHMSA require states to adopt reporting requirements as part of their damage prevention programs.

Continuing The implementation and Funding of Technical Assistance Grants to Communities

Over the past two and a half years, PHMSA has started the implementation of the Community Technical Assistance Grant program that was authorized as part of the Pipeline Safety Improvement Act of 2002 and clarified in the PIPES Act. Under this program more than a million dollars of grant money has been awarded to communities across the country that wanted to hire independent technical advisors so they could learn more about the pipelines running through and surrounding them, or be valid participants in various pipeline safety processes.

In the first two rounds of grants, PHMSA funded 46 projects in 22 states from California to Florida. Local governments gained assistance so they could better consider risks when residential and commercial developments are planned near existing pipelines. Neighborhood associations gained the ability to hire experts so they could better understand the "real" versus the imagined issues with pipelines in their neighborhoods. And farm groups learned first-hand about the impacts of already-built pipelines on other farming communities so they could be better informed as they participate in the processes involving the proposed routing of a pipeline through the lands where they have lived and labored for generations. Overall, we viewed the implementation of this new grant program as a huge success.

The Trust appreciates your efforts to ensure the reauthorization of these grants, as provided for in S. 275 to continue to help involve those most at risk if something goes wrong with a pipeline. We further ask that you accept language from H.R. 2937 to allow the use of user fees in funding these grants.

Continuing to Make More Pipeline Safety Information Publicly Available

Over the past two reauthorization cycles, PHMSA has done a good job of providing increased transparency for many aspects of pipeline safety. In the Trust's opinion, one of the true successes of PIPES has been the rapid implementation by PHMSA of the enforcement transparency section of the act. It is now possible for affected communities to log onto the PHMSA website and review specific enforcement and inspection actions regarding local transmission pipelines. This transparency for the most part should increase the public's trust that our system of enforcement and inspection of pipelines is working adequately or in some instances

may provide the information necessary for the public to push for improvements from specific companies.

PHMSA has also significantly upgraded their incident data availability and accuracy, and continues to improve their already excellent “stakeholder communication” website.

There is also a need to make other information more readily available. This includes information about:

- *High Consequence Areas (HCAs)*. These are defined in Federal regulations and are used to determine which pipelines fall under more stringent integrity management safety regulations. Unfortunately, this information is not made available to local government and citizens so they know if they are included in such improved safety regimes. Local government and citizens also would have a much better day-to-day grasp of their local areas and be able to point out inaccuracies or changes in HCA designations if this information were publicly available.
- *Emergency Spill Response Plans*. As has been learned in the Gulf of Mexico tragedy, it is crucial that spill response plans are well designed, adequately meet worst-case scenarios, and use the most up-to-date technologies. While 49 CFR §194 requires onshore oil pipeline operators to prepare spill response plans, including worst case scenarios, those plans are difficult for the public to access. To our knowledge the plans are not public documents, and they certainly are not easily available documents.

The review and adoption of such response plans is also a process that does not include the public. In fact PHMSA has argued that they are not required to follow any public processes, such as NEPA, for the review of these plans. If the Gulf tragedy has taught us nothing else it should have taught us that the industry and agencies could use all the help they can get to ensure such response plans will work in the case of a real emergency.

It is always our belief that greater transparency in all aspects of pipeline safety will lead to increased involvement, review and ultimately safety. There are many organizations, local and state government agencies, and academic institutions that have expertise and an interest in preventing the release of fuels to the environment. Greater transparency would help involve these entities and provide ideas from outside of the industry. The State of Washington has passed rules that when complete spill plans are submitted for approval the plans are required to be made publicly available, interested parties are notified, and there is a 30 day period for interested parties to comment on the contents of the proposed plan. We urge Congress to require PHMSA to develop similar requirements for the adoption of spill response plans across the country, and that such plans for new pipelines be integrated into the environmental reviews required as part of the pipeline siting process.

- *State Agency Partners*. States are provided with millions of dollars of operating funds each year by the Federal government to help in the oversight of our Nation’s pipelines. While there is no doubt that such involvement from the states increases pipeline safety, different states have different authority, and states put different emphasis in different program areas. After the San Bruno tragedy an independent review panel was formed to review problems with the pipeline safety system in California. One of their recent conclusions regarding the California Public Utility Commission was that “*it would be difficult for the gas safety staff to offer assurances on the quality of prevailing integrity management efforts they audit.*” Why was it that such stunning conclusions about one of the largest pipeline safety programs in the Nation were not understood before eight people were killed? Each year PHMSA audits each participating state program, yet the results of those program audits are not easily available. We believe that these yearly audits should be available on PHMSA’s website and that some basic comparable metrics for states should be developed. It is not only the performance of pipeline companies that needs to be inspected.

Implementing Expansion of Excess Flow Valve Requirements

One of the Trust’s priorities that was well-addressed in the PIPES Act was to require the use of Excess Flow Valves (EFVs) on distribution pipelines for most new and replaced service lines in single family residential housing. While this was a huge step forward, the National Transportation Safety Board (NTSB) has continued to push for an expansion of the use of EFVs in multi-family and commercial applications “*when the operating conditions are compatible with readily available valves.*”

From closely following the deliberations of PHMSA’s Large Excess Flow Valve Team, it is our opinion that there are thousands of potentially compatible structures

being constructed or renewed which could be afforded greater safety by the installation of Excess Flow Valves (EFVs). It is clear from the data provided by PHMSA that the service lines serving a majority of these types of structure fall within the size constraints of commercially available EFVs. It is also clear from the data that the vast majority of these gas services are provided at pressures that avoid the concerns regarding low pressure lines.

There are many multi-family residential, small office, and retail structures that for all intents and purposes have the same load profiles as a single family residence. For these types of applications PHMSA and the industry need to move forward with rules to require installation of EFVs for new and renewed gas service.

For these reasons the Pipeline Safety Trust urges Congress to direct PHMSA to undertake a rulemaking—as the National Transportation Safety Board has requested—that would require EFVs be installed on the many types of structures where “*operating conditions are compatible with readily available valves.*”

Conclusion

Thank you again for this opportunity to testify today. At the end of the day, we note that many of the most important changes to the Federal pipeline safety program we have requested could be instituted without legislation and have been recommended by safety experts over and over again throughout the past decade or more. All we need is a President, a Secretary and an agency that has the will to get the job done. The Pipeline Safety Trust hopes that both that Congress and the Administration will seriously consider the concerns we have raised and the requests we have made. If you have any questions now or at any time in the future, the Trust would be pleased to answer them.

Senator LAUTENBERG. Thank you.
Mr. Santa?

STATEMENT OF DONALD F. SANTA, JR., PRESIDENT AND CEO, INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Mr. SANTA. Good afternoon, Mr. Chairman, Ranking Member Wicker, and Senator Boxer.

I am Donald Santa, President and CEO of the Interstate Natural Gas Association of America. Our members operate approximately 200,000 miles of natural gas transmission pipelines. It appreciates the work of the National Transportation Safety Board to develop pipeline safety recommendations as part of its San Bruno accident investigation.

On behalf of INGAA, I also offer our congratulations to the Chairman and his colleagues on the passage of S. 275 last evening.

The NTSB recommendations are aggressive and aspirational. Still, much work will need to be done to transform these recommendations into a concrete, practicable, and achievable plan for realizing the pipeline safety goals that all of us share.

INGAA advocates a multi-tiered approach that would build on the well-founded existing approach of reducing risks to the greatest number of people in the most effective way.

We believe that S. 275 would accomplish these objectives. Pipeline transportation remains the safest method of moving energy supplies within the United States. Still, in the wake of the San Bruno accident last year, we recognized more must be done to improve safety and to regain public confidence in the safety of our pipeline infrastructure.

Last December, INGAA established a board-level task force to pursue these objectives. This task force produced a set of aggressive guiding principles anchored by the goal of zero pipeline incidents.

This summer, INGAA committed publicly to a nine-point action plan to improve pipeline safety. For purposes of the discussion today, I wanted to focus on two of the items addressed in our action plan: first, expanding integrity management, and second, fitness for service of pre-regulation pipelines.

Mr. Chairman, you and many members of the Subcommittee may be familiar with the integrity management program, which was the cornerstone of the Pipeline Safety Improvement Act of 2002. The IMP requires operators to identify pipeline segments in populated areas, known as high consequence areas, perform baseline assessments on all such segments by December 2012, and reassess those segments every 7 years thereafter. The baseline assessments are close to completion, and many segments already have been reassessed.

INGAA's members already have committed to go further, and, over time, to expand integrity management principles beyond HCAs. INGAA has proposed that integrity management principles be extended to cover 70 percent of the people who live or work in close proximity to pipelines by 2020, and 100 percent of this population by 2030.

A phased approach to covering additional pipeline segments beyond HCAs is important, because it will be necessary both to undertake significant pipeline modification, and to develop and deploy improved inline inspection technologies that do not exist today.

Next, fitness for service of pre-regulation pipelines. The first Federal pipeline safety regulations provided operators with two options for confirming the maximum allowable operating pressure of pre-regulation pipelines: first, pressure testing in the same manner required of pipelines constructed after 1970, and second, using verifiable records demonstrating past operating history to confirm the basis of the then current MAOP.

Many pre-regulation—pre-1970 pipelines elected the second option, which has come to be known as the grandfather clause. About 60 percent of the U.S. natural gas transmission pipeline mileage was installed prior to 1970. Most of these pipelines are performing well, and have records that the pipe has been pressure tested.

Engineering and operational history shows that older pipelines are perfectly capable of safely remaining in service for many decades to come. Age should not be the sole determinative factor in determining whether to replace a natural gas transmission pipeline. Fitness for service is the correct focus. If a pipeline is unfit for service, then it must be repaired or replaced, regardless of age.

INGAA supports a process for confirming the fitness for service of pre-regulation pipelines located in HCAs. INGAA believes there must be a workable time-frame to complete the retesting, in order to avoid significant adverse consumer energy price impacts due to testing-related pipeline capacity constraints and service disruptions. INGAA suggests that such work be completed by 2020. S. 275 is consistent with this approach, and we believe it represents an effective legislative response to the San Bruno accident.

Mr. Chairman, thank you for providing INGAA with the opportunity to testify today. Our key messages are these: first, reducing risk to people must remain the primary focus of the Federal pipeline safety program. Second, S. 275 provides a constructive frame-

work for enhancing the pipeline safety program in a way that maintains this important focus. And third, given that we are at such a critical moment in the evolution of our pipeline safety program, it is important for Congress to act this year to enact the reauthorization bill.

Thank you very much.

[The prepared statement of Mr. Santa follows:]

PREPARED STATEMENT OF DONALD F. SANTA, JR., PRESIDENT AND CEO,
INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Mr. Chairman and Members of the Subcommittee:

I am Donald F. Santa, President and CEO of the Interstate Natural Gas Association of America, or INGAA. Our members operate approximately 200,000 miles of natural gas transmission pipelines, representing two-thirds of the Nation's total natural gas transmission mileage and about 90 percent of the total interstate natural gas transmission mileage in the United States. The pipeline systems operated by INGAA's members are analogous to the interstate highway system, transporting natural gas across state and regional boundaries.

Let me state at the outset that INGAA appreciates the work of the National Transportation Safety Board (NTSB) to develop pipeline safety recommendations as part of its San Bruno accident investigation. Furthermore, our association agrees with the goals served by those recommendations: to reduce pipeline accidents and restore the public confidence of the safety of the natural gas infrastructure.

Some of NTSB's key recommendations include confirming the safe maximum allowable operating pressure (MAOP) for pre-1970 pipes, expanding and/or modifying integrity management principles beyond the current focus on populated areas, improving accident response times using both personnel and automation (such as valves), and the need for improved inspection technologies.

The NTSB recommendations are aggressive and aspirational. Still, there is much work needed to transform these recommendations into a concrete, practicable and achievable plan for realizing the pipeline safety goals that we share. INGAA advocates a phased approach that would build on the well-founded, existing approach of reducing risks to the greatest number of people in the most effective way. We believe that S. 275 accomplishes these objectives. S. 275 and a similar bill emerging in the House provide a well-considered framework for achieving groundbreaking improvements to the Federal pipeline safety program. Therefore, Congress should enact this legislation this year.

INGAA Commitments

Pipeline safety has improved consistently over the decades through the application and continuous refinement of consensus standards, technology, law and regulation. Because of this work, pipeline transportation remains the safest method of moving energy supplies within the United States. Still, in the wake of the San Bruno accident last year, we recognized more needed to be done to improve the safety of natural gas transmission pipelines and to regain public confidence in the safety of our pipeline infrastructure. Last December, INGAA's board of directors established a board-level task force to pursue these objectives. This task force produced a set of aggressive guiding principles, anchored by the goal of zero pipeline incidents, which subsequently were adopted by our board of directors. The guiding principles are as follows:

1. Our goal is zero incidents—a perfect record of safety and reliability for the national pipeline system. We will work every day toward this goal.
2. We are committed to safety culture as a critical dimension to continuously improve our industry performance.
3. We will be relentless in our pursuit of improving by learning from the past and anticipating the future.
4. We are committed to applying integrity management principles on a system-wide basis.
5. We will engage our stakeholders—from the local community to the national level—so they understand and can participate in reducing risk.

At first blush, the goal of zero incidents may sound daunting. Still, we were inspired by the substantial results achieved by other industries that set similar goals. Commercial aviation stands out as an example. A quote from Vince Lombardi cap-

tures the idea well: “Perfection is not attainable. But if we chase perfection, we may capture excellence.”

Developing and adopting these guiding principles was an important first step, but we knew that the real test of INGAA’s commitment to pipeline safety would be the specific actions we as an industry were prepared to take in response to this challenge. As part of its response to the “call to action” issued by Secretary of Transportation Ray LaHood, INGAA committed publicly to a nine-point action plan to improve pipeline safety. The INGAA action plan includes commitments to do the following:

1. Apply risk management beyond High Consequence Areas (HCAs, or populated areas).
2. Raise the standards for corrosion anomaly management.
3. Demonstrate “fitness for service” on pre-regulation (or pre-1970) pipelines.
4. Shorten pipeline isolation and response time to one hour.
5. Improve integrity management communication and data.
6. Implement the Pipelines and Informed Planning Alliance guidance.
7. Evaluate, refine and improve threat assessment and mitigation.
8. Implement management systems across INGAA members.
9. Provide forums for stakeholder engagement and emergency officials.

We will be working with the Pipeline and Hazardous Materials Administration (PHMSA) and other pipeline safety stakeholders to implement these action items, either through regulation or on our own accord. (The complete plan of action can be downloaded from INGAA’s website.) For purposes of the discussion today on S. 275 and the recent NTSB recommendations, I want to focus on three of the nine items addressed in our action plan.

Expansion of Integrity Management

Mr. Chairman, you and many members of the Subcommittee may be familiar with Integrity Management Program, or IMP. The integrity management program is the cornerstone of the pipeline safety enhancements included in the Pipeline Safety Improvement Act of 2002. Briefly, the IMP requires operators to identify pipeline segments in populated areas (known as High Consequence Areas, or HCAs), perform baseline assessments of all such segments by December 2012, and reassess those segments every seven years thereafter. The baseline assessments are close to completion, and many segments already have been reassessed.

There are approximately 300,000 miles of natural gas transmission pipelines in the United States. Of this, about 18,000 miles, or six percent, is located in an HCA. Because in-line inspection devices, commonly known as “smart pigs,” are used most often for these assessments and because of practical considerations affecting how these devices are inserted and retrieved from pipelines, pipeline operators ultimately will assess about 65 percent of the total natural gas transmission pipeline mileage by the end of next year. Completing the baseline assessments will be an important milestone. It is an opportune time to begin contemplating the next steps for natural gas transmission pipeline integrity management.

INGAA’s members already have committed to go further, and over time plan to extend integrity management principles beyond HCAs. Our plan is based upon a phased approach, looking specifically at assessing those pipelines located in close proximity to where people live and work. Using the integrity management principles contained in the American Society of Mechanical Engineers (ASME) standard B31.8S, INGAA has proposed that integrity management principles be extended to cover 70 percent of the people who live or work in close proximity to pipelines by 2020, and 100 percent of the people who live or work in close proximity to pipelines by 2030.

As is common with such efforts, the final increments of this integrity work will be the most difficult and most expensive to complete. As noted, the majority of this work is being performed with smart pig devices, which increasingly are able to perform more accurate and comprehensive testing. Still, some natural gas transmission pipeline segments cannot readily accommodate such devices, since these pipelines were constructed before the technology was invented and were not engineered to accommodate smart pig devices. In addition, some low-pressure, low flow, small-diameter pipelines cannot accommodate smart pigs—at least based upon current technology.

A phased approach to covering additional pipeline segments beyond HCAs is important because it will be necessary both to undertake significant pipe modification and to develop and deploy improved in-line inspection technologies that do not exist

today. Our commitment to cover 100 percent of the population living or working near pipelines is based on the assumption that new technology will provide the answer. It could not be achieved fully today given the configuration of the pipeline system and the state of current technology. Still, it is the aspirational goal that the industry should be setting for itself.

Section 7 of S. 275 would require the Secretary of Transportation to evaluate an extension of integrity management beyond HCAs, and then proceed with a rule-making within one year. The bill also would direct the Secretary to re-evaluate the class location regulations for natural gas transmission pipelines. These regulations pre-date new technology advancements and the application of integrity management and now largely are redundant because class location and IMP address the same issue—reducing risk in populated areas. The need for these legacy regulations will be even less compelling as integrity management is broadened. Section 7 of S. 275 is consistent with our goals for expanding integrity management.

Fitness for Service of Pre-Regulation Pipelines

The Natural Gas Pipeline Safety Act was enacted in 1968, and regulations implementing the new law took effect in 1970. Prior to this, pipeline operators utilized the ASME B31.8 standard to determine a pipeline's "fitness for service." (This standard did not require consistent record keeping.) The new regulations provided operators of pre-regulation pipelines with several options for confirming the Maximum Allowable Operating Pressure (MAOP) of the pipeline. Pre-regulation pipelines could determine MAOP through pressure testing, in the same manner required of pipelines constructed after 1970, or they could demonstrate, using verifiable records, past operating history to confirm the basis for the then-current MAOP. Many pre-1970 pipelines elected this second option, which has come to be known as the "grandfather clause."

Engineering and operational history supports the assertion that older pipelines are perfectly capable of safely remaining in service for many decades to come. Just as with an older home, pipelines that are well maintained can continue to provide reliable service. INGAA does not agree with the notion that older pipelines should be replaced simply due to their age. Age should not be the sole determinative factor in deciding whether to replace a natural gas transmission pipeline. *Fitness for service is the correct focus.* If a pipeline is unfit for service, then it must be repaired or replaced—regardless of age.

About 60 percent of U.S. natural gas transmission pipeline mileage was installed before 1970. Most of these pipelines are performing well and have records that the pipe had been pressure tested. INGAA supports a process for confirming the "fitness for service" of pre-regulation (or pre-1970) pipelines located in HCAs. This directly addresses the fact pattern in the San Bruno accident. INGAA believes that for all natural gas transmission pipelines operating in HCAs, an operator must either produce adequate records verifying a pipeline's fitness for service or reconfirm the fitness of that pipeline by pressure testing or utilizing an equivalent new technology. INGAA believes there must be a workable time-frame for completing this retesting to avoid significant adverse consumer energy price impacts due to testing-related pipeline capacity constraints and service disruptions. INGAA suggests that such work be completed by 2020.

Section 27 of S. 275 is consistent with the approach we support, and we believe it represents an effective legislative response to the San Bruno accident. INGAA's recommendation to reconfirm the MAOP in HCAs with testing or new technology, within a reasonable timeframe, is focused, rational, and demonstrably improves safety. Conversely, if the NTSB recommendation were implemented verbatim into regulation, all pre-1970 pipes would be required to undergo a specific type of hydrostatic pressure test, presenting a very problematic mandate. It is important to recognize that a pipeline must be completely removed from service, perhaps for up to several weeks, in order to be pressure tested hydrostatically. Moving beyond HCAs to cover all pre-1970 pipeline mileage would increase greatly the likelihood and magnitude of transportation service disruptions and increase consumer energy prices due to pipeline capacity constraints. Furthermore, with hydrostatic testing costs of approximately \$250,000 to \$500,000 *per mile* and with approximately 179,000 miles of pre-1970 natural gas transmission pipelines in the United States, the direct cost of such testing alone could have a significant impact on consumer energy costs when included in natural gas pipeline rates. This clearly is an area that should be subject to a rigorous cost-benefit analysis and where the availability of less costly and less disruptive alternatives to achieve the same safety goals should be considered.

The INGAA action plan closely mirrors S. 275 on this issue. We believe pre-1970 pipe segments, located in HCAs, that do not have pressure test records should meet

certain fitness-for-service requirements by 2020. The lessons learned from this effort, which would be focused on decreasing the risk to people, could then be applied to broader pipeline segments beyond 2020. A key “enabler” for expanding such testing will be the development and commercialization of smart pig technology that could substitute for a hydrostatic test, and thereby dramatically decrease testing costs and service disruptions, while at the same time provide better data to operators. We believe that smart pig research and development ultimately will be critical to meeting the goals of the NTSB recommendation on pre-regulation pipelines.

Pipeline Isolation and Response Time

Incident response time is another part of the INGAA action plan. Based on our meetings with emergency responders, the key issues for improving incident response and mitigation are, first, rapid recognition and, second, certainty of response. INGAA’s members have committed to have personnel on-site to coordinate with emergency responders, and within an HCA, to isolate a damaged pipe section, within one hour. In areas where an operator cannot get workers to an incident scene promptly, automation (such as automatic or remotely-controlled valves) is an option. Still, automation will not provide that prompt face-to-face interface preferred by emergency responders.

Incident response should focus on performance, not specific technology. Automatic and remotely controlled valves may be part of improving response time, but they are not the only solution and alone are not a complete solution. Valves cannot prevent an incident, nor are they likely to reduce the number injuries or fatalities in the unlikely event of a natural gas pipeline rupture and fire. Even with an automatic or remote controlled valve, a high-pressure natural gas pipeline can take significant time to depressurize following a rupture. Most of the human impacts from a rupture occur in the first few seconds, well before any valve technology could reduce the flow of natural gas. It is important for policymakers to understand that the primary benefit of isolating a damaged pipe segment—either through personnel or through automation—is to mitigate property damage from fire and allow emergency responders access to the impacted area.

INGAA supports section 5 of S. 275, which directs PHMSA to develop a regulation for the installation of automatic and remotely controlled valves on all new pipelines (including pipe replacements). We would suggest, however, that such a requirement be focused on pipe segments located in HCAs. Additionally, INGAA supports the provision in H.R. 2937 that would require the Secretary to review and report incident response time for existing pipe segments located in HCAs.

NTSB’s recommendations for valve automation and spacing, taken literally, are very prescriptive and would result in the dedication of significant resources to an issue that does not prevent accidents from happening.

Pipeline Technology Research and Development

A common theme in this testimony has been the role that new technologies can play in making it possible to chart a practicable and achievable course for reaching the pipeline safety goals that all of us share. The further development of smart pig technologies is absolutely critical to achieving these goals. It will be important for industry, government and other pipeline stakeholders to work together closely to develop a research and development road map for the pipeline safety technologies needed, an efficient and effective work plan for developing and deploying these technologies, and a means to fund this important R&D work.

Conclusion

Mr. Chairman, thank you once again for providing INGAA with the opportunity to testify today. Our key messages are these: first, reducing risk to people must remain the primary focus of the Federal pipeline safety program; second, S. 275 would provide a constructive framework for enhancing the pipeline safety program in a way that maintains this important focus; and, third, given that we are at such a critical moment in the evolution of our pipeline safety program, it is important for Congress to act this year to enact the reauthorization bill.

Senator LAUTENBERG. Thanks very much for your testimony, Mr. Santa.

And Ms. Sames, Vice President of Operations and Engineering for the American Gas Association, we look forward to hearing your testimony.

Please, Ms. Sames, give us your testimony.

**STATEMENT OF CHRISTINA SAMES, VICE PRESIDENT,
OPERATIONS AND ENGINEERING,
AMERICAN GAS ASSOCIATION**

Ms. SAMES. Thank you, and good afternoon. I appreciate the opportunity to appear in front of the Subcommittee.

Pipeline safety is a critically important issue, and I commend the Senate for passing a bipartisan bill, something a little unusual in this day and age. I applaud you for that. That bill will help to ensure that America continues to have one of the safest, most reliable pipeline systems in the world.

I'm here today testifying on behalf of AGA, whose members transport approximately one-fourth of the energy consumed in the United States.

Natural gas is delivered to customers through a safe, 2.4 million mile underground pipeline system. This does include 2.1 million miles of distribution pipe, the local utility pipe, and another 300,000 miles of natural gas transmission pipe. These pipelines stretch across the country, covering and providing service to more than 175 million Americans.

The industry has demonstrated that it can increase delivery of natural gas while continuously making improvements in safety. DOT data shows a continued downward trend in pipeline incidents of approximately 10 percent every 3 years. While this is a great record, clearly more has to be done. The tragic incident in San Bruno reminds us that one accident is just really one too many.

The leadership of AGA believes that the commitment must start at the top, and our actions as leaders clearly demonstrate that we are committed to achieving the goal of pipeline safety.

AGA's already addressing a number of NTSB recommendations, proposed legislation, and PHMSA's advanced notice of proposed rulemaking on gas transmission integrity management.

We are also moving forward with other initiatives that we believe will improve safety. Most notably, during today's hearing, the AGA board of directors met and just approved a number of significant actions that distribution and intrastate transmission operators can take to enhance pipeline safety.

This commitment to enhancing safety addresses key recommendations of the NTSB, of Congress, of PHMSA, and of the states. AGA members also commit to continuing proactive initiatives that we truly believe are enhancing safety. This includes engaging CEOs and executive leaders in safety improvement.

Back in 2007, AGA created a board-level safety committee that meets regularly to focus on pipeline, customer, employee, contractor, and vehicular safety. The AGA board has adopted a safety culture statement that states that all employees, as well as the contractors and suppliers providing services to AGA members, are expected to place the highest priority on safety.

We have an evergreen safety action plan, and hold an annual executive leadership safety summit. Our next summit will actually be November 7th and 8th; it will be our fifth one, and I invite the members of the Subcommittee to join my leaders at that summit.

AGA's taken a number of voluntary steps to promote safety in direct response to Secretary LaHood and the NTSB's calls to action on safety. This includes creating a technical task force focused on

pipeline fitness for service, records, maximum allowable operating pressure, automatically and remotely controlled shutoff valves, and emergency response.

We are working with other pipeline trade associations in the U.S. and Canada on a comprehensive study to explore initiatives currently utilized by other sectors, as well as the pipeline industry, in order to share information more wisely.

We're committed to continuing our work on excavation damage, one of the leading causes of pipeline incidents. AGA's actually a co-founder of the Common Ground Alliance, and supports a number of initiatives to address excavation damage.

We believe that more industry research is needed in order to improve inline inspections, direct assessment, nondestructive testing, and leak detection. Many companies are members of research consortiums and contribute toward research. On October 4, AGA actually hosted a meeting of the research consortiums and the national pipeline trade associations in order to begin our work on NTSB recommendation P-11-32, and create a path forward for near and long-term research.

Finally, AGA members are committed to finding new and innovative ways to inform and engage stakeholders. This includes emergency responders, public officials, excavators, and members of the public living in the vicinity of pipelines.

On September 25, AGA and INGAA sponsored an emergency response workshop presented by the National Association of State Fire Marshalls. We're working on an emergency responder checklist to assist communications, and we'll participate in PHMSA's emergency response workshop later this year.

In conclusion, the natural gas utility industry has a strong safety record. Recognizing the critical role that natural gas can and should play in meeting the Nation's energy needs, we're committed to working with all stakeholders to improve. To that end, we applaud this committee's focus on the common goal to enhance the safe delivery of a vital energy resource.

Thank you.

[The prepared statement of Ms. Sames follows:]

PREPARED STATEMENT OF CHRISTINA SAMES, VICE PRESIDENT, OPERATIONS AND ENGINEERING, AMERICAN GAS ASSOCIATION

Good morning, Mr. Chairman and members of the Committee. Pipeline safety is a critically important issue, and I commend you for the bipartisan support that members of Congress have provided over the years to ensure that America has one of the safest, most reliable pipeline systems in the world.

I am here testifying today on behalf of the American Gas Association (AGA), which was founded in 1918, and represents over 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 70 million residential, commercial and industrial natural gas customers in the U.S., of which 91 percent—more than 65 million customers—receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas companies, pipelines, marketers, gatherers, international natural gas companies and industry associates.

Natural gas pipelines, which transport approximately one-fourth of the energy consumed in the United States, are an essential part of the Nation's infrastructure. Natural gas is delivered to customers through a safe, 2.4-million mile underground pipeline system. This includes 2.1 million miles of local utility distribution pipelines and 300,000 miles of transmission pipelines that stretch across the country, providing service to more than 175 million Americans. The recent development of nat-

atural gas shale resources has resulted in abundant supplies of domestic natural gas, which has meant affordable and stable natural gas prices for our customers. America needs clean and abundant energy and America's natural gas provides just that. This has made the safe, reliable and cost-effective operation of the natural gas pipeline infrastructure even more critically important, as it is our job to deliver the natural gas to the customer.

Critical Pipeline Infrastructure

AGA believes that the domestic abundance of natural gas and the resulting price stability, when combined with the other advantages of natural gas—including its environmental attributes and efficiency of use—presents us with an unprecedented opportunity. There is direct use of natural gas in core residential and commercial markets, expanding use for gas-fired electric generation, and the transportation market where natural gas vehicles can displace some traditional diesel-and gasoline-based vehicles. These actions will save consumers billions of dollars in related energy costs, reduce greenhouse gas emissions and enhance America's energy security by reducing our reliance on imported oil. Our industry can help meet America's need for clean and abundant energy by delivering more of America's fuel—natural gas—not just in 2011, but also well into the future. Indeed, natural gas should now be considered a foundation fuel for the country.

Shale production grew from about 1 billion cubic feet (Bcf) per day in 2000 to about 15 Bcf per day by year-end 2010, thus forming nearly twenty-five percent of all domestic dry natural gas production. U.S. shale gas production is now spread between Appalachian states, the mid-continent, Texas, Louisiana, Arkansas and even the Michigan basin. The pipeline infrastructure is being expanded to accommodate large shale gas resources in the Northeast and other parts of the Nation. As shale production and the natural gas infrastructure grow to take advantage of this abundant resource, it must be done with a focus on safety. The AGA Board of Directors recently adopted principles for Responsible Natural Resource Development. These principles address a foundation for the sustainable and responsible development of all natural gas resources in our country and underscore the commitment of local natural gas utilities to the communities they serve. Not only will this significant production help to ensure a stable supply of natural gas, it will also provide new jobs. Estimates are that in 2011, the Marcellus Shale region alone will directly or indirectly create 122,000 new jobs. All told, 2.8 million people are directly or indirectly employed by the natural gas industry.

Industry's Demonstrated Commitment to Safety

The industry has demonstrated that it can increase the delivery of natural gas while continuously making improvements in safety. The data from the Department of Transportation's Pipeline & Hazardous Materials Safety Administration (PHMSA) shows a continual downward trend in pipeline incidents of approximately 10 percent every three years. AGA has analyzed data from the PHMSA database and leaks, serious incidents, and significant incidents are continually being reduced.

Over the last twenty years, we have seen improvements in leak reduction (49 percent), as well as significant incidents (29 percent) and serious incidents (49 percent). But clearly more needs to be done. The tragic incident in San Bruno, California reminds us that one accident is one too many. The leadership of AGA believes that commitment must start at the top in any organization or business. Our actions as leaders in reducing incidents and leaks clearly demonstrate that we are fully committed to achieving the goal of improving pipeline safety.

AGA'S Review of the NTSB Report, Legislation and Regulations

AGA commends the Committee for developing a solid bipartisan bill for pipeline safety. Everyone has the common goal of continuing to have a safe, reliable and efficient national pipeline infrastructure. Congressmen, public utility commissioners, regulators, gas utility leaders, and utility hourly employees all agree that safety is the top priority.

It is important to highlight that the NTSB investigative process, pipeline safety reauthorization, and rulemaking by PHMSA are separate and distinct processes. AGA has provided support for each of these processes. AGA and its Operations Section chairman, Charles Dippo, Vice President of Engineering Services and System Integrity for South Jersey Gas, testified at the NTSB San Bruno hearing in March 2011 on activities that operators and the association are doing to promote pipeline safety. Mr. Dippo also testified at several House and Senate hearings. AGA technical committees have engineers from its operating companies reviewing the NTSB report, legislation and PHMSA proposed rulemaking.

The investigative process of this tragic accident is complete and there are important lessons to learn. Industry must be prudent in moving forward to enhance its

safety practices. On the positive side, the facts associated with this accident appear to be unique and not part of a systemic problem. The NTSB investigation showed that there were good engineering practices in place as early as the 1940s that required gas transmission pipe to use high grade steel, to be pressure tested at the mill, to be properly field inspected, and to operate at a maximum allowable operating pressure (MAOP) with a margin of safety. All of the 42 miles of the Line 132 that failed were constructed to industry standard and in good condition, except six approximately four foot sections that were installed when 1,825 feet of the line was relocated in 1956. The NTSB stated that the proximate cause of the San Bruno incident was,

“the Pacific Gas and Electric Company’s (PG&E) (1) inadequate quality assurance and quality control in 1956 during its Line 132 relocation project, which allowed the installation of a substandard and poorly welded pipe section with a visible seam weld flaw that, over time grew to a critical size, causing the pipeline to rupture during a pressure increase stemming from poorly planned electrical work at the Milpitas Terminal; and (2) inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section.”

AGA has circulated the full NTSB report to its members companies and they are analyzing the facts and the recommendations for consideration in their operations. AGA believes that the NTSB staff did an excellent job investigating this unique incident and now it is time to address their findings through the regulatory process.

There was one NTSB safety recommendation to AGA. The recommendation states,

“Report to the National Transportation Safety Board on your progress to develop and introduce advanced in-line inspection platforms for use in gas transmission pipelines not currently accessible to existing in-line inspection platforms, including a timeline for implementation of these advanced platforms. (P-11-32).”

On October 4, AGA hosted a meeting that was attended by all of the national pipeline trade associations and the following research organizations; Gas Technology Institute, NYSEARCH, Operations Technology Development, and the Pipeline Research Council International (PRCI). The meeting was designed to develop answers to NTSB Safety Recommendation P-11-32 and created a path forward for near and long-term R&D for the pipeline industry.

AGA commends the Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security for developing a comprehensive pipeline safety bill for reauthorization. AGA believes the bill provides a balance of prescriptive mandates from Congress that leaves technical details to be implemented by the Secretary of Transportation through regulation. AGA sent a letter to Congress urging the immediate passage of the bill. There has already been thorough discussion on every aspect of the bill and we urge Congress to pass the bill by unanimous consent so that regulators and industry can begin immediate implementation of the safety improvement ordered by Congress.

Finally, PHMSA has already begun the regulatory process to address many of the integrity management issues related to the NTSB San Bruno investigation and contained within Senate bill 275. PHMSA issued an advance notice of proposed rulemaking on August 25 that contained 191 questions, many with subparts. AGA and its member companies have a number of technical committees reviewing the questions and developing responses that are due December 2. The notice includes all aspects of integrity management including in-line inspection, pressures testing, expanding high consequence areas (HCAs), installation of automatic or remotely controlled valves, and managing pipe that has not had a post construction hydrotest, but has a long history of stable operation below established MAOPs.

Raising the Bar for Safety

Along with addressing the findings in the NTSB investigation, new legislation and the PHMSA proposed rulemaking, industry must keep its focus on key safety initiatives that are already underway and are showing success. AGA has been, and continues to be, actively engaged in all aspects of pipeline safety. This includes the following:

- *Engaging CEOs and executive leadership in safety improvement*—In 2007, AGA created a board-level safety committee that focuses on pipeline safety, customer safety in the home, employee safety, contractor safety and vehicular safety. The committee meets regularly to share lessons learned, review safety statistics, and identify ways to further improve safety. This committee has developed a Safety Information Resource Center that includes safety alerts, safety messages, safety statistics, information on motor vehicular safety and case studies. In addition,

AGA and our executive leadership hold an annual Safety Summit that brings together key safety personnel and leaders in safety from government and a variety of industries to share lessons learned.

- *Sharing Safety Information*—AGA has 14 technical committees and an operations managing committee focusing on a wide range of operations and safety issues. The technical committees develop and share information, including those issues raised by Secretary LaHood, PHMSA and the National Transportation Safety Board. In addition, AGA has three Best Practices Programs (distribution, transmission and supplemental gas) focused on identifying superior performing companies and innovative work practices that can be shared with others to improve operations. AGA is also the Secretariat for the National Fuel Gas codes and the Gas Piping Technology Committee.
- *State Safety and Rate Mechanisms*—Gas utilities operate under the safety and rate making jurisdiction of state utility commissions. AGA serves as a clearinghouse to document the effective cost-recovery mechanisms that various states have used to fund infrastructure maintenance and replacement projects. AGA provides technical and regulatory information at regional and national meetings of state utility commissioners and pipeline safety regulators.
- *Publications*—AGA has developed a number of publications dedicated to improving safety and operations. This includes publications on corrosion control, gas control, integrity management, odorization, plastic piping, purging principles and practices, repair and replacement, worker safety practices, contractor safety, natural gas pipelines and unmarked sewer lines, alarm management, directional drilling and emergency shutdown.

Actions Supporting the NTSB and DOT Secretary Calls to Action

AGA has taken a number of voluntary steps to promote safety in direct response to the NTSB recommendations and Secretary LaHood's call to action on pipeline safety. This includes creating technical task forces focused on addressing a pipeline's fitness for service, records, maximum allowable operating pressure, automatic and remotely controlled shutoff valves, and emergency response. We have held a number of workshops, teleconferences and other events to share information, and have initiated a Safety Information Safety Study with other pipeline trade associations, including our Canadian counterparts. In addition, the AGA Board of Directors has finalized and adopted a Safety Culture Statement to show its commitment to promoting positive safety cultures and, today, the Board will adopt AGA's Commitment to Enhancing Safety, a list of commitments that AGA and its members are willing to take to improve safety. Additional details are listed below:

- *Pipe Fitness for Service*—AGA brought together two task forces to develop guidance on how to determine a distribution or transmission pipeline's fitness for service, including the critical records needed for this determination, and the maximum allowable operating pressure on a transmission pipeline. Distribution and transmission piping serve different purposes and have very different characteristics for examining fitness for service. The initial documents were submitted for the DOT Report to the Nation. Also under development are more comprehensive documents focused on the fitness for service considerations, the level of accuracy needed for critical records, how to address gaps in records, and how to obtain new information to address record gaps and update records. These documents are expected to be finalized in Fall 2011.
- *Transmission Records Verification Process*—AGA developed a technical paper to provide guidance on determining the maximum allowable operating pressure of a transmission pipeline. This technical paper was finalized in April and distributed to operators and Federal and state regulators. Additional work is being conducted by the task forces listed above and a companion document to the April technical paper will be issued in the Fall of 2011.
- *Safety Information Sharing Study*—In order to share safety information amongst all operators, AGA is working with the Interstate Natural Gas Association of America (INGAA), the American Petroleum Institute (API), the Association for Oil Pipelines (AOPL) and our Canadian counterparts, the Canadian Gas Association and the Canadian Energy Pipeline Association, on a comprehensive study to explore safety sharing initiatives currently utilized by other sectors in the economy, as well as the pipeline industry. It is our hope that by learning from others, the energy pipeline industry can identify and implement a model that will measurably improve pipeline system safety. The safety management study is expected to be completed as early as February of 2012.

- *Gas Utility Emergency Response*—The safety performance of the natural gas pipeline industry is largely attributed to a well designed and maintained infrastructure. Operators must also be prepared to respond quickly to address potentially dangerous situations. Consistent with PHMSA advisories, an AGA task group is developing a checklist that will enable operators to enhance their emergency response communications and education programs. This emergency check list will be completed in the fall of 2011.
- *Automatic and Remotely Controlled Valves*—AGA has developed a technical paper on Automatic and Remotely Controlled Valves. The technical paper presents the benefits and disadvantages of their installation on new, fully replaced and existing transmission pipelines, especially as it relates to the gas transmission pipelines embedded into distribution systems. The initial technical document was completed in March 2011 and AGA is developing a more comprehensive technical paper that is expected to be completed by December of 2011.
- *Safety Culture Statement*—In February of 2011 the AGA Board of Directors adopted a Safety Culture Statement to show its commitment to promoting positive safety cultures among employees throughout the natural gas distribution industry. All employees, as well as contractors and suppliers providing services to AGA members, are expected to place the highest priority on employee, customer, public and pipeline safety. The Safety Culture Statement addresses the commitment by management to promoting open and honest communications across all levels of an organization, identifying hazards, managing risks, planning the work and working the plan, and promoting a learning environment and personal accountability.
- *Infrastructure Replacement Rate Mechanisms*—AGA, INGAA and API have developed a document to explain to the public the ratemaking mechanisms used for the pipeline infrastructure. A well designed rate reflects the input of all stakeholders and the importance of factors such as expanded safety programs, infrastructure repair and replacement. Such a rate design also recognizes the changing methods of cost recovery and other factors.
- *Technical Workshops, Teleconferences and Other Events to Share Information*—Information sharing is critical to improving safety. AGA has held a number of workshops, teleconferences and other events to promote the sharing of pipeline safety information. This includes numerous technical committee meetings; workshops on emergency response, transmission integrity management, vintage pipelines and utility contractor management; regional operations executives' roundtables; and roundtables on external corrosion, damage prevention and marking and locating. In addition, the AGA Operations Conference and Exhibition, which was held in May of 2011 and included technical sessions on the management of vintage pipe, distribution and transmission integrity management, emergency management, pipe replacement, welding repair qualification procedures, leak detection, corrosion assessment, MAOP, qualification of personnel, control room management, sewer cross bores, compression fittings, worker safety, weld failure mechanisms, safety culture, contractor management, improving communications, and new construction. AGA also participated in the workshops that PHMSA held on weld seams and integrity assessments and its revised annual and incident reporting forms.

The Safety Path Forward

AGA has developed additional actions that distribution and intrastate transmission pipeline operators can take to enhance pipeline safety. This plan will be voted on by the AGA Board of Directors at its October 2011 meeting.

In addition to the actions identified above, AGA believes additional safety actions need to continue in order to improve pipeline safety consistent with the intent of Congress. AGA supports timely reauthorization of the pipeline safety law and in July sent a letter to the Senate requesting passage of the Senate bill 275. This is a constructive vehicle to meet our common objective for a safer system that also can effectively meet our Nation's energy needs. AGA members are already engaged to take action on the following:

Damage Prevention—AGA is a founder of the Common Ground Alliance and supports programs that address excavation damage, which is one of the leading causes of pipeline safety incidents. Based upon 2008 data collected by the Common Ground Alliance, excavation damages for all underground facilities have decreased by approximately 50 percent compared to 2004 data. AGA believes a significant cause of this reduction is the work done by the pipeline industry in promoting the use of 811, the national number for people to call before they dig. AGA members are working at the state level to promote participation in One-

Call programs by all underground operators and all excavators. They also want state legislation with flexible and effective enforcement that prohibits municipalities, state agencies or their contractors from being exempt from One-Call notification requirements.

Transmission Integrity Management Enhancements—AGA's distribution company members operate approximately 45,000 miles of natural gas transmission pipeline in the United States. These pipelines generally have different operating characteristics from interstate natural gas pipelines. Transmission pipelines operated by distribution companies are often embedded within the distribution network that serves residential, commercial and industrial customers, and they operate at lower stress levels.

AGA members are committed to immediately engaging in public discussions to evaluate whether gas transmission integrity management should be expanded beyond HCAs, and the benefits and disadvantages of applying the integrity management principles to additional areas. Many AGA members are required to manage Distribution Integrity Management Programs (DIMP) and Transmission Integrity Management Programs (TIMP) programs, so the effectiveness, inefficiencies and duplication of multiple integrity management programs must also be explored. AGA members are committed to evaluating how various low-stress pipelines operating below 30 percent SMYS would benefit by using elements from either or both programs.

Data Collection and Sharing—Collecting accurate data and data analysis are integral to determine areas for pipeline safety improvement. AGA is committed to working with PHMSA, state regulators and the public to create a data quality team made up of representatives from government, industry and the public, similar to the PHMSA technical advisory committees. The team could analyze the data that PHMSA collects and determine opportunities to improve pipeline safety based on the data analysis. The team could also identify gaps in the data that are collected by PHMSA and others, identify ways to improve the collected data, and communicate consistent messages about pipeline incident data.

Research & Development—More industry research is necessary to improve inline inspection tool quality, operator use of tool data, direct assessment tools, non-destructive testing and leak detection. Many pipeline companies have direct memberships in research consortiums and contribute towards research. These research consortiums include Pipeline Research Council International (PRCI), NYSEARCH and Operations Technology Development (OTD), Utilization Technology Development (UTD) and Sustaining Membership Program (SMP). In the last five years, hazardous liquid and gas pipeline operators have contributed more than \$115 million to research and development. However, R&D cannot be successful without cooperative planning between industry and government. As noted above, AGA is committed to improving the transparent collaborative relationship with PHMSA that has historically enhanced pipeline safety R&D.

Emergency Response—AGA members are committed to finding new and innovative ways to inform and engage stakeholders, including emergency responders, public officials, excavators, consumers and safety advocates and members of the public living in the vicinity of pipelines. AGA and INGAA sponsored a workshop on September 26 that was presented by the National Association of State Fire Marshals. The workshop had approximately 60 emergency responders, PHMSA staff and 40 operator personnel in attendance.

AGA, PHMSA, NTSB, and the public have the common goal of continuing to keep the pipeline infrastructure the most safe and efficient mode of energy transportation in America. AGA is confident that the commitments to safety listed above will indeed achieve that goal.

Summary

In conclusion, the natural gas utility industry has a strong safety record. Recognizing the critical role that natural gas can and should play in meeting our Nation's energy needs, we are committed to working with all stakeholders to improve. To that end, we applaud this committee's focus on the common goal: to enhance the safe delivery of this vital energy resource.

Senator LAUTENBERG. Ms. Quarterman, the NTSB made more than a dozen recommendations to PHMSA, and its report on the San Bruno accident. Now, how quickly can PHMSA move forward on addressing these recommendations?

Ms. QUARTERMAN. Mr. Chairman, we started to address these recommendations before the report came out. As I mentioned in my written testimony, we issued a couple of safety advisories earlier in the year, one before the incident in response to actually the Michigan incident with respect to emergency response. We have a couple of recommendations associated with that from NTSB that will require some tweaking of those advisory bulletins.

We also issued an advisory bulletin with respect to recordkeeping and risk assessment, and we've held workshops on those issues. We have also issued an advanced notice of proposed rulemaking that addresses many of the provisions related to maximum allowable operating pressure, grandfathering of pipe, the automatic and remote control shutoff valves. So we are well on the way to, we hope, getting rid of these current recommendations that NTSB has made and closing them.

Senator LAUTENBERG. So, how long more might it take to install the remainder of the recommendations that you've made?

Ms. QUARTERMAN. We're subject to the vagaries of the rule-making process, which take years. I mean, we're not talking about this happening overnight. We're talking about a few years to get these rules in a position where they become final.

Senator LAUTENBERG. Ms. Hersman, and also Mr. Kessler, the NTSB's investigation into the San Bruno explosion found that PG&E knew very little about the 50-year-old pipe that ruptured. How could this explosion have been prevented, if the company didn't know? Would better recordkeeping have made the difference here? More information? What might have been done?

And it sounds like this could have been—I don't want to trifle with this, but easily fixed. And it just didn't happen. What do you think the principle reason for this was? Was it poor recordkeeping? What was it?

Ms. HERSMAN. Poor recordkeeping is a symptom, certainly, of the problems with this system. But really that installation of the flawed pipe was what set all of this into motion. The pipe they installed were substandard quality. We know that there were welds that were substandard quality. This was an accident that was waiting to happen.

Since the pipe was installed, the line was not tested hydrostatically and no inline inspections were performed; it lay there for over 50 years before this accident occurred.

During all that time, they had the potential to identify problems, but the fact that their records were bad resulted in faulty risk assessment and they continued to overlook this pipe.

Senator LAUTENBERG. How much time might have been needed to fix this, if discovered?

Ms. HERSMAN. I would defer to Mr. Stavropoulos to respond. Certainly, if they had discovered this section of pipe, I think it would have raised their interest in this area of pipe and probably would have led them to test it, inspect it, and remove it.

Senator LAUTENBERG. Mr. Stavropoulos, the investigation identified deficiencies of PG&E's recordkeeping, emergency response procedures, and the management of its system.

Now, PG&E has been aware of some of these deficiencies since incidents that occurred as far back as 1981. What's PG&E done to

remedy the deficiencies that the NTSB has identified as a systemic problem?

Mr. STAVROPOULOS. Well, Mr. Chairman, one of the first things that PG&E has done is to reorganize its gas business. And, really, the problems identified by NTSB is the primary reason why they asked me to join the company and bring my 30 years of experience of dealing with old infrastructure in the United States, to see what we can do to quickly remedy the situation regarding recordkeeping, regarding the integrity management flaws that had been identified, our procedures around clearances to do work on the pipeline, our emergency response procedures.

We've reorganized—I've been with the company almost 4 months. We've completely reorganized our gas management team. I brought in other senior leaders from across the country. I've traveled to—not only using my experience, but that of others, to address the problem.

Senator LAUTENBERG. Now, I'm going to turn to Senator Wicker and—but I have continuing questions for some of you.

Thank you.

Senator WICKER. Thank you very much, Mr. Chairman. Ms. Sames, how do you pronounce your name?

Ms. SAMES. Sames.

Senator WICKER. Sames, just like it's spelled. Here we are.

[Laughter.]

Ms. SAMES. I get mispronunciation a lot.

Senator WICKER. Well, I won't mispronounce it again since it's so easy.

Thank you for acknowledging that one accident is too many. And particularly such a horrific incident as we had in San Bruno is just unthinkable, and horrific.

But you do talk about the improvement in safety statistics over time. A 49 percent improvement in leak reduction, 29 percent in significant incidents, and 49 percent improvement in serious incidents. Now those are not your data, are they?

Ms. SAMES. They are not. This is data collected by the Department of Transportation, by PHMSA. We rely on their data for these statistics.

Senator WICKER. OK. Do they, to your knowledge, have data as to injuries and fatalities?

Ms. SAMES. They do. PHMSA collects data on all incidents that result in a death, an injury, or significant property damage.

Senator WICKER. And has there also been a steady improvement in the record with regard to fatalities and injuries?

Ms. SAMES. I would need to look at PHMSA's data. I don't know that off the top of my head. But I do know that the number of incidents have been decreasing over time, and I find that to be a good sign.

Senator WICKER. Well, absolutely.

Ms. SAMES. But more needs to be done—completely recognize that.

Senator WICKER. Ms. Quarterman, is the term "serious incident" a term of art—is the term "significant incident" a term of art that we use in PHMSA.

Ms. QUARTERMAN. They are terms of art, and to answer the question you just asked about the number of fatalities—we have seen an increase in the number of fatalities over the past 3 years. We do not like to see that.

We have to always be cognizant of the fact that despite the good record in terms of the number of incidents, we need to continually improve the program.

Senator WICKER. Well, that—that is interesting. You know, if serious incidents have decreased and significant incidents have decreased, and fatalities have increased, it seems that we might need to change the definition within the office, just within the agency just so we can be clear there.

Let me move, though, Ms. Quarterman, to Mr. Kessler's observation that is backed up by recommendations, that the state agency did a bad job. And one of the main reasons for that is that PHMSA appeared to have handed off responsibility while never doing any meaningful oversight.

Now, apparently that's going to be improved under your watch. Was insufficient resources an issue in this lack of oversight leading up to San Bruno?

Ms. QUARTERMAN. Well, I think resources are always a challenge. We—the Pipeline Safety Program is only 200 employees, of which about five or six oversee the 52 programs that are run by the states.

I would say that I think that when the pipeline safety law was first put in place, which was late 1960s, early 1970s, you've heard a majority of this pipeline was already in the ground. And in fact, many of the states were already regulating these programs, the intrastate gas programs, and so the legislation was very strong in that it wanted the states to be in charge of many of these programs. They don't want to completely upset the apple cart, and therefore there's a strong certification program for the states, and the states have, in fact, been certified.

I think this is a huge challenge for the Pipeline Safety Program in terms of being able to have a consistent regulatory practice across all the states, when you have to oversee so many states with so few people in the oversight position. That's something that we would like to see improved going forward.

We have talked with our partners in the states about how we would like to make their data more transparent. For example, we right now have all of our data available to anybody in the United States. The individual state records are not available to them or to us. So we want to be more consistent in our implementation.

Senator WICKER. Mr. Kessler, is it a good idea for 30-inch natural gas pipes to be running through residential areas like this?

Mr. KESSLER. I don't know that it's a good or bad idea, Senator. I think it certainly can be done.

Senator WICKER. How prevalent is that?

Mr. KESSLER. Sorry?

Senator WICKER. How prevalent is that in these little residential communities like San Bruno?

Mr. KESSLER. I'm not sure off the top of my head.

Senator WICKER. Anyone answer that?

Mr. KESSLER. The Administrator may have a better idea. But I do know that this—

Senator WICKER. Is this happening frequently? I understand this pipe was defective.

Mr. KESSLER. Right. We do—

Senator WICKER. But is there the likelihood that thousands of people watching this today have 30-inch natural gas pipelines running through their subdivisions without their knowledge?

Mr. KESSLER. There are large, significant transmission lines are running through people's neighborhoods without their knowledge. Not wholly the fault of the industry, because many of these communities popped up on top of the pipelines.

But, yes, we have a real problem in that local governments don't know what's below, that local residents don't know what's below, and I think that it can be safe but without the knowledge, without the inspections, it may not be.

Senator WICKER. Thank you.

Senator LAUTENBERG. I'm going to call on Senator Boxer and ask her please to take the chairmanship, if she will, as she asks her questions.

And please excuse me. Thank you all for what you've done.

Senator BOXER [presiding]. Thank you. Senator Lautenberg, thank you so much for your leadership here.

I have a lot of questions, so I may have a couple of rounds. If Senator Wicker wants some more rounds, that's great with me. We'll just go as long as we can.

I want to start with PHMSA because PHMSA got a pretty bad rap from the NTSB, and I want to discuss this. They say specifically on page 121, the NTSB concludes that the PHMSA integrity management inspection protocols are inadequate, and they go through a whole host of things you should do: incorporate a review of meaningful metrics, require auditors to verify the operator has a procedure in place for ensuring the completeness and accuracy of underlying information, three, require auditors to review all integrity management performance measures reported to PHMSA, and compare the leak failure and incident measures to the operator's risk model, and four, require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits.

Have you begun the process of changing your protocols?

Ms. QUARTERMAN. We have not begun the process of changing our protocols. And I actually had a conversation with Chairwoman Hersman yesterday to talk about those particular provisions, to ask that we might meet with them to understand more what it is they have in mind when they made those recommendations.

Senator BOXER. Well, it's not that complicated, is it? It says, "Incorporate a review of meaningful metrics, require auditors to verify the operator has a procedure in place for ensuring the completeness and accuracy"—this is plain English. You have not started to change your protocols? After this?

And I want to put up this picture again. This happened, and you have not started to change your protocols? I don't get it.

Ms. QUARTERMAN. We believe that we do have protocols in place, that's why we'd like—

Senator BOXER. So you don't agree with the NTSB after they made that exhaustive investigation?

Ms. QUARTERMAN. I'm not saying I don't agree with them, I'm saying that I don't necessarily understand what their recommendations mean beyond what we have in place.

Senator BOXER. OK. Well, I would suggest you look at page 121. It's the clearest English. I mean, I understand it and I know compared to what you know, this much. But it's not so difficult—you gave the CPUC very high grades, didn't you?

Ms. QUARTERMAN. Grades with respect to its program?

Senator BOXER. Yes.

Ms. QUARTERMAN. I believe that it was rated—perhaps there were two others with lower scores than they. So they weren't the highest rated, obviously they were near the bottom.

Senator BOXER. Well, weren't they in the 90s? They had a rating of 99 percent to 100 percent, and then you say "our partners in the states?" I'm all for you cooperating with your partners, but you have an obligation to ride herd on them.

And I'm very concerned. This started the first time we spoke, and I thought maybe today you'd have some better answers. Now you also said in your questioning from Senator Lautenberg, this is going to take several years to change rules. Look at this. You think the people are going to stand for that, if—God forbid it's anything even close to this.

Ms. QUARTERMAN. I would love to have rules in place sooner than that.

Senator BOXER. Good.

Ms. QUARTERMAN. Unfortunately, I can't control the process.

Senator BOXER. Well, yes, I understand that you have the ability to act in emergency orders. You have that don't you in this case? Don't you think this requires emergency orders, to immediately test and immediately talk to your partners in the state to see if there's even a remote chance that this could happen again?

Let me just say my opinion, from watching you and your testimony. You are a well-meaning woman, but so far you haven't understood what the NTSB did. You should watch this video. You don't understand what they said, or your people don't understand what they said. You're going to have a meeting. When are you going to meet with them to understand what they said? When are you going to have a meeting with them?

Ms. QUARTERMAN. As I mentioned in my written and oral testimony, we have been out front in terms of trying to respond to this incident, issuing several safety advisories and going forward with rulemaking. We would love to meet with the NTSB as soon as they're available. We discussed this yesterday. We don't expect—

Senator BOXER. Good. Ms. Hersman, are you available to meet with Ms. Quarterman ASAP?

Ms. HERSMAN. Yes, ma'am.

Senator BOXER. I would like to have a report about that meeting, if I could, as soon as you meet. I'd like to know that you met and I'd like to know how it went, and if it's appropriate, I would love to send someone there just to be present. But if you don't think that's appropriate we don't have to.

But I don't sense this feeling of emergency in your voice, Ms. Quarterman. And I walked this area. People are dead because of this. You know what they were doing? They were sitting in their house having a cup of coffee. That's what they were doing. This could happen anywhere in America.

And your agency gave 100 percent rating to the CPUC. Your partner. Listen, that is not being an oversight agency. And what regulations are you writing now? Can you share that information with us? You said several regulations. What do they include?

Ms. QUARTERMAN. Our regulations relate to matters beyond this particular incident, but they also relate to the remote control shut-off valves, the measurement of the MAOP.

Senator BOXER. What's MAOP?

Ms. QUARTERMAN. The maximum allowable operating pressure for the pipeline.

Senator BOXER. Well, that is related. Both of those things are related to this incident.

Ms. QUARTERMAN. Well, I know they are related.

[The information referred to follows:]

U.S. DEPARTMENT OF TRANSPORTATION,
Washington, DC, December 14, 2011

Hon. DEBORAH A.P. HERSMAN,
Chairman,
National Transportation Safety Board,
Washington, DC.

Dear Chairman Hersman:

I am sending you this letter in response to the National Transportation Safety Board's (NTSB) safety recommendations P-11-8 through -20 and P-11-1 and P-11-2 (Reclassification) issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on September 26, 2011. The NTSB made these recommendations following its investigation of the tragic September 9, 2010 natural gas pipeline rupture in the city of San Bruno, California. We were pleased to provide substantial support to the NTSB during this investigation, and I want to assure you that we are acting expeditiously to address the significant risks our investigation revealed in this incident. As you know, PHMSA began addressing these risks through both regulatory and non-regulatory means even before the investigation was officially concluded.

PHMSA takes all recommendations from the NTSB seriously and I want to assure you and the rest of the Board that we are focused on addressing all pipeline safety recommendations as expeditiously as possible.

The following text will identify the San Bruno NTSB recommendations by number, and PHMSA's response to each:

NTSB Safety Recommendation P-11-8:

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius. This recommendation supersedes Safety Recommendation P-11-1.

PHMSA Actions:

On November 3, 2010, PHMSA issued Advisory Bulletin PHMSA-2010-0307 regarding Pipeline Safety: Emergency Preparedness Communications. PHMSA expanded on that effort through an Emergency Responder Forum, which was held on December 9, 2011 at the U.S. Department of Transportation's Headquarters in Washington, D.C. The NTSB was invited to attend. This Forum convened leaders from the emergency responder community, Federal and State Government, the public, and the pipeline industry to begin development of a strategy and action plan for improving emergency responders' ability to prepare for and respond to pipeline emergencies. Our Forum evaluated available resources and current regulatory requirements, and drew lessons from several recent pipeline accidents, and sought to

reveal potential gaps in information firefighters and other emergency responders need to prepare for and respond to natural gas and hazardous liquid pipeline emergencies adequately.

PHMSA will create a plan to address this recommendation now that the Forum is completed.

NTSB Recommendation P-11-9:

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated. (P-11-9) This recommendation supersedes Safety Recommendation P-11-2.

PHMSA Actions:

PHMSA will soon publish an advisory bulletin to all pipeline operators reiterating the importance of immediate dialogue between the operator and emergency responders when any indication of a pipeline rupture or other emergency condition that may have an adverse impact on people or the environment arises.

NTSB Recommendation P-11-10:

Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.

PHMSA Actions:

PHMSA has already accelerated our new Control Room Management rule's effective date from February 1, 2013 to October 1, 2011. That new rule addresses human factors and other aspects of control room management for pipelines where pipelines use supervisory control and data acquisition (SCADA) systems. Under this rule, affected pipeline operators must define the roles and responsibilities of controllers and provide controllers with the necessary information, training and processes to fulfill these responsibilities. Operators must also implement methods to prevent controller fatigue. The rule further requires operators to manage SCADA alarms, assure control room considerations are taken into account when changing pipeline equipment or configurations and review reportable incidents or accidents to determine whether control room actions contributed to the event.

In addition, on August 25, 2011, PHMSA published an Advance Notice of Proposed Rulemaking (ANPRM), which requests comments regarding leak detection systems on natural gas pipelines. As part of a larger study on pipeline leak detection technology, PHMSA will conduct a public workshop in early 2012. This study will, among other things, examine how enhancements to SCADA systems can improve recognition of pipeline leak locations. Additionally, in early 2012 PHMSA plans to hold a pipeline research forum to identify technological gaps, potentially including the advancement of leak detection methodologies. We anticipate advancing rulemaking to address this recommendation following these actions.

NTSB Recommendation P-11-11:

Amend Title 49 Code of Federal Regulations Section 192.935(c) to directly require that automatic shutoff valves (ASV) or remote control valves (RCV) in high consequence areas and in class 3 and 4 locations be installed and spaced at intervals that consider the population factors listed in the regulations.

PHMSA Actions:

PHMSA published an ANPRM on August 25, 2011 and invited comments on the need for revised mainline valve regulations for new pipeline construction or existing pipelines. The ANPRM discusses the issue of valve spacing and automatic shutoff valves (ASV) or remote control valves (RCV) in high consequence areas.

PHMSA will hold a public workshop in the first quarter of 2012 on pipeline valve issues—including the need for additional valve installation on both natural gas and hazardous liquid transmission pipelines. We will also include this topic in our 2012 Pipeline Research Forum. We anticipate advancing rulemaking to address this recommendation following these actions.

NTSB Recommendation P-11-12:

Amend 49 CFR 199.105 and 49 CFR 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed

to the accident or cannot be completely discounted as a contributing factor to the accident.

PHMSA Actions:

PHMSA is consulting within the U.S. DOT, as its broader authority and policy is relevant in this matter, and will seek to clarify the regulatory language identified in § 199.105(b) and .225(a)(1), as appropriate, following those discussions.

NTSB Recommendation P-11-13:

Issue immediate guidance clarifying the need to conduct post accident drug and alcohol testing of all potentially involved personnel despite uncertainty about the circumstances of the accident.

PHMSA Actions:

PHMSA will soon publish an Advisory Bulletin reminding operators of the requirement for post-accident testing and clarify that testing must occur unless an operator can unequivocally determine that personnel did not contribute to the accident.

NTSB Recommendation P-11-14:

Amend Title 49 Code of Federal Regulations 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.

PHMSA Actions:

In our August 2011 gas transmission ANPRM referenced earlier, PHMSA began rulemaking on this and other issues relating to the San Bruno failure. We intend to advance rulemaking to address this topic during CY 2012. Removing the grandfather clause for all gas transmission pipelines will involve significant technical and economic challenges and is likely to require time to implement. Notwithstanding, PHMSA will evaluate several options for implementing this recommendation. To commence these actions PHMSA is initiating an OMB-approved information collection effort to gather key data needed to characterize the quantity and locations of pre-1970 gas transmission pipelines operating under the grandfather clause accurately.

NTSB Recommendation P-11-15:

Amend Title 49 Code of Federal Regulations Part 192 of the Federal pipeline safety regulations so that manufacturing- and construction-related defects can only be considered stable if a gas pipeline has been subjected to a post-construction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.

PHMSA Actions:

PHMSA's August 2011 rulemaking also began the regulatory process needed to implement rulemaking to strengthen the Integrity Management requirements relating to manufacturing and construction defects. We plan to advance this rulemaking during 2012.

NTSB Recommendation P-11-16:

Assist the California Public Utilities Commission in conducting the comprehensive audit recommended in Safety Recommendation P-11-22.

PHMSA Actions:

PHMSA has already been assisting the California Public Utilities Commission (CPUC) in conducting its oversight responsibilities for which PHMSA provides substantial funding. In April of 2011, PHMSA sent a team of five engineers to help CPUC review the Risk Assessment and Threat Identification portion of their Gas Integrity Management audit of Pacific Gas and Electric (PG&E). In October 2011, PHMSA sent additional staff to assist the CPUC in its audit of PG&E's public awareness program. PHMSA will continue to provide support to the CPUC with regard to the application of the integrity management and other pipeline safety regulations. I have spoken with the CPUC leadership offering them all the help they need to carry out their responsibilities.

NTSB Recommendation P-11-17:

Require that all natural gas transmission pipelines be configured so as to accommodate in-line inspection tools, with priority given to older pipelines.

PHMSA Actions:

PHMSA regulations were changed in 2004 to require that most new gas transmission pipelines be piggable. In March 2010, Secretary LaHood issued a call to action to accelerate the repair, replacement or rehabilitation of the highest risk pipe. PHMSA is hopeful that natural gas transmission pipeline operators will respond to that call to action by ensuring the integrity of older pipelines. PHMSA has already initiated an Advanced Notice of Proposed Rulemaking to consider whether the IMP rule should be expanded to include more pipelines for integrity assessment and to address assessment methods (including application of inline inspections).

Since significant portions of the Nation's natural gas transmission pipelines are not now piggable, requiring that all natural gas transmission pipelines be made piggable will entail a major rulemaking that must analyze the costs that it would entail. To ensure their piggability many may need to be replaced or the in line inspection technology must be improved. As mentioned earlier, PHMSA is requesting OMB approval for an information collection that will help us more precisely understand the implications of such a requirement.

PHMSA also intends to continue to invest significant research and development attention on this problem. Our prior investments have yielded very promising new robotic technology that has effectively made portions of this infrastructure previously considered unpiggable accessible to new types of pigs. We are optimistic that a combination of information, research, and rulemaking will help us drive attainment of this laudable, but ambitious goal.

NTSB Recommendation P-11-18:

Revise your integrity management inspection protocol to (1) incorporate a review of meaningful metrics; (2) require auditors to verify that the operator has a procedure in place for ensuring the completeness and accuracy of underlying information; (3) require auditors to review all integrity management performance measures reported to the Pipeline and Hazardous Materials Safety Administration and compare the leak, failure, and incident measures to the operator's risk model; and (4) require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits.

PHMSA Actions:

PHMSA agrees that clear, meaningful metrics are important. PHMSA has been collecting and reviewing integrity management performance metrics from pipeline operators since 2004. PHMSA inspectors compare the operator reported data to the records maintained by the operator for consistency. In January 2011, PHMSA issued an Advisory Bulletin on record keeping and risk, two critical components to an effective integrity management program. PHMSA intends to revise the inspection format to encourage inspectors to focus on verification of performance measures, record adequacy, data integration, and risk analysis.

PHMSA has always maintained a bias for continual improvement in pipeline safety, which at times, has included in-person performance reviews with company executives. These meetings have occurred to remedy unanswered deficiencies found in inspections, and establish clear expectations these companies need to follow for compliance. We intend to maintain our continual improvement approach with pipeline operators and will continue dialogue on this subject with NTSB to ensure needed actions are taken to address concerns.

NTSB Recommendation P-11-19:

(1) Develop and implement standards for integrity management and other performance-based safety programs that require operators of all types of pipeline systems to regularly assess the effectiveness of their programs using clear and meaningful metrics, and to identify and then correct deficiencies; and (2) make those metrics available in a centralized database.

PHMSA Actions:

PHMSA agrees that clear, meaningful, and readily available metrics are important. PHMSA's integrity management program has many metrics in place. However, PHMSA will continue to meet with representatives of the NTSB and States to evaluate ways to improve those metrics to ensure that operators regularly assess the effectiveness of their programs and correct identified deficiencies. As mentioned above, PHMSA will also advance the goals of this recommendation in a Spring 2012 pipeline safety data workshop.

NTSB Recommendation P-11-20:

Work with state public utility commissions to (1) implement oversight programs that employ meaningful metrics to assess the effectiveness of their oversight pro-

grams and make those metrics available in a centralized database, and (2) identify and then correct deficiencies in those programs.

PHMSA Actions:

PHMSA agrees that clear, meaningful, and readily available metrics are important. PHMSA will work with State Pipeline Safety programs to evaluate ways to improve the oversight of the State programs and correct identified deficiencies. We have begun dialog on this and other topics relating to the performance of State programs with the National Association of Regulatory Utility Commissioners who, as a general rule, direct the actions of our State pipeline safety program managers. We have also begun parallel discussions with the National Association of Pipeline Safety Representatives.

PHMSA has for some years now been committed to increasing the transparency of its own data, and has over the past few years been pushing for greater transparency of State pipeline safety program data. We are engaged with the many States now, and will be using State generated data in the next year to increase the amount of performance data available to the public.

Please let me reiterate PHMSA's commitment to address each of the NTSB recommendations arising from the tragic San Bruno accident. We will do all we can to help prevent similar failures. If you have questions, concerns, or comments regarding this or any other pipeline safety matter, please feel free to contact me directly at 202-366-4433.

Regards,

CYNTHIA L. QUARTERMAN

NATIONAL TRANSPORTATION SAFETY BOARD,
Washington, DC, April 24, 2012

Hon. CYNTHIA L. QUARTERMAN,
Administrator,
Pipeline and Hazardous Materials Safety Administration,
Washington, DC.

Dear Administrator Quarterman:

Thank you for your letter, dated December 14, 2011, which the National Transportation Safety Board (NTSB) received on February 24, 2012, updating the status of actions to address Safety Recommendations P-11-8 through -20, stated below. We issued these recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on September 26, 2011, as a result of our investigation of the September 9, 2010, natural gas pipeline rupture that occurred in a residential area in the City of San Bruno, California.

P-11-8

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius.

The NTSB is aware that PHMSA issued Advisory Bulletin (ADB) PHMSA-2010-0307, *Pipeline Safety: Emergency Preparedness Communications*. We note that, in December 2011, PHMSA held an emergency responder forum that brought together leaders of the emergency responder community from the Federal and state governments, the public, and the pipeline industry to begin development of a strategy and action plan for improving emergency responders' ability to prepare for, and respond to, pipeline emergencies. The forum evaluated available resources and current regulatory requirements, drew lessons from recent pipeline accidents, and looked for potential gaps in information that emergency responders need to adequately prepare for, and respond to, natural gas and hazardous liquid pipeline emergencies. PHMSA plans to use this information to address Safety Recommendation P-11-8; accordingly, the recommendation is classified "Open-Acceptable Response."

P-11-9

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated.

The NTSB notes that PHMSA plans to issue an ADB to all pipeline operators, reiterating the importance of immediately notifying emergency responders when a pipeline ruptures or other emergency condition exists. However, the pending ADB, which does not constitute a regulation, will not *require* operators to directly notify emergency responders, as recommended. Accordingly, we ask that PHMSA reconsider its planned action to address Safety Recommendation P-11-9. Pending receipt of further information from PHMSA regarding our request, Safety Recommendation P-11-9 is classified “Open-Acceptable Response.”

P-11-10

Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems [SCADA] with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.

The NTSB notes that, in late 2011, PHMSA issued an Advanced Notice of Proposed Rulemaking (ANPRM), and in 2012, as part of a study to examine how enhancements to SCADA systems can improve recognition of pipeline leak locations, will hold a public workshop as well as a public forum on leak detection. Because PHMSA intends to initiate rulemaking once these actions are complete, Safety Recommendation P-11-10 is classified “Open-Acceptable Response.”

P-11-11

Amend Title 49 *Code of Federal Regulations* [CFR] 192.935(c) to directly require that automatic shutoff valves or remote control valves in high consequence areas and in class 3 and 4 locations be installed and spaced at intervals that consider the factors listed in that regulation.

P-11-14

Amend Title 49 *Code of Federal Regulations* 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.

P-11-15

Amend Title 49 *Code of Federal Regulations* Part 192 of the Federal pipeline safety regulations so that manufacturing-and construction-related defects can only be considered stable if a gas pipeline has been subjected to a post-construction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.

Because PHMSA initiated regulatory action to address these issues, with the August 2011 issuance of an ANPRM, *Pipeline Safety: Safety of Gas Transmission Pipelines*, Safety Recommendations P-11-11, -14, and -15 are classified “Open-Acceptable Response,” pending publication of the recommended final rule.

P-11-12

Amend Title 49 *Code of Federal Regulations* 199.105 and 49 *Code of Federal Regulations* 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident.

The NTSB understands that PHMSA is reviewing its legal authority and policy with the U.S. Department of Transportation (DOT) to clarify the regulatory language identified in Title 49 CFR 199.105(b) and .225(a)(1), and that, following those discussions, PHMSA will clarify the regulations as needed. Accordingly, pending completion of this review and receipt of further information about PHMSA’s intended course of action, Safety Recommendation P-11-12 is classified “Open-Acceptable Response.”

P-11-13

Issue immediate guidance clarifying the need to conduct post-accident drug and alcohol testing of all potentially involved personnel despite uncertainty about the circumstances of the accident.

PHMSA issued ADB-2012-02, *Pipeline Safety: Post Accident Drug and Alcohol Testing*, on February 23, 2012, satisfying the recommendation. Accordingly, Safety Recommendation P-11-13 is classified “Closed-Acceptable Action.”

P-11-16

Assist the California Public Utilities Commission [CPUC] in conducting the comprehensive audit recommended in Safety Recommendation P-11-22.

Because PHMSA is assisting the CPUC as requested, Safety Recommendation P-11-16 is classified "Open-Acceptable Response," pending completion of the CPUC's audit.

P-11-17

Require that all natural gas transmission pipelines be configured so as to accommodate in-line inspection tools, with priority given to older pipelines.

The NTSB is encouraged that the U.S. Secretary of Transportation is committed to this issue and that PHMSA initiated regulatory action with its August 25, 2011, issuance of an ANPRM, *Pipeline Safety: Safety of Gas Transmission Pipelines*, which includes action regarding Integrity Management Programs (IMP). Accordingly, pending publication of a final rule that satisfies the recommendation, Safety Recommendation P-11-17 is classified "Open-Acceptable Response."

P-11-18

Revise your integrity management inspection protocol to (1) incorporate a review of meaningful metrics; (2) require auditors to verify that the operator has a procedure in place for ensuring the completeness and accuracy of underlying information; (3) require auditors to review all integrity management performance measures reported to the Pipeline and Hazardous Materials Safety Administration and compare the leak, failure, and incident measures to the operator's risk model; and (4) require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits.

PHMSA has initiated action to revise its IMP inspection protocol and amend its audit requirements as requested. Accordingly, pending completion of these efforts, Safety Recommendation P-11-18 is classified "Open-Acceptable Response."

P-11-19

(1) Develop and implement standards for integrity management and other performance-based safety programs that require operators of all types of pipeline systems to regularly assess the effectiveness of their programs using clear and meaningful metrics, and to identify and then correct deficiencies; and (2) make those metrics available in a centralized database.

The NTSB understands that PHMSA's IMP contains some of the recommended metrics, and we are encouraged that PHMSA plans to continue working with applicable stakeholders to improve those metrics and to ensure that operators regularly assess the effectiveness of their programs and correct identified deficiencies. We are also encouraged that PHMSA plans to advance the goals of this recommendation in a spring 2012 pipeline safety data workshop. Pending completion of PHMSA's efforts to satisfy this recommendation, Safety Recommendation P-11-19 is classified "Open-Acceptable Response."

P-11-20

Work with state public utility commissions to (1) implement oversight programs that employ meaningful metrics to assess the effectiveness of their oversight programs and make those metrics available in a centralized database, and (2) identify and then correct deficiencies in those programs.

The NTSB is encouraged that PHMSA plans to work, or already has begun to work, (1) with state pipeline safety programs, (2) with the National Association of Regulatory Utility Commissioners, and (3) with the National Association of Pipeline Safety Representatives to address this recommendation. We are further encouraged that your agency is working to improve the transparency of its data and of state pipeline safety program data. Pending completion of these efforts to implement Safety Recommendation P-11-20, this recommendation is classified "Open-Acceptable Response."

We would appreciate receiving periodic updates on these initiatives as progress continues to address Safety Recommendations P-11-8 through -12 and 14 through -20. We encourage you to submit updates electronically at the following e-mail address: correspondence@ntsb.gov. If a response includes attachments that exceed 5 megabytes, please e-mail us at the same address for instructions. To avoid confu-

sion, please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

DEBORAH A.P. HERSMAN,
Chairman.

cc: Ms. Linda Lawson, Director
Office of Safety, Energy, and Environment
Office of Transportation Policy

Senator BOXER. Because we didn't have—you said it goes beyond it. So those two are important. And when do you think you'll have those regulations out for the public to respond to?

Ms. QUARTERMAN. As I told you, we are actually in the middle of the comment period right now. So the details of those regulations are not something that we are supposed to be discussing publicly.

Senator BOXER. OK. But you're asking for comment, for public comment. You're soliciting input from the public, but have you printed these regulations yet? These proposed regulations anywhere so we can see what they are exactly?

Ms. QUARTERMAN. It's an advanced notice of proposed rules.

Senator BOXER. So you have that out?

Ms. QUARTERMAN. Yes.

Senator BOXER. Excellent. And those are two. And what else do you have?

Ms. QUARTERMAN. You said those—?

Senator BOXER. You said—you described to me two provisions, the maximum pressure, the shutoff valves.

Ms. QUARTERMAN. Oh, there are—there are many, many different provisions in there. I don't remember them all. I'd be happy to get—

Senator BOXER. How many regulations are you considering writing?

Ms. QUARTERMAN. I don't know the number. I think we have tens of things, 40 plus.

Senator BOXER. Forty plus regs. Would you send me the proposed regs that you have that are related to this incident?

Ms. QUARTERMAN. Absolutely.

Senator BOXER. Thank you. That'd be very, very helpful. But I would urge you to look at these protocols. They're, you know, very, very clear. They require setting performance goals for pipeline operators at each audit and followup—I mean, this is not rocket science. This is written in a way by the NTSB that those of us who don't have a degree in engineering can really readily understand. So I hope you'll take a look at that.

I wanted to talk to PG&E. First of all, I'm glad that you were hired there.

Mr. STAVROPOULOS. Thank you.

Senator BOXER. Sounds like they need you, badly. They needed you long before.

So, let me say this. I don't know if you're aware, but in 2008 there was an explosion in a PG&E gas pipeline in Rancho Cordova. One person died, and there were five injuries. And as we look at this, if you look at the causes and the deficiencies there, they were really very similar to the deficiencies here. Do you have an answer to this question why was it that corrections were not taken, these

deficiencies—why were these deficiencies not corrected prior to these explosions since they were so similar?

Mr. STAVROPOULOS. Senator, I wasn't here to be part of those activities.

Senator BOXER. Well, maybe that's why they sent you to this hearing.

Mr. STAVROPOULOS. Between Rancho Cordova and San Bruno, Rancho Cordova happened on the gas distribution lines of our system—

Senator BOXER. So you don't know why they didn't make any corrections. Could you get an answer for the record for me, please?

Mr. STAVROPOULOS. Certainly.

[The information referred to follows:]

American Gas Association

AGA Actions Supporting the Secretary's Call to Action and NTSB Recommendations

Pipe Fitness for Service—Developed guidance on how to determine a distribution or transmission pipeline's fitness for service, including critical records needed for this determination. The initial documents were submitted for consideration in the DOT Report to the Nation. More comprehensive documents are under development focused on fitness for service considerations, level of accuracy needed for critical records, and how to address record gaps and update records. These documents are expected to be finalized fall 2011.

Transmission MAOP Records Verification—Developed guidance on determining a transmission pipeline's MAOP. Technical paper finalized in April and distributed to operators and Federal and state regulators. A more detailed document on records review for transmission pipeline MAOPs was completed in October 2011.

Safety Information Sharing Study—Working with INGAA, API, AOPL, Canadian Gas Association and Canadian Energy Pipeline Association on a comprehensive study to explore safety sharing initiatives currently utilized by other sectors, as well as the pipeline industry. The results of the study may help to identify and implement a model that will measurably improve the sharing of pipeline safety information. The study is expected to be completed in February of 2012.

Gas Utility Emergency Response—Developing a checklist that will enable operators to enhance emergency response communications and education programs. Checklist will be completed fall 2011.

Automatic Shutoff and Remotely Controlled Shutoff Valves (ASV/RCV)—Developed ASV/RCV technical paper that presents the benefits and disadvantages of their installation on new, fully replaced and existing transmission pipelines, especially as it relates to gas transmission pipelines embedded in distribution systems. The initial technical document was completed March 2011 and a more comprehensive technical paper is expected to be completed by December 2011.

Safety Culture Statement—In February 2011, the AGA Board of Directors adopted a Safety Culture Statement. All employees, as well as contractors and suppliers providing services to AGA members, are expected to place the highest priority on employee, customer, public and pipeline safety. The Safety Culture Statement addresses the commitment by management to promoting open and honest communications across all levels of an organization, identifying hazards, managing risks, planning the work and working the plan, and promoting a learning environment and personal accountability.

Infrastructure Replacement Rate Mechanisms—AGA, INGAA and API developed a document to explain to the public the ratemaking mechanisms used for the pipeline infrastructure. A well designed rate reflects the input of all stakeholders and the importance of factors such as expanded safety programs, infrastructure repair and replacement. Such a rate design also recognizes the changing methods of cost recovery and other factors.

Events to Share Information—In the past year, AGA has held a number of events to share information, including workshops on emergency response, transmission integrity management, utility contractor management and vintage pipe; regional operations executives' roundtables, roundtables on external corrosion, damage prevention and marking and locating, and technical committee meetings and sessions on the management of vintage pipe, distribution and transmission integrity manage-

ment, emergency management, pipe replacement, welding repair qualification procedures, leak detection, corrosion assessment, MAOP, qualification of personnel, control room management, sewer cross bores, mechanical fittings, worker safety, weld failure mechanisms, safety culture, and new construction. AGA also participated in PHMSA workshops on transmission pipeline weld seams, transmission integrity management risk assessments and its revised annual and incident reporting forms.

AGA's Commitment to Enhancing Safety—Developed AGA's *Commitment to Enhancing Safety* which identifies additional actions that distribution and intrastate transmission pipeline operators are committed to take to improve pipeline safety. Approved by the AGA Board October 2011.

The Safety Path Forward

- AGA supports timely reauthorization of the pipeline safety law.
- Actions under AGA's Commitment to Enhancing Safety. This includes actions that will help ensure pipelines are built for safety, existing pipelines operate safely, and work to enhance pipeline safety.

Damage Prevention—AGA is a founder of the Common Ground Alliance and supports programs that address excavation damage, historically the leading cause of significant pipeline incidents. A number of initiatives have reduced excavation damage by 50 percent over the last 6 years and that work must continue if we are to further reduce excavation damages. This includes promoting 811, the national number for people to call before they dig; working at the state level to promote participation in One-Call programs by all underground operators and excavators; and strengthening state damage prevention legislation.

Transmission Integrity Management Enhancements—AGA members are committed to engaging in public discussions to evaluate whether transmission integrity management should be expanded beyond high consequence areas (HCAs), and the benefits and disadvantages of applying integrity management principles to additional areas. Many AGA members are required to manage Distribution Integrity Management Programs (DIMP) and Transmission Integrity Management Programs (TIMP) programs, so the effectiveness, inefficiencies and duplication of multiple integrity management programs must also be explored. AGA members are committed to evaluating how various low-stress pipelines (those with MAOPs below 30 percent SMYS) would benefit by using elements from either or both programs.

Data Collection and Sharing—AGA is committed to working with PHMSA, state regulators and the public to create a data quality team made up of representatives from government, industry and the public, similar to the PHMSA technical advisory committees. The team could analyze the data PHMSA collects and determine opportunities to improve pipeline safety based on conclusions reached by data analysis. The team could also identify gaps in the data that are collected by PHMSA and others, identify ways to improve the collected data, and communicate consistent messages about pipeline incident data.

Research & Development—Continue funding and collaboration on research, development and deployment of technologies to improve safety, including in-line inspection tool capabilities, operator use of tool data, direct assessment tools, non-destructive testing and leak detection.

Emergency Response—AGA members are committed to finding new and innovative ways to inform and engage stakeholders, including emergency responders, public officials, excavators, consumers and safety advocates and members of the public living in the vicinity of pipelines.

Executive Leadership Engagement In Safety Improvement—Continue the work of the Board of Directors Safety Committee that focuses on pipeline, customer, employee, contractor and vehicular safety. This includes holding an annual Executive Leadership Safety Summit, sharing lessons learned, reviewing safety statistics, identifying ways to further improve safety, and furthering the Safety Information Resource Center that includes safety alerts, safety messages, statistics, information on motor vehicular safety and case studies.

Sharing Safety Information—Continue sharing safety information through AGA technical committees, the operations managing committee, and the AGA Best Practices Programs. The Best Practices Programs focus on identifying superior performing companies and innovative work practices that can be shared with others to improve operations.

State Safety and Rate Mechanisms—Continue to promote effective cost-recovery mechanisms that states can use to fund infrastructure maintenance and replacement projects. Continue to serve as a clearinghouse of state rate mechanisms.

Publications—Continue to develop publications dedicated to improving safety and operations.

AGA's Commitment to Enhancing Safety

AGA and its members are dedicated to the continued enhancement of pipeline safety. As such, we are committed to proactively collaborating with public officials, emergency responders, excavators, consumers, safety advocates and members of the public to continue to improve the industry's longstanding record of providing natural gas service safely and effectively to more than 175 million Americans. AGA and its members support the development of reasonable regulations to implement new Federal legislation as well as the National Transportation Safety Board safety recommendations. Below are actions that are being, or will be, implemented by AGA or individual operators to help ensure the safe and reliable operation of the Nation's 2.4 million miles of pipeline which span all 50 states representing diverse regions and operating conditions. In implementing these actions, the AGA and its individual operators recognize the significant role that their state regulators or governing body will play in supporting and funding these actions.

Building Pipelines for Safety

Construction

- Expand requirements of the Operator Qualification (OQ) rule to include new construction of distribution and transmission pipelines.
 - *AGA Members Action. Task Forces suggested operators take this action by June 1, 2013*
- Review established Quality Assurance/Quality Control (QA/QC) procedures associated with pipeline construction to ensure adequacy of oversight and confirm that operator construction practices and procedures are followed.
 - *AGA Members Action. Task Forces suggested that operators establish QA/QC procedures that help ensure effective compliance with procedures of company and contract construction personnel by June 1, 2013.*

Emergency Shutoff Valves

- Support the use of automatic shutoff and/or remote control valves where economically, technically and operationally feasible on transmission lines that are being newly constructed or entirely replaced. Develop guidelines for consideration of automatic shutoff and remote control valves on transmission lines that are already in service. We commit to work collaboratively with appropriate regulatory agencies and policy makers to develop these criteria.
 - *AGA Action—Guidelines. AGA has developed a technical paper on ASVs and RCVs. The technical paper presents the benefits and disadvantages of their installation on new, fully replaced and existing transmission pipelines, especially as it relates to the gas transmission pipelines embedded into the distribution system. The initial technical document was completed in March 2011 and AGA is developing a more comprehensive technical paper that is expected to be completed by December 2011. AGA will hold a roundtable focused on operator experience and lessons learned during the 2012 Operations Conference.*
 - *AGA Members Action—Task Forces suggested that, for newly constructed or entirely replaced transmission pipelines, AGA members commit to installing the necessary ASVs or RCVs or equivalent technology for those pipelines designed after December 31, 2012.*
- Expand the use of excess flow valves to new and fully replaced distribution branch services, small multi-family facilities, and small commercial facilities where economically, technically and operationally feasible.
 - *AGA Members Action—Installation of EFVs on new or fully replaced service lines to branched single family residential services, duplexes, triplexes, quad-plexes and small commercial customers up to 1,000 standard cubic feet/hour (SCFH) connected load where the operator determines it to be economically, technically and operationally feasible starting in June 1, 2013. Note: PHMSA issued ANPRM on EFVs beyond SFHs 11/24/11. Appears they are considering requiring EFVs beyond 1000 SCFH*

Operating Pipelines Safely

Integrity Management

- Continue to advance integrity management programs and principles to mitigate system specific risks. This includes operational activities as well as the repair, replacement or rehabilitation of pipelines and associated facilities where it will most improve safety and reliability.

- Develop industry guidelines for data management to advance data quality and knowledge related to pipeline integrity.
 - AGA Actions for the above bullets—
 - Develop guidance on how to determine a distribution or transmission pipeline's fitness for service. The initial documents were submitted for the DOT Report to the Nation. More comprehensive documents are under development and are expected to be finalized fall/winter 2011
 - Develop guidance on critical records needed to determine a pipeline's fitness for service and the records needed to determine maximum allowable operating pressure (MAOP) on a transmission pipeline. The initial documents were submitted for the DOT Report to the Nation. More comprehensive documents focused on the level of accuracy needed for critical records, how to address gaps in records, and how to obtain new information to address record gaps and update records are under development and were finalized in October 2011
 - AGA developed a technical paper to provide guidance on determining a transmission pipeline's MAOP. This technical paper was finalized in April and distributed to operators and Federal and state regulators.
 - Continue to serve as a clearinghouse to document the effective cost-recovery mechanisms that various states have used to fund infrastructure repair, replacement and rehabilitation projects. AGA will continue to provide technical and regulatory information at regional and national meetings of state utility commissioners and pipeline safety regulators. AGA, INGAA and API developed a document to explain to the public the ratemaking mechanisms used for the pipeline infrastructure.
 - Engage in public discussions on whether gas transmission integrity management should be expanded beyond HCAs, and the benefits and disadvantages of applying the integrity management principles to additional areas.
 - AGA has highlighted in DOT workshops, NAPSRS meetings, and in discussions with the Government Accountability Office that—
 - Many AGA members are required to manage Distribution Integrity Management Programs (DIMP) and Transmission Integrity Management Programs (TIMP) and the effectiveness, inefficiencies and duplication of multiple integrity management programs must be explored.
 - Low-stress pipelines operating below 30 percent SMYS would benefit by using elements from either or both programs.
 - AGA Member Actions for the above bullets—
 - Distribution: Task force suggested operators conduct an evaluation of all distribution pipelines for fitness for service as an element of an operator's DIMP program by December 31, 2012.
 - Transmission: Task force suggested that operators—
 - Complete a systematic validation of records relative to MAOP for their pre-1970 installed transmission pipelines by December 31, 2013.
 - Evaluate a transmission pipeline's fitness for service by integrating readily available information by December 31, 2014.
 - Use a risk based approach to extend integrity management principles outside of currently defined high consequence areas, incorporating all transmission lines in class 3 and class 4 locations by December 31, 2022 and all transmission lines in class 1 and class 2 locations by December 31, 2032
- Support development of processes and guidelines that enable the tracking and traceability of new pipeline components.
 - AGA Actions—Work with other stakeholders to develop potential technological solutions that will allow for the tracking and traceability of new pipeline components (including pipe, valves, fittings and other appurtenances attached to the pipe).

Excavation Damage Prevention

- Support strong enforcement of the 811—Call Before You Dig program through state damage prevention laws.
 - AGA Actions—
 - Support legislation that strengthens enforcement of damage prevention programs and 811
 - Support the Common Ground Alliance, the use of 811 and other programs that address excavation damage
 - AGA Member Actions—Work at the state level to:
 - Encourage participation in One-Call programs by all underground operators and excavators.
 - Modify state legislation, if needed, to strengthen enforcement of damage prevention programs and 811

- Improve the level of engagement between the operator and excavators working in the immediate vicinity of the operator's pipelines.
 - *AGA Actions—Develop a process that provides for an improved level of engagement between the company and excavators when they are identified as excavating in the immediate vicinity of a company's high priority gas facilities. The results of that work to be reported by December 31, 2013*

Enhancing Pipeline Safety

Safety Knowledge Sharing

- Review programs currently utilized for the sharing of safety information. Identify and implement models that will enhance safety knowledge exchange among operators, contractors, government and the public.
 - *AGA Actions –*
 - *AGA is working with INGAA, API, AOPL, the Canadian Gas Association and the Canadian Energy Pipeline Association on a comprehensive study to explore initiatives currently utilized by other sectors, as well as the pipeline industry. The safety management study is expected to be completed February/March 2012*
 - *Based on the results of the safety management study, identify and implement initiatives that will enhance the appropriate sharing of safety information. AGA to begin this work spring 2012*
 - *Continue the work of the AGA Best Practices Programs to identify superior performing companies and innovative work practices that can be shared with others to improve operations and safety.*
 - *Work with other stakeholders to improve pipeline safety data collection and analysis, converting data into meaningful information and communicating it to other stakeholders. This includes working with PHMSA, state regulators and the public to create a data quality team made up of representatives from government, industry and the public to analyze the data that PHMSA collects, determine opportunities to improve pipeline safety based on the data analysis, identify gaps in the data collected by PHMSA and others, and communicate consistent messages about pipeline incident data. This also includes continuing the work of the Plastic Pipe Database Committee to collect and analyze plastic material failures.*
 - *Conduct workshops, teleconferences and other events to share information:*
 - *By December 2012, hold workshops, teleconferences or other events on pipeline safety reauthorization, distribution and transmission integrity management, fitness for service, records, corrosion, in-line inspection, emergency response, damage prevention, plastic material issues, environmental issues and other key safety initiatives*
 - *Hold regional operations executives' roundtables summer 2012*
 - *AGA Operations Conference and Exhibition. This year's conference included technical sessions on the management of vintage pipe, distribution and transmission integrity management, emergency management, pipe replacement, welding repair qualification procedures, leak detection, corrosion assessment, MAOP, qualification of personnel, control room management, sewer cross bores, worker safety, weld failure mechanisms, safety culture, contractor management, improving communications, and new construction.*
 - *Technical committee meetings*
 - *Support PHMSA and NAPSR workshops and other events*
 - *Continue roundtable discussions within AGA committees*

Stakeholder Engagement and Emergency Response

- Evaluate methods to more effectively communicate with public officials, excavators, consumers, safety advocates and members of the public about the presence of pipelines. Implement tested and proven communication methods to enhance those communications.
 - *AGA Actions—Search for new and innovative ways to inform, engage and provide appropriate information to stakeholders, including emergency responders, public officials, excavators, consumers and safety advocates and members of the public living in the vicinity of pipelines*
 - *AGA Member Actions—Continue to meet RP 1162, implement lessons learned, and explore new and innovative ways to inform, engage and provide appropriate information to stakeholders, including emergency responders, public officials, excavators, consumers and safety advocates and members of the public living in the vicinity of pipelines.*

- Partner with emergency responders to share information and improve emergency response coordination.
 - *AGA Actions—*
 - *In September, AGA sponsored a workshop of the National Association of State Fire Marshals on emergency response planning. The workshop included approximately 60 emergency responders and 40 operators. AGA is currently analyzing the workshop results to determine potential next steps.*
 - *Develop a checklist that will enable operators to enhance their emergency response communications and education programs. This emergency check list will be completed by December 2011*
 - *Work with PHMSA to establish time limits for telephonic or electronic notification of reportable incidents to the National Response Center after confirmation by the operator that an incident meets the PHMSA incident reporting requirements*
 - *Search for new and innovative ways to inform, engage and provide appropriate information to emergency responders*
 - *AGA Member Actions—*
 - *Utilize the emergency response checklist that AGA is developing*
 - *Participate in local emergency response training exercises*
 - *Continue outreach to emergency responders to share information and improve emergency response*

Pipeline Planning Engagement

- Work with a coalition of Pipelines and Informed Planning Alliance (PIPA) Guidance stakeholders to increase awareness of risk based land use options and adopt existing PIPA recommended best practices.
 - *AGA Actions—Continue to build an active coalition of AGA member representatives to work with PHMSA and other stakeholders to implement PIPA recommended practices pertaining to encroachment around existing transmission pipelines.*
 - *AGA Member Actions—For operators with transmission pipelines, collaborate with PIPA stakeholders near existing transmission lines to increase awareness and adoption of PIPA recommended best practices.*

Advancing Technology Development

- Increase investment, continue participation, and support research, development and deployment of technologies to improve safety. Evaluate and appropriately implement new technological advances.
 - *AGA Actions—*
 - *Continue to promote to state commissioners the inclusion of research funding in rate cases in an effort to increase overall funding for research and development*
 - *Work with PHMSA and other stakeholders on opportunities to increase R&D funding and deployment of technologies*
 - *Continue to encourage (or advocate) PHMSA and state acceptance of technologies that can improve safety*
 - *AGA Member Actions—Evaluate and implement where appropriate new advances in technologies for the assessment of potential threats to distribution and transmission pipelines.*

Other Actions to Enhance Safety

- *Engaging CEOs and executive leadership in safety improvement—*Continue the work of the Board of Directors' Safety Committee to improve pipeline safety, customer safety in the home, employee safety, contractor safety and vehicular safety. This includes
 - Sharing lessons learned, reviewing safety statistics, and identifying ways to further improve safety.
 - Further enhancement of the Safety Information Resource Center to include additional safety alerts, safety messages, safety statistics, information on motor vehicular safety and case studies.
 - Hold an annual executive leadership safety summit to bring together key safety personnel and leaders in safety from government and a variety of industries to share lessons learned.
- *Publications—*AGA will continue to develop publications dedicated to improving safety and operations. Publications developed to date include guidance on corrosion control, gas control, integrity management, odorization, plastic piping, purging principles and practices, repair and replacement, worker safety practices, con-

tractor safety, natural gas pipelines and unmarked sewer lines, alarm management, directional drilling and emergency shutdown.

- *Safety Culture Statement*—Continue to promote the AGA Safety Culture Statement and positive safety cultures among employees throughout the natural gas distribution industry. All employees, as well as contractors and suppliers providing services to AGA members, are expected to place the highest priority on employee, customer, public and pipeline safety. The Safety Culture Statement addresses the commitment by management to promoting open and honest communications across all levels of an organization, identifying hazards, managing risks, planning the work and working the plan, and promoting a learning environment and personal accountability.

Senator BOXER. From PG&E, someone who does know? Because something happened very similar 2 years before. Very similar deficiencies, and they were not taken care of.

Let's see. I want to ask Mr. Kessler a couple questions. Do you believe the problems in PG&E's pipeline safety programs are unique to PG&E, or are they pervasive throughout the pipeline industry?

Mr. KESSLER. Well, certainly, Madame Chair, there are companies that go above and beyond the Federal minimums because they understand it's in their business interests to do so.

Senator BOXER. Yes. I would agree.

Mr. KESSLER. Unfortunately, I think the problems at PG&E are pervasive, how widespread we don't know because we're not looking. And I think that's a big part of the problem. Senator Lautenberg asked earlier about age and whether we need to inspect. And clearly anyone over 40 knows you kind of can't keep up, or at least I can't the way I used to before then, but if you maintain yourself you've got to put more and more work in and you can do a good job. It's not just age.

Senator BOXER. So some are doing very well at this, and some are not. Is that your point?

Mr. KESSLER. Right. Well, and we don't really know for sure because we haven't really looked exhaustively.

Senator BOXER. And so you would support testing these lines and all the things NTSB now says ought to be done? And our legislation moves in that direction.

Mr. KESSLER. Just like going for a check-up, Senator. You know, we all have to do it and we find things and we fix them.

Senator BOXER. Absolutely. I think that's a very good analogy, frankly. Especially at my age—we have to worry about different things just not functioning.

Mr. KESSLER. Then you know how successful it can be if you've ever tried to keep up with Senator Lautenberg.

Senator BOXER. Oh, boy, I wish I could when I'm there.

So I want to ask the NTSB this question. Have any of your prior investigations found similar contributing factors to the accident as those identified in your investigation of the San Bruno explosion?

Ms. HERSMAN. Yes, we have identified two previous investigations involving PG&E. One was a large release that occurred in San Francisco that required evacuation. It took them almost 10 hours to shut down the line. We again saw a delay in shutting down the line here. We expected after our previous recommendations that this issue would have been addressed or remedied.

Also you mentioned Rancho Cordova—

Senator BOXER. Before you get there—what about in the rest of the country, any of the other explosions? Were they similar things where you had a pipe that wasn't welded properly, or was too old, or inadequate, no inspections? Did you come across anything in the rest of the country other than in PG&E's domain or California?

Ms. HERSMAN. Yes. We've seen poor welds in earlier accident investigations. We've also seen problems with the integrity management program, which really is at the heart of the oversight regime now. We've seen operations in which companies didn't identify the pipeline correctly, elevate the risk appropriately, or consider past leak history, and so we've investigated accidents in Florida and Kansas where we've seen problems with integrity management.

Senator BOXER. The reason I'm asking this, and I asked Mr. Kessler a similar question—you know, this shouldn't have happened. Because my understanding is you have investigated 118 pipeline accidents, natural gas or otherwise, since NTSB was formed in 1967. And how many of those were over the last decade? Oh, I think it's 118 over the last decade. Is that right, or is—

Ms. HERSMAN. We have conducted 115 pipeline investigations since 1970, and we've issued roughly 17 reports in the last decade.

Senator BOXER. Seventeen in the last decade. Now, in each of these did you make recommendations to PHMSA? Prior to Ms. Quarterman's taking over.

Ms. HERSMAN. Yes, many of these investigations have resulted in recommendations to PHMSA. I would like to note that 80 percent of our recommendations on average are accepted and adopted in a favorable way, and that PHMSA has a higher rate of 91 percent.

While we issued quite a few recommendations to PHMSA with this accident investigation, in the past they have been responsive to us and going forward, Administrator Quarterman has committed to me that they're working to address our—

Senator BOXER. Good. So PHMSA has taken 86 percent, has adopted 91 percent of your recommendations.

Ms. HERSMAN. Yes, since PHMSA was created in 2004.

Senator BOXER. Over the history—well, that's very important. I think they should do 100 percent. But 91 percent is a lot better than FAA does after the safety board tells them what to do, so I'll say fine.

But these protocols, that's an example of your recommendation, so that's good to know for your meeting tomorrow. Because I think if you accept these protocols we're on our way to a better situation.

Look, what we're doing here is trying, all of us together, to make sure this never happens again, or anything close to this. Now, can we be assured that nothing bad goes wrong? Of course not, we're dealing with reality here. But there are so many levels of failure here, and so many obvious levels of failure, I think we can make huge strides. If we don't, then we're not acting in the memory of these decent people who perished on that day.

Now, I would ask Ms. Quarterman, PG&E reported 67 leaks, failures, and incidents to PHMSA over the 6-year period 2004 to 2010, an average of 10 a year. How does PG&E's records of leaks, failures, and incidents compare to other natural gas operators? Is it exceptionally high, or within the range of operators?

Ms. QUARTERMAN. I would have to get back to you on that.

[The information referred to follows:]

Question. Now, I would ask Ms. Quarterman, PG&E reported 67 leaks, failures, and incidents to PHMSA over the six year period '04 to 2010, an average of 10 a year. How does PG&E's records of leaks, failures, and incidents compare to other natural gas operators? Is it exceptionally high, or within the range of operators?

Answer. Based on the Incident reports submitted to PHMSA over the six period 2004 to 2010, PG&E's record of incidents is not exceptionally high, and within the range, compared to the similar size gas transmission operators.

Among the group of 11 similar size operators, PG&E ranked 3rd based on 7-year average incident rate per 10,000 miles of onshore transmission miles operated. PG&E has an average of 4.58 per 10,000 miles of onshore transmission it operates in the period 2004–2010.

Senator BOXER. OK.

Let me just say, on your website, Ms. Quarterman, there were 387 serious gas pipeline incidents, 54 in transmission, 329 on distribution, four in gathering pipelines from 2001 to 2010—the last 10 years—resulting in 126 fatalities, 542 injuries, and nearly \$300 million in property damage. Does this indicate to you that our minimum Federal pipeline safety standards are too low?

Ms. QUARTERMAN. That's why we're in the midst of looking at those minimum standards. We have out for comment and are in the middle of drafting a proposed rule with respect to hazardous liquid pipelines, and as I mentioned, we are in the midst of a rule-making with respect to gas transmission pipelines.

We recently enacted a piece of regulation in December of 2009 with respect to distribution, gas pipelines, that is just at the beginning of being implemented.

So I do believe that there are changes to be made, absolutely.

Senator BOXER. Good. And what I'm saying, just as a senator from the state in which this happened, the easiest thing for you to do is make the changes that can be done via regulation, through your protocols. We're going to help you with legislation. I understand your staff was helpful in helping Senator Lautenberg put that together. I think that's been strengthened now in the Senate.

And then there are the new regulations, which I don't want to see them take 3 years, so maybe there are ways we can use your emergency capabilities to move that forward. Because, you know, somebody said—I think you did, Ms. Hersman, that this was an accident waiting to happen. It just was sitting there waiting to happen. Of course, as we sit here our thoughts go to, "Is there something else out there that we don't know about waiting to happen?"

And just as a human being and knowing that none of us is perfect—there's something out there, and if we can figure out a way to catch it before by an inspection and making sure we test these old lines. You know, we'll never get a pat on the back for what doesn't happen. But you know what? We'll know. We'll know we did the right thing when we see these accidents going down. So I guess that would leave me to Mr. Kessler.

You know, we have an aging infrastructure. And so the question I have is does an aging infrastructure inevitably lead to accidents, or can we do a better job testing and maintaining that infrastructure?

Mr. KESSLER. We can certainly do a better job. Again, age alone, even materials alone, aren't insurmountable. You know, what I find really interesting about this, and from dealing in other areas

of environmental law and whatnot, is what we're actually talking about—we're arguing about—is inspecting, not fixing other parts of this. We're having this long-running, kind of silly discussion over how often to inspect.

You know, it was only less than 10 years ago that Congress put in place, with the help of this committee and others, a mandatory minimum backstop of 7-year reinspection period. We had nothing before that.

And it's—you know, the whole program is centered around industry. It's kind of a trust but verify sort of program, and we're doing a lot of trusting but not a lot of verifying. And if you don't inspect, you don't know and so where does that leave you? I think with all the fears—

Senator BOXER. It leaves us at the mercy of something like this.

Mr. KESSLER. That's right.

Senator BOXER. And everyone comes and says, "Oh my God, how awful," and then we have to make the most of the moment. And that's important.

Let me ask Mr. Santa and Ms. Sames, because I think they represent the industry. So, the same question to you, because what we know is 61 percent of our present-day gas transmission pipelines were constructed prior to 1970—61 percent.

And when you say, Ms. Sames, we have the safest record in the world and so on, I guess one way to look at it is if you look at Europe, you look at other places, they have very old infrastructure, older than ours in some cases. And we want to make sure that we don't have the same problems, or worse problems, going forward.

So I guess I have the same question. Does an aging infrastructure inevitably lead to accidents, or can we do a better job—can you do a better job—of testing and maintaining that infrastructure, Mr. Santa?

Mr. SANTA. I—yes, Senator, I believe that we can. As a matter of fact, I think that's reflected in the nine commitments that INGAA has made—our voluntary commitments on pipeline safety, and we are very committed to this.

I think that age alone is not the determinative factor. We're committed to a goal of zero incidents, and I think that we will do that which we can to improve.

We've got a good record, but it is not perfect. We'll concede that. And we are committed to that improvement.

Senator BOXER. To me what's really important is go after those high-risk areas first.

So in other words, if there's a pipeline that's very old, and if that pipe is big, and if there was no development there before and suddenly there's housing there—I mean, my goodness, a bell has to go up. And if there's a lot of, you know, roadwork there, all these things are, it seems to me, clues that you need to move faster in certain areas and because we know there's miles and miles and miles and miles.

So what we want to do is get after the high-risk pipelines first. Would you agree with that, Ms. Sames?

Ms. SAMES. I would, and I would also like to agree with Mr. Kessler and Mr. Santa that age or material are not the only factors to consider.

Pipelines are very unique. You have a multitude of ages, multitude of materials, and multitude of environments. And an operator really needs to take into account a variety of factors to determine the health of that pipeline.

And you can do that in a number of ways. I know you've read through the NTSB report as I have. What you see in the NTSB report is there really isn't a silver bullet, but there's a multitude of tools that could be used to assess the integrity of the line.

I think what we in the industry firmly believe is that all tools should be utilized to take a closer look, specific to a particular pipeline.

Senator BOXER. OK. I'm going to ask a yes or no, and go down. We'll start from you, Ms. Sames, and just say yes or no, or don't know.

Do you support eliminating the grandfather clause that exempts pre-1970 pipelines from pressure tests? Do you now support eliminating that grandfather clause, so we can give pressure tests to those pipelines pre-1970?

Ms. SAMES. I know you asked for a yes/no.

Senator BOXER. Yes, no, or don't know.

Ms. SAMES. I'd say yes, with caveats.

Senator BOXER. Yes with caveats.

Mr. Santa?

Mr. SANTA. We support eliminating it in high-consequence areas as is done in S. 275.

Senator BOXER. OK. So you support it in high-consequence areas but not all the pre-1970 pipelines.

Mr. Kessler?

Mr. KESSLER. Look, we absolutely support removing it, period. But we're not sure S. 275 actually goes all the way to doing that, so.

Senator BOXER. Right. It doesn't, sir, Mr. Santa. We don't. We say you have to give us records, but it doesn't force the tests. So it's not as strong as you've shown it to be. We wish it was. We're trying.

Mr. KESSLER. I agree with you, Madame Chair.

Mr. SANTA. I'd be happy to discuss that with you at some point, Senator, but I think that between the records requirement and, if you do not pass the records requirement, the requirement to test, I do believe that effectively eliminates the grandfather clause for pipe within HCAs.

Senator BOXER. OK. We don't believe it is for all pre-1970 lines.

Yes, do you support that testing?

Mr. STAVROPOULOS. Yes.

Senator BOXER. Yes. No caveats. Let the record show PG&E said yes without a caveat.

Ms. HERSMAN. Yes.

Ms. QUARTERMAN. Absolutely.

Senator BOXER. OK, that's good. That's good.

I had a lot of questions for PG&E, but you can't answer them because you're so new. So I'll have to send it to them in the record. And the record will stay open. How many days can we keep the record open? Two weeks, so that we can get back from you your comments.

Mr. Santa, pipeline safety legislation introduced by Senator Feinstein and myself would have required automatic or remote controlled shutoff valves, wherever technically and economically feasible. And I think Mr. Kessler—I think you're the one who made a very, I thought, compelling case for that.

The compromised legislation that passed this committee only required these valves on new pipelines. Is that correct?

Did INGAA oppose requiring automatic or remote controlled shutoff valves on preexisting pipelines?

Mr. SANTA. We support what's in S. 275, Senator, and I'd also note for you that the House Energy and Commerce bill includes a directive to the secretary to review and report back on the question of whether or not retrofits should be required. And we're comfortable with that assessment.

Senator BOXER. I know you're comfortable with it. I'm not so comfortable. I think we ought to require this. And you have caveats. And I think that is critical.

Let me just say this: it took so long, and I thought that the most stunning thing on your video presentation was that it was volunteer PG&E people that came over there and were able to shut this off. This makes no sense. It's just a dereliction of responsibility. If you had these automatic shutoff valves, it would make all the difference in the world.

So I hope you'll take another look at this. Because, frankly, I think maybe Mr. Kessler said something—that the good operators are the ones who are going to win over the public, who are going to have the good relations. And if ever there was a case for automatic shutoff valves—you had a situation here where people didn't show up, and the ones that showed up risked everything to go there. It shows the amazing sense of responsibility they had.

So, I'll ask this again to INGAA. Does INGAA support requiring automatic or remote controlled shutoff valves on preexisting pipelines, either through legislation or rulemaking by PHMSA?

Mr. SANTA. Were it to be required in rulemaking by PHMSA, we would comply with the requirements, yes, Senator.

Senator BOXER. I know you'd comply. Because if you don't comply you're breaking the law; you'd never do that.

So you'd comply, but you're not saying that you support it. Am I right? I mean, let's just be candid here. You're not supporting it here today but you're saying if PHMSA required it, you would of course comply.

Mr. SANTA. Of course we would, yes. Our members comply with the regulations—

Senator BOXER. Right, but you don't support it. You're not asking PHMSA to do this.

Mr. SANTA.—and in many instances go beyond the regulations.

Senator BOXER. But you're not asking PHMSA to do this today.

Mr. SANTA. No, we are not, Senator.

Senator BOXER. Fine. I just wanted—and I assume, Ms. Sames, you're the same.

Ms. SAMES. We've actually taken a very hard look at—we support it on new and fully replaced lines. We support that in the bill.

We've also looked at existing lines. We have a technical committee that has submitted a document to the NTSB during the

hearing process on this particular issue. We have extended that work, of the technical committee, to really dive into all of the pros, cons, considerations that need to be taken into account when installing these lines on an existing system. We expect that to be finished around the end of the year.

Senator BOXER. All right. I'm going to close now; I'm sure you're all breathing a sigh of relief that I'm about to close this hearing.

But I want to leave you with this picture in mind, but also this picture in mind. This is what happened because there was no automatic shutoff valve. If we had that, it would've sensed the leak and we would've not seen this happen. And 38 more people would not have died, more than likely. It would have been immediately stopped.

So what I want you to think about is this. We all serve the public—utilities serve the public, regulators serve the public, PG&E serves the public. Mr. Kessler is chosen to be a consumer advocate; he speaks for the public. You look like you're absolutely dying to say something, Mr. Kessler.

Mr. KESSLER. I just wanted to say—Madame Chair, thank you.

You know, I agree with everything you said and I want to point out that should PHMSA actually promulgate a rule, the law requires that that rule go through a very rigorous cost/benefit analysis that is peer reviewed by committees that are substantially populated by industry folks. And it would have to have benefits that outweigh the costs.

And we have supported the idea that retrofit should be done in technically, economically, feasible locations where lives would be saved. And I would go so far—and we've made this offer—that we'd be happy to see the industry required—companies be required to come up with plans, that they'd be required to assess their own system and submit plans themselves, and file those plans.

Not a hard mandate. I mean, if that gets us closer to our goal, much like the Pollution Protection Act, just the mere assessment and filing of a plan is often enough. We'd be supporting of that. We are not out to—natural gas has a clean, good feel. It's American. We're not out to bankrupt the industry.

Senator BOXER. Nobody is. And part of it being acceptable to the public is to minimize this. So I'm going to correct what I said before. If we test for leaks, then we would stop an explosion. If we put in an automatic shutoff valve, that's the second line of defense. You would still have the explosion and I don't know that we could say nobody would be devastated, but we can definitely say it would minimize the damage after the initial explosion.

So it seems to me these two things are doable. There's no crisis in technology. It's out there for you. It's out there for you, I say to the utilities and to the people who represent them. And, you know, the greatest thing in my life would be—and I can speak for Senator Feinstein, and I can speak for my colleagues, and I think I can speak for the regulators—is if you do this, you step out front and do the right thing—now, I think PG&E, from your testimony today, it sounds to me like you're moving in the right direction.

But nothing will speak to me better than actually testing, first the most vulnerable areas, areas that we describe like this, where you have the old pipe. It's too large for a residential community,

and the recordkeeping was no good then, and we need massive inspections of this pipe. Because I don't want to be here again, being aggravated with you, and having a new person hired by some other utility to come here and say, "I can't answer for what happened back then."

And we're in a position to make this better. We really are, on multiple levels. I do want to say to NTSB, I can't tell you how impressed you are—I know that Senator Feinstein said that. I agree with her. You were out there immediately. I was talking to NTSB practically every day for weeks, and they were on the case—smart people, fair people, you know, but calling it the way it was.

And, I mean, that's something we don't often say around here, and so I wanted to say that. So here's my wrap-up. There were multiple opportunities to prevent this accident. Due to failures by the pipeline industry, the state and Federal regulators, everybody bears the burden of not doing what they should've.

The same safety problems persisted year after year. I told you about the 2008 incident. You're not familiar with it? Same problems. Very similar. This happened 2 years later. Not enough was done.

I'm pleased that the Senate passed S. 275, and I thank Ms. Quarterman for her help and her agency's help in helping us put that together. And it was strengthened last night.

But I am concerned—as you can note from my questions to you, Ms. Quarterman, that PHMSA has not even begun making changes to its integrity management program protocols.

I believe this to be an emergency. I think you should go back there; you should work through the weekend; you should take what you learn from a one-on-one with the NTSB. Your agency has a good record, I was pleased to hear that, of accepting their ideas. Eighty-seven percent, let's make it 95 percent.

These protocols have to be changed. There is no way anyone could say that CPUC deserved 100 percent. Come on. That either just shows a reflexive, you know, buddy-to-buddy partner mentality, or somebody seriously didn't do their job and look at what was happening.

So, I was glad that Secretary LaHood said, "I agree that the tragedy"—he wrote me a letter on October 5—"I agree that the tragedy in San Bruno requires action, and I'm committed to ensuring that the pipeline and hazardous materials safety administration—that's your agency, Ms. Quarterman—responds to NTSB's recommendations in a timely and effective manner."

On September 26, we formally received the accident report and recommendations. So, it's true, you got them recently, but now I hope that this hearing, if it does anything else—I hope it does a few things. I hope it gets this meeting going between you two, dedicated public servants, and we get going on the protocols and anything I can do to help move the rulemaking. I hope that the industry will think again about the images here.

You know, we live in a world where we have short spans of attention because our world is so full of images every day, and not all of them are good. And we sometimes forget, which is why I have this photo here. I think if the industry—if the regulators do what they have to do, be fair—don't drag it out, don't be bureaucratic,

you do that, we have the recommendations, that would be tremendous.

We have the industry and, in this case, PG&E, not waiting. You don't have to wait for protocols. You can just come out and announce. I would be so excited to hear you have a press conference: "We have decided to move now. We're going to do leak detection, we're going to do automatic shutoff valves on our oldest pipelines that are near these residential communities." I'm telling you, this would give confidence.

The American people are frustrated about a lot of things. You've a chance to restore some confidence in something that they can't live without.

And, Mr. Kessler, I think that again, as usual, you came forward here with the right attitude. You're not pointing fingers of blame. You want to work with people but you are speaking for the consumer, I think in an intelligent way.

I again want to thank Senators Lautenberg and Wicker. I want to thank Senators Rockefeller and Hutchison, the Chair and Ranking Member.

I want to thank my dear colleague Senator Feinstein for her eloquence today, and, you know, I feel in my heart that we can make a difference here, and I'm ready to work with everybody, all the parties that I can.

And with that, we stand adjourned. Thank you very much.

[Whereupon, at 4:30 p.m. the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BARBARA BOXER TO
HON. CYNTHIA L. QUARTERMAN

Question 1. At the hearing, I asked how PG&E's record of leaks, failures, and incidents compare to other natural gas operators. You responded that you would need to take a further look into the matter, and I would appreciate your response.

Answer. The incident reports submitted to PHMSA by pipeline operators for the six-year period of 2004 to 2010 of gas transmission systems of similar size as PG&E is in the attached chart.

Among the group of 11 similar sized operators, PG&E ranked 3rd highest number of incidents based on a 7-year average incident rate per 10,000 miles of onshore transmission miles operated. PG&E has an annual average of 4.58 incidents per 10,000 miles of the onshore transmission pipelines it operated in the period of 2004–2010.

PHMSA's analysis did not incorporate data for the number of failures and leaks, as the agency did not require separate reporting of this information by pipeline operators prior to 2010. Newly revised operator annual report forms, effective January 1, 2011, allowed PHMSA to begin to collect and analyze data concerning the number of leaks, failures, and incidents experienced by pipeline operators as separate categories.

Question 2. The *San Francisco Chronicle* reported that recent gas leaks in Cupertino and Roseville, California involved a type of plastic pipe called Aldyl-A. Almost three decades ago, Dupont, who is the manufacturer of Aldyl-A, warned that pipes constructed before 1973 were prone to cracking and failure. In 1998, after a series of problems, the NTSB urged operators to assess and replace these problematic pipelines.

Question 2a. If the manufacturer of the pipe and the NTSB both identified problems with Aldyl-A, why didn't PHMSA require utility companies to replace the faulty plastic pipelines?

Answer. In April, the Secretary of Transportation issued a Call to Action urging all stakeholders to do their part to assure the replacement of high-risk infrastructure, including Aldyl-A, cast iron and other pipe materials of concern. PHMSA regulations (§ 192.613(b)) require pipeline operators to either (1) recondition or phase out segments of pipe determined to be in unsatisfactory condition but not posing immediate hazard, or (2) lower the maximum allowable operating pressure. PHMSA has issued multiple safety advisories to pipeline operators reminding them of their responsibility to take remedial action, including replacement, to mitigate any risks to public safety posed by pipe whose integrity cannot be verified. Further, PHMSA has repeatedly advised state pipeline safety programs, who oversee the vast majority of this type of plastic pipe to institute repair, rehabilitation, replacement, or requalification programs within their respective states. PHMSA cannot order large scale replacement of pipeline infrastructure unless it can support a finding that such pipe poses an immediate hazard to persons or property.

Question 2b. Are pipeline operators required to report information about specific types of plastic or other materials that are exhibiting problems, so that PHMSA can track materials that are prone to failure?

Answer. Yes, pipeline operators are required to submit incident reports as well as safety related condition reports for events occurring on their pipelines. These reports include information about the material qualities of the pipe and allow PHMSA to identify materials that may be prone to failure.

In addition, PHMSA in cooperation with NTSB and industry associations, has access to an industry operated reporting system, akin to a near miss reporting system, in which pipeline operators voluntarily report issues that do not rise to the level of an incident or safety related condition. The benefit of the system is that operators report more information on a greater number of "non-incident" events because of the

system's confidentiality. The increased data allows for more trending and identifying emerging plastic pipe-related threats.

Question 3. Much of our Nation's original gas pipeline infrastructure was constructed between the 1950s and 1970s, and much of it has never been replaced.

Question 3a. What percentage of our present-day gas transmission pipelines were constructed prior to 1970?

Answer. 59 percent of gas transmission pipelines were constructed prior to 1970.

Question 3b. What percentage of the leaks, failures, and incidents that have been reported by gas operators involved pipelines from those two decades? Is there a correlation between the age of the pipeline and the likelihood of an accident?

Answer. About 45 percent of "significant" gas transmission incidents between 2005 and 2009, occurred on pipelines installed prior to 1970. Approximately 55 percent of the significant incidents occurred on pipelines installed after 1970, representing roughly 41 percent of the total gas transmission mileage. There does not appear to be a direct correlation between age of the pipe and the incidents using 2005–2009 data.

Question 4. The California State Legislature recently passed a series of five bills strengthening the state's pipeline safety regulations, which for years have already been more stringent than Federal standards. Are you aware of any states, other than California, that have more stringent requirements for pipeline safety beyond what is federally required? If so, which states and how exactly do they exceed current Federal regulations? Please provide a table listing those states who exceed Federal regulations, including state statutory and regulatory citations.

Answer. Yes, as the Federal pipeline safety laws contemplate, some states have more stringent requirements than those in the Federal regulations based on the needs within their states. The National Association of Pipeline Safety Representatives (NAPSR) recently compiled a listing of state requirements exceeding the minimum Federal requirements. PHMSA has made this document publicly available at: <http://opsweb.phmsa.dot.gov/pipelineforum/library/index.html>.

Attached is a table excerpt from the full document listing which States exceed Federal regulations.

Question 5. As you know, the Pipeline Safety Improvement Act of 2002 sets December 17, 2008 as the deadline for all pipelines in High Consequence Areas (HCAs) to be inspected and for remediation plans to be put in place. The deadline for non-HCAs is 2012. To date, what percentage of each of these types of pipelines (*i.e.*, in HCAs and in non-HCAs) have not yet been inspected? Of those that have been inspected, what percentage do not yet have remediation plans?

Answer. The PSIA of 2002, and subsequent Federal regulations, require that 50 percent of all gas pipeline segments in High Consequence Areas (HCAs) be assessed by December 17, 2007. The regulations further require that 100 percent of pipeline segments in HCAs be assessed by December 17, 2012. All pipeline segments in HCAs must have a plan to address any anomalies within the timeframes identified in the regulations, *i.e.*, immediate, one year, monitored, and other activities depending on the severity of the anomalies found.

Out of the 302,000 onshore gas transmission miles, about 7 percent or 21,000 miles of onshore gas transmission lines are in HCAs. The total mileage assessed is about 187,000 miles since the start of the IMP Program. This includes mileage inside and outside of HCAs.

Based on reports submitted to date, roughly 95 percent of HCA miles on gas transmission systems have been assessed in accordance with PHMSA's Integrity Management regulations, leaving approximately 1,000 miles yet to be assessed prior to the 2012 deadline. The remaining HCA miles yet to be assessed are lower-risk segments.

Question 6. In March, Senator Feinstein and I sent you a letter expressing concern about a regulatory loophole that allows pipeline operators to avoid reporting instances when they exceed the Maximum Allowable Operating Pressure (MAOP) on a pipeline, as PG&E did twice in San Bruno before last year's explosion. PHMSA does not require operators to report these high pressures unless they persist for more than five days.

Federal law requires that the Secretary of Transportation "shall prescribe regulations requiring each operator of a pipeline facility. . .to submit to the Secretary a written report on any (A) condition that is a hazard to life, property or the environment. . . ." Yet, PHMSA's regulations limit this reporting requirement to a narrow suite of conditions.

Question 6a. What was the Department of Transportation's basis for so severely limiting the types of safety-related conditions that pipeline operators are required to report, particularly in the face of a clear Congressional directive?

Answer. PHMSA believes the safety related condition regulations, which were reviewed by OMB and legal staff prior to adoption, are aligned with the original Congressional directive and intent. The pipeline safety regulations require operators to report certain safety related conditions that, if allowed to continue without prompt mitigation, could result in a safety risk. The safety-related condition reporting requirements were specifically designed to assure that PHMSA is notified of conditions that require prompt and timely action so that regulators can monitor the operator's mitigative action.

Question 6b. Unless operators report on all safety and environmental hazards (including all instances when the MAOP is exceeded), how will PHMSA know what hazards are recurring frequently?

Answer. PHMSA reviews records of any abnormal operating conditions during routine and specialized onsite inspections. Inspectors examine operator records and facilities to assure that the cause of an abnormal operation is investigated and addressed. Further, as part of their safety evaluation duties, inspectors consider the potential engineering impact of recurring abnormal conditions and whether the operator has adequately addressed the situation. Moreover, following its inspections, PHMSA both may bring enforcement actions and will publish final orders against operators, which applies a broader audience to view the types and character of identified safety and environmental hazards.

Question 6c. Given that the current regulation so clearly fails to meet the Congressional directive does PHMSA intend to draft new rules that will comport with the law? If so, when will those rules be proposed?

Answer. PHMSA does not anticipate changes to the current regulatory requirements for safety related condition reporting. However, on August 25, 2011, PHMSA proposed an Advanced Notice of Proposed Rulemaking (ANPRM) for the Safety of Gas Transmission Pipelines. This ANPRM poses a number of questions to stakeholders regarding the adequacy and stringency of current regulations. The public comment period on the ANPRM expires on January 20, 2012. Based on public comment, PHMSA may consider changes to this portion of the regulations.

Comparison per 7 year totals and averages; based on Gas Transmission & Gathering systems Incident and Annual Reports

Data as of 11/02/2011		TRANSMISSION LINES (Gathering lines excluded)							
Operator	OPID	Gas Transmission line mileage in 2004-2010; OPID 15700 and similar size operators		Count of Incidents(*)	Number of fatalities	Number of injuries	Property Damage	Occurred in HCA	Serious Incidents
		Average of Transmission Onshore Miles in 2004-2010	7 years average of miles which occurred on transmission line per 10,000 transmission line mileage						
CENTERPOINT ENERGY GAS TRANSMISSION	602	6,215	10.57	46	0	1	\$9,992,420	9	1
GULF SOUTH PIPELINE COMPANY, LP	31,728	6,687	7.48	35	1	2	\$12,217,613	8	3
PACIFIC GAS & ELECTRIC CO	15,007	5,620	4.58	18	8	51	\$223,981,666	6	1
SOUTHERN STAR CENTRAL GAS PIPELINE, INC	31,711	5,894	4.36	18	1	1	\$11,634,701	4	2
ATMOS PIPELINE--TEXAS	31,978	6,069	3.77	16	0	0	\$2,389,601	3	0
TEXAS GAS TRANSMISSION LLC	19,270	5,772	2.97	12	0	2	\$2,444,130	1	2
PANHANDLE EASTERN PIPELINE CO	15,105	6,042	2.84	12	0	0	\$6,069,669	0	0
FLORIDA GAS TRANSMISSION CO	5,304	4,908	2.62	9	0	3	\$1,626,878	3	1
COLORADO INTERSTATE GAS CO	2,564	5,208	2.19	8	1	0	\$6,076,828	0	1
ENTERPRISE PRODUCTS OPERATING LLC	31,618	5,303	2.15	8	1	7	\$2,195,449	1	1
KM INTERSTATE GAS TRANSMISSION CO	1,007	4,643	1.85	6	0	0	\$469,705	0	0

(*) includes incidents where pipeline function not reported; incident form changed in 2010.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ROGER F. WICKER TO
HON. CYNTHIA L. QUARTERMAN

Question 1. The investigation of the San Bruno accident found that the pipe involved was defective, yet went undetected for over 50 years. Is there a way to detect if there are other, similar pipes currently in use?

Answer. There are two ways of determining if other, similar, pipe is currently in use elsewhere in the country: Records evaluation and physical examination of the pipe itself.

The pipe involved in the San Bruno incident was installed prior to implementation of Federal pipeline safety regulations (1968–1970). Therefore, the company was not required to maintain records of the type of pipe installed until pipeline safety regulations went into effect. Pursuant to the existing industry standards, companies installing pipe prior to the regulations should have maintained records of the pipe in their systems. The specific PG&E case involves the installation of pipe that did not meet existing industry standards and incorrect or incomplete records about the type of pipe installed. On January 10, 2011, PHMSA issued an Advisory Bulletin to all operators reminding them of the need to check their records for accuracy and adequacy.

Physical examination of the pipe involves either excavation to inspect the pipe visually or the use of internal inspection devices (smart pigs) that can detect problems inside the pipe. Since excavation of all pipelines that might be similar would probably be impracticable, assessment tools such as in line inspection technologies or hydrostatic testing could be used to determine the integrity of the pipelines. While use of internal inspection tools is the preferred method to inspect pipelines, many older pipelines cannot accommodate the tools because of sharp turns, T-intersections, and other obstructions and hydrostatic testing might be necessary and the only available option for internal testing.

Question 2. The accident at San Bruno had catastrophic results, at least partly due to the large volume of natural gas located so close to a residential area. How many similarly large natural gas distribution pipelines are located in populated areas?

Answer. Almost all of the two million miles of distribution system pipelines are located in high population areas because they supply natural gas to homes and businesses in our communities for heating and cooking. Distribution pipelines directly supply natural gas into residential, public and commercial buildings, and manufacturing facilities. However, the PG&E pipeline that failed in San Bruno was an intrastate transmission pipeline that supplied gas to lower pressure distribution pipelines. There are approximately 35,000 miles of gas transmission pipelines located in populated areas.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. FRANK R. LAUTENBERG TO
HON. DEBORAH A.P. HERSMAN

Question Several state and local government agencies are currently exempt from using the one-call system before digging. With excavation damage being the leading cause of pipeline accidents year after year, should anyone be exempt from this safety requirement?

Answer. The NTSB believes that pipeline safety rules, like marking lines, should be followed by all entities working around pipelines. No one should be exempt from the one-call rules.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BARBARA BOXER TO
HON. DEBORAH A.P. HERSMAN

Question 1. What does the San Bruno incident indicate about the need for improvements in quality control, integrity management programs, release prevention, and emergency response protocols throughout the industry?

Answer. Although the NTSB's investigation and accident report were focused on San Bruno, the NTSB considered the likelihood that similar conditions exist with other pipeline operators and state pipeline regulators. The NTSB believes that safety improvements are needed throughout the pipeline industry.

The three critical elements of Quality Control, Integrity Management Programs, and Release Prevention stated in the question go hand-in-hand. As was shown in the San Bruno accident, an inadequate Quality Assurance and Quality Control Program in the 1950s allowed the installation of a substandard and poorly welded pipe section with a visible seam weld flaw that grew to a critical size. Since the 1950s,

the pipeline industry and regulators have established quality control measures that far exceed those in place sixty years ago. Current Federal safety regulations for gas pipelines have incorporated the standards and recommended practices of highly regarded technical organizations such as the Pipeline Research Council International, the American Petroleum Institute, the American Society for Testing and Materials, the American Society of Mechanical Engineers International, and the National Association of Corrosion Engineers. These standards and recommended practices supplement Federal requirements for the design of pipe and pipeline components, welding standards, qualification of welders, general construction standards, corrosion control and maintenance. These technical standards typically include testing and quality control measures to ensure the standards are being met.

The bigger concern in the NTSB's view is that more than half of the Nation's natural gas transmission pipelines were constructed prior to 1970 and predate today's comprehensive technical standards and quality controls. It is therefore imperative that operators and regulators are both accountable to continuously and aggressively monitor and maintain the structural integrity of these pipelines. To that end, PHMSA should (1) modify its oversight protocols to better verify that operators have employed and are executing integrity management and other performance-based safety programs based on accurate risk assessments and the use of meaningful metrics; (2) ensure that pipeline operators maintain accurate system data on pipeline construction, maintenance, and leak and repair histories; and (3) assess whether operators are establishing and meeting performance goals.

In addition, PHMSA should (1) require all operators of natural gas transmission and distribution pipelines to equip their supervisory control and data acquisition (SCADA) systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks, and to isolate lines breaks in a timely manner; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines; (2) require automatic shutoff valves or remote control valves in high consequence areas, and (3) require all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test to eliminate defects from reaching a critical size and causing a pipeline failure.

Regarding Emergency Response, the operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines should be required (1) to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located; this information should include pipe diameter, operating pressure, product transported, and potential impact radius; and (2) to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated.

Question 2. At the hearing, you mentioned that 91 percent of NTSB's recommendations have been accepted by PHMSA over the years. Which recommendations have been implemented? What recommendations have not been implemented?

Answer. The "acceptable" rate of our recommendations is a constantly changing number given action or inaction on the part of the recipient. At this time, the acceptance rate of NTSB's pipeline recommendations issued to PHMSA, since it was created in 2004, is 100 percent. In other words, all pipeline recommendations issued to PHMSA, since its creation in 2004, are either closed in an acceptable manner or they have acted favorably on open pipeline recommendations.

Since the creation of PHMSA in 2004, the following 24 pipeline recommendations have been closed with acceptable action or superseded by a new NTSB recommendation:

1. Closed Acceptable Action (CAA) 04/28/10. Require operators of hazardous liquid pipelines to follow the American Petroleum Institute's Recommended Practice 1165 for the use of graphics on the SCADA screens. (P-05-001)
2. CAA 04/28/10. Require pipeline companies to have a policy for the review/audit of alarms. (P-05-002)
3. CAA 04/28/10. Require controller training to include simulator or non-computerized simulations for controller recognition of abnormal operating conditions, in particular, leak events. (P-05-003)
4. CAA 04/06/10. Change the liquid accident reporting form (PHMSA F 7000-1) and require operators to provide data related to controller fatigue. (P-05-004)

5. Closed Acceptable Alternative Action (CAAA) 05/06/10. Require operators to install computer-based leak detection systems on all lines unless engineering analysis determines that such a system is not necessary. (P-05-005)
6. CAA 03/17/08. Provide a summary of the lessons learned from the Bergenfield, New Jersey accident to recipients of emergency planning and response grants. (P-07-001)
7. CAA 02/14/11. Require in 49 Code of Federal Regulations 195.52 that a pipeline operator must have a procedure to calculate and provide a reasonable initial estimate of released product in the telephonic report to the National Response Center. (P-07-007)
8. CAA 02/14/11. Require in 49 Code of Federal Regulations 195.52 that a pipeline operator must provide an additional telephonic report to the National Response Center if significant new information becomes available during the emergency response. (P-07-008)
9. CAA 09/18/09. Require an operator to revise its pipeline risk assessment plan whenever it has failed to consider one or more risk factors that can affect pipeline integrity. (P-07-009)
10. CAA 02/14/11. Through appropriate and expeditious means such as advisory bulletins and posting on your website, immediately inform the pipeline industry of the circumstances leading up to and the consequences of the September 9, 2010, pipeline rupture in San Bruno, California, and the National Transportation Safety Board's urgent safety recommendations to Pacific Gas and Electric Company so that pipeline operators can proactively implement corrective measures as appropriate for their pipeline systems. (P-10-001, Urgent)
11. Closed Superseded (CS) 09/26/11. Issue guidance to operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines regarding the importance of sharing system-specific information, including pipe diameter, operating pressure, product transported, and potential impact radius, about their pipeline systems with the emergency response agencies of the communities and jurisdictions in which those pipelines are located. (P-11-001)
12. CS 09/26/11. Issue guidance to operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines regarding the importance of control room operators immediately and directly notifying the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated. (P-11-002)
13. CAA 07/01/08. Develop and implement, with the assistance of the Minerals Management Service, the U.S. Coast Guard, and the U.S. Army Corps of Engineers, effective methods and requirements to bury, protect, inspect the burial depth of, and maintain all submerged pipelines in areas subject to damage by surface vessels and their operations. (P-90-029)
14. CAA 04/28/10. Determine the extent of the susceptibility to premature brittle-like cracking of older plastic piping (beyond that piping marketed by Century Utility Products, Inc.) that remains in use for gas service nationwide. Inform gas system operators of the findings and require them to closely monitor the performance of the older plastic piping and identify and replace, in a timely manner, any of the piping that indicates poor performance based on such evaluational factors as installation, operating and environmental conditions, piping failure characteristics, and leak history. (P-98-002)
15. CAAA 05/03/06. Require pipeline system operators to precisely locate and place permanent markers at sites where their gas and hazardous liquid pipelines cross navigable waterways. (P-98-025)
16. CAA 05/03/06. Assess the potential safety risks associated with rotating pipeline controller shifts and establish industry guidelines for the development and implementation of pipeline controller work schedules that reduce the likelihood of accidents and attributable to controller fatigue. (P-98-030)
17. CAAA 02/18/10. Establish within 2 years scientifically based hours-of-service regulations that set limits on hours of service, provide predictable work and rest schedules, and consider circadian rhythms and human sleep and rest requirements. (P-99-012)
18. CAA 11/28/06. Establish quantitative criteria, based on engineering evaluations, for determining whether a wrinkle may be allowed to remain in a pipeline. (P-02-001)
19. CAA 05/03/06. Develop and issue guidance to pipeline operators on specific testing procedures than can (1) be used to approximate actual operations during

the commissioning of a new pumping station or the installation of a new relief valve, and (2) be used to determine, during annual tests, whether a relief valve is functioning properly. (P-02-004)

20. CAA 09/20/07. Revise 49 Code of Federal Regulations Part 192 to require that new or replaced pipelines be designed and constructed with features to mitigate internal corrosion. At a minimum, such pipelines should (1) be configured to reduce the opportunity for liquids to accumulate, (2) be equipped with effective liquid removal features, and (3) be able to accommodate corrosion monitoring devices at location with the greatest potential for internal corrosion. (P-03-001)

21. CAA 08/21/05. Evaluate the Office of Pipeline Safety's pipeline operator inspection program to identify deficiencies that resulted in the failure of inspectors, before the Carlsbad, New Mexico, accident, to identify the inadequacies in El Paso Natural Gas Company's internal corrosion control program. Implement the changes necessary to ensure adequate assessments of pipeline operator safety programs. (P-03-003)

22. CAA 01/10/11. Amend 49 Code of Federal Regulations to require that natural gas pipeline operators (Part 192) and hazardous liquid pipeline operators (Part 195) follow the American Petroleum Institute's recommended practice RP 5LW for transportation of pipe on marine vessels. (P-04-002)

23. CAAA 05/03/06. Revise the emergency response planning requirements in the pipeline safety regulations to include coordination with electric and other utilities that may need to respond to a pipeline emergency. (P-04-007)

24. CAA 05/18/2005. Issue an advisory bulletin to liquid pipeline operators to validate the accuracy of their tank strapping tables. (P-04-008)

As of this date, the following 19 pipeline recommendations to PHMSA remain open. For six of the 19 recommendations, the NTSB has determined that PHMSA is acting on them in a manner consistent with the intent of the recommendation. The NTSB is awaiting a response from PHMSA concerning its actions in regard to the other 13 open recommendations:

1. Open Acceptable Response (OAA). Require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available valves. (P-01-002)
2. OAA. Remove the exemption in 49 Code of Federal Regulations 192.65 (b) that permits pipe to be placed in natural gas service after pressure testing when the pipe cannot be verified to have been transported in accordance with the American Petroleum Institute's recommended practice RP 5L1. (P-04-001)
3. OAA. Evaluate the need for a truck transportation standard to prevent damage to pipe, and, if needed, develop the standard and incorporate it in 49 Code of Federal Regulations Parts 192 and 195 for both natural gas and hazardous liquid line pipe. (P-04-003)
4. OAA. Conduct a comprehensive study to identify actions that can be implemented by pipeline operators to eliminate catastrophic longitudinal seam failures in electric resistance welded pipe; at a minimum, the study should include assessments of the effectiveness and effects of in-line inspection tools, hydrostatic pressure tests, and spike pressure tests; pipe material strength characteristics and failure mechanisms; the effects of aging on electric resistance welded pipelines; operational factors; and data collection and predictive analysis. (P-09-001)
5. OAA. Based on the results of the study requested in recommendation (P-09-01), implement the actions needed. (P-09-002)
6. OAA. Initiate a program to evaluate pipeline operators' public education programs, including pipeline operators' self-evaluations of the effectiveness of their public education programs. Provide the National Transportation Safety Board with a timeline for implementation and completion of this evaluation. (P-09-003)
7. Open Await Response (OAR). Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius. [Supersedes Recommendation P-11-1] (P-11-008)

8. OAR. Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated. [Supersedes Recommendation P-11-2] (P-11-009)

9. OAR. Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines. (P-11-010)

10. OAR. Amend Title 49 Code of Federal Regulations 192.935(c) to directly require that automatic shutoff valves or remote control valves in high consequence areas and in class 3 and 4 locations be installed and spaced at intervals that consider the factors listed in that regulation. (P-11-011)

11. OAR. Amend 49 CFR 199.105 and 49 CFR 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident. (P-11-012)

12. OAR. Issue immediate guidance clarifying the need to conduct post-accident drug and alcohol testing of all potentially involved personnel despite uncertainty about the circumstances of the accident. (P-11-013)

13. OAR. Amend Title 49 Code of Federal Regulations 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test. (P-11-014)

14. OAR. Amend Title 49 Code of Federal Regulations Part 192 of the Federal pipeline safety regulations so that manufacturing-and construction-related defects can only be considered stable if a gas pipeline has been subjected to a post-construction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure. (P-11-015)

15. OAR. Assist the California Public Utilities Commission in conducting the comprehensive audit recommended in Safety Recommendation P-11-22. (P-11-016)

16. OAR. Require that all natural gas transmission pipelines be configured so as to accommodate in-line inspection tools, with priority given to older pipelines. (P-11-017)

17. OAR. Revise your integrity management inspection protocol to (1) incorporate a review of meaningful metrics; (2) require auditors to verify that the operator has a procedure in place for ensuring the completeness and accuracy of underlying information; (3) require auditors to review all integrity management performance measures reported to the Pipeline and Hazardous Materials Safety Administration and compare the leak, failure, and incident measures to the operator's risk model; and (4) require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits. (P-11-018)

18. OAR. (1) Develop and implement standards for integrity management and other performance-based safety programs that require operators of all types of pipeline systems to regularly assess the effectiveness of their programs using clear and meaningful metrics, and to identify and then correct deficiencies; and (2) make those metrics available in a centralized database. (P-11-019)

19. OAR. Work with state public utility commissions to (1) implement oversight programs that employ meaningful metrics to assess the effectiveness of their oversight programs and make those metrics available in a centralized database, and (2) identify and then correct deficiencies in those programs. (P-11-020)

Thirteen of the nineteen open safety recommendations to PHMSA were issued as a result of the San Bruno investigation.

Question 3. What are NTSB's top pipeline safety priorities that have not been addressed by Federal pipeline safety regulations?

Answer. In the San Bruno accident report, the NTSB addressed several safety issues that need to be addressed by Federal pipeline safety regulations. The NTSB

considers the following safety issues to be of critical importance for restoring and improving the safety of natural gas transmission pipelines:

- Integrity Management
- Establishment of an Maximum Allowable Operating Pressure (MAOP)
- Oversight of Performance-based Programs
- Supervisory Control And Data Acquisition (SCADA) System Operations
- Use of Automatic Shut-Off Valves (ASVs) or Remote Control Valves (RCVs)
- Emergency and Risk Management Procedures
- Public Awareness Programs

Another long-standing safety issue that needs to be address is the broader use of excess flow valves (EFVs). The NTSB's safety recommendation P-01-02 called upon PHMSA to require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available EFVs. The existing regulations only require the installation of EFVs on newly constructed single-family homes.

Question 4. The NTSB report cites the CPUC's "failure to detect the inadequacies of PG&E's pipeline integrity management program" as a contributing factor in the San Bruno Accident. Could you describe in more detail the deficiencies in the CPUC's oversight and inspection of natural gas operators, and what this indicates in turn about PHMSA's oversight of state regulators?

Answer. The NTSB determined that the CPUC missed opportunities over many years through its audits and inspections to uncover the pervasive and long-standing problems within PG&E. These problems were found with its integrity management program, which is a performance-based program intended to ensure the safe operation of a pipeline system. Despite conducting two audits and using a procedure developed by PHMSA for use nationwide, the CPUC failed to uncover these problems. The NTSB believes that had the CPUC detected and acted on PG&E's problems with implementation and execution of its integrity management program, the defective pipe section that ruptured in San Bruno could have been detected and removed before it ruptured. Of great concern to the NTSB is that CPUC and PHMSA (1) failed to identify and correct deficiencies within PG&E, and (2) failed to recognize through objective self-assessments the need for improvements of their respective oversight programs.

Question 5. Based on past natural gas pipeline incidents investigated by NTSB, what is the average length of time for gas operators to shut off the gas flow following an accident? Have there been other incidents where it has taken an equally long time as it took for PG&E to shut off the gas during the San Bruno incident (95 minutes).

Answer. In the San Bruno accident, the ruptured section of the gas transmission pipeline was not isolated for 95 minutes, which the NTSB determined to be excessive for the densely populated residential area. There is no one length of time to shut off the flow of gas that is appropriate for all systems and situations. In any event, it is critical to stop the flow of gas in the pipeline to prevent or minimize the danger to the public and the environment. To stop the flow, the breach in the pipeline has to be isolated by closing shutoff valves on either side of the breach.

Factors such as population density, potential impact upon the environment, the size and operating pressure of the pipeline, and the hazards of the product in the pipeline, are critical considerations of any pipeline operator when determining the types, placements, and spacing of shutoff valves to attain a timely shutdown in an emergency situation.

In 1982, the NTSB issued a safety recommendation regarding emergency shutdown to PG&E following a gas distribution pipeline investigation. On August 25, 1981, a PG&E excavation contractor punctured a 16-inch natural gas main in San Francisco, California. The PG&E personnel who first arrived on scene were neither trained nor equipped to close the valves. The flow of gas was not stopped until 9 hours, 10 minutes after the puncture. As a result of this 1981 investigation, NTSB issued the following safety recommendation to PG&E:

Train and equip company personnel who respond to emergency conditions in the operation of emergency shutdown valves. (P-82-1)

On June 21, 1982, PG&E responded that special attention was being directed to training personnel about the location and the operation of emergency shutdown valves, and that additional valve keys were being provided to crews who could be called in an emergency. Safety Recommendation P-82-1 was subsequently classified "Closed—Acceptable Action."

More recently, since 2000, the NTSB has investigated two other natural gas transmission pipeline accidents: (1) the rupture of an El Paso Natural Gas Company pipeline on August 19, 2000, near Carlsbad, New Mexico, and (2) the rupture of a Florida Gas Transmission Company pipeline in Palm City, Florida, on May 4, 2009. The gas flow in the El Paso pipeline in Carlsbad was stopped in 55 minutes, and the gas flow in the Florida Gas pipeline in Palm City was stopped in 2 hours.

Question 6. Is the delay in length of time for shutting off the gas following a leak or explosion a pervasive problem throughout the industry? If so, how would the presence of automatic or remote-controlled shutoff valves minimize ensuing damage?

Answer. The NTSB believes that the delay in the shutoff of the gas flow following the failure of natural gas transmission pipeline is a pervasive problem. In the San Bruno public hearing, it was stated that the use of automatic shut-off valves (ASVs) or remote control valves (RCVs) would have reduced the shutdown time by approximately 1 hour, thus reducing the time the fire burned and the severity of the accident.

For 40 years, the NTSB has advocated for rapid shutdown of natural gas pipelines during an accident. In 1971, the NTSB issued safety recommendation (P-71-1) for the development of standards for the rapid shutdown of failed natural gas pipelines. In 1991, the NTSB recommended that the Research and Special Programs Administration (RSPA, the predecessor to PHMSA) expedite requirements for installing ASVs or RSVs on high pressure pipelines in urban and environmentally sensitive areas.

In 1995, the NTSB recommended that RSPA expedite requirements for the installation of ASVs or RCVs to help prevent the severity of accidents. In San Bruno, the NTSB believes that ASVs or RCVs on Line 132 would have mitigated the severity of the ensuing fire and property destruction. It also would have allowed first responders the opportunity to access to scene sooner to begin their search and recovery efforts.

Title 49 *Code of Federal Regulations* (CFR) 192.179 prescribes the spacing of valves on a transmission line based on its class location. The regulations, however, do not require a response time to isolate a ruptured gas line, nor do they require the use of ASVs or RCVs. The regulations give the operator discretion to decide whether ASVs or RCVs are needed in HCAs as long as they consider the factors listed in 49 CFR 192.935. There is little incentive for an operator to perform an objective risk analysis as to usage of ASVs or RCVs.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. FRANK R. LAUTENBERG TO
NICK STAVROPOULOS

Question 1. Several of the deficiencies revealed by the recent National Transportation Safety Board report were also factors in a previous explosion of a PG&E gas pipeline that occurred in 2008 in Rancho Cordova, California. Like San Bruno, the Rancho Cordova accident also involved a pipeline that did not meet specifications at the time of installation, inaccurate record-keeping that failed to detect the deficiencies in the pipeline, and an inadequate emergency response that caused an unnecessary delay in stopping the flow of gas. Correcting some of these deficiencies back in 2008, particularly the poor record-keeping, could have prevented the San Bruno explosion and saved 8 lives, numerous injuries, and many homes.

At the hearing, I asked why deficiencies from the 2008 explosion in Rancho Cordova were not corrected prior to the 2010 San Bruno explosion. You responded that you would need to take a further look into that situation. Your response would be appreciated.

Answer. The deficiencies identified in connection with Rancho Cordova were corrected prior to the San Bruno explosion. They were, however, unrelated to the causes of the San Bruno rupture, and unfortunately did not prevent the San Bruno tragedy.

I will briefly cover the three main deficiencies that led to the 2008 Rancho Cordova explosion.

Use of Packing Pipe

The problem in Rancho Cordova occurred when an employee, in violation of PG&E's written policies and procedures, used a short piece of plastic packing pipe (*i.e.*, pieces of pipe used to hold the package in place) instead of approved gas pipe. PG&E's procedures require that employees only use approved pipe (distribution as well as transmission), and, to ensure compliance, that employees document information from the print line on the pipe, such as the manufacturing code and date.

In the case of Rancho Cordova, the unapproved pipe had no manufacturer print line. Had the installer followed PG&E's procedures, he would have discovered his mistake and would not have installed the packing pipe. To prevent a recurrence of this type of error, PG&E issued a bulletin to all gas construction employees and followed this with company-wide presentations reinforcing the importance of following PG&E's procedures. PG&E also investigated how pipe not intended for gas service got on the employee's truck. PG&E determined that it was pipe used as packing material by the manufacturer and that 16 of PG&E's 17 divisions had a practice of destroying all such packing pipe, but one division kept it and used it to mark the location of gas lines. PG&E implemented a company-wide policy of destroying packing pipe to ensure that no employee mistakenly used it again.

For the one division that had not discarded the packing pipe, PG&E identified all repairs using pipe of the same diameter during a six-year period and excavated those sites to ensure that no packing pipe had been installed. PG&E confirmed that the Rancho Cordova repair was the only repair in which packing pipe had mistakenly been used.

As an extra precaution, PG&E also identified all repairs during that period in which the same diameter pipe had been used throughout PG&E's service territory and leak surveyed the repair locations. PG&E excavated each site where a leak was found. PG&E again found no repairs in which the packing pipe had been used.

Transmission lines are not made of plastic and were never shipped using similar pipe as packing material. The use of unmarked plastic pipe is unrelated to the events that led to the San Bruno tragedy.

Record Keeping

The issue in Rancho Cordova was not inaccurate record-keeping that failed to detect deficiencies, but false information on a record. PG&E's policies and procedures require pipe to be used to distribute gas be pressure tested at 100 psi or more for at least five minutes. The employee who performed the faulty repair did not document that he performed the required pressure test. When his supervisor reviewed the form, rather than require the employee to go back to the site and perform the proper pressure test, the supervisor altered the form. PG&E conducted a thorough investigation of the incident and terminated the employment of that supervisor. PG&E also made a company-wide presentation reinforcing the importance of following PG&E's procedures, including record-keeping procedures. However, the underlying causes and the corrective measures PG&E took in response to the Rancho Cordova accident had no relation to the causes of the San Bruno tragedy.

Emergency Response

The issue in Rancho Cordova was not the time it took to shut off the gas, but rather the time it took for a crew to arrive on site to repair the leak after it had been located by a PG&E Gas Service Representative. Two PG&E supervisors failed to adhere to PG&E's procedures and allowed an unreasonable delay in PG&E's response to the leak. This was exacerbated by an over-turned big-rig that created a major traffic jam, as well as a mechanical problem on a PG&E vehicle.

PG&E took three measures in response. First, PG&E thoroughly investigated the incident and terminated the employment of the two supervisors. Second, PG&E made a company-wide presentation on Rancho Cordova that reinforced the importance of following PG&E's procedures. Third, PG&E implemented new dispatch and crew tracking procedures to better track the location of crews to ensure prompt responses to leaks.

In the case of the San Bruno explosion, there was no report of a gas leak or odor prior to the explosion. The corrective measures PG&E took in response to the Rancho Cordova accident thus had no ability to prevent the San Bruno tragedy.

Question 2. Did PG&E use any kind of quality control measures when the pipe was installed at segment 180 of line 132—the segment that caused the San Bruno explosion?

Answer. The relocation work in 1956 on Line 132 for what would become segment 180 was designed and constructed to meet ASA B31.8, the operative industry standard in 1956. The welders on the project would have been qualified before being allowed to work on the project.

Question 2a. If so, how is PG&E reforming its practices to ensure that newly installed pipelines are subjected to more rigorous quality control, and that records are verified for existing pipelines?

Answer. PG&E is making changes to the way it does business so that all field work conducted for both the electric and gas operations is consistent with PG&E standards and meets or exceeds regulatory requirements. The Company will also en-

sure that appropriate corrective action mechanisms are in place and that there is transparency for all findings.

Under 49 CFR Part 192, newly installed pipelines are subject to rigorous design, construction, inspection and testing requirements, particularly when compared to industry standards in place in 1956. Subpart E of Part 192 establishes enhanced requirements for inspections of welds, far more rigorous than the industry standard in 1956. In addition, PG&E is performing an exhaustive review of its pipeline records to confirm the maximum allowable operating pressure (MAOP). PG&E has retrieved and scanned more than 2.3 million paper documents going back more than 50 years to validate the MAOP of all pipelines in Class 3 and Class 4 locations and Class 1 and Class 2 High Consequence Areas. This involves a structured process employing qualified engineering companies and multiple stages of Quality Control and Quality Assurance performed by an independent third party vendor.

As of November 2011, PG&E has validated the MAOP for more than 1,500 miles of Class 3 and Class 4 locations and Class 1 and Class 2 High Consequence Area pipelines, including more than 750 miles of high-priority pipelines without records of prior pressure tests. After completing this validation effort for those areas, PG&E will undertake a similar review of its records for the remainder of the transmission system.

PG&E is also enhancing the safety of its new and existing transmission pipelines through an aggressive program to pressure test or replace all transmission pipelines for which PG&E does not have a record of a prior pressure test. This year we have completed over 150 miles of hydrostatic pressure tests. This will help ensure that the pipelines can safely operate at their approved MAOP.

Question 3. How many miles of PG&E's pipelines have inadequate records? What percentage of these particular pipelines or segments fall under High Consequence Areas?

Answer. We have confirmed pressure test records for approximately 95 percent or more of transmission pipeline segments installed since July 1970 in Class 3 and Class 4 locations and Class 1 and Class 2 High Consequence Areas (collectively referred to as HCAs for purposes of this answer). We have also confirmed that we have pressure test records for approximately 73 percent of all HCA pipeline segments. While we have not completed our ongoing records review, but preliminary estimates indicate that approximately 60 percent of non-HCA pipelines have been pressure tested. These percentages will be confirmed by our records review, which will be completed by January 31, 2012 for HCA pipeline segments and by early 2013 for non-HCA pipeline segments.

To the extent you are asking whether we have adequate records to confirm the MAOP for HCA or non-HCA pipeline segments, PG&E is in the midst of a review of its relevant records to confirm the MAOP for all transmission lines. Consistent with the recommendation of the National Transportation Safety Board, the first phase of our effort has been to focus on HCA segments for which PG&E has been unable to locate pressure test records. PG&E has confirmed the MAOP for those HCA pipeline segments that did not previously undergo a pressure test. We anticipate completing this MAOP review for the remaining HCA areas (*i.e.*, the pipeline segments for which PG&E has pressure test records) by January 31, 2012.

We have not yet completed our review of the non-HCA Class 1 and Class 2 areas, so we are unable to provide a percentage of those segments for which we may be missing key records. That effort has begun, and will be completed by early 2013.

For any segments where we are unable to find necessary records to support the MAOP, PG&E has and will continue to perform excavations to verify the critical pipeline system information, reduce pressure, perform a hydrostatic test, or take other appropriate action, such as replacing the pipeline segment in question.

Question 4. What efforts are being undertaken to assemble missing or inadequate information and when do you anticipate that work will be completed?

Answer. PG&E is in the midst of a comprehensive review of existing records. We have over three hundred employees or contractors dedicated to this effort. To date, we have completed the following work:

- Retrieved and scanned more than 2.3 million paper documents going back more than 50 years to validate the MAOP of all pipelines in Class 3 and Class 4 locations and Class 1 and Class 2 High Consequence Areas (HCAs)
- Verified pressure test documentation for more than 1,150 miles of HCA pipeline.
- Validated the MAOP for more than 1,500 miles of HCA pipelines, including more than 750 miles of high-priority pipelines without prior pressure tests.

We are also in the process of completing the following efforts:

- Collecting and verifying pipeline pressure tests, as-built construction drawings and relevant documents to validate the MAOP of remaining non-HCA pipelines and respective components. PG&E anticipates completing this validation effort for over 6,700 miles of pipelines (both transmission and distribution) operating above 60 psig by early 2013.
- Continuing to excavate and inspect pipe segments within the transmission system to verify pipe specifications and confirm pipeline integrity as part of the MAOP validation effort. This work will be completed by early 2013, as it supports the records validation discussed above.

Question 4a. When does PG&E expect to complete a comprehensive review and revision of its integrity management program, including its risk assessment protocols?

Answer. Integrity management is a critical part of a public utility's responsibility, and PG&E is committed to a complete review and upgrade of its Integrity Management Program to ensure the integrity of our gas pipeline network. To that end, the Company is undertaking several initiatives to improve its integrity management program and supporting systems. We expect a comprehensive review to be complete in the first quarter of 2012, and the initiatives are presently planned to be completed in 2012 as well.

Some of our initiatives to improve integrity management are:

- Using outside experts to conduct a complete review of the entire Gas Transmission Integrity Management Program (TIMP) and procedures.
- Benchmarking current TIMP against industry leaders.
- Once the benchmarking is complete, PG&E will develop an implementation plan for the future state of PG&E's TIMP, including a scope and schedule for the selected industry best practices and enhancement initiatives.

Question 5. As it took PG&E 95 minutes to stop the flow of gas and isolate the rupture site following the accident in San Bruno, what is PG&E doing to reform its emergency response protocols to prevent such delays in responding to a future pipeline leak or rupture?

Answer. PG&E is updating emergency response plans to reflect recommendations and current best practices. We are also proposing to expand PG&E's use of automated gas transmission pipeline system isolation valves through our Valve Automation Program included as part of our Pipeline Safety Enhancement Plan filed with the California Public Utilities Commission in August. This plan proposes installing over 220 additional automated valves on large-diameter, high-pressure pipelines in heavily populated areas.

I have separated the actions the Company is taking into three categories: (a) Emergency Response, (b) Emergency Training and Outreach, and (c) Gas Operations and Gas Control.

Emergency Response: With respect to emergency response protocols, upon completion of the initiatives described below, the Company will have a comprehensive and up-to-date emergency response plan that will integrate and standardize emergency response across the Company.

Completed

- Benchmarking—Contacted approximately 25 other utilities and first responders to identify best practices and industry standards.
- Incorporated results into gas emergency response plan updates and improvements.
 - Organized into three areas: (1) Prevention (2) Preparedness (3) Recovery.
 - Clearly defined roles and responsibilities.
 - Defined emergency scenarios with three incident-severity levels and developed appropriate response plans.

In Process

- Implementing new, fully functioning mobile command centers to be used in emergencies. Four of six centers have been completed; an additional two will be completed by 2012.
- An assessment is underway to establish a distribution control center that will be co-located with the transmission gas control center and gas dispatch, which will improve data and information sharing for assessing potential pipeline incidents and improving emergency response.

Planned (Implementation Has Not Begun)

- Restructure all division, regional and Company emergency plans to incorporate industry best practices.

Emergency Training and Outreach: PG&E is working with external partners such as first responders and public safety officials to enhance training for emergency preparedness and response. Enhanced emergency prevention, preparedness and response programs consist of education programs for first responders, contractors, infrastructure departments, community members, school children, and other stakeholders.

Completed

- Launched PG&E first responder website portal.
- Provided maps, GIS data, and other information to first responders.
- Providing free, regionally-based training to fire departments and agencies located within PG&E's service area.
- Developed an improved process for incoming emergency calls to efficiently dispatch Gas Maintenance and Construction personnel, Gas Service Representatives and other first responders to the scene of a natural gas emergency.

Gas Operations and Gas Control: The San Bruno tragedy also underscored the need for a comprehensive review of the Gas Operations and Gas Control business areas. PG&E has launched a number of initiatives designed to improve the operations of its gas pipeline network by focusing on infrastructure, operations, and processes. The objective is to bring best practices of the industry to PG&E's Gas Operations and Gas Control.

In Process

- Conducting condition assessments on 24 gas transmission stations this year.
 - Identifying improvements within each station to bring each station up to a new level of instrumentation, automation, and control.
 - Engineering in progress for major improvements to at least four stations.
- Establishing detailed procedures for system-wide operations.
 - Retained outside consultants and experts in operational assessment, human factor analysis, alarm management, and operator training to make recommendations for SCADA and control room procedure improvements.
 - Developing and implementing gas control operator practices and updated clearances processes and training.
- Working to build a state-of-the-art Distribution Control System utilizing advanced technology and protections.
 - Developing and implementing a comprehensive unified controls framework with best accepted practices in the industry.
- Updating SCADA procedures to ensure that manually-input information is accurate and that clear instructions on pipeline segment shutdowns are available during emergencies.
- Conducting training for alarm management, emergency response and SCADA change management.
- Upgrading alarm management software systems.

Question 6. Although there were no Federal regulations requiring hydrostatic pressure testing of new pipelines until 1970, a voluntary national consensus standard was established by ASME in 1955 calling for hydrostatic pressure testing of newly constructed pipelines. Why did PG&E not follow the ASME standard for hydrostatic pressure testing when it installed this pipeline?

Answer. The relocation work in 1956 on Line 132 for what would become segment 180 was designed and constructed to meet ASA B31.8 (the predecessor to ASME B31.8). PG&E has pressure test reports for lines constructed in 1956 both before and after Segment 180, with forms that specifically refer to ASA B31.1.1.8 hydro test procedures, but PG&E has been unable to locate records that show whether Segment 180 was pressure tested.

Question 6a. In light of the NTSB's recommendations, is PG&E now performing pressure tests on its pre-1970 pipelines?

Answer. Yes. PG&E has pressure tested approximately 150 miles of pre-1970 transmission pipelines in 2011. Our Pipeline Safety Enhancement Plan filed with

the CPUC in August 2011 proposes pressure testing all transmission pipelines that have not previously been pressure tested.

Question 6b. When PG&E completes the pressure tests it is planning to conduct through 2014, what percentage of PG&E's pre-1970 pipelines will have been tested?

Answer. PG&E operates 5,786 miles (2010 PHMSA 7100 Report) of gas transmission and gas gathering pipeline, 3,862 miles (67 percent) of which was installed prior to 1970. (References elsewhere in these answers to approximately 6,700 miles of pipelines are discussions of all pipelines operating above 60 psig, regardless of whether it is transmission or distribution pipe.)

By the end of 2014, PG&E currently forecasts a minimum of 1,068 miles (27 percent) of the pre-1970 transmission pipelines will have had prior pressure tests or been pressure tested to 49 CFR 192, Subpart J testing requirements as part of the Pipeline Safety Enhancement Plan. In addition, PG&E is currently proposing to replace 176 miles of pre-1970 pipeline by 2014 as part of our Pipeline Safety Enhancement Plan.

Question 7. Although automatic or remote controlled shutoff valves are not mandated, existing Federal pipeline integrity management regulations require that, "If an operator determines, based on a risk analysis, that an automatic or remote-controlled shutoff valve would be an efficient means of adding protection to a high consequence area in the event of a gas release, an operator must install the ASV or RCV." Did PG&E ever perform a risk analysis for line 132?

Answer. Yes

Question 7a. If so, did the risk analysis indicate that adding an automatic or remote-controlled shutoff valve would be an efficient means of adding protection to this high consequence area? If not, why not?

Answer. The analysis concluded that adding automatic or remote shut-off valves was not recommended. The explanation was as follows:

"There are 9 Mainline Valves at [specific locations that] can be used to isolate the pipeline sections in between in case of emergency. The valve spacings are in compliance with class location requirements.

Note: A review of the environment that the line operates in reveals that there are no unique conditions or characteristics which may lead one to believe that the length of time necessary to respond to a rupture will increase the likelihood of harm to population around the pipeline (such as due to large structures weakened by exposure to heat) or increase the likelihood of a failure due to areas of unique geologic features which may increase the likelihood of failure. In addition, because:

- Most of the damage to property and risk to human safety occurs immediately or shortly thereafter,
- The immediate energy release has little or nothing to do with the location of vales,
- The rate of release from a rupture decreases exponentially,
- A lead or rupture may not immediately trigger a ASV,
- The leak will continue for a long period of time regardless of the valve location.

Additional ASV's and RCV's are not recommended. . . ."

Question 8. Is PG&E currently working to retrofit pre-1994 pipelines for in-line inspection? When that is complete, what percentage of PG&E's pipelines will be able to accommodate in-line inspection?

Answer. Yes. PG&E has been retrofitting gas transmission pipelines to accommodate ILI inspection tools since 2000. As of December 2010, PG&E had retrofitted 988 miles of pipeline to accommodate ILI tools, which represents 17 percent of our gas transmission pipelines.

PG&E is planning to retrofit all pipelines operating above 30 percent SMYS, and many below 30 percent SMYS, to accommodate inspections using current intelligent "pigging" technologies. PG&E forecasts the total pipeline miles retrofitted for ILI to be approximately 1,483 miles (about 26 percent) by the end of 2014. Where ILI is not feasible in pipelines operating below 30 percent SMYS, PG&E will continue pressure testing, pipe replacement, or other actions to assure the margin of safety is not compromised.

Question 9. On October 25, 2011, the San Francisco Chronicle reported that a PG&E transmission line (which was laid in the 1950s) ruptured during a pressure test, creating a crater in an alfalfa field near Weedpatch, CA. If a pressure test had not been performed, is there a risk this pipeline could have ruptured in the future, such as when the pressure in the pipeline were increased to meet winter demand?

Answer. It is highly unlikely Line 300B would have ruptured at the location of the failed pressure test under normal operating conditions. Line 300B has an MAOP of 757 psig. The pipeline would not be operated above this pressure. The section of Line 300B failed during the pressure test at 998 psig, or 241 psig above the MAOP. The pipeline was at 95 percent of Specified Minimum Yield Strength at the point of rupture. There was no evidence that the anomaly responsible for the hydrostatic test failure was growing while it was in service, so it is likely that this anomaly could have lasted indefinitely in the pipe at pressures up to the MAOP of 757 psig.

Question 9a. In the same article, you said regarding the test failure: "This is the first one—but that's what these tests are intended to do, identify areas of weakness." Has PG&E identified other areas where pipelines are expected to be weak or contain flaws?

Answer. PG&E has focused its initial pressure testing on 152 miles of pipeline that had not been tested previously and had characteristics similar to the segment that failed in San Bruno. The purpose of the pressure testing program is to identify and remediate pipeline flaws found during the testing. PG&E's record search has not identified any areas where the pipeline is expected to be weak or contain flaws.

PG&E also notes it is in the final stages of a multi-year plan to In-Line Inspect (ILI) the portion of L300B in Bakersfield which experienced the recent hydrostatic test rupture. Over the past few years, this portion of Line 300B and the parallel pipeline Line 300A have been physically upgraded to accommodate ILI tools and the ILI inspections are scheduled to occur in 2012.

Question 9b. Was this rupture located in a "High Consequence Area?"

Answer. No, the rupture was not in a High Consequence Area.

Question 9c. How many miles of your pipelines that lie outside of High Consequence Areas have not been subjected to pressure tests? What is your schedule for testing these pipelines?

Answer. PG&E has 1,027 miles of HCA pipelines (using Method 2, 49 CFR Part 192 Subpart O) and operates 4,727 miles of gas transmission and gas gathering pipelines outside of HCA (2010 PHMSA 7100 Report). Preliminary estimates indicate that approximately 60 percent of these non-HCA pipelines have already been pressure tested. This information is in the process of being validated as part of our MAOP validation project.

PG&E has not completed its plan for pressure testing all untested HCA and non HCA pipelines. PG&E estimates that approximately 2,200 miles will not have previously been pressure tested and will require testing. As part of our Pipeline Safety Enhancement Plan, we propose to pressure test approximately 780 miles of pipe between 2011 and 2014.

Question 10. On November 2, 2011, the San Francisco Chronicle reported that the aforementioned Bakersfield pipeline was discovered to have a seam flaw in 1974, the same kind of defect that caused the San Bruno explosion. However, the article reported that PG&E vouched for the pipeline's safety by using an inspection method used mainly for finding corrosion problems. Was the flaw found in 1974 ever repaired before the failed test conducted last week?

Answer. In 1974 PG&E had a rupture during a hydrostatic test of a long seam weld on a 34 inch diameter section of Line 300B near Harris Ranch, about 90 miles north of the section that ruptured in Bakersfield. The section ruptured at approximately 1040 psig. This was 200 psig above its maximum allowable operating pressure, and 84 percent of the Specified Minimum Yield Strength. The failed section of pipe from the 1974 test was replaced, and the pipeline was successfully retested with an 8 hour hydrostatic test at over 1100 psig. Our records indicate that subsequent examination revealed that the cause of the rupture was inadequate penetration on the long seam weld at that spot.

Question 10a. If a seam flaw was found, what is the justification for confirming the pipeline's safety through use of a corrosion test and not a test for bad welding?

Answer. The determination of an assessment method for a particular HCA segment is based upon the threats identified with respect to that particular segment. In cases where a pipeline is hundreds of miles long, such as Lines 300A and 300B, different segments of the pipeline are built at different times, sometimes in different years, using different manufacturing methods and will operate at different pressures and under different conditions.

As discussed above, the flaw discovered in 1974 was the rupture of a longitudinal weld during a hydrostatic test. By the nature of the test, the section was subjected to pressures that far exceeded its expected operating pressure in order to identify potential defects caused during the manufacturing or construction that could adversely affect the pipeline. In this instance, the 1974 hydrostatic test worked as in-

tended and identified a defect that was removed from the pipeline. The section of Line 300B was then re-tested and passed.

A single incident at one location does not necessarily have implications for the entire pipeline and does not require an assessment method designed to identify suspect welds. PHMSA Frequently Asked Question 219 provides in part that “any manufacturing and construction defects that survive the Subpart J pressure test are considered to be stable and not subject to failure, unless other threats adversely affect the stability of the residual manufacturing and construction defects.” Here, the segment where the pipeline ruptured was not in a “High Consequence Area” and was not required to be assessed. 49 CFR 192.917 (e)(4) sets forth special consideration for the identification of threats on low frequency ERW pipe, but the longitudinal seam that ruptured on Line 300B was manufactured using Double Submerged Arc Welded (DSAW) method. In contrast to ERW pipe, DSAW was, and still is, considered one of if not the most reliable seam manufacturing technologies.

Question 10b. Have any other pipelines been designated as safe through a corrosion test where previous seam flaws were detected? If so, how many, and where are these pipelines located?

Answer. PG&E is in the midst of several major initiatives to enhance the safety of our transmission system, including major efforts to improve our records, to validate the maximum allowable operating pressure of all of our transmission lines and to pressure test all of our transmission pipelines that have not already been pressure tested. If PG&E finds a seam defect on an HCA segment that can no longer be considered stable we will take steps to confirm the integrity of the longitudinal seam.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BARBARA BOXER TO
DONALD F. SANTA, JR.

Question 1. At the hearing, I asked you whether INGAA supported a repeal of the “grandfather clause,” which exempts pre-1970 pipelines from hydrostatic pressure testing to determine maximum allowable operating pressure. You replied that INGAA would support doing away with the grandfather clause in high consequence areas.

However, on October 25, the San Francisco Chronicle reported that a PG&E transmission line (which was laid in the 1950s) ruptured during a pressure test, creating a crater in an alfalfa field near Weedpatch, CA. Commenting on repairing the damage, PG&E’s Executive Vice President for Gas Operations, Nick Stavropoulos, said, “It’s typically not an extensive process. Here, access should not be an issue, so it shouldn’t take very long.”

Question 1a. With this in mind, can you elaborate on why INGAA does not support greater regulations that would enhance the safety for all people, regardless of whether they live within or outside of a high consequence area?

Answer. INGAA believes that the focus of all pipeline regulations, including those regarding verification of pipe material strength, should be on protecting people first and foremost. Thus the focus on populated areas, or high consequence areas. We think that at least initially, regulations regarding re-verification of maximum allowable operating pressure (MAOP) for pipelines constructed before 1970 should be focused on these high consequence areas. As Senator Boxer stated in the hearing on October 18th, “to me what’s really important is go after those high-risk areas first.” We agree. Given the technical difficulties of undertaking this effort, an initial focus on high-risk pipe segments located in populated areas makes the most sense and provides the best improvement in safety over the next few years.

Question 1b. In light of Mr. Stavropoulos’ comments, isn’t it true that it would not be much of an added burden to perform pressure tests in non-high consequence areas in addition to high-consequence areas?

Answer. We do not think Mr. Stavropoulos intended for his remarks to suggest that MAOP re-verification of all pipelines in the United States constructed before 1970 is “easy” or “shouldn’t take very long.” Our united opinion is that such an effort, extrapolated across all gas transmission mileage rather than focusing initially on pre-1970 high consequence areas, would be a massively disruptive effort that would not be logical or manageable.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BARBARA BOXER TO
CHRISTINA SAMES

Question 1. At the hearing, I asked you whether AGA supported a repeal of the “grandfather clause,” which exempts pre-1970 pipelines from hydrostatic pressure testing to determine maximum allowable operating pressure. You replied that AGA would support doing away with the grandfather clause, with certain caveats. What are these caveats? Why does AGA not support regulations that would enhance the safety of all people, regardless of where they live?

Answer. AGA and its member companies are committed to safety. The largest portion of AGA’s resources is dedicated to supporting operations, safety and engineering. AGA maintains 14 technical committees, a Board level safety committee, a Safety Implementation Task Force, three Best Practices programs, is secretariat for the national and the international Fuel Gas Codes and forms task groups whenever additional support is needed. The responses contained herein are supported by widely accepted technical standards and practices regarding how pipelines and other industries effectively manage risks. All risks are relative and resources have to be thoughtfully applied to eliminate or manage the risks.

AGA supports eliminating the grandfather clause as it is currently written in 49 CFR 192.619(c) for transmission pipelines that represent the largest risk as defined by S.275, the *Pipeline Transportation Safety Improvement Act of 2011*. AGA supports amending regulations to require additional integrity management requirements for pipelines that operate in a high consequence area (HCA) above 30 percent SMYS (stress levels) and do not have a post construction pressure test, in-line inspection or acceptable alternative inspections.

Since its inception in 1970, Federal pipeline safety regulations have implemented a tiered risk based design and operational philosophy that is based upon population density. AGA believes this risk-based approach, founded upon sound engineering, is consistent with safety for all people. And AGA will continue its efforts to enhance safety for all people. AGA has petitioned PHMSA to adopt the latest standards for installing natural gas plastic pipe in distribution systems, supported the expedited implementation of the control room management regulation, and seeks improvement to transmission integrity management. I have included in our response a copy of “*AGA Commitment to Enhance Safety*” that was approved by the AGA Board of Directors. I have also included the document “*AGA Actions Supporting the Secretary’s Call to Action and NTSB Recommendations*” that identifies actions AGA and its members have taken in response to Secretary LaHood’s Call to Action on Pipeline Safety.

Question 2. On October 25, the San Francisco Chronicle reported that a PG&E transmission line (which was laid in the 1950s) ruptured during a pressure test, creating a crater in an alfalfa field near Weedpatch, CA. Commenting on repairing the damage, PG&E’s Executive Vice President for Gas Operations, Nick Stavropoulos, said, “It’s typically not an extensive process. Here, access should not be an issue, so it shouldn’t take very long.” In light of Mr. Stavropoulos’ comments, isn’t it true that it would not be much of an added burden to perform pressure tests in non-high consequence areas in addition to high-consequence areas?

Answer. AGA does not know the full context of the statement by Mr. Stavropoulos, therefore our answer is not a direct reflection on his statement. Most pipelines do not rupture during a pressure test and it is relatively easy to effect repairs if there is a failure. However, the preparation to pressure test transmission pipeline operated by local distribution companies can be very complicated.

Many rural transmission pipelines traverse long distances, and are constructed in parallel (looped) configurations that allow supply to be diverted from one line to another. Many of the intrastate transmission pipelines operated by local distribution companies, on the other hand, typically cover shorter distances, are primarily located in more densely populated areas, are constructed of smaller diameter pipe that operates at lower pressures and stress levels, are seldom constructed in parallel (looped) configurations and are often the single source of supply to a city, town or industrial facility.

Local distribution companies operate pipelines that will have to be taken out of service to be pressure tested. A significant portion of this mileage is pipe that is the single source of supply (single source feed) that is relied upon exclusively to serve cities, villages and large industrial customers. Without the benefit of an alternate supply source, utilities will need to serve customers with temporary gas supplies, such as portable compressed natural gas trailers or temporary liquid natural gas. In some cases, temporary supplies will not be adequate and new pipelines will have to be built before the existing pipeline can be tested.

AGA appreciated the opportunity to testify on the important issue of pipeline safety. If you need more information please feel free to contact me.

