

EXAMINING THE TRAGIC EXPLOSION AT THE KLEEN ENERGY POWER PLANT IN MIDDLETOWN, CT

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON WORKFORCE PROTECTIONS

COMMITTEE ON

EDUCATION AND LABOR

U.S. HOUSE OF REPRESENTATIVES

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**EXAMINING THE TRAGIC EXPLOSION
AT THE KLEEN ENERGY POWER PLANT
IN MIDDLETOWN, CT**

**Monday, June 28, 2010
U.S. House of Representatives
Subcommittee on Workforce Protections
Committee on Education and Labor
Washington, DC**

The subcommittee met, pursuant to call, at 10:00 a.m., City Hall Council Chambers, 245 deKoven Drive, Middletown, Connecticut, Hon. Joe Courtney [member of the committee] presiding.

Present: Representative Courtney.

Also Present: Representatives DeLauro, Larson and Murphy.

Staff Present: Lynn Dondis, Labor Counsel, Subcommittee on Workforce Protections; James Schroll, Junior Legislative Associate, Labor; Loren Sweatt, Minority Professional Staff Member.

Mr. COURTNEY. The proceedings of the Subcommittee on Workforce Protections will come to order.

For some of the guests who are here today who maybe have some questions about the proceeding that we're holding this morning, I'm Congressman Joe Courtney. We're joined here by other Members who will be introduced in a moment.

I sit on the House Education and Labor Committee which is the Committee of the House of Representatives which has cognizance or supervision of laws and regulations concerning workplace safety. This is a Committee which really beginning on February 7th has been in constant contact with local officials, federal officials, Members here in the delegation. They've been tracking the events here because there are issues involved here that intersect with the Occupational Health and Safety Act, as well as other federal regulations which they have been working on prior to the incident on February 7th and certainly subsequent.

The purpose of this proceeding is really to hear directly from the witnesses that have been invited this morning so that the Committee can learn more about what happened and use that in its decision making about possible legislation and other actions which the Committee may take action on.

We had hoped this morning that the Chair of the Subcommittee, Congresswoman Lynn Woolsey from California, was going to be in attendance. She had been in constant contact, particularly with Congresswoman DeLauro about holding this hearing today by the Subcommittee. Unfortunately, she became ill over the weekend and

was unable to make the flight in from California to Connecticut. So as someone who sits on the Committee, she asked me to pinch hit this morning which I'm certainly happy to do, but obviously we're joined by other Members of the delegation who have been very deeply involved in this issue and this incident and they certainly will be part of the proceedings as far as asking questions to the witnesses that are here today.

And without objection, all Members will have 14 days to submit additional materials for the hearing record.

Lynn had prepared a few remarks which again, from the Committee's standpoint, wanted to sort of set the context here this morning. And again, on her behalf, I want to thank the witnesses for being in attendance this morning.

I particularly want to thank Jodi Thomas for being here today. This is not easy and we are honored that you are here today. Judge Thomas, the Probate Judge of Colchester does an outstanding job for the community, and it's going to help all of us I think better understand about what needs to be done to protect our workers, generally, and also from this inherently dangerous gas blow procedure.

I think all the Members here are really interested in urging OSHA to move forward in terms of learning more about what actually happened and steps that could be taken to ensure that it does not happen again.

Six good men were killed as a result of this explosion. At least 50 others were injured. Our thoughts again are with the surviving family members. The Dobratz family is also here today. I want to recognize them and thank them for being in attendance. Again, they lost Raymond Dobratz, who was an outstanding member of the community of Old Saybrook, Connecticut, and again our heart goes out to you and our thoughts and our prayers are with you.

Again, I want to welcome Congresswoman DeLauro, Congressman Larson, Chris Murphy, who are all here today.

Again, from Lynn's standpoint, she wanted to set the context of why the Congress is concerned about what happened in Middletown, Connecticut. It's important to recognize that this has been a tragic year for the American worker.

On April 2, a blast at the Tesoro oil refinery in Anacortes, Washington caused the deaths of seven workers who were engulfed in a "firewall." In 2010, 47 mine workers in coal and metal/non-metal mines have been killed at work, higher than all the mining fatalities in 2009. This includes the 29 miners who were killed on April 5 when a massive explosion ripped through the Massey Energy's Upper Big Branch mine in Montcoal, West Virginia.

As early as this week, a number of us on the Committee are going to be introducing legislation to reform the Mine Safety and Health Administration to again address obvious gaps in the law that could have prevented that tragedy from happening.

On April 20, 11 workers were lost and 17 injured following an explosion on the Deepwater Horizon drilling ship leased by BP in the Gulf of Mexico. That disaster, obviously, is tragic for the families of those 11 workers for which our Committee held a hearing last week. And the spill is so enormous that the environmental and economic effects will be felt in the Gulf region for years to come.

These accidents all have a common thread. All of them are caused by methane or other flammable gases which were allowed to leak or to build up to dangerous levels and then exploded because they found ignition sources. Aside from these more visible accidents, there are thousands of equally tragic deaths that occur in ones and twos, away from the limelight.

So it's important that we as a nation begin to address the flaws that may exist within our regulatory and legal structure and that's the purpose of today's proceeding.

Today, we are examining the blast at Kleen Energy, specifically the pipe cleaning procedure known as a "gas blow" that caused the explosion. When a natural gas power plant is built, piping must be installed to connect the turbines producing the energy with a natural gas pipeline. That piping must be cleaned to remove any debris that could damage the turbines. The cleaning is accomplished by forcing an element, such as natural gas, steam, air, nitrogen, or water, through the piping at high pressure.

The Chemical Safety Board which is represented here today, an independent federal agency charged with investigating industrial chemical accidents, has been investigating the incident at Kleen Energy. And it has determined that using the "gas blow" procedure to accomplish the cleaning is "inherently dangerous" because the gas is highly flammable. Air, steam or nitrogen are much safer and just as effective in removing the debris.

Despite safer alternatives, the use of natural gas is still popular.

It is important to note that General Electric, which supplies most of the turbines to these plants—although not the one installed at Kleen Energy—is recommending that air blows and other alternatives to natural gas be used when cleaning the piping for their own product. That is good because as unbelievable as this sounds, there is no law, regulation, standard or code—either in Connecticut or on the federal level—that directly regulates the "gas blow" procedure in natural gas power plants. This is especially troublesome because more and more power plants are being built each year. The Department of Energy projects that 125 natural gas plants are going to be built over the next 5 years, so this is obviously a very relevant issue for our nation which is obviously addressing issues of trying to get to cleaner energy sources to deal with this procedure.

We need to fix the problem, and the CSB has made urgent recommendations to OSHA and other organizations, such as the National Fire Protection Association, which issues voluntary consensus codes for industry to use to prevent fires and explosions. We invited NFPA to testify here today, and it declined. Based on NFPA's recent rejection of even modest changes to its gas code, it is becoming increasingly doubtful whether the NFPA will follow CSB's recommendations. If those that are being asked to act, do not take action, Congress should move swiftly to protect workers at natural gas power plants from this dangerous procedure. If we are going to send workers into harm's way, we need to ensure that they are safe and healthy at work and return to their families each day.

Again thank you all so much for coming today and I look forward to your testimony.

Now I would like to recognize the gentlewoman from the 3rd Congressional District of Connecticut who represents the City of Middletown who has been there with this issue from February 7th and on, Congresswoman Rosa DeLauro.

[The statement of Mr. Courtney follows:]

**Prepared Statement of Hon. Joe Courtney, a Representative in Congress
From the State of Connecticut**

I want to thank you all for agreeing to testify today about the tragic explosion in February at the Kleen Energy Power Plant in Middletown, Connecticut.

Six good men were killed as a result of this explosion, and at least fifty others were injured.

The Occupational Safety and Health Administration (OSHA) is currently investigating the blast.

So, OSHA is not testifying today because its inquiry has not been completed.

OSHA officials have informed me that OSHA expects to complete its investigation later in the summer, and we all look forward to learning what it has discovered and what actions it intends to take.

Our thoughts are with Ms. Thomas who will be testifying today about her husband Ron Crabb, and Carle Crabb, Ron Crabb's brother, who I understand is in the audience today.

The Dobratz family is also here.

They lost Raymond Dobratz in the explosion.

My heart goes out to you and to others who lost loved ones at the Kleen Energy site in this senseless accident.

I want to welcome my Connecticut colleagues, Representatives DeLauro, Larson and Murphy, all of whom are sitting with me on the dais today.

We are all making sure we take steps to prevent a similar explosion in the future.

This has been a tragic year for the American worker.

On April 2, a blast at the Tesoro oil refinery in Anacortes, Washington caused the deaths of seven workers who were engulfed in a "firewall."

So far in 2010, forty-seven miners in coal and metal/non-metal mines have been killed at work, higher than all the mining fatalities in 2009.

This includes the twenty-nine miners who were killed on April 5 when a massive explosion ripped through Massey Energy's Upper Big Branch mine in Montcoal, West Virginia.

As early as this week, we are introducing mine legislation that will help prevent a disaster of this magnitude from ever happening again.

On April 20, eleven workers were lost and seventeen injured following an explosion on the Trans-Ocean Deepwater Horizon drilling ship leased by BP in the Gulf of Mexico.

That disaster is tragic for the families of those eleven workers, and the spill is so enormous that the environmental and economic effects will be felt in the gulf region for years to come.

These accidents have a common thread—all of them were caused by methane or other flammable gasses, which were allowed to leak or build up to dangerous levels, and then exploded because they found ignition sources.

Aside from these more visible accidents, there are thousands of equally tragic deaths that occur in ones and twos, away from the limelight.

So we have our hands full.

Today we are examining the blast at Kleen Energy, and specifically the pipe cleaning procedure, known as a "gas blow" that caused the explosion.

When a natural gas power plant is built, piping must be installed to connect the turbines producing the energy with a natural gas pipeline.

The piping must be cleaned to remove any debris that could damage the turbines.

The cleaning is accomplished by forcing an element, such as natural gas, steam, air, nitrogen or water through the piping at a high pressure.

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It has determined that using the "gas blow" procedure to accomplish the cleaning is "inherently dangerous" because the gas is highly flammable.

Air, steam or nitrogen are much safer and just as effective in removing the debris.

Despite safer alternatives, the use of natural gas is still popular.

Let me note that General Electric, which supplies most of the turbines to these plants—although not the one installed at Kleen Energy—is recommending that air blows and other alternatives to natural gas be used when cleaning the piping.

That is good because as unbelievable as this sounds, there is no law, regulation, standard or code—either in Connecticut or on the federal level—that directly regulates the “gas blow” procedure in natural gas power plants.

This is especially troublesome because more and more power plants are being built each year.

We need to fix the problem, and the CSB has made urgent recommendations to OSHA and other organizations, such as the National Fire Protection Association (NFPA), which issues voluntary consensus codes for industry to use to prevent fires and explosions.

We invited NFPA to testify here today, and it declined.

Based on NFPA’s recent rejection of even modest changes to its gas code, it is becoming increasingly doubtful whether the NFPA will follow CSB’s recommendations.

If those that are being asked to act, do not take action, Congress should move swiftly to protect workers at natural gas power plants from this dangerous procedure.

If we are going to send workers into harm’s way, we need to ensure that they are safe and healthy at work and return to their families each day.

Again thank you all so much for coming today and I look forward to your testimony.

Ms. DELAURO. Thank you very much, Congressman Courtney. I’m delighted to be here this morning and if I might just take a second and recognize a couple of folks who are here, people that we’ve worked with over these last several months. State Representative Joe Serra is here; our former State Senator, Billy Ciotto; John Olsen, head of the Connecticut AFL-CIO; State Representative Linda Orange from Colchester; and Councilman Bauer. This has been a collaborative effort of federal, state, and local officials to try to determine what happened and how we try to move forward.

I would also like to thank today’s distinguished panel. Mayor Giuliano, thank you. Fire Chief Edward Badamo; the Honorable John Bresland, a former Chair of the U.S. Chemical Safety and Hazard Investigation Board, a Member; and also here to welcome the new Chair of the CSB, Rafael Moure-Eraso; and also a new Member, Mark Griffin, who was here and they were confirmed by the Senate last Thursday. We also have Professor Glenn Corbett of the Department of Protection Management, and John Jay College of Criminal Justice; the Honorable Alan Nevas, Chair of the Governor’s Panel into the Kleen Energy explosion; and Jodi Thomas, whose husband, Ron Crabb, perished in this terrible explosion.

Thank you for contributing today. We thank you for your broader efforts in the wake of this tragedy. I know local leaders such as Mayor Giuliano and Chief Badamo, as well as representatives from Kleen Energy Systems, have all been working very hard over the past few months to figure out exactly what happened last February. I thank you for your diligence. I stood with the Mayor and with the Chief on the night of February 7th and if nothing but the quick reaction, the concerned reaction for the loss of life and for trying to secure the facility, it was apparent that our local responders knew what they were doing and were carrying out their task effectively.

I would also like to say a thank you to my colleagues, Chairman George Miller and Chairwoman Lynn Woolsey. We are obviously all concerned that Lynn is not well, but we thank them for agreeing to hold this field hearing of the Workforce Protections Sub-

committee here in Middletown; and to Congressmen Courtney, who sits on the Committee; and to my colleague, John Larson. John Larson and I share the responsibility for representing Middletown in the United States House of Representatives. I'm delighted to be joined by Congressman Murphy as well this morning.

From Day One, the Subcommittee has been tremendously responsive and we thank them for their support.

To everyone here in the Middletown community, coming together, you have risen to help the families of those who perished in the tragic Kleen explosion last February. It is your compassion and your strength and you truly rose to the occasion and you make us all proud.

We are here today to examine the causes and the circumstances surrounding that awful explosion, which as you know, claimed the lives of six men: Ronald Crabb, Peter Chepulis, Raymond Dobratz, Kenneth Haskell, Christopher Walters, and Roy Rushton, and injured over 50 workers at the Kleen Energy plant. It's worth repeating the names over and over again, lest we forget who they are, what they did, and that their families have to survive.

But our task today is not simply one of historical inquiry. To do right by the men who perished in this accident and their colleagues, we must take this incident as an impetus for action. We know this natural gas explosion was not the first of its kind. In 2003, a Fairfield, California plant "gas blow" procedure gone wrong caused significant property damage, shattering windows a quarter of a mile away. And a 2009 plant explosion in Garner, North Carolina resulted in 3 deaths and 71 injuries. But if we act this time, if we act this time, we can help ensure the Middletown explosion is one of the last of its kind.

Particularly with 125 more natural gas power plants commissioned to be built over the next five years, it behooves us to explore exactly what went wrong here in Middletown and take the necessary steps to see it does not happen again. I know the Occupational Safety and Health Administration, the Chemical Safety Board and the Governor's panel have been thoroughly investigating this accident with regulatory action in mind, and we look forward to hearing and reviewing their recommendations and we are prepared to act as Members of Congress.

The fact is we have much to do in the realm of worker safety across the board. An average of 15 workers per day die from work-related incidents, and another 8 to 12 million workers suffer work-related injuries on an annual basis. No doubt there are steps we can take to mitigate these dismal numbers. For example, Chairwoman Woolsey has introduced the "Protecting America's Workers Act," which grants stronger enforcement capacity to the Occupational Safety and Health Administration, OSHA, and which I and my colleagues are proud to co-sponsor.

We can make sure that regulations exist to protect our working men and women in dangerous jobs and prevent future tragedies such as this. To take just one example, at the moment, natural gas is the only fuel gas not regulated by OSHA, even though its consumption exceeds any other gas fuel. To take another, the CSB has determined that the "gas blow" procedure is inherently dangerous and should be discontinued in favor of safer alternatives, but as the

Governor's Commission also pointed out in their findings, there is no law, standard, or code on the books to regulate or prohibit this procedure. These seem like exactly the sort of lapses in regulatory oversight that can and should be rectified.

No one wants to see any more lives lost. And we all agree that we should do everything in our power to protect our workers. That is why we are here today, to listen, to glean everything we can and to move forward. I thank the panel for being here today, and I look forward to hearing their testimony. Thank you very much.

[The statement of Ms. DeLauro follows:]

**Prepared Statement of Hon. Rosa L. DeLauro, a Representative in Congress
From the State of Connecticut**

Thank you and good morning.

Let me begin thanking today's distinguished panel—Mayor Giuliano, Fire Chief Edward Badamo; the Honorable John Bresland, Chair of the U.S. Chemical Safety and Hazard Investigation Board, Professor Glenn Corbett of the Department of Protection Management at John Jay College of Criminal Justice, the Honorable Alan Nevas, Chair of the Governor's Panel into the Kleen Energy explosion, and Jodi Thomas, whose husband Ron Crabb perished in this terrible explosion.

Thank you for contributing today, and for your broader efforts in the wake of this tragedy. I know local leaders such as Mayor Giuliano and Chief Badamo, as well as representatives from Kleen Energy Systems, have all been working very hard over the past few months to figure out exactly what happened last February. I thank you for your diligence.

Thanks also to my colleagues Chairman George Miller and Chairwoman Lyn Woolsey for agreeing to hold this field hearing of the Workforce Protections Subcommittee here in Middletown, and to Congressmen Joe Courtney, Chris Murphy, and John Larson for being here today. From Day One, the subcommittee has been tremendously responsive and I thank them for their support.

And, of course, thank you to everyone here in the Middletown community who have come together and risen to help the families of those who perished in the tragic Kleen explosion last February. In your compassion and your strength, you have done all of Connecticut proud.

We are here today to examine the causes and circumstances surrounding the awful explosion of February 7, which, as you know, claimed the lives of six men—Ronald Crabb, Peter Chepulis, Raymond Dobratz, Kenneth Haskell, Christopher Walters, and Roy Rushton—and injured over 50 workers at the Kleen Energy plant.

But our task today is not simply one of historical inquiry. To do right by the men who perished in this accident and their colleagues, we must take this incident as an impetus for action. We know this natural gas explosion was not the first of its kind. In 2003, a Fairfield, California plant "gas blow" procedure gone-wrong caused significant property damage, shattering windows a quarter of a mile away, and a 2009 plant explosion in Garner, North Carolina resulted in three deaths and 71 injuries. But if we act this time, we can help ensure the Middletown explosion is one of the last of its kind.

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The fact is we have much to do in the realm of worker safety across the board—an average of fifteen workers per day die from work related incidents, and another 8 to 12 million workers suffer work-related injuries on an annual basis. No doubt there are steps we can take to mitigate these dismal numbers. For example, the Chairwoman has introduced a "Protecting America's Workers Act," which grants stronger enforcement capacity to the Occupational Safety and Health Administration, and which I am glad to co-sponsor.

And we can make sure that regulations exist to protect our working men and women in dangerous jobs and prevent future tragedies such as this. To take just one example: At the moment, natural gas is the only fuel gas not regulated by OSHA, even though its consumption exceeds any other gas fuel.

To take another: The CSB has determined that the “gas blow” procedure is inherently dangerous and should be discontinued in favor of safer alternatives, but, as the Governor’s Commission also pointed out in their findings, there is no law, standard, or code on the books to regulate or prohibit this procedure. These seem like exactly the sort of lapses in regulatory oversight that can and should be rectified.

Nobody wants to see any more lives lost. And we all agree that we should do everything in our power to protect our workers. That is why we are here today, to listen, to glean everything we can and to move forward. I thank the panel for being here today, and I look forward to hearing their testimony. Thank you.

Mr. COURTNEY. Thank you, Rosa. Now I’d like to recognize the Member from the 1st District who also represents a portion of Middletowners with us here today, Congressman John Larson.

Mr. LARSON. Thank you very much, Joe, and I thank the Committee for putting this very important hearing together. Thank you, Joe, for being here to chair and oversee this meeting and this testimony that will be critical to legislation as we put it forward.

Connecticut is a very small delegation, but I’m honored to be here with four of the five Members of the United States Congress as we listen to this testimony here this morning. I’m honored to be joined by Joe Courtney, Chris Murphy, and certainly by the dean of our delegation and someone as Joe rightly pointed out, who has been on top of this issue from the moment it happened. I’m honored as well, as she mentioned Joe Serra, and Billy Ciotto who works in my office who has been our point person here in Middletown. And although we represent a small portion of Middletown, let me say that what happened here in Middletown touched everyone across the State of Connecticut. And I dare say across this country.

As you listened to what Joe Courtney had to say about what is befalling working men and women all across this great nation of ours, you understand the need and importance of hearings like this. But Mayor Giuliano and Chief Badamo, let me say especially to the community of Middletown, with the great dignity and empathy and the outpouring of compassion and the incredible memorials that soon ensued demonstrated just what kind of community Middletown is. And frankly, I think the whole community stands taller and prouder because of the kind of compassion.

And to have Jodi here today, your courage, your valor, your ability to come here and testify, I’m sure how painful this must be in remembering Ron, just how vital this testimony is to not only Members of Congress, to people all across this nation.

You heard Joe and Rosa both outline what we’ve learned in the aftermath, where fundamental problems and gaps in regulation that directly led to this disaster. But we look forward to your testimony which we believe will reveal that no agency was tasked with regulating the gas blow. And that procedure has been determined to be the cause of the explosion.

In addition, as was earlier enumerated by my colleagues, there are no specific codes or regulations that would have applied to the process of cleaning natural gas piping at the Kleen Energy Power Plant. Even more concerning, as Rosa pointed out, similar explosions have occurred across the country in California, she indicated, in North Carolina as well. Despite these repeated occurrences there

has not been a clear solution established to address these safety gaps once and for all.

While we await the findings of the OSHA investigation that is scheduled to be completed by the end of July, it is clear that urgent action needs to be taken. The Chemical Safety Board has made recommendations for additional regulatory action by OSHA, a change in the National Fuel Gas Code, and further legislative action by the State of Connecticut. I look forward to working with the Committee, and my colleagues from the Connecticut delegation, and the regulatory agencies to make sure that this type of disaster never occurs again.

While we can never undo the tragic events of February, we can honor the memory of the fallen by guaranteeing that we have the regulations and standards in place to ensure that every worker across this country is protected.

I want to thank as well, Professor Corbett, Judge Nevas, John Bresland also for joining us here today, and also recognize the fact that the family of Raymond Dobratz is here as well. Thank you for your testimony and we appreciate your service to your country.

[The statement of Mr. Larson follows:]

**Prepared Statement of Hon. John B. Larson, a Representative in Congress
From the State of Connecticut**

I would first like to thank the Education and Labor Workforce Protections Subcommittee for holding this proceeding and my colleagues from the Congressional delegation for being in attendance.

The tragedy that occurred here in Middletown, CT was felt across the nation. However, the hardest hit, were those families who lost their loved ones on that terrible day in February. I want to especially acknowledge the courage of Jodi Thomas for being here today to testify. Your act of bravery in being here to not only talk about your wonderful husband, Ron, but to discuss ways to prevent this type of accident from ever occurring again is truly remarkable and admirable. I also understand that the family of Raymond Dobratz is in attendance. I would like to express my deepest condolences to you and my appreciation for your courage to be here for this important hearing. To all of the victims and families who were either killed or injured in the explosion, I offer my sincere regrets and sympathy.

I would also like to thank the other members of the panel from Connecticut for being here, including Chief Badamo, Mayor Giuliano, and Judge Nevas, as well as John Bresland from the Chemical Safety Board and Dr. Glenn Corbett.

In the aftermath of all that took place we learned that there were fundamental problems and gaps in regulation that directly led to this disaster. As the testimony from our witnesses will reveal, no agency was tasked with regulating the "gas blow" procedure that has been determined to be the cause of the explosion. In addition, there are no specific codes or regulations that would have applied to the process of cleaning natural gas piping at the Kleen Energy Power Plant. Even more concerning is that similar explosions have occurred across the country in the past several years, including in North Carolina in 2009. Despite these repeated occurrences there has not been a clear solution established to address these safety gaps once and for all.

While we await the findings of the OSHA investigation that is scheduled to be completed by the end of July, it is clear that urgent action needs to be taken. The Chemical Safety Board has made recommendations for additional regulatory action by OSHA, a change in the National Fuel Gas Code, and further legislative action by the State of Connecticut. I look forward to working with the subcommittee, my colleagues from the Connecticut delegation, and the regulatory agencies to make sure that this type of disaster never occurs again.

While we can never undo the tragic events of February, we can honor the memory of the fallen by guaranteeing that we have the regulations and standards in place to ensure that every worker is protected. I look forward to hearing the testimony and recommendations made here today and thank you all once again for attending today's critically important hearing.

Mr. COURTNEY. Thank you, John.

And Chris Murphy from the 5th District who is a Member of the Energy and Commerce Committee is also with us this morning. Chris?

Mr. MURPHY. Thank you very much, Representative Courtney and thank you to Chairman Woolsey, although we're sorry she can't be here. We certainly appreciate the opportunity to have this Committee come to Connecticut in order to glean on the ground facts that we know are necessary for action moving forward. My thanks as well to Representative DeLauro and John Larson, who both from the minute this happened were on the ground, starting the process that we stand here continuing today to figure out what went wrong, what we can learn from it and how we can change the law to make sure that it doesn't happen again. To the Panel, especially to Ms. Thomas for joining us here today, I look forward to your testimony.

Between the events of this past February and the explosion at the facility in North Carolina of last summer, it's clear that we do not have an adequate safety system in place for handling industrial natural gas lines. The Chemical Safety Board's report provides exhaustive evidence to the fact that despite clear and documented safety risks, gas blows remain the most prevalent method to purge gas lines.

Beyond the decision to use gas itself in the blow down, it's also clear that successive purges that took place at the Middletown site on February used an excessive level of gas and did not adequately vent it once released. In examining these facts, one of the many questions before us becomes clear. Is natural gas an appropriate substance to employ when it comes to clearing debris from piping systems? And beyond the individual codes and the regulations in need of revision, something that we will talk much about today and the days following, it's important that we ensure that the overall safety of natural gas power plants going forward meets the highest of standards.

Gas power plants are nothing new here in the Northeast where they shoulder the majority of our generation needs along with nuclear power. However, as we work to enact national energy policies to lower greenhouse gas emissions, natural gas plants will likely begin to emerge in significantly greater numbers than they are even today throughout the country. Furthermore, newly discovered recoverable domestic gas reserves will also make long-term investment in gas resources more attractive, and further drive the expansion of gas generation facilities. Gas will remain a vital part of our energy mix, and we owe it to ourselves, to the country, and to those that are working in the construction field related to gas development, to ensure the gas plants meet the highest safety standards.

Accidents like those here in Middletown should mark the beginning of a renewed commitment to safety rather than just an initial indicator of a deeply troubling trend.

I think I can speak for all of us here today when I say that our thoughts and prayers are with you, Ms. Thomas, with the families of those killed, including Peter Chepulis, a constituent of the 5th Congressional District.

As Congressman Courtney noted, there is overlapping jurisdiction on the path forward. I serve as a Member of the Energy and Commerce Committee which has jurisdiction, in part, over the Chemical Safety Board and I look forward to the testimony today. I look forward to the joint collaborative work that the Energy and Commerce Committee and the Education and Labor Committee are going to put forward to take the lessons learned from this tragedy to make sure that we push forward a new way to regulate industrial gas lines. I thank Representative Courtney of the Committee and our Panel for being here today.

[The statement of Mr. Murphy follows:]

Prepared Statement of Hon. Christopher S. Murphy, a Representative in Congress From the State of Connecticut

I'd like to thank Chairwoman Woolsey and Ranking Member Rodgers for bringing this Committee here to Middletown to investigate this tragic accident. I also appreciate the willingness on behalf of our panel here today to work with us to further this effort. We have a great deal of work to do before we can ensure that incidents like these never befall another community.

Between the events of this past February and the explosion at the ConAgra SlimJim facility in North Carolina of last summer, it's clear that we must have an adequate safety system in place for handling industrial natural gas lines. The Chemical Safety Board's report provides exhaustive evidence to the fact that, despite clear and documented safety risks, gas blows remain the most prevalent method to purge gas lines.

Beyond the decision to use gas itself in the blowdown, it's also clear that the successive purges that took place at the Middletown site on February 7 used an excessive level of gas and did not adequately vent it once released. In examining these facts, one of the many questions before us becomes clear—is natural gas an appropriate substance to employ when it comes to clearing debris from piping systems?

Beyond the individual codes and regulations in need of revision, it's important that we ensure the overall safety of natural-gas power plants going forward. Gas-fired plants are nothing new here in the Northeast, where they shoulder the majority of our generation needs, along with nuclear power.

However, as we work to enact national energy policies to lower greenhouse gas emissions, natural gas plants will likely begin to emerge in significantly greater numbers throughout the country. Furthermore, our newly-discovered recoverable domestic gas reserves will also make long-term investment in gas resources more attractive, and further fuel expansion of gas generation facilities. Gas will remain a vital part of our energy mix for years to come, and we owe it to ourselves and our communities to ensure that gas plants meet the highest safety standards. Accidents like those here in Middletown should mark the beginning of a renewed commitment to safety, rather than an initial indicator of a deeply troubling trend.

I think I can speak for all of us here today when I say that our thoughts and prayers remain with Ms. Thomas and the families of those killed in the Kleen Energy disaster. Their lives will never again be made whole, and we owe them our diligence and hard work in today's proceedings. I appreciate the opportunity to appear with the subcommittee today, and look forward to the witnesses' testimony.

Mr. COURTNEY. Great. Thank you, Chris. Again, just for the record, today I'm joined on the dais here with staff from the Education and Labor Committee, both minority staff and majority staff. There's a full record and transcript that's being made of the proceedings and any exhibits that are being submitted or written testimony, of course, will be made part of the record. And again, we're taking this back to Washington again for Congresswoman Woolsey's Committee to deliberate on.

Now I'd like to introduce our distinguished panel of witnesses with us here today. Our first witness will be John Bresland who is the Board Member of the U.S. Chemical Safety Board and until yesterday was its Chairman and CEO. He has served as chair since

2008 and has been on the Board since 2002. Mr. Bresland graduated in chemistry from Londonderry Technical College, Northern Ireland, and from Suffolk University in England. He is a Member of the American Institute of Chemical Engineers, the American Chemical Society, and a Fellow of the Royal Society of Chemistry.

Ms. Jodi Thomas who will be testifying second, serves as a full-time Probate Judge for Colchester and Lebanon. Prior to becoming a Judge, she worked as an attorney, a law clerk to the Superior Court Judges for the State Judicial Branch, in a task force clerked for the General Assembly's Energy and Technology Committee. She received her undergraduate degree from Sacred Heart University and a law degree from Quinnipiac University School of Law.

She will be followed by Mayor Sebastian Giuliano, the Mayor of Middletown, Connecticut, a position he has held since 2005. Prior to becoming Mayor, he worked as an attorney at Giuliano and Scalora, a law firm from 2001 to '05. He received his J.D. from Catholic University and his B.A. from Boston College.

Mr. Edward Badamo is the Fire Chief of the South Fire District and has served in this role since March 2008. He was the Incident Commander for the Kleen Energy Incident and oversaw response and recovery operations for 28 days at the Kleen Energy site. Prior to becoming the Fire Chief, he was the Deputy Chief of Operations and a Training Officer for the South Fire District, dating back to January 2005. He holds a Bachelor's degree in Public Safety Administration from Charter Oak College, several fire and rescue certifications, and certificates, and is a licensed paramedic.

The Honorable Alan Nevas, a distinguished witness here today, was the Chair of the Kleen Energy Systems and Explosion Origin and Cause Panel. He was appointed to this position by Connecticut's Governor, Jodi Rell. Judge Nevas served with distinction on the U.S. District Court for the District of Connecticut for over 20 years. He served in the State Legislature and has a distinguished career in the Connecticut bar. He serves now as an arbitrator and mediator at Levitt Rockwood, PC. He graduated with a B.A. from Syracuse University and received his law degree from NYU.

Mr. Glenn Corbett is an Associate Professor and Chair of the Department of Protection Management at John Jay College of Criminal Justice. He currently serves on the Fire Code Advisory Council for New Jersey and is a former member of the Federal Advisory Committee of the National Construction Safety Team. Professor Corbett is the technical editor and columnist for Fire Engineering Magazine. He received his master's in Engineering from Wooster Polytech and a B.A. from John Jay College of Criminal Justice.

Just welcome to all of the witnesses and just again by way of explanation, those little panel—those light panels, if you've never testified at one of these hearings, let me explain the lighting system and the five-minute rule. Everyone, including Members, is limited to five minutes of presentation or questioning. The green light is illuminated when you begin to speak. When you see the yellow light, it means you have one minute remaining, and when you see the red light it means your time has expired and you need to conclude your testimony. I'll be pretty generous in terms of that point, but in any case, that's what the system is and then there will be

questions following. We'll go right down the line in terms of the testimony here.

And Mr. Bresland, welcome to the Committee.

**STATEMENT OF HON. JOHN BRESLAND, BOARD MEMBER,
U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD**

Mr. BRESLAND. Good morning Congressman Courtney, Congresswoman DeLauro, Congressman Larson, and Congressman Murphy. I am John Bresland, board member of the U.S. Chemical Safety Board.

My statement today is on my own behalf and does not necessarily reflect the views of the other four board members. Last week I stepped down as a board chair to make way for President Obama's new appointment, Dr. Rafael Moure-Eraso, who is sitting behind me today. All of us welcome Dr. Moure and we look forward to his leadership over the next five years.

The Chemical Safety Board, or CSB, is an independent, non-regulatory federal agency that investigates major industrial accidents involving hazardous materials. Most recently we've been called in to investigate the causes of the explosion and fire of the BP Deepwater Horizon oil rig in the Gulf of Mexico.

For the past four and a half months, the CSB has conducted an intensive investigation of the root causes of the accident at the Kleen Energy Power Plant here in Middletown. This accident occurred during the procedure called a gas blow used to clean natural gas piping. During this procedure, a huge volume of high-pressured natural gas was vented directly to the atmosphere. I must say as an aside, someone who has worked in industry for many years, I wasn't aware that there was such a procedure and I was quite shocked to realize there actually is a procedure like this.

The CSB team has interviewed more than 90 witnesses, gathered large numbers of documents, and painstakingly examined the site and key pieces of evidence. We have also exhaustively reviewed applicable federal and state regulations, and other codes and standards. The CSB has uncovered what we believe is a significant gap in these standards, a gap that threatens the continued safety of workers at facilities that handle flammable natural gas.

The tragedy that took six lives and injured many others at Kleen Energy was not the first explosion involving natural gas that the CSB has investigated. On June 9, 2009, a destructive gas-purging accident occurred at the ConAgra Slim Jim meat processing facility in Garner, North Carolina. These deadly accidents in Connecticut and North Carolina were preventable. Gas company records show that some two million standard cubic feet of natural gas were released to the atmosphere during the gas blows of Kleen Energy on the morning of February 7th. That, by the way, is enough to fuel a typical American home every day for 25 years.

You can get an idea of just how much flammable gas is released in the gas blow from the photograph on the easel taken a week before the explosion at Kleen Energy. I'm looking at the photograph on my right here. You can just see how much gas and debris was being ejected into the atmosphere.

On the morning of the accident, no safety meeting was held among the workers involved in the gas blows and many personnel

who were not essential to the gas blows remained on site. At approximately 11:15 a.m., the gas found one of the numerous available ignition sources and exploded. Through extensive research, our team discovered that since 2001, at least two other fires and explosions have occurred at gas power plants during gas blows. One of these explosions at a Calpine power plant in 2003 is pictured on the easel, the one with the flame.

But alternatives to using natural gas are readily available. They include blowing with air, nitrogen, or steam, or using a cleaning device called a pig, which can be pushed through the piping using air. Many companies already use these alternative techniques, yet we find that natural gas blows remain the most popular single pipe cleaning method and they're still going on despite our previous announcement about the hazards.

In our review of federal standards, safety codes, and industry guidance, we find nothing that specifically prohibits natural gas blows or mandates the use of available, inherently safer techniques. Indeed, we found a series of exemptions governing the natural gas in our industry.

The CSB has a solution. At our CSB public meeting tonight in Portland, I intend to vote for and support new urgent safety recommendations that we have developed, calling for OSHA to enact new regulations to control this hazard and I will encourage the other board members to do the same.

The new regulations would prohibit the use of natural gas for pipe cleaning and they would require the participation of workers and contractors in developing safe gas handling procedures. We consider these recommendations urgent, in part because some 125 new gas-fired power plants are planned for completion in the next five years including a number here in Connecticut and I believe that number we will hear tonight is between six and eight here in Connecticut.

If the Board approves the recommendations this evening, we plan to conclude the CSB investigation of the explosions at Kleen Energy and ConAgra in the strong belief that we've identified the principal root causes of these disasters. We will focus our future energies on advocating the swiftest possible adoption of our recommendation by OSHA, the National Fire Protection Association, and other recipients.

I thank you again for convening today's hearing and I thank you and the entire Connecticut congressional delegations for your unwavering support of CSB's investigation and our work to improve industrial safety and I will be happy to answer any questions that you may have.

[The statement of John Bresland follows:]

Prepared Statement of Hon. John S. Bresland, U.S. Chemical Safety Board

Good morning Chairman Woolsey and distinguished members of Congress. I am John Bresland, board member of the U.S. Chemical Safety Board. Thank you for convening this important field hearing of the House Education and Labor Committee and for inviting me to appear before you.

My statement today is on my own behalf and does not necessarily reflect the views of the other board members. This week we are welcoming two new members to the Chemical Safety Board: Dr. Rafael Moure-Eraso, who will serve as the new chair, and Mr. Mark Griffon. Dr. Moure and Mr. Griffon were confirmed by the Senate just last Wednesday evening.

The Chemical Safety Board or CSB is an independent, non-regulatory federal agency that investigates major industrial accidents involving hazardous substances. We were established in 1998 and have investigated approximately 70 industrial fires, explosions and toxic gas releases across the country. These include the West Pharmaceutical explosion of 2003, the BP Texas City refinery explosion of 2005, and the Imperial Sugar explosion of 2008. Most recently, we have been called in to investigate the causes of the explosion and fire at the Deepwater Horizon oil rig in the Gulf of Mexico.

For the past four-and-a-half months, the CSB has conducted an intensive investigation of the root causes of the February 7, 2010, accident at the Kleen Energy power plant under construction here in Middletown. That investigation began less than 24 hours after the explosion and has involved a large number of our personnel.

I myself observed portions of the site on the Tuesday immediately following the explosion (Figure 1). It was a scene of devastation and of tragedy. For us, it was one of the most challenging investigations we have ever conducted.

Our team has interviewed more than 90 witnesses, has gathered large numbers of documents from all the parties involved, and has painstakingly examined the site and key pieces of evidence. We have also conducted an exhaustive review of applicable federal and state regulations, codes, and standards governing the gas power industry and the work activities underway on the morning of the explosion.

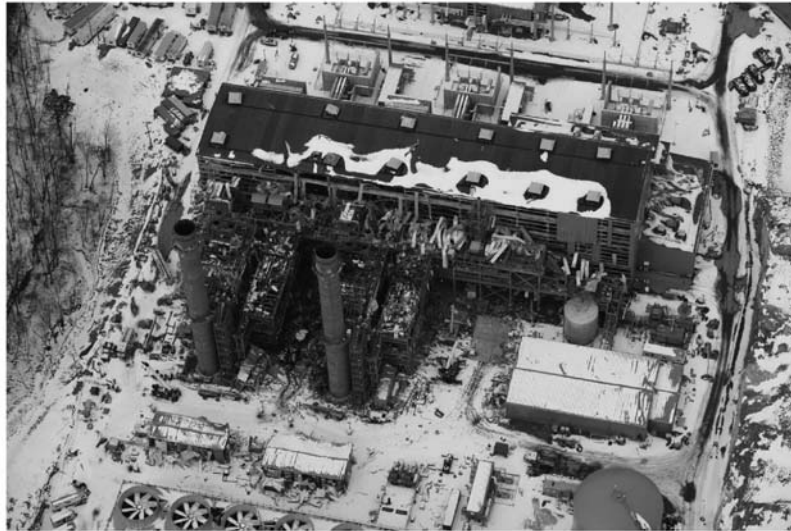


Figure 1. Aerial photograph taken shortly after the devastating gas explosion February 7, 2010, at the \$1 billion Kleen Energy power plant in Middletown, Connecticut.

CSB Investigation of Kleen Energy Explosion Reveals Significant Gap in Current Standards

Madam Chairman, the CSB team has uncovered what we believe is a significant gap in these standards—a gap that threatens the continued safety of workers at facilities that handle flammable natural gas.

CSB investigators have determined that no specific federal workplace safety standards prohibit intentional, planned releases of natural gas into workplaces, as occurred here on February 7. We also determined that there are safe, feasible, economical alternatives to the unsafe gas-handling practices that caused this accident.

The tragedy that took six lives and injured at least 50 others at Kleen Energy was not the first explosion involving natural gas that the CSB has investigated. On June 9, 2009, a similarly destructive accident occurred at the ConAgra Slim Jim meat processing plant in Garner, North Carolina (Figure 2). That explosion during what is known as “gas purging” of a process pipe killed four workers and injured 67 others. It substantially destroyed the facility, leading to a permanent shutdown that cost more than 600 jobs in the region.



Figure 2. ConAgra Slim Jim meat processing plant in Garner, North Carolina, following the natural gas explosion of June 9, 2009, which killed 4 workers, injured 67 others, and caused much of the building to collapse.

A mere three days before the accident at Kleen Energy, on February 4, the CSB held a public meeting in North Carolina to present our preliminary findings on the ConAgra explosion and to issue urgent safety recommendations for changes to the National Fuel Gas Code to prevent the unsafe indoor venting of gas during purging operations.

At the hearing, accident victims spoke to the Board—none more poignantly than Debra Pettitway, who worked for ConAgra and whose only son, 33-year-old Lewis Watson, also worked at the Slim Jim plant and was killed in the explosion, leaving behind a wife and child. Ms. Pettitway implored the Board, “For the people that did die, please don’t let them die for nothing.” Ms. Pettitway’s plea has, I believe, inspired our continuing work to promote the safer handling of fuel gases—the work that we plan to complete here today in Middletown.

Madam Chairman, I am here to testify that these deadly accidents in Connecticut and North Carolina were preventable. There are readily available alternative practices that will completely eliminate the hazard. It is my earnest hope that standards will be put in place that will require these safer practices in the future.

Natural Gas Blow Released Huge Volume of Flammable Gas at Kleen

The explosion at Kleen Energy occurred during what has been termed a “natural gas blow.” This was a procedure to clean out debris from large, newly constructed natural gas piping that provided fuel to the plant’s large electricity-generating gas turbines.

The cleaning of natural gas piping is a necessary activity when putting new piping into service at gas power plants, because even small debris particles can cause damage to the turbines, which are very large and costly. The turbine manufacturers—including companies like Siemens and General Electric—require cleaning of the piping as a condition of the warranty on the turbines.

Although contractors involved in constructing the Kleen Energy plant had considered using high-pressure air to clean out the piping, it was eventually decided to use high-pressure natural gas for this purpose. Using natural gas, we determined, has generally been done as a matter of custom and convenience at new power generation facilities, since an abundant supply of high-pressure natural gas is readily available from nearby gas pipelines that are already connected into these plants.

Gas blows of this kind can result in vast releases of natural gas to the atmosphere. Figure 3 shows a gas blow conducted at Kleen Energy about a week prior to the accident; a geyser-like plume of gas and debris towers over the large plant.



Figure 3. Natural gas blow conducted at the Kleen Energy plant a week prior to the explosion on February 7, 2010, showing plume of gas and debris hundreds of feet high.

Over a four-hour period on the morning of February 7, workers were conducting a series of 15 planned gas blows involving different sections of piping within the plant. The gas was supplied at a high pressure of approximately 650 pounds per square inch gauge (psig).

This gas was vented directly to the atmosphere, without being captured or combusted. The venting occurred through large, horizontal, open pipe ends that were less than 20 feet off the ground and were located in congested areas adjacent to the power generation building.

Our investigators obtained gas company records that show that some two million standard cubic feet of natural gas were released to the atmosphere during these gas blows on February 7. To put that into some perspective, that is more than two billion BTUs worth of gas—enough to fuel a typical American home every day for more than 25 years.

During the final ten minutes prior to the blast, approximately 400,000 cubic feet of gas were released. That is enough gas to fill a pro basketball arena with an explosive fuel-air mixture.

Workers Were Not Adequately Involved in Safety Planning

No safety meeting was held that morning among the workers involved in the gas blows. About 150 workers were present at the site. Although workers were evacuated from the area south of the power generation building, there was no effort to evacuate nonessential personnel from the building itself; however, a few workers evacuated themselves due to concern about the odor from the gas that was being released.

While efforts were made to eliminate or control ignition sources outside the building, some ignition sources were difficult or impossible to eliminate. In addition there were abundant ignition sources that remained inside, including electrical devices and welding equipment. We view that the formation of a flammable gas cloud was the fundamental hazard, and thus determining a specific ignition source has not been a major focus of our investigation.

At approximately 11:15 a.m. the gas found one of the numerous available ignition sources and exploded.

Two Previous Fires or Explosions Occurred During Natural Gas Blows at Power Plants

CSB investigators discovered that this was not the only explosion that has occurred during a natural gas blow at a power plant. In October 2001, a fire occurred during a natural gas blow at a First Energy power plant in Ohio. Flames reportedly shot 30-40 feet in the air following a sudden, unexpected ignition of the gas. In that case, operators were able to shut off the supply of gas within a period of seconds, before injuries or serious damage occurred.

The next occurrence was even more serious. On January 26, 2003, a similar explosion occurred at the Calpine Wolfskill Energy Center in Fairfield, California. This blast, which was actually photographed as it began (Figure 4), also happened during a gas blow to clean piping, using high-pressure (630 psig) natural gas.



Figure 4. Previous explosion during a natural gas blow on January 26, 2003, at a Calpine natural gas power plant in Fairfield, California. The explosion was heard 10 miles away.

The explosion was powerful enough to be heard 10 miles away. However, workers were 80 to 140 feet away from the location of the vent and were spared injury. Investigators from Calpine noted that one of the causes of the accident was that available alternative cleaning methods such as compressed air were not being used.

Perhaps because these previous accidents did not cause severe injuries or damage, they were not widely publicized or acted upon by the gas power industry, which has continued to use natural gas for pipe cleaning.

Natural Gas Blows Remain Common, Despite Safer Alternatives

Following the explosion at Kleen Energy, we enlisted the help of an industry organization called the Combined Cycle Users' Group to conduct a survey of gas power companies concerning their pipe cleaning practices. The survey confirmed that there are a number of alternatives to using natural gas blows for cleaning debris from pipes.

These alternatives include blowing with air, nitrogen, or steam, or using a cleaning device known as a "pig" which can be pushed through the piping. Although no method is completely free of any risks, using compressed air, for example, completely eliminates the catastrophic fire and explosion hazard associated with using natural gas. Other methods, such as using a cleaning pig with compressed air as the motive force, also eliminate the fire hazard.

These methods are practical and affordable and work as well if not better than natural gas. Many companies use these alternative techniques. Despite the availability of these alternative methods, we were disturbed to find that natural gas blows remain the most popular single technique, practiced by 37% of respondents in our survey. We even learned of several natural gas blows that were performed after the CSB's announcement at a news conference on February 25th that these operations were inherently unsafe and should be avoided.

General industry safety guidelines dating back for several decades emphasize the importance of eliminating process hazards to the greatest degree possible, rather than trying to control the hazards of inherently dangerous activities. This approach, often termed "inherent safety," recognizes that despite the best of intentions, efforts at controlling serious hazards are ultimately prone to failure over time. In the safety hierarchy, permanent elimination of a hazard is always preferable whenever it is possible to do so.

While not every natural gas blow leads to an explosion or to injuries, the activity is inherently dangerous and difficult to conduct in a way that reliably results in safe dispersion of the gas before it contacts an ignition source. In fact, there are even indications that natural gas blows can self-ignite due to static electricity or impact sparks from metal debris.

Madam Chairman, the hazard of natural gas releases into workplaces is one that can and should be eliminated.

Current Regulations and Guidance Allow Natural Gas Blows

CSB investigators examined numerous standards, codes, and guidance from the U.S. Occupational Safety and Health Administration (OSHA), the National Fire Protection Association (NFPA), the American Society of Mechanical Engineers (ASME), the Electric Power Research Institute (EPRI), and the State of Connecticut. Yet we found nothing that specifically prohibits natural gas blows or mandates the use of feasible alternatives.

What we did find in our investigation was a series of exemptions governing the natural gas power industry. For example, we found that the National Fuel Gas Code (NFPA 54), which has been adopted by at least 35 states across the U.S., has a specific exemption for power plants and for piping above a pressure of 125 psig. We found that other NFPA documents that provide guidance for power plants, including NFPA 37 and NFPA 850, are silent on the issue of gas blows.

In addition we were told that industry representatives have resisted the development of NFPA or other consensus codes that would contain potential mandatory safety requirements for the power industry. NFPA 850, a document focused on fire protection in the electric power industry, has thus been designated a "recommended practice" rather than a code and it remains completely voluntary in all jurisdictions.

Urgent Safety Improvements Are Warranted

Madam Chairman, I would submit to you that the present patchwork of inadequate codes and voluntary practices does not protect America's workers from the kind of explosions that killed six at Kleen Energy, killed four at ConAgra, and threatened many others with death or injury.

That's why today, at our CSB public meeting later this evening, I intend to vote for and support new urgent safety recommendations calling for OSHA to enact new regulations to control this hazard, and I will encourage the other Board members to do the same.

The two accidents at Kleen Energy and ConAgra—and many others over the years—underscore the fact that OSHA currently has no regulatory standard for the safe handling of natural gas. In contrast, OSHA has specific regulatory standards for other flammable gases, including the liquefied petroleum gases propane and butane as well as acetylene and hydrogen.

Data gathered by our investigators demonstrate, however, that natural gas is far more widely used than the other common flammable gases. For example, natural gas use exceeds that of propane by a factor of 15 (Figure 5). Propane use is specifically regulated by OSHA; natural gas is not.

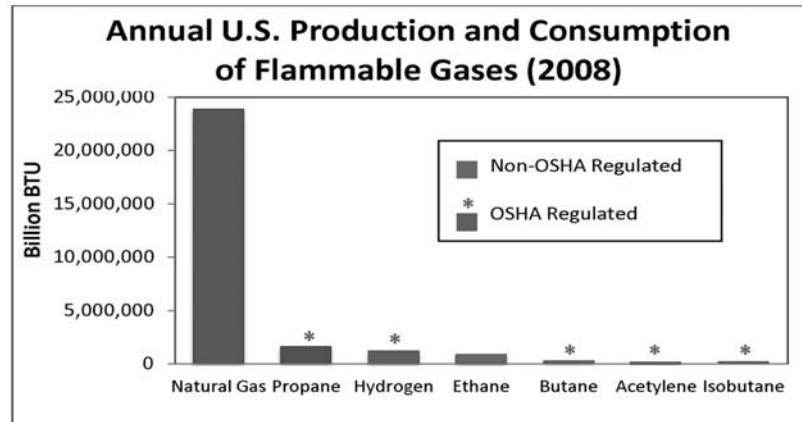


Figure 5. Graph showing annual U.S. consumption of various flammable gases. Although propane and other liquefied petroleum gases, hydrogen, and acetylene are regulated by specific OSHA safety standards, OSHA currently has no specific standard for the safety of natural gas (methane), which is by far the most common gas.

I will not seek to catalogue here all the accidents that have resulted from unsafe natural gas releases in industrial workplaces—they are both serious and numerous. Our draft urgent recommendations mention some of the most severe examples, including the catastrophic coal dust explosion that was ignited by an inadvertent gas release during the purging of a natural gas line at the Ford River Rouge power plant in Dearborn, Michigan, in 1999. That single accident killed six workers, injured dozens of others, and caused an estimated one billion dollars in property losses.

Other jurisdictions have gone further than federal OSHA. In California, state construction regulations prohibit work in an atmosphere where flammable gas exceeds 20% of the lower explosive limit (LEL). Similar regulations prohibit any work activity in an atmosphere above 20% of the LEL in a majority of Canadian provinces.

OSHA Should Develop Safety Standards for Natural Gas

The draft urgent recommendations that the CSB will consider tonight would call upon OSHA to enact new gas safety regulations that will:

- Prohibit the use of natural gas for pipe cleaning, the cause of the explosion at Kleen Energy
- Prohibit the venting or purging of fuel gas indoors, the cause of the explosion at ConAgra
- Prohibit any work activity where the flammable gas concentration exceeds a fixed, low percentage of the lower explosive limit
- Require that companies involve their workers and contractors in developing safe procedures and training for handling fuel gas

I believe OSHA should proceed with developing these regulations as quickly as possible, as a matter of considerable urgency. In the electrical generating sector alone, there are some 125 new gas-fired power plants planned for completion between 2010 and 2015 (Figure 6). These plants not only represent a major financial investment, but unless steps are taken to prevent unsafe gas blows, many workers may be placed in harm's way over the next five years.

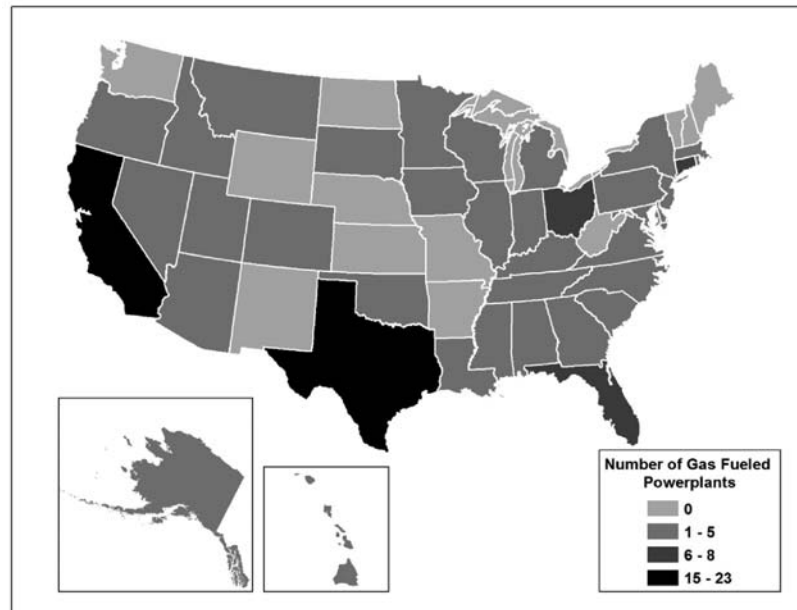


Figure 6. Approximately 125 new gas-fire power plants are expected to come into operation over the next five years across the United States. The majority of states have new plants under construction.

Additional draft urgent recommendations will seek safety improvements from the NFFPA, the American Society of Mechanical Engineers, the Electric Power Research Institute, the major gas turbine manufacturers, and the State of Connecticut and other states.

All these recommendations remain “draft” until they are voted on and approved by the full Board. I ask consent to have the 12 draft recommendations—together with more than 60 findings of fact that support the recommendations, included in the record of this morning’s hearing.

If the Board approves the recommendations this evening, our intention is to conclude the CSB investigations of the explosions at Kleen Energy and ConAgra. We believe that the 12 urgent recommendations proposed today—together with the two urgent recommendations we issued on February 4—address all of the principal root causes of these two tragic accidents. If adopted by the recipients, I have no doubt that future accidents will be avoided and lives will be saved as a result.

We need to put an end to the unsafe and potentially deadly practice of venting huge volumes of natural gas in the vicinity of workers and ignition sources. The CSB’s draft recommendations represent a comprehensive, multi-layered strategy for doing just that.

Let me add, Madam Chairman, that we had an encouraging meeting just over a week ago with the OSHA Assistant Secretary, Dr. David Michaels, and his deputies to discuss the proposed recommendations. I know that Dr. Michaels and the other dedicated leaders and staff of OSHA are just as concerned about these recent fuel gas accidents as we are.

I hope that as you proceed with your work on this issue, you will consider providing OSHA with whatever specific fiscal resources, personnel, or statutory tools it may need to proceed quickly with the new recommended standards.

I thank you again, Madam Chair, for convening today’s hearing and I thank you and the entire Connecticut Congressional delegation for your unwavering support of the CSB’s investigation and our work to improve worker safety. I will be happy to answer any questions you may have.

Mr. COURTNEY. Thank you, Mr. Bresland.
Ms. Thomas?

**STATEMENT OF JODI M. THOMAS, WIFE OF RON CRABB, A
PIPEFITTER WHO DIED IN THE KLEEN ENERGY EXPLOSION**

Ms. THOMAS. Good morning. My name is Jodi Thomas. I'm a little under the weather. My voice is breaking up. I apologize. My husband, Ron Crabb, was killed in the Kleen Energy explosion on February 7, 2010. He was 42 years old. I thank you for the invitation to speak and tell you about this wonderful man.

Ron was a man who lived and loved life every day. He loved his family with his whole heart. He inspired a loyalty in friends that I have seldom seen in my lifetime. He brought joy and laughter to so many people, even strangers. He was a very special person, the kind you only meet once or twice in a lifetime, if you are lucky. When he saw that something needed change, he tried to help fix it. When he saw that someone needed a hand, he gave it. He gave of himself freely and with joy.

He also gave his time to the community, the union and the people of the State of Connecticut in numerous elected and appointed positions. For this, he was honored with the Connecticut Secretary of State's Public Service Award in 2003.

Ron was very proud of his trade and he believed strongly in the principles of unionism. He was a talented, skilled tradesman who worked hard and conducted himself ethically and with integrity. He believed that everyone should have a voice and believed in focusing on unity and common ground.

Job-site and worker safety were also very important to Ron and I can recall several specific examples of Ron reporting violations or sending his men home until a safety issue, like exposure to asbestos, was fixed.

Ron had been working 40 hours per week at the Kleen Energy plant since September of 2009, when he was hired by IST, Instrument Sciences and Technologies, to perform the instrumentation and control work at the plant. In late January 2010, IST asked Ron to be the General Foreman for instrumentation and he was given authority to hire a crew. He then began working seven 12-hour days and had been doing so for only about a week or two before the explosion.

Ron and I talked about his job at Kleen Energy at least a little bit every night. I know that he felt challenged by the work and wanted to do a good job, not just because of his work ethic, but also to help his trade possibly secure more work in this specialty area. Ron had, in fact, been offered another job twice during the time he worked at Kleen Energy, but turned it down. Instead, he decided to stay and honor his commitment to see instrumentation through.

I hope to be able to give a sense of how this devastating tragedy has affected our lives. Ron left behind two sons: my stepson, Tyler, age 18, and our six-year-old little boy, Dylan. Ron adored his sons. By everyone's account, he was an extraordinary father. Every day when we heard Ron's footsteps come up the porch, Dylan would jump up and scream "Daddy's home!" The dog would jump up and run to the door and a smile would come across my face. Our home lit up with joy when Ron came home from work each day.

Dylan is too young to grasp the full magnitude of this devastating loss and how it will impact him in the future. But, what he does know is that his daddy went to work one day and never

came home. He also knows that daddy died in an explosion. Because of this, the security of his world has been shattered. He worries about something bad happening to me when he is not with me. The most heartbreaking thing, though, is that this beautiful little boy will be deprived of his father's love, guidance and companionship for the rest of his life.

As for me, this loss, and my grief, are so big that I can hardly find the words to express them. I can best describe it as profound heartache. Ron, to me, was an angel here on earth. I thanked God every night for nineteen years for bringing Ron to me. And I was so proud of him, who he was as a man, a husband, a father, a tradesman, a public servant, loyal, ethical, loving, intelligent, funny, strong. But most of all, I just loved him with all my heart. Nineteen years may seem like a long time, but it was not enough.

The manner and cause of Ron's death have only compounded our family's grief. This tragedy should never, ever have happened. It was preventable. This is why I urge you, please, do not allow Ron's death to be in vain. Real change, real protection for hardworking Americans, must come out of this. It is the only way to truly honor him and the other men who lost their lives, whose families are forever broken. Together with the other tragedies that occurred this year, and the world of heartache and loss that have resulted, the lessons here could not be any more apparent or urgent. Failing to make good come from this would be the biggest tragedy of all.

My family and I support, wholeheartedly, the enactment of H.R. 2067, the Protecting America's Worker Act. We are grateful to the many co-sponsors of this bill, including Representative Courtney and all of the Connecticut Congressional delegation. Responsible parties must be held accountable, including civilly and criminally, where appropriate. OSHA and other relevant agencies must be given the tools and means to make that happen. We also believe that safety whistleblowers should be afforded greater protections and that victims' families should be allowed greater access in investigations. We very strongly support passing legislation making it illegal to offer or give financial incentives or bonuses for early completion of certain projects like power plants. Finally, we absolutely believe that new power plants should not be exempt from regulation.

Thank you so very much for this opportunity to speak and for your work on these critical and urgent issues.

[The statement of Jodi Thomas follows:]

Prepared Statement of Jodi M. Thomas, Wife of Ron Crabb

My name is Jodi Thomas and my husband, Ron Crabb, was killed in the Kleen Energy explosion on February 7, 2010. He was 42 years old. I thank you for the invitation to speak and tell you about this wonderful man.

Ron was a man who lived and loved life every day. He loved his family with his whole heart. He inspired a loyalty in friends that I have seldom seen in my lifetime. He brought joy and laughter to so many people, even strangers. I have boxes full of cards and letters from people telling us how Ron touched their lives and what a good man he was. Everyone just loved him, from the time he was a little boy. He was a very special person—the kind you only meet once or twice in a lifetime, if you are lucky. When he saw that something needed change, he tried to help fix it. When he saw that someone needed a hand, he gave it. He gave of himself freely and with joy.

He also gave his time to the community, the union and the people of the State of Connecticut. He had just completed a six-year term on the Town of Colchester

Board of Finance and served on the Colchester Democratic Town Committee. He was the immediate Past-President of the Connecticut Plumbers & Pipefitters Union, Local 777. Prior to that post, Ron served as Recording Secretary for the Local and as a member of its Executive Board. Ron also served for six years on the Connecticut Department of Consumer Protection's Licensing Board for Heating, Piping, Cooling and Sheet Metal Work, having been appointed and re-appointed by two consecutive Governors. He was honored with the Connecticut Secretary of State's Public Service Award in 2003.

Ron was very proud of his trade and believed strongly in the principles of unionism. He was a talented, skilled tradesman who worked hard and conducted himself ethically and with integrity. He believed that everyone should have a voice and believed in focusing on unity and common ground. I have personally heard countless stories of Ron diffusing tension on various jobs or working parties through jurisdictional and other disagreements. Jobsite and worker safety were also very important to Ron and I recall several specific examples of Ron reporting violations and/or sending his men home until a safety issue, such as exposure to asbestos, was fixed.

Ron had been working 40 hours per week at the Kleen Energy plant since September 2009, when he was hired by IST to perform the instrumentation and control work at the plant. This is a specific area within the trade for which Ron had obtained specialty certification. He had done instrumentation and control work at many power plants over the years, when those jobs were available and in between regular pipefitting jobs. About 4 or 5 months after starting at Kleen Energy, in late January 2010, IST asked Ron to be the General Foreman for instrumentation and he was given authority to hire a crew. He then began working seven 12-hour days and had been doing so for only about a week or two before the explosion.

Ron and I talked about his job at Kleen Energy at least a little bit every night. I know that he felt challenged by the work and wanted to do a good job, not just because of his work ethic, but also to help his trade possibly secure more work in this specialty. Ron had, in fact, been offered another job twice during the time he was at the Kleen Energy plant, but turned it down. Instead, he decided to stay and honor his commitment to see the instrumentation through.

I hope to be able to give a sense of how has this devastating tragedy had affected our lives. Ron left behind two sons: my step-son, Tyler, age 18, and our six-year-old little boy, Dylan. Ron adored his sons. By everyone's account, he was an extraordinary father. Every one of my son's friends (and their parents) thought he was the greatest dad in the world—and he was. He took Dylan (and often his friends) everywhere—enjoying all that nature can offer and especially fishing, hiking and sports. And no matter how hard Ron had worked on a given day, he always had time to wrestle and play with Dylan. Every day when we heard Ron's footsteps come up the porch, Dylan would jump up and scream "Daddy's home!" The dog would jump up and run to the door and a smile would come across my face. Our home lit up with joy when Ron came home from work each day.

Dylan is too young to grasp the full magnitude of this devastating loss and how it will impact him in the future. But what he does know is that his daddy went to work one day and never came home. He also knows that daddy died in an explosion. Because of this, the security of his world has been shattered. He worries about something bad happening to me when he is not with me. The most heartbreaking thing, though, is that this beautiful little boy will be deprived of father's love, guidance and companionship for the rest of his life.

As for me, this loss, and my grief, are so big that I can hardly find the words to express them. I can best describe it as profound heartache. Ron, to me, was an angel here on earth. My angel and my soul mate. We were in love from the moment that we met and always knew that we were meant to be together. I thanked God every night for nineteen years for bringing Ron to me. And I was so proud of him—who he was as a man, a husband, a father, a tradesman, a public servant—loyal, ethical, loving, intelligent, funny, strong. But most of all, I just loved him with all my heart. Nineteen years may seem like a long time, but it was not enough.

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My family and I support, wholeheartedly, the enactment of H.R. 2067, the Protecting America's Worker Act ("PAWA"). We are grateful to the many, many co-sponsors of this bill, including Representative Courtney and all of the Connecticut

Congressional delegation. Responsible parties must be held accountable, including civilly and criminally, where appropriate. OSHA and other relevant agencies must be given the tools and means to make that happen. We also believe that safety whistleblowers should be afforded greater protections and that victims' families should be allowed greater access in investigations.

We very strongly support passing legislation making it illegal to offer or give financial incentives or bonuses for early completion of certain projects like power plants. Finally, we absolutely believe that new power plants should not be exempt from regulation.

Thank you so very much for this opportunity to speak and for your work on these critical and urgent issues.

Mr. COURTNEY. Thank you, Jodi, for the courage to be here today and to deliver those remarks. As someone who had the opportunity to observe Ron's involvement in the community and his involvement with his family, every word that you said is true and more. I really appreciate you taking the time and having the strength of character to be here today.

Major Giuliano.

**STATEMENT OF HON. SEBASTIAN GIULIANO,
MAYOR OF MIDDLETOWN**

Mr. GIULIANO. Thank you for the opportunity to address you today. I am Mayor Sebastian Giuliano of Middletown, Connecticut. While I am not in any position to discuss what was happening at the Kleen Energy Plant immediately prior to the explosion, I can discuss our response in the aftermath. I have some brief remarks, the text of which I will place into the record, and then I will be happy to take questions, if Members of the Subcommittee would like to ask any.

All Middletown emergency responders were advised of the incident within minutes and immediately went into action. Likewise, emergency responders from neighboring communities all were on site amazingly quickly. Command posts were established and NIMS protocols were instituted. NIMS for those who might not be aware or familiar with the acronym is National Incident Management System. Firefighters were on site to put out the fire and to rescue any victims. Police secured the site and, along with the Fire Marshals and after all rescue operations were completed, searched for and gathered any evidence of the cause and origin of the blast.

The rapid response and the speed with which resources were organized and allocated were due in great part to the training in emergency preparedness that we undergo. That training is provided for and funded, in significant part, by Congress. Without this type of training, this situation undoubtedly would have been even more disastrous.

While prevention is always the best and wisest investment, the nature of the response to an incident can make the difference between minimization of harm and having a situation spiral out of control. I am extremely proud of the manner in which our emergency responders handled this tragedy. They reacted as professionally and competently as they did because they take advantage of every opportunity to train. While we had not trained for this specific incident, our normal scenario is more likely to be a natural disaster such as a hurricane, flood or blizzard, the principles are the same and everybody adapted quickly to the situation.

I would urge that funding for emergency response training for local responders be retained, if not increased. As some of our nation's largest disasters, both natural and manmade, have demonstrated, the most effective response is local response. More importantly, in most disaster scenarios, state or federal help may be days or weeks away and local responders will likely be "on their own", at least during the initial stages of an event. Being well trained to identify available resources and how to summon and deploy them, will make the difference in our ability to get through those first few hours or days while waiting for state or federal assistance to arrive, or to determine whether such assistance will be needed at all.

I believe that we in Middletown approached this tragedy with the correct priorities. On February 7, our focus was to bring the event under control, secure the site and search for and rescue victims first, then to recover and remove the remains of those who lost their lives. Once we had accomplished those objectives, the activities changed over to investigation. Whether search and rescue or investigation however, all appropriate steps were taken throughout the process to ensure that the site was as safe as possible for those who had to enter.

Justice requires that, for the sake of the dead and injured, we determine what led to this tragic loss of life and health. To best ensure that evidence would be preserved, the Middletown Police, under the supervision of the State's Attorney for the Middlesex Judicial District, procured a warrant from a Judge of the Superior Court and secured the site as a "crime scene" for approximately three weeks thereafter. During that time, police, along with the South Fire District and the State Fire Marshal, recovered, seized, and secured important physical evidence, now undergoing evaluation and testing. It is our hope that everything we have done will help in the search for answers to the questions that everyone has been asking since February: "How did this happen?" and "How can we prevent it from happening to someone else?" If such questions can be answered, then those who lost their lives will rest more peacefully knowing that their fellow workers will be safer in the future.

I again thank you for taking the time and effort to convene this panel and I offer my welcome to all of you to Middletown.

[The statement of Sebastian Giuliano follows:]

Prepared Statement of Hon. Sebastian Giuliano, Mayor, Middletown, CT

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Mr. COURTNEY. Thank you, Mr. Mayor.
Chief Badamo.

**STATEMENT OF EDWARD BADAMO, FIRE CHIEF,
SOUTH FIRE DISTRICT**

Mr. BADAMO. Members of the Committee, thank you for your commitment to workplace and worker safety by holding this hearing. I am Edward Badamo, Fire Chief for the South Fire District, and I will testify in my role and the role of the District in the Kleen Energy incident. The Kleen Energy power plant is not the first plant to be located within the South Fire District, NRG is actually located right down the street. However, this is the first to be fed primarily by natural gas fed through the Algonquin Pipeline.

Prior to the date of the explosion, the plant construction from our perspective was moving forward without any fire code concerns. Although we were involved in the building and inspection process, through plan review and site visits, we held no regulatory authority over the gas blow procedure. The only issue that we dealt with during the construction was early on due to the blasting because this plant is being built on a Feldspar Rock quarry and there was localized damage done to some homes.

The role of the South Fire District on the day of the blast sounds relatively simple, but was complicated due to the processes that existed on the site. I will be brief, but our initial efforts were to rescue the injured workers. While the firefighters were performing their primary searches, the command post was attempting to ascertain from the various trades an accountability of who was on site and if they knew they were accounted for, where they were so we could direct crews to that area. This was extremely difficult and took nearly a day and a half before we were able to confidently say that everyone was accounted for. During this time we attempted to control the power and ensure that the gas to the building was secured. We also had a fire in the rear of the building that was also being controlled.

Between the on-site work and the coverage for the remainder of the city, the incident required the efforts of 18 fire departments, 8 ambulance services, 6 police departments, 6 Emergency Management Agencies, 16 Community Emergency Response Teams, the American Red Cross, the Salvation Army, and several other supporting agencies.

There were a lot of resources utilized that day from a fire-rescue perspective that were made possible through the various grant funding projects. None of these roles or functions would have been easily completed without your supporting these grants. The sustainment of the grant programs referenced in my full testimony as well as the assistance to fire fighters' program in the future is critical, especially to small fire departments like ours with limited local resources.

Over the 21 days that the fire department spent on the site for safety, we were confronted with new challenges on a daily basis. From the development of procedures for the evacuation of the remaining pressurized gas in the pipe, to the removal of gas cylinders, to the falling debris hampering the investigations, to the coordination of all of the various agencies involved, every day was a learning experience.

The gas blows themselves are not regulated by the fire department and according to NFPA 54, power plants are exempted from the regulation. NFPA 54 also only regulates piping up to 125 psi. The day of the blast they were using over 600 psi. While we were advised of the schedule of the blows and our fire marshal was explained the safety process out of courtesy, we made no operational changes for them. The day of the explosion was actually the second day of gas blows. They did some the weekend prior, and several on that day prior to the explosion.

Since the investigation is ongoing, I am not going to make reference to specific gas-related procedures that should be followed for the future. However, I would recommend that the process involve a regulatory authority in one form or another, whether it is as simple as a requirement that the company submit its safety form to an agency for review and then the procedures are reviewed by a third party. That process can obviously be expanded to include pre-blow inspections and have an on-site component during the blows. But more importantly and regardless of the changes made to any of the regulations, the safety of workers on these types of sites needs to be ensured. I feel that the Governor's Commission led by

Judge Nevas has made some excellent recommendations that will work towards ensuring worker safety at least here in Connecticut.

I would also ask that the Committee investigate and include any changes made that large multi-trade sites become required to utilize some type of credentialing and accountability system for anyone working or visiting the site. This would have made our on scene rescue efforts much easier, rather than working through a day and a half of interviews and searching before everyone was accounted for.

Finally, I would ask that the legislators not only continue to support grant funds for emergency services, but that you look into establishing a fund to help support the local agencies that are affected by incidents such as this. In this case, we were able to successfully seek restitution from the company, but if we were not able to or were not successful, this would have greatly reduced the department's funds and ability to operate.

Although the families and workers that were killed or injured during this disaster are never really going to recover from the events of February 7th, it is important to determine the cause of the blast and come up with solutions so a tragedy such as this never happens again.

Again thank you for your efforts.

[The statement of Edward Badamo follows:]

Prepared Statement of Edward Badamo, Fire Chief, South Fire District

MEMBERS OF THE COMMITTEE: Thank you for your commitment to workplace and worker safety by holding this hearing. I am Edward Badamo, Fire Chief for the South Fire District and I will testify my role and the role of the District in the Kleen energy incident. The Kleen Energy plant is not the first power plant to be located within the South Fire District, NRG is actually located right down the street. However, this is the first to be fed primarily by natural gas fed through the Algonquin Pipeline. Although NRG has a gas feed, it does not run its turbines by Natural Gas.

Prior to the date of the explosion, the plant construction from our perspective was moving forward without any fire code concerns. Although we were involved in the building and inspection process, through plan review and site visits, we held no regulatory authority over the gas blow procedure. The only issue that we dealt with during the construction was early on due to the blasting because this plant is being built on a Feldspar Rock quarry and there was localized damage done to some homes.

The role of the South Fire District on the day of the blast sounds relatively simple, but was complicated due to the processes that existed on the site. I will be brief, but our initial efforts were to rescue the injured workers. While the firefighters were performing their primary searches, the command post was attempting to ascertain from the various trades an accountability of who was on site and if they were not accounted for, where they were so we could direct crews to that area. This was extremely difficult and took nearly a day and a half before we were able to confidently say that everyone was accounted for. During this time we attempted to control the power and ensure that the gas to the building was secured. We also had a fire in the rear of the building that was also being controlled. Between the on-site work and the coverage for the remainder of the city, the incident required the efforts of 18 fire departments, 8 ambulance services, 6 police departments, 6 Emergency Management Agencies, 16 Community Emergency Response Teams, the American Red Cross, the Salvation army, and several other supporting agencies.

There were a lot of resources utilized that day from a fire-rescue perspective that were made possible through the various grant funding projects. The Connecticut Urban Search and Rescue Team which is not federally recognized was called to the scene and the local decontamination unit was also sent, both of these are funded through Homeland security funds. There were interoperable communications brought to the site which were funded through the Public Safety Interoperability Communications grant. Our local Emergency Management Director, the Community

Emergency Response teams, and the Incident management teams have never operated at a duration incident of this length, complexity or magnitude. These are funded through the Emergency Management Performance Grant. None of these roles or functions would have been easily completed without you supporting these grants. The sustainment of these programs as well as the Assistance to Firefighters Grant program in the future is critical especially to a small fire department like ours with limited local resources.

Over the twenty eight days that the fire department spent on the site for safety, we were confronted with new challenges on a daily basis. From the development of procedures for the evacuation of the remaining pressurized gas in the pipe, to the removal of damaged gas cylinders, to the falling debris hampering the investigations, to the coordination of all of the various agencies involved, every day was a learning experience.

The gas blows themselves are not regulated by the fire department and according to NFPA 54, power plants are exempted from the regulation. NFPA 54 also only regulates piping up to 125 psi. The day of the blast they were using over 600 psi. Connecticut adopted NFPA 54 into its Connecticut State Fire Safety Code. While we were advised of the schedule of the blows and our fire marshal was explained the safety process out of courtesy, we made no operational changes for them. The day of the explosion was actually the second day of gas blows. They did some the week-end prior, and several on that day prior to the explosion.

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Although the families and workers that were killed or injured during this disaster are never really going to recover from the events of February 7th, it is important to determine the cause of the blast and come up with solutions so a tragedy such as this never happens again.

Again thank you for your efforts.

Mr. COURTNEY. Thank you, Chief.
Judge Nevas.

**STATEMENT OF HON. ALAN NEVAS, CHAIR, GOVERNOR'S
KLEEN ENERGY SYSTEMS AND EXPLOSION ORIGIN AND
CAUSE PANEL**

Mr. NEVAS. Good morning. This is a role reversal. I generally am used to imposing time limitations on the people speaking to me, rather than having the time limitations imposed on me. However, I left that life a year ago.

I'm not going to repeat many of the things that have been said this morning, but I do want to add some comments of my own. First, there was reference, I think, in Ms. Thomas' remarks to the fact that this was done so it would be quicker. While it's not contained in our report, it was my understanding that there was a

May 31st deadline and that if the construction company met that deadline, there was to be a completion bonus. I think that's something that should be explored. It has not been discussed a great deal, but certainly something that the Committee should be looking at.

Also, many of the recommendations that I'll summarize in a few minutes and that have been made this morning are valid, good, and will be very beneficial, but they will take time for Congress to act, for the Connecticut General Assembly. So the recommendations that we're making, as I'll indicate are recommendations that I think can be implemented much more quickly by the Siting Council and I'll go into that very shortly.

The Commission that I chaired was charged with determining the origin and cause of the explosion which took the lives of six men and injured more than 30 other people and our goal was to provide information necessary for a second Commission to be chaired by Mr. James Thomas, the so-called Thomas Commission, to carry out a separate assignment and that is to recommend specific legislative or regulatory changes.

Our work was affected, of course, by the fact that the site was designated a crime scene by the Middletown State's Attorney's Office and that investigation is still ongoing. We heard many, many witnesses testify, all of whom made excellent presentations and whose contributions were very valuable. We know, of course, from what others have said and we know it is a fact that this explosion resulted from a process known as cleaning or blowing the pipeline and in this case the blowing was effected through the use of large quantities of natural gas propelled outside the Kleen Energy power block under very high pressure where it accumulated and ignited from a source near the power block.

The investigation is ongoing, of course, and it's going to focus on the precise mechanisms and procedures that led to the use of natural gas for the cleaning process, as well as the manner and means in which the gas was used.

Armed with this information, we identified the regulatory structure applicable to the cleaning process and made suggested revisions.

The construction of this plant was heavily regulated and supervised by many agencies including OSHA, the local building inspectors, the local fire marshal, state fire marshal, state building inspector, DTUC, DET, Connecticut Department of Labor, Connecticut Department of Consumer Protection and the Connecticut Siting Council. However, as has been said and I cannot emphasize strongly enough, no agency, not one agency had overall oversight with regard to that part of the process known as cleaning or blowing the pipeline, a process that is a necessary step in the construction of any natural gas fuel power plant.

The recommendations from the Thomas Commission which we made suggest a variety of areas that should be pursued:

1. Determine whether any other state or federal agency has developed a regulatory structure applicable to natural gas pipeline cleaning.

2. Consult with industry experts to determine which methods of gas blowing are used and/or recommended, and identify the advantages and disadvantages of each method.

3. Identify the agency, or agencies, best suited to regulate the gas blow process.

4. Recommend the level of training and expertise necessary for that agency to effectively establish and enforce necessary cleaning regulations.

5. Consider recommending that the Connecticut Siting Council impose safety conditions upon any entity constructing a power plant that will employ the gas blow cleaning process.

6. Consider recommending that the Connecticut Department of Consumer Protection and/or the Connecticut Department of Labor identify, if appropriate, special licensing, credentials and/or training for those assigned to effect power plant gas blows in Connecticut. Further, recommend that those agencies address whether work schedule limitations are appropriate for those assigned to perform power plant gas blows in Connecticut. Some of these people have been working many, many hours each day for multiple days in a row and that's something that should be addressed.

7. And consider recommending the establishment of regulations in the following areas: for every method of gas blowing, the qualifications, training, credentials and/or licensing needed for the staff involved in the gas blow process; determine which and/or whether any of the gas blow agents now in use should be permitted in the future; identify acceptable practices for each gas blow agent; identify the type and level of notice that must be given by the contractor to the regulatory agencies, prior to any gas blowing operation; the establishment of design specifications for the materials to be used in the gas blowing process; the establishment of site requirements and limitations, that is, identify the personnel who may be on site before and during the gas blow; set the qualifications for those individuals; identify the roles of individuals permitted to be on site; set appropriate perimeter security; consult with appropriate authorities as to the propriety of drafting regulations intended to prevent worker fatigue; and the establishment of gas blow procedures.

8. Recommend an agency or entity responsible for serving as a "clearinghouse" to coordinate the efforts of every regulatory agency with responsibilities associated with the construction of a power plant.

In addition to the points that I've made, I want to make an additional suggestion to Derek Phelps who is the chair of the Connecticut Siting Council. Hopefully, the Thomas Commission will develop specific, proposed, statutory and regulatory recommendations as quickly as they can. But those recommendations will have to await the next session of the General Assembly.

The current permit for the Middletown Kleen Energy facility expires on November 30, 2010. And in order to renew construction, it must apply for a renewal and/or extension of its current permit to the Siting Council. If Mr. Thomas and his Commission have made its recommendations by the time the Siting Council is prepared to act, I would strongly urge the Council to attach as conditions to any permit it issues, language that addresses the findings

of this Commission and the adoption of the specific recommendations of the Thomas Commission.

It has also been suggested that a “coordination council” consisting of pertinent state agencies be assembled to share information during the course of construction of a large power facility. The Siting Council might serve as that coordinating entity using its “changed conditions” authority if concerns arise that there is a pattern of violations during construction. The Siting Council should review this report and ultimately the Thomas Commission report to determine whether its “changed conditions” authority would enable it to review all power plants within its jurisdiction to determine whether such plants warrant further attention.

It is also suggested that the Thomas Commission solicit comments and input from the Siting Council as to how the Siting Council might address concerns relative to gas-fired baseload power plant facilities that have been permitted in the past and the records of which are now closed.

I want to close in expressing my profound sympathy and regret to the families of the victims of the explosion. I believe that the most fitting memorial to those victims is a careful, precise and thorough response that eliminates the possibility of such an event ever occurring in the future. It is my firm belief that the work of the Commission, and the work of the Thomas Commission, and the Siting Council, and all other agencies involved will combine to effect such a result.

[The statement of Alan Nevas follows:]

**Prepared Statement of Judge Alan H. Nevas, Chair, Governor’s
Kleen Energy Systems and Explosion Origin and Cause Panel**

I. Introduction and Executive Summary

The Commission that I chaired was charged with determining the origin and cause of the February 7, 2010, explosion at the Kleen Energy construction site in Middletown, Connecticut. That explosion took the lives of six men and injured more than thirty other people. The goal of the Commission was to provide information necessary for a second Commission, to be chaired by Mr. James Thomas (the “Thomas Commission”) to carry out a separate assignment. The Thomas Commission has been tasked with recommending any necessary specific legislative or regulatory changes.

The mission of the two Commissions, working interdependently, is to ensure that the events of February 7, 2010, are never repeated in the State of Connecticut. It is hoped, further, that the recommendations of these two Commissions will be of value to this Committee, federal regulatory authorities and to regulatory authorities in other states.

After this Commission began its work, the complexion of the ongoing investigation of the Kleen Energy explosion underwent a significant change when, on February 23, 2010, a judge of the Connecticut Superior Court signed a search and seizure warrant applicable to the site of the explosion. This Commission recognized that the criminal option must be explored to the fullest, out of respect for the six men who died, their families, and those who were injured in the explosion. It was incumbent on the Commission to complete its assignment without compromising the ongoing criminal investigation. The members of the Commission made the following determinations:

1. The February 7, 2010 explosion was the product of a process used to clean a natural gas pipeline using large quantities of natural gas that came into contact with an ignition source known in the industry as a “gas blow;”
2. Although the Kleen Energy construction project was heavily regulated by a variety of agencies, no agency regulated the process used—or any process that might be used such as gas purging—to clean the natural gas pipeline that was the source of the explosion; and

3. There are significant regulatory steps that should be taken to ensure that the events of February 7, 2010 are not repeated.

The Explosion

Kleen Energy Systems, LLC began constructing a natural gas and oil-fired power plant in Middletown, Connecticut in 2008. Kleen Energy expected that construction of its plant would be complete sufficiently in advance of November 2010, in accordance with its capacity contract with Connecticut Light & Power. Kleen Energy's source for natural gas was via a pipeline servicing the Northeast. On February 7, 2010, at approximately 11:15 a.m., a large explosion occurred at Kleen Energy's plant. At 11:19 a.m., first responders in Middletown learned of the explosion and received reports of multiple casualties.

The Commission heard presentations from Middletown South District Fire Chief Edward Badamo, who was the incident commander at the site and whose Deputy Chief/Fire Marshal, Steve Krol, was statutorily charged with determining the origin and cause of the explosion. He was aided in his investigation by the Middletown Police Department, and the Office of the State Fire Marshal which, in turn, was aided by the Connecticut State Police Central District Major Crime Squad.

Although the investigation is still ongoing, significant resources and efforts have been devoted to the investigation, including the collection of more than 115 items of evidence and the completion of more than 100 interviews, as well as twenty days of on-site investigation by multiple investigative entities, including but not limited to the South District Fire Department, the Office of the State Fire Marshal, the Middletown Police Department, the Connecticut Department of Environmental Protection, the Office of the Chief State Medical Examiner, The United States Occupational Safety and Health Administration, and the United States Chemical Safety Board.

The investigation to date, although incomplete, established without question that the explosion resulted from a process known as "cleaning" or "blowing" a natural gas pipeline for the purpose of removing debris from the pipeline, i.e., a "gas blow." In this case, the "blowing" was effected through the use of large quantities of natural gas, propelled outside the Kleen Energy power block under very high pressure, where it accumulated and ignited from a source near or in the Kleen Energy power block.

Although the investigation is ongoing, and will focus on the precise mechanisms and procedures that led to the use of natural gas for the cleaning process, as well as the manner and means in which the gas was used, dispersed, and ignited, what is known is that it was the process of cleaning the natural gas pipeline in the manner described that led to the explosion. Armed with this information, my Commission identified the regulatory structure applicable to the cleaning process. Further, we recommended possible revisions to the regulatory structure relative to gas blows for consideration by the Thomas Commission.

The Existing Regulatory Structure

The construction of the Kleen Energy plant was heavily regulated and supervised by a variety of agencies, including federal OSHA, the local building inspector, the local fire marshal (both of whom were supported by the Office of the State Fire Marshal and the Office of the State Building Inspector), the Department of Public Utility Control, the Department of Environmental Protection, the Connecticut Department of Labor, the Connecticut Department of Consumer Protection, and the Connecticut Siting Council. However, no agency had oversight with regard to that part of the construction process known as "cleaning" or "blowing" the natural gas pipeline, a process that is a necessary step in the construction of any natural gas-fueled power plant.

Changes to the Regulatory Structure

It is for the successor Thomas Commission to determine what regulatory changes should be recommended. However, in an effort to assist that Commission with its work, we suggested a variety of areas that should be pursued. They are as follows:

1. Determine whether any other state or federal agency has developed a regulatory structure applicable to natural gas pipeline cleaning (hereinafter, "gas blowing" or a "gas blow").
2. Consult with industry experts to determine which methods of gas blowing are used and/or recommended, and identify the advantages and disadvantages of each method.
3. Identify the agency, or agencies, best suited to regulate the gas blow process.
4. Recommend the level of training and expertise necessary for that agency to effectively establish and enforce necessary cleaning regulations.

5. Consider recommending that the Connecticut Siting Council impose safety conditions upon any entity constructing a power plant that will employ the gas blow cleaning process.

6. Consider recommending that the Connecticut Department of Consumer Protection and/or the Connecticut Department of Labor identify, if appropriate, special licensing, credentials and/or training for those assigned to effect power plant gas blows in Connecticut. Further, consider recommending that the latter agencies address whether work schedule limitations are appropriate for those assigned to perform power plant gas blows in Connecticut.

7. Consider recommending the establishment of regulations in the following areas:

a. For every method of gas blowing, the qualifications, training, credentials and/or licensing needed for the staff involved in the gas blow process;

b. Determine which and/or whether any of the gas blow agents now in use should be permitted in the future;

c. Identify acceptable practices for each permissible gas blow agent;

d. Identify the type and level of notice that must be given by the contractor to the regulatory agency, or agencies, prior to any gas blowing operation;

e. The establishment of design specifications for the materials to be used in the gas blowing process;

f. The establishment of site requirements and limitations (e.g., identify the personnel who may be on site before and during the gas blow; set the qualifications for those individuals; identify the roles of individuals permitted to be on site; set appropriate perimeter security; consult with appropriate authorities as to the propriety of drafting regulations intended to prevent worker fatigue).

g. The establishment of gas blow procedures (e.g., identify what other activities, if any, may take place on site prior to, during, and after the cleaning process; identify, if appropriate, weather conditions that will preclude the cleaning operation; establish limitations for the periods of cleaning; establish appropriate site monitoring, both in terms of personnel and detection equipment, before, during and after the cleaning).

8. Recommend an agency or entity responsible for serving as a "clearinghouse" to coordinate the efforts of every regulatory agency with responsibilities associated with the construction of a power plant. The agency or entity recommended would serve to track and record the work of all other regulatory agencies. The Department of Emergency Management and Homeland Security has expressed a willingness to identify models of the latter form of operating structure.

Statement by the Chairman

Everyone should be grateful to Governor Rell for her wisdom and compassion in dealing with the terrible events that occurred in Middletown on February 7, 2010. The findings and recommendations of the Commission I chaired and subsequently the Thomas Commission will hopefully prevent such a tragedy from occurring in the future.

The members of the Commission and their staffs worked very hard in preparing for our hearings and made essential contributions to our final findings and recommendations. Former Commissioner of Public Safety John Danaher and his staff assisted in the drafting of our report and Chairman of the DPUC Kevin DelGobbo and his staff provided the venue for our hearings and gave essential administrative support. Attorney Brian Spears of Levett Rockwood P.C. in Westport gave his invaluable assistance and input in the preparation of the final report.

In addition to the points set forth above, let me add an additional suggestion to Derek Phelps and the Connecticut Siting Council. Hopefully, the Thomas Commission will develop specific proposed statutory and regulatory recommendations as quickly as they can. However, the adoption of their recommendations will in all likelihood have to await the next session of the General Assembly.

The current permit for the Middletown Kleen Energy facility expires on November 30, 2010, and it must apply for a renewal and/or extension of that permit. If the Thomas Commission has made its recommendations by the time the Siting Council is prepared to act, I would strongly urge the Council to attach as conditions to any permit it issues, language that addresses the findings of this Commission and the adoption of the specific recommendations of the Thomas Commission.

It has also been suggested that a "coordination council" consisting of pertinent state agencies be assembled to share information during the course of construction of a large power facility. The Siting Council might serve as the coordinating entity using its "changed conditions" authority if concerns arise that there is a pattern of violations during construction. The Siting Council should review this report and ultimately the Thomas Commission report to determine whether its "changed condi-

tions” authority would enable it to review all power plants within its jurisdiction to determine whether such plants warrant further attention.

It is suggested further that the Thomas Commission solicit comments and input from the Siting Council as to how the Siting Council might address concerns relative to gas-fired baseload power plant facilities that have been permitted in the past and the records of which are now closed.

II. Reports by the Members of the Governor’s Kleen Energy Origin and Cause Commission

This Commission was comprised of pertinent Connecticut agencies, each of which was tasked with reviewing the circumstances surrounding the Kleen Energy explosion and rendering a written report. The reports of the agencies and our final report are posted on line at: <http://www.ct.gov/dpuc/>.

Conclusion

I want to close in expressing my profound sympathy and regret to the families of the victims of the Kleen Energy Plant Explosion. I believe that the most fitting memorial to those victims is a careful, precise and thorough response that eliminates the possibility of such an event ever occurring in the future. It is my firm belief that the work of the Commission, and the work of the Thomas Commission, will combine to effect such a result.

Mr. COURTNEY. Thank you, Judge.
Professor Corbett.

**STATEMENT OF GLENN CORBETT, ASSOCIATE PROFESSOR
AND CHAIR, DEPARTMENT OF PROTECTION MANAGEMENT,
JOHN JAY COLLEGE OF CRIMINAL JUSTICE**

Mr. CORBETT. Acting Chairman Courtney, Congresswoman DeLauro, Congressman Larson, and Congressman Murphy, thank you for inviting me to testify about the explosion at the Kleen Energy power plant in Middletown, Connecticut. I am an associate professor and chair of the Department of Protection Management at John Jay College of Criminal Justice in New York City.

Prior to coming to John Jay, I spent nearly eight years as a code enforcement official in the Austin and San Antonio, Texas Fire Departments. Currently, I am a member of New Jersey State’s Fire Code Council and continue to be involved in a variety of code-related issues. However, I am representing only myself today.

The explosion at the Kleen Energy plant on February 7, 2010, has exposed a large gap in our national model codes, in particular, provisions dealing with natural gas purging and “gas blow” operations. This incident, in addition to another similar explosion at the ConAgra Slim Jim plant in Garner, North Carolina in 2009, demands that this problem be promptly and properly addressed in our model codes.

The inherent danger of purging gas piping of trapped air with natural gas is obvious. While such purging operations are necessary and commonly take place in small installations such as a residential gas-fired equipment without incident, the higher volumes of expelled gas in larger commercial and industrial installations presents a much greater danger to construction workers and the public. Gas blow operations, on the other hand, conducted with very high gas pressures and using natural gas to remove trapped debris such as slag, are inherently dangerous and present significant danger not only to the workers, but surrounding occupants to that facility. Stringent regulations are critical to ensure proper safety.

As many of you are aware, our nation relies heavily on the construction and safety codes developed by private, non-profit code-writing organizations such as the National Fire Protection Association and the International Code Council. Their codes and standards are adopted, and in many cases modified by local governments, states, and the federal government.

The two most relevant codes addressing gas purging operations are the National Fire Protection Association's NFPA 54: the National Fuel Gas Code and the International Code Council's International Fuel Gas Code. However, electric utility plants, as identified earlier, such as the Kleen Energy facility are outside the scoping provisions of both of these codes. In addition, the high pressure gas blow that was used at the Kleen Energy facility reported had 650 psi, also outside the scope of NFPA 54 and the International Fuel Gas Code. It is the scoping provisions of these two codes that create the greatest impediment to ensuring worker safety in the construction and operation of electric power utility plants that utilize natural gas as a field.

In the wake of the ConAgra and Kleen Energy incidents, the NFPA issued an emergency tentative interim amendment to NFPA 54, changing the gas purging provisions. A subsequent vote was taken of the technical committee charged with overseeing NFPA 54, and it failed to meet the necessary two-thirds affirmative vote needed for permanent inclusion in the code. While these failed provisions were an improvement on the previous code language, these changes would have done nothing to address the scoping exemptions. While these failed provisions were an improvement on the previous code language, these changes would have done nothing to address the scoping exemptions for electric utility power plants nor would they have dealt with the very dangerous gas blow operations that we've discussed already. While the International Code Council has vowed to update the 2012 edition of the International Fuel Gas Code, it is unclear what those changes may be.

At the heart of ensuring a safe work environment and public safety in terms of gas purging and gas blow operations is code enforcement, of course. The enforcement of NFPA 54 and the International Fuel Gas Code often lies with local government plumbing inspectors, and in some cases, state inspectors. However, these inspectors do not typically inspect the gas pipe discharge areas prior to the purging or gas blow operations, nor do they witness the actual operation itself. The codes do not require that an inspection of gas purging operations or gas blows be performed. I do not believe that the Occupational Safety and Health Administration had a policy of inspecting gas purging or gas blow operations at the time of the Kleen Energy explosion.

Looking to the future, I believe that gas purging operations in medium and large scale installations, defined by pipe size, pressure, gas flow rate, must receive much closer scrutiny. I believe that gas blow operations, on the other hand, using natural gas are inherently dangerous and must be prohibited, substituting the use of compressed air or mechanical device such as the "pigs" that have been described.

Specifically, I recommend the following changes to NFPA 54 and the International Fuel Gas Code:

1. Broaden the scope of these codes to include power plants. While some modifications will need to be made to the codes, it is crucial that the exception for power plants be eliminated.

2. Require that medium and large scale installations receive a permit for gas purging operations. Given the danger involved, I recommend that this requirement be placed in NFPA 54, the International Fuel Gas Code, as well as the Uniform Fire Code NFPA #1 which is actually the fire prevention code or the typical fire code that many jurisdictions use. Gas purging operations in medium and large scale installations should not only receive a site inspection and approval of the plumbing inspector but should also receive the concurrent approval of the local fire marshal.

3. Prohibit gas blows using natural gas. They should be, as I mentioned earlier, conducted using non-flammable gases or mechanical devices such as “pigs” run through the pipe to remove debris.

It is not clear that NFPA 54 and the International Fuel Gas Code will ever actually be changed to include power plants within their scopes, however. And this is of grave concern to me. I have no confidence the NFPA or the ICC are actually going to make these changes that have been discussed here, as well as the other witnesses that have discussed already. In addition, it is not clear that these codes will be amended to prohibit gas blows. These problems are too significant and must be addressed immediately.

I believe that it is imperative that the issue of gas purging and gas blows at construction sites be addressed specifically by the federal government to ensure worker safety. OSHA should develop regulations dealing with gas purging and gas blow to operations to ensure worker safety.

I specifically recommend that OSHA be authorized to create regulations dealing with these specific situations, again prohibiting gas blowing using natural gas, and instituting essentially a permit system similar to what they use for confined spaces or what we call lock out/tag out regulations.

In closing, I wish to thank the Subcommittee on Workforce Protections for allowing me to testify on this very important issue. I look forward to answering any questions that you may have and I ask that my testimony be included into the formal record.

[The statement of Glenn Corbett follows:]

Prepared Statement of Glenn Corbett, Associate Professor, Chair, Department of Protection Management, John Jay College of Criminal Justice

Chairwoman Woolsey, Ranking Member Rodgers, and members of the Subcommittee on Workforce Protections: thank you for inviting me to testify about the explosion at the Kleen Energy power plant in Middletown, Connecticut. I am an associate professor and chair of the Department of Protection Management at John Jay College of Criminal Justice in New York City. Prior to coming to John Jay College, I spent nearly eight years as a code enforcement official in the Austin and San Antonio, Texas Fire Departments. Currently, I am a member of New Jersey’s Fire Code Council and continue to be involved in a variety of code-related issues. I am only representing myself today.

The explosion at the Kleen Energy plant on February 7th, 2010 has exposed a large gap in our national model codes, in particular, provisions dealing with natural gas purging and “gas blow” operations. This incident, in addition to another similar explosion at a ConAgra Slim Jim™ plant in Garner, North Carolina in 2009, demands that this problem be promptly and properly addressed in our model codes.

The inherent danger of purging gas piping of trapped air with natural gas is obvious. While such purging operations are necessary and commonly take place in small installations such as residential gas-fired equipment without incident, the higher volumes of expelled gas in larger commercial and industrial installations presents much greater danger to construction workers and the public. Gas blow operations, conducted with very high gas pressures to remove trapped debris such as slag, are inherently hazardous and present significant danger to workers and occupants in a facility. Stringent regulations are critical to ensure proper safety.

As many of you are aware, our nation relies heavily on the construction and safety codes developed by private, non-profit code-writing organizations such as the National Fire Protection Association and the International Code Council. Their codes and standards are adopted—and in many cases modified—by local governments, states, and the federal government.

The two most relevant codes addressing gas purging operations are the National Fire Protection Association's NFPA 54: The National Fuel Gas Code and the International Code Council's International Fuel Gas Code. However, electric utility power plants such as the Kleen Energy facility are outside the scoping provisions of both of these two codes. In addition, the high pressure "gas blow" that was used at the Kleen Energy facility, reportedly 650 psi, is also outside the scope of NFPA 54 and the International Fuel Gas Code. It is the scoping provisions of these two codes that create the greatest impediment to ensuring worker safety in the construction and operation of electric power utility plants that utilize natural gas as a fuel.

In the wake of the ConAgra and Kleen Energy incidents, the National Fire Protection Association issued an emergency tentative interim amendment to NFPA 54, changing the gas purging provisions. A subsequent vote taken of the technical committee charged with overseeing NFPA 54 failed to meet the necessary $\frac{2}{3}$ affirmative vote needed for permanent inclusion in the code. While these failed provisions were an improvement on the previous code language, these changes would have done nothing to address the scoping exemptions for electric utility power plants nor would they have dealt with the very dangerous gas blow operations. While the International Code Council has vowed to update the 2012 edition of the International Fuel Gas Code, it is unclear what those changes may be.

At the heart of ensuring a safe work environment and public safety in terms of gas purging and gas blow operations is code enforcement. The enforcement of NFPA 54 and the International Fuel Gas Code often lies with local government plumbing inspectors, and in some cases, state inspectors. However, these inspectors do not typically inspect the gas pipe discharge areas prior to the purging or gas blow operations nor do they witness the actual operation itself. The codes do not require that an inspection of gas purging operations or gas blows be performed. I do not believe that the Occupational Safety and Health Administration had a policy of inspecting gas purging or gas blow operations at the time of the Kleen Energy explosion.

Looking to the future, I believe that gas purging operations in medium and large scale installations (as defined by pipe size, pressure, and gas flow rate) must receive much closer scrutiny. I believe that gas purging operations using natural gas are inherently dangerous and must be prohibited, substituting the use of air or mechanical devices such as a "pig."

I recommend the following changes to NFPA 54 and the International Fuel Gas Code:

1. Broaden the scope of these codes to include power plants. While some modifications will need to be made to the codes, it is crucial that the exception for power plants be eliminated.
2. Require that medium and large scale installations receive a permit for gas purging operations. Given the danger involved, I recommend that this requirement be placed in NFPA 54, the International Fuel Gas Code, as well as the Uniform Fire Code NFPA #1 and the International Fire Code. Gas purging operations in medium and large scale installations should not only receive a site inspection and approval of the plumbing inspector but should also receive the concurrent approval of the local fire marshal.
3. Prohibit gas blows using natural gas. Gas blows should be conducted using non-flammable gases or mechanical devices such as "pigs" run through the pipe to remove debris.

It is not clear that NFPA 54 and the International Fuel Gas Code will ever actually be changed to include power plants within their scopes. In addition, it is not clear that these codes will be amended to prohibit gas blows. These problems are too significant and must be addressed immediately.

I believe that it is imperative that the issue of gas purging and gas blows at construction sites be addressed by the federal government to ensure worker safety. The

Occupational Safety and Health Administration (O.S.H.A.) should develop regulations dealing with gas purging and gas blow operations to ensure worker safety.

I recommend that O.S.H.A. be authorized and charged with developing regulations dealing with all gas purging and gas blowing operations, including the following:

1. A prohibition on gas blowing operations using natural gas.
2. A permit system for conducting gas purging operations in large scale commercial and industrial occupancies. Regulations similar to O.S.H.A.'s confined space "lock-out tag-out" permit requirements should be developed to ensure proper gas purging operations in large installations. A permit will ensure that the site of the purging operation has been inspected for proper equipment installation, the necessary monitoring equipment is in place, and that a safe dispersal area has been established prior to conducting the operation.

In closing, I wish to thank the Subcommittee on Workforce Protections for allowing me to testify on this very important issue. I look forward to answering any questions that you may have.

Mr. COURTNEY. Thank you, Professor Corbett. For the record, I just wanted to add that we also have written testimony submitted by Carle Crabb, Ron Crabb's brother which again the Committee will take to Washington.

And Carle is seated in the front row and thank you for being here today.

[The statement of Carle Crabb follows:]

Prepared Statement of Carle Ray Crabb IV, Brother of Ron Crabb

Hello, my name is Carle Ray Crabb IV. I am the brother of Ron Crabb, who died, in the tragic explosion on February 7, 2010 at the Kleen Energy Power Plant in Middletown, Connecticut. We were both Journeyman Pipefitters and did a 5 year apprenticeship, and have over 15 years in the trade. We both worked primarily in the heavy industrial and commercial fields in our trade. I have worked in gas, coal, oil, and nuclear power houses. I've also worked in U.S. Government labs, along with the chemical, automobile, pharmaceutical, food industries, gas, oil refineries, and pipelines. Our jobs can be dangerous, but with the responsible parties taking proper safety precautions and proper safety training methods, you should be able to go home at night and see your family.

My brother ranked right up there with some of the most knowledgeable pipefitters that I know. If I ever had a question I could call him and get an answer. I talked to Ron quite often, at least every other week if not weekly. For the two weeks prior to Feb 7th we probably talked 10 times.

When my brother and I got into the trade in the early 90's it was quite enjoyable. An honest 8-for-8, do it right the first time, do quality work, and be a skilled craftsman. We were proud to be steamfitters (pipefitters).

Unfortunately, the industry has morphed into is totally different nowadays. It is not just our trade, but just about every business in America. We are in a period where only one thing matters, and that is making money. Most industries take every short-cut possible and cut costs in every way possible. They are running on such bare bones—manpower, knowledge, and resources—that human life and fines are figured into the cost of doing business. Not all, and I would like to thank the few that care, especially Exxon Mobile; their safety program should be a role model for the rest of them.

From my perspective on what should of happened on Feb 7th, 2010 at the Kleen Energy plant in Middletown, CT and what actually happened is unmistakably, pure and simple, TOTAL GROSS CRIMINAL NEGLIGENCE! The shortcuts and total disregard for safety were unbelievable from my experience as a journeyman pipefitter!

You might ask yourself how could this act of total disregard happen; pure and simple—MONEY AND LACK OF REGULATION!—HURRY IT UP AND GET IT DONE MENTALITY. Which in this instance, when dealing with a procedure that is this dangerous, it is PURELY CRIMINAL!

Unfortunately there is no regulatory body or set regulations for this procedure in a new powerhouse. It is totally up to the General Contractor to police the sub-contractors and their safety teams. In other words, it's the Wild West. This procedure has been done many times safely, but each time it is up to the safety teams to write the procedures, and unfortunately, many times, not only have these safety

teams ever worked in the heavy industry field, but have never seen or been involved in a line purged with natural gas!

I don't know how a procedure could have changed so dramatically from Feb 4th to Feb 7, 2010, but it went from having a plan to the wild west in three days. If you get a chance, take a look at the action taken on the 4th then look at the 7th. The difference is purely criminal; these poor gentlemen did not stand a chance.

I ask members of this panel and every member of the U.S. House of Representatives to please get some regulations on this procedure and please pass P.A.W.A.-H.R.2067 because this has been a terrible year for the American Worker.

In the two weeks leading up to the explosion my brother and I talked around ten times. We talked about a lot of topics family, hunting, fishing, sports, their new G.S.P. puppy, Maya, and a little about work. When it came to the subject of work there was a lot of stuff that we just didn't have to say to each other as it was just a "given". Like "they are cutting corners" or "they want more production" or "the safety department is a joke;" it all was a given. When Ron mentioned the blow down more than twice, I knew he was nervous about it. My thoughts on it were he will be all right because he was a General Foreman for the instrumentation and had nothing to do with it. He should be in the trailer or not on-site when this procedure will be going on.

On Saturday, February 6, 2010, we talked for an hour. Ron went into great detail about his 2 son, areas we only talked about briefly. I could tell he was nervous about tomorrow the way he opened up. We ended our conversation like we always did—Love and Miss You Bro, be Safe.

On Feb 7, 2010, around 7p.m., when my mother and myself finally got the confirmation of his death, all I could say to her was how unfair life can be. Here is a person who used every minute of every day, had so much going for him and his family, and was basically a role model for everyone he came in contact with. What a tragedy!

On many occasions I have flown into Bradley Airport to see my brother, his family, and their faithful G.S.P. Rooster. But on February 8, 2010, it was the hardest landing I ever had to do because this time, my brother would not be there. I knew that from this day forward, like so many of my brother's friends and complete strangers, the only thing that matters is seeing Jodi, Dylan, and Tyler through this tragic event. The next week has been hard on us all. The one reality check I had every day was trying to get my brother's dog into the house. He sat on the ice of the drive way, through snow and freezing temps, for hours at a time—waiting for my brother to come home; but this time he was not coming.

Ron was more than a brother to me. I always considered him to be my life-mate someone to grow old with and share the many laughs of life. I guess I have to thank God for all the time we spent together hunting, fishing, playing baseball, and just being brothers. Love and miss you Ron—be safe for ever.

Once again I beg this committee and congress to pass legislation for this process and to pass P.A.W.A. H.R.2067 to protect myself and all American Workers!

No man or woman should not be able to return to their home at the end of the work day.

Thank You.

Mr. COURTNEY. Now we're just going to open it up to some questions. I just wanted to start by first of all, Jodi, when you described Ron's position at the site, it was significant that you described he was actually working on instrumentation and controls. Is that correct?

Ms. THOMAS. Correct.

Mr. COURTNEY. So he actually was there on the site not directly involved in the gas blow procedure, isn't that correct?

Ms. THOMAS. Correct. He was not working for Keystone which was the subcontractor.

Mr. COURTNEY. The subcontractor who was in charge of the gas blow. And I guess just to sort of go back to the Chief's testimony and the Judge's testimony about trying to get some rules in place for when these procedures are taking place in terms of whether or not people who were not directly involved in the gas blow, even really belong on the site when something like this is occurring. And

the fact that it appears there were no rosters that you could consult in terms of—maybe just sort of respond to that, Chief.

Mr. BADAMO. There were supposedly some rosters that we were never ever able to truly locate, nor were we ever able to truly locate the people who had those rosters. So we simply had to go by the word of the workers and that took a day and a half to interview all of the workers on that site that day to determine whether all of them were accounted for.

Mr. COURTNEY. So obviously, it would have been much better for you if you would have been able to arrive at that scene and have a list of exactly who was there, obviously on the site, and that was not available to you?

Mr. BADAMO. Correct. From a fire department perspective, we don't operate on any site without a true accountability of all of our personnel, where they are. We have a tag system. We know every single person who is on that site and usually where they are on that site. A system like that being employed here would have made our efforts in the rescue and finding of the victims much easier.

Mr. COURTNEY. And Judge, again, you sort of raised the question of whether or not something, when a procedure like this is taking place, whether or not there's any reason for people who are not directly involved to even be within the radius of the activity and that seemed to be one of the recommendations you wanted to make to the Siting Council. Obviously, that didn't take place in this incident.

Mr. NEVAS. That's correct. The Chief, I think, articulated it correctly that anybody could be there, just walk on the site, no record of who was there or who wasn't there. I suppose there was a time record in terms of their punching in at the beginning of the work day, but in terms of maintaining rosters or any oversight of who was there, my understanding is that there was none. So anyone could wander in and out of the site at will.

Mr. COURTNEY. So Professor Corbett, aside from getting to the sort of core issue of whether or not natural gas blows should be permitted at all, the fact is there still aren't basic rules about evacuating nonessential personnel or even keeping adequate records of who's there. That's how unregulated this procedure is. Is that correct?

Mr. CORBETT. Right. Obviously, this disaster brought this all to the forefront and there's a bunch of issues that you've heard here today that need to be addressed certainly.

Mr. COURTNEY. And I guess just to go back to your point about whether we can rely on voluntary code regulation which has been really the operating system for this industry, I mean you're somebody who has been directly involved with that process. I mean it sounds like you're saying we've really just got to go to a different place to get rules and I wonder if you could sort of comment about whether making recommendations really should be what this Committee should do or whether or not we should move more directly to changing the law.

Mr. CORBETT. Thank you for asking that question. I just want to spend a couple of moments talking about my involvement over the last several years, particularly with issues of 9/11 specifically. I work a lot with a lot of 9/11 families and of course, there's a variety

of issues that have come up with respect to highrise building design, for example.

I will preface the rest of my comments with saying I'm a member of the NFPA and they do a lot of good things, but in my career I've encountered several of these kind of wait a minute moments with the NFPA specifically on very obvious problems that they fail to address. I brought with me today a book that actually two years ago, almost exactly two years ago, I went with a colleague and several family members from 9/11 to the NFPA Standards Council which is the top entity within their structure that actually is the final step before codes are issued. And one particular thing that had come up and one proposal that my colleague had made was to actually widen stairwells in highrise buildings from the more traditional 44 inches that is pretty much the standard across the country to a wider 56 inches. Forty-four is actually based upon the width of a World War I soldier's shoulder width. That's how far back that 22 inch times 2 rule goes to essentially come up with 44 inches.

And in the wake of 9/11 that was one of the things I thought would be a very easy thing to change. I thought it would go through without any question. Well, I was wrong because we actually did try to change this to widen stairwells to 56 inches. Again, I went to the Standards Council with my colleague and other individuals who are concerned about this issue and we were turned down. I even brought this text called "Walking Forward, Looking Back". It's actually a set of photographs taken on 9/11 including the only known set of photographs taken inside either of the towers that survived, the photographs that survived. And I showed the Standards Council this one particular photograph and if you look at it, you can actually see the people standing on the stairwell stopped to let the firefighters go by. And I thought here's something as basic as the ability for a set of firefighters to go up and a set of civilians to go down or just as importantly two sets of civilians to go down in a stairwell because some people, of course, take longer than others and this would allow a more quicker descent.

In retrospect, we learned with the investigation, for example, that had the attacks occurred later in the day, of course, it would have been more people in those buildings and in actuality people would have died leaving, trying to get out of the building because the stairwells would have been so crowded. So all these issues, this photograph which I showed to all the members of the Standards Council and said, "please, make this simple change of going from 44 to 56" fell on deaf ears and to this day that regulation was never changed.

And again, I've had experiences like this through my career either as a participant or as an observer and this is the situation my final comment would be. This is the situation for Congress to act. When the private sector, like the NFPA or the International Code Council, does not act, I think the ball ends up in your court and you actually have to move these changes. I think we should forget about the NFPA and ICC and go right to OSHA to deal with the situation.

Mr. COURTNEY. Thank you, Professor.

Mr. CORBETT. Thank you.

Mr. COURTNEY. Congresswoman DeLauro?

Ms. DELAURO. Thank you very much, Mr. Chairman. And I want to say thank you to all of you. We spend a lot of time in hearings, my colleagues and I, and listen to testimony. I want to just really applaud the clarity of the testimony and the candor and the lucid recommendations that this Committee can take back on a number of instances, whether listening to family, listening to local government, the challenge of the state government and the Commission, and the Chemical Safety Board and our expert in the Fire Protection Codes.

Let me start with a question to both Mr. Bresland, Mr. Corbett, and I think you've stated this, but I want to try to ferret it out a little bit more.

How confident are you that OSHA will issue a new regulatory standard for the practice of gas blower purging? That is to come up some time in July. Does OSHA even have the authority to issue a new safety standard in this area? Let me just lay out a couple of things.

Dr. Bresland, do you concur with Judge Nevas' particular recommendations and particularly his comments on the role of the Siting Council in that effort?

Mr. BRESLAND. Well, just let me address the issue of OSHA, because we did meet with the Assistant Secretary Michaels the week before last to discuss the issue of the recommendations that we were planning to make to OSHA. They were receptive to those recommendations which basically will say OSHA should ban the practice of venting natural gas directly to the atmosphere in these high-pressure systems.

However, the second comment that we got from them was that developing regulations in OSHA is a very lengthy process and they were talking in terms of five years to do this.

Ms. DELAURO. It doesn't have to be that way.

Mr. BRESLAND. I think you maybe want to go and talk to them and find out why it is that way, but that is certainly a fairly consistent refrain that we do get from OSHA on several recommendations that we have made to them.

Perhaps a legislative approach to this would be a more direct and faster way to do it. As I said in my comments, I find it quite—I'm not sure what word to use, maybe bizarre is the right word to use, that a company will spend what I understand is \$1.3 billion building operations like this, they're within months of starting it up, and then they use this inherently dangerous process and basically blow it up and kill people, injure people. It doesn't make any sense to me.

Ms. DELAURO. Mr. Corbett, the point is though as well that natural gas is readily available and that's why it's used for this process. There are safer alternatives that clearly—there have been demonstrated safer alternatives. Why are we not moving to those safer alternatives and that become the standard? Just explain to me why this has to be the case? We know it's a proven effort to use the pigging, air, whatever it is. I'm not an expert in these areas, but I've read enough to know that there are safer alternatives.

Why aren't we mandating safer alternatives?

Mr. CORBETT. I agree with you totally. I mean I would imagine why it's conducted this way is because of cost. That's the simplest answer for the question.

Ms. DELAURO. It's less costly to use natural gas to do this procedure?

Mr. CORBETT. Natural gas is right there, it's readily available. So we've got to bring in other equipment, procedures, people, perhaps to do the perhaps the—it would be obviously a more safe process of using either the pigs or using compressed or what have you, so but why in the regulatory standpoint, again in the private sector, I don't understand—this is again, this is the 800 pound gorilla that's in the room and the NFPA and the ICC and I just don't understand why they won't address it. The only thing I can, of course, surmise, is that a lot of these technical committees and that's where a lot of the work is done are dominated by industry representatives.

So that's why I'm suggesting that although OSHA, of course, as we have heard has issues of trying to get regulations put in place. That takes time as well, but I don't know what the other alternative is because again we're totally relying on the private sector to develop these codes and standards. If they're not going to do it, then OSHA seems like the only path that we can go down.

Ms. DELAURO. I know that my time is up. Judge Nevas, which agency should be in charge? If no agency is in charge, who should be in charge from your investigation?

Mr. NEVAS. In the best of worlds, OSHA. But I think we should be realistic here and practical and we know, you know far better than I, that for a regulatory, a federal regulatory agency to make major changes in its regulations is going to take a long, long time.

I just commented to the Chief, luckily, if it got done in three years I think that would be a miracle, but my point and the point I want to emphasize and I obviously speak only for the Commission that I chair and we are concerned with the State of Connecticut and how it will move forward. Obviously, I think, I hope that we can provide a model for other states to follow. But my point is that all of these safety measures that have been discussed this morning, the recommendations to OSHA, to you, for federal legislation and the suggestions that I make can be implemented for Connecticut quickly, quickly. We can get it done in the next four or five months because that Siting Council will have jurisdiction over Kleen Energy when they come to the Siting Council, whenever they come. It will obviously have to be some time this summer or early in the fall and say we want to resume construction. We want to complete this plant, but we need a new permit because we can't get it done by November 30th. And the Siting Council will be able to say we'll give you that permit, but you're going to have to agree to do A through Z when you resume construction.

So for Connecticut, we can get it done quickly. From your perspective on a national view, obviously you're constrained by legislation, by committee work, by bureaucracy, but we're not going to be constrained by that here in Connecticut and we can get it done.

Ms. DELAURO. Thank you so much.

Mr. COURTNEY. Mr. Murphy.

Mr. MURPHY. Thank you. Let me ask maybe the predicate to Representative DeLauro's question of why haven't we changed from gas? Why use gas in the first place? Is it an issue of—and I guess this is a question for Professor Corbett. Is it an issue of cost? Is it an issue of effectiveness versus the other potential technologies? Why is gas so prevalent, given the fact that even someone without a chemical safety background could understand that it's the most volatile of the potential litany of tools to use?

Mr. CORBETT. All I can say is that I think it comes down to cost because the gas is already there. You know, if we talk about doing mechanical pigs or using compressed air, nitrogen, what have you, all those things are additional work and time and money. So I think that's really what it comes down to, but again given its obvious danger, it's unfathomable to me why we continue to do this. I mean we're just—I guess we can say we've been lucky where explosions haven't happened and so—

Mr. MURPHY. Banning gas seems like a no brainer and I guess I'd like to examine a little bit more about the NFPA for a second. If I'm a worker on one of these sites, it would make me very uncomfortable to know that the entity in charge of developing these standards is representative, in part or in large part, by industry which has an incentive to try to lower costs and to try to decrease the time of completion, especially if there's money involved.

Can you talk a little bit as a member of that body, can you talk a little bit about who in NFPA is accountable to how you get selected to that panel? Tell us a little bit about that Board.

Mr. CORBETT. I am a member of the NFPA, as a general member, but they issue hundreds of codes and standards for a variety of things. And each one of them has at least one technical committee which is responsible for sort of overseeing the document in this case, let's say NFPA 54.

On those committees, in their structure, they are supposed to have specific numbers of different types of people on those committees. It could be enforcement authority. It could be special knowledge expert, industry reps, insurance industry, all those kind of people who are supposed to be on those committees. And so when you actually look at the committee membership very often you'll see that there's an imbalance in some cases where too many of one type of entity—as a matter of fact, one of the CSB identified another, ironically another what's called a recommended practice, NFPA 850, which is specifically for electrical power plants and there's not one fire service or enforcement official I can even see on their committee and ironically they have identified that that code and standard refers back to NFPA 54 for natural gas, ironically, which on the other hand is exempted in the other standard, so there is a lot of issues here. I think that we depend very heavily on them.

And again, on the balance, they do a lot of good work, but there are situations where things like this happen that are real problematic.

Mr. MURPHY. Mr. Bresland, can you comment on this issue for a moment on whether we are smart or not to rely on a body that is populated in large part by industry and has an imbalance on many of its committees with respect to either safety professionals

or representatives of labor, representatives of the workers who are doing this on the ground. What are your thoughts or CSB's thoughts on the reliance that we have on these voluntary organizations and the makeup of the organizations?

Mr. BRESLAND. I should point out that at our hearing this evening when we're going to vote on our recommendations, we have recommendations proposed to a variety of different organizations, not just OSHA, but we've got recommendations to the National Fire Protection Association; recommendations to the American Society of Mechanical Engineers; recommendations to the major gas turbine manufacturers; recommendations to the Governor and to the State of Connecticut which basically says we recommend that the State of Connecticut actually ban this practice of using flammable gas; and a recommendation to the Electric Power Research Institute.

Going back to one to the major gas turbine manufacturers, they do require that the gas be cleaned before it goes into their turbines. These are very, very expensive pieces of equipment and we are recommending that they develop technical guidance for the cleaning of the fuel pipeline without using natural gas. And I think if we're looking for a quick way to solve this problem without either OSHA or without waiting for OSHA or without waiting for legislation, the people who have the most interest in making sure that they do not get dirty gas and they do not blow these facilities up would be the manufacturers of the turbines.

Your question on NFPA, I'm not an expert on NFPA, but I've dealt with them off and on during my eight years on the Chemical Safety Board. I've been, I guess, confused by their process and why they developed really good recommendations and good practices and other times, for example, with ConAgra, the one that happened that last year, there are issues and it doesn't seem to move forward in a way that would make just common sense.

Mr. MURPHY. Thank you.

Mr. COURTNEY. We're going to do another round of questions, if people don't mind. And thank you again for your great testimony and patience.

Mr. Bresland, it was almost just a few days before February 7th that the Chemical Safety Board had made urgent recommendations again to the industry and again to some of the voluntary codes which were not—which fell short of actually banning the natural gas blow process. Again, it was more focused on whether or not people should be in enclosed spaces where this procedure was going forward.

Obviously, you've sort of moved, the CSB has sort of moved to where again tonight you'll be making a different set of recommendations and I guess what happened, first of all, between then and now, both procedurally, but also substantively as far as the CSB was concerned?

Mr. BRESLAND. Well, there are two—what happened is that there are two completely different situations. In the case here in Middletown you're dealing with high pressure gas, 600 psi blowing out into the atmosphere. In the case at ConAgra, it was just the normal gas that perhaps that you would be using in your home, low pressure gas and they were in the process of starting up a hot

water heater and they allowed that gas to vent inside the building, so the low pressure gas vented inside the building. The concentration of gas buildup that came in contact with an ignition source and there was a catastrophic explosion that killed a number of people and basically destroyed that facility because it has closed down with the loss of hundreds of jobs.

So you're dealing in one case with a very high-pressure issue of gas being blown into the atmosphere and the other, you're dealing with low-pressure gas being allowed to build up. What we recommended was that that build up of gas inside the building should be prevented. Hopefully, there will be a recommendation by NFPA going in that direction, although as Professor Corbett has said it's run into some roadblocks along the way.

Mr. COURTNEY. So then there's some distinction in terms of what you'll be recommending tonight between—what you're talking about tonight will be focused on power plants as opposed to sort of smaller cleaning operations like the ConAgra, so there will be sort of a threshold difference?

Mr. BRESLAND. What we'll be recommending tonight will be both. We'll be recommending that OSHA prohibit the release of flammable gas to the atmosphere. That's the issue that we're talking about what happened here at Kleen Energy in Middletown.

We're also recommending that and the words are "prohibit fuel gas venting or purging indoors, prohibit venting or purging outdoors where fuel gas may form a flammable atmosphere." So we're going with both instances, although in reality they are two very different issues.

Mr. COURTNEY. Thank you. Professor Corbett, when we had our hearing last week on Deepwater Horizon, there was testimony that the oil rig workers actually, there's a procedure for sort of time out that they could basically stop working and try and put again sort of an emergency procedure to protect themselves. And again, Ms. Thomas testified about Congresswoman Woolsey's bill, the Protecting America's Workers Act, which would again provide that sort of across-the-board.

What's your opinion about this situation? I mean were workers, do they have that capacity to—like they did apparently on an oil rig or do we still have gaps even in something as basic as that?

Mr. CORBETT. Not to my knowledge. I don't think that existed in this particular situation, so I mean with the absence of the regulations you're reliant then on the contractor to set up the procedures and things and to some extent the local community to be involved with that. But I don't believe so, no.

Mr. COURTNEY. Thank you. Another area for us. Congresswoman DeLauro.

Ms. DELAURO. Just a couple of quick things. Is the safety meeting that didn't happen, is that required before a gas blow, can anybody just tell me? Is that a requirement to have a safety meeting before a gas blow?

Mr. BRESLAND. I don't think there would be a legal requirement that you would have a safety meeting before a gas blow. It's probably a function of either the company's policy or perhaps a union agreement, a labor agreement between labor and management.

Ms. DELAURO. But it's not mandated to do something like that.

Mr. BRESLAND. I don't think so.

Ms. DELAURO. Quick question to you, Chief, was anyone from your Department present during any of the gas blow procedures conducted on the site?

Mr. BADAMO. No. We were notified of them, but were not present.

Ms. DELAURO. Mr. Corbett, you say that—the Chief said a Fire Marshal was informed. He couldn't take any action because he has no authority, the Fire Marshal. Should the Fire Marshal have authority?

Mr. CORBETT. I think part of it also is the fact, I mean, even myself—I wasn't very familiar with gas blow operations until this incident occurred. And I don't know, and again I can't speak for the Chief, but I would imagine it wouldn't probably set off any alarms in their organization, but I mean I would almost bet you if someone walked in to the Chief and said, "Chief, I'm going to be blowing 400,000 cubic feet of gas, is that okay with you?" I'm sure he would have probably said, "no."

Ms. DELAURO. If NFPA applied to power plants, would local authorities come into play? Would that have made this event any different?

Mr. CORBETT. Again, the gas blow, we have to distinguish between the gas purging operations that are in NFPA 54 right now as specified dealing with trapped air inside the pipe as opposed to gas blow situations which are an attempt to blow debris and other kind of things out of the pipes, so gas blows aren't even defined in NFPA 54. Even if the scope was expanded to include power plants, gas blows aren't even in there right now.

Ms. DELAURO. Mr. Bresland, in your testimony there is a chart which is a really extraordinary chart here. It's a graph that shows the annual U.S. consumption of various flammable gases, although propane and other liquified petroleum gases, hydrogen and acetylene are regulated, I need my glasses here—there it is, it's right there. Okay, so that you can see, but OSHA currently has no specific standard for the safety of natural gas, for methane, which is by far the most common gas. Why? And you have looked at these issues for a while and why are power plants exempt from these regulations and these assessments?

Mr. BRESLAND. The answer to your first question about natural gas regulation, I don't know why there are no specific OSHA regulations regarding natural gas.

Ms. DELAURO. Is there any history of that? Do you know anything about that or the exemption in terms of power plants' exemption?

Mr. BRESLAND. I don't know that is an exemption per se, it's just something that hasn't happened. It hasn't been addressed over the years.

Your second question, what was the second part of your question?

Ms. DELAURO. I'm trying to remember. Oh, it's actually the exemption, why power plants—

Mr. BRESLAND. That might be a better questions for Professor Corbett to answer because he's more of an expert on NFPA issues than I am.

Ms. DELAURO. Why are power plants exempt?

Mr. CORBETT. I don't know. I really don't. I'm not sure. There are other codes and standards in the NFPA that specifically either scope in or scope out specific types of buildings' occupancies and I don't know for those reasons either why that happens.

I know again, another colleague years ago, they tried to put in the scope of a particular code that deals generally with life safety issues. They wanted a specific requirement in there to specifically state the users of the code that this code was not to be applicable for terrorism-resistant building designs and the NFPA turned them down on that proposal which implies that the code should be used for that. So it's very confusing.

I don't have an answer for you. I think we'd have to ask them.

Ms. DELAURO. Mayor, the training and the resources to train your first responders, can you make the federal connection or connect the dots between the resources that the Federal Government provides in this area and your ability and Chief Badamo's ability to do the kinds of job that's needed to be done on the night of February 7th?

Mr. GIULIANO. Well, Congresswoman, this is really something that comes through Homeland Security. And they set the standards, National Incident Management System standards. They determine what qualifications we all need and I even was sent to training shortly after I was elected. I'm going to be honest with you, most of us grumbled about it, "why are we doing this? What are we doing this for?" And on February 7th, we were extremely glad that we did because what otherwise would have been, would have been a state of mass confusion. When confronted with that site, that event immediately after this thing had occurred, it would take you enough time just to absorb it. And to be able to have that training, that stuff that's in the back of your head, in your subconscious come forward and say, "now I know what I have to do" was invaluable.

Again, the only clearinghouse for incidents that could filter into this training system would be at the federal level. They're the only ones who could say this happened in the Gulf, that happened at the ConAgra plant. This natural disaster happened over here. This terrorist attack happened over here. And this is what we've learned from all these things.

Ms. DELAURO. What happens when those funds are cut?

Mr. GIULIANO. Well, one, you don't update your training, and two, you don't have the ability to quote often stage. We do exercises and that information comes in from those sources. If the funds are cut, we don't have the resources to even do the exercises that keep us kind of at a higher edge. So you talk about what happened on this and everything that happened before and what could have been done. I don't think anybody saw it coming. I don't think even the workers on the site saw this coming. It happened that quickly.

When you look at, for example, the photos of the January 30th blow down right here, that one—what I was told was that was textbook, nothing went wrong with that. Now it's hard to believe that eight days later everybody got stupid and did it wrong. So something extremely small must have occurred that wasn't immediately obvious that something was going wrong. Nobody picked up on it.

And look at the devastating result. So your margin for error, very, very tiny in these types of things.

I noticed that maybe not directly address the question about training, but what you're dealing with, sometimes in any event when you see them coming, great, you can kind of stop them. But most of these things you don't see coming. How are you going to respond immediately and you're not sure what's happening. You've got emergency responders on their way to the site trying to figure out while they're going there what they're going to be facing when they get there. So a lot of that preparation has got to kick into gear on your way and beforehand.

Ms. DELAURO. Thank you.

Mr. COURTNEY. Mr. Murphy.

Mr. MURPHY. Professor Corbett, you've been on the hot seat for much of today, so I'll put you back for the final round of questions. What I heard you say with respect to where you think OSHA should step in is in gaps where the NFPA or the ICC has not sufficiently protected the public.

And I wonder if that is realistic or possible, or whether we need a full substitution for the current rulemaking and current standard-setting process, whether we really can expect to have OSHA be knowledgeable on a weekly, monthly, or yearly basis what gaps exist when they're not really in charge to begin with of these safety standards or whether we need a wholesale substitution of regulatory authority where OSHA or some other federal entity steps in, rather than—I heard what you may be suggesting which is a concurrent responsibility between private groups and then when they screw up, the Federal Government.

Am I wrong to suggest that maybe we should be thinking in a little bit more ambitious terms?

Mr. CORBETT. Well, I testified before the House Science Committee twice in the wake of 9/11 and the first hearing I think it was Congresswoman Sheila Jackson-Lee actually brought up that exact question, shouldn't we be actually doing this at the federal level rather than relying on the NFPA?

I can remember sitting at that table just like I am now and literally feeling the room move and the tension that went up, skyrocketed in there. There are benefits to the process that exists now because you do bring a lot of people to the table that have specific knowledge, but there are these situations that arise that, you know, shows the dark underside of this process that things like this happen and we end up having to go to the government, have the feds take the lead on it.

Personally, I would have no problem if the Federal Government were to assume this responsibility. I don't know that they want to do that. There's all sorts of states' rights issues here.

I will say one thing in response to Judge Nevas' comments. Many years ago, a similar situation with the NFPA, we had a situation in Newark, New Jersey in the 1980s where there was a large tank that overflowed from a pipeline, a gasoline tank. An explosion occurred, a worker was killed and one of the most fundamental issues was monitoring the level of gasoline inside this million barrel tank basically and the New Jersey group, the New Jersey Fire Director, and several people went to the NFPA and said, "look, why

can't we have a manual gauging of these tanks? We have to have some kind of automated system," and the NFPA Technical Committee turned them down too, back in the '80s.

As I say, that's the reason this comes up every few years, the same kind of issues. So my personal perspective, I would certainly support the government taking this over.

Mr. MURPHY. Judge Nevas, on your recommendations to the Siting Council, the Siting Council is not really a construction safety organization. It's a siting organization, and there are safety concerns, obviously, inherent in siting, but do you worry about asking the Siting Council to get involved in maybe an area that they are not completely familiar with? Is that asking too much?

Mr. NEVAS. Not at all. I think they can draw on outside experts if they think they need them. But I think what we're recommending is practical, common sense suggestions as to how to prevent this, time limitations on how long the worker can work there, whether or not you're going to use natural gas or nitrogen or air. To that point, Congressman Murphy, my understanding is that when you blow with natural gas you can accomplish the goal of clearing your lines in the matter of a couple of days. If you use nitrogen, or some other agent, it can take a couple of weeks. So obviously from the contractor's, the builder's point of view, he wants to get it done quicker. That doesn't mean it's safer, obviously.

So I think the Siting Council can take a very practical, common sense approach. They can look at the recommendations of our Commission. They can draw on other experts to make suggestions to them. And then they can implement those suggestions and recommendations very clearly and very concisely when they renew this permit and say these are the conditions under which this permit is being renewed and you've got to do all these things and we're going to watch you and monitor you to make sure you do them.

Mr. MURPHY. And finally, if I may, to the Mayor and the Chief, construction is back up and running, the plant is scheduled to be online in the spring or summer of next year, I believe. Can you talk for just a few seconds to the extent that you believe things have changed there or how things have changed with respect to your relationship on the site? Are you confident that some lessons have been learned and that there's a different level of safety sensitivity on the site?

Mr. BADAMO. I think there definitely is. Obviously, whenever any tragedy happens, you learn from the mistakes that were made previously, you grow from those and I believe they are moving forward with those, with that in mind. They are moving forward. The construction process is continuing, the rebuilding process is continuing. They are expected to be done tentatively some time in April of next year, if everything goes accordingly as they move forward.

As far as our relationship, our relationship has only grown to become more inclusive, not that we were excluded before, but we are definitely more included in some of the things. And again, like Mr. Corbett has said earlier, we don't have expertise in all of these processes. Over those 21 days, I learned a heck of a lot about gas pipes and blows and things that I never even dreamt that I would

ever have an experience with, so we do our best. And during that day we relied on them and their safety procedures, even though we were presented them to be safe. They have made other changes in processes and I think that this site is actually going to become a starting point for the future of building power plants because I think they're going to work towards attempting and utilizing newer, safer practices that can be employed in the future.

Mr. NEVAS. Mr. Chairman, can I just add something?

Mr. COURTNEY. Sure.

Mr. NEVAS. Derek Phelps, who is the chair of the Siting Council is here and he just passed me a note and I'd like to tell you what he says in this note. "This past week, we, the Siting Council, received Kleen Energy's request to extend its certificate for construction. It includes a commitment to comply with all, the panel that I chaired, recommendations. This Tuesday, the Council will take up a motion to reopen and consider the recommended action and the hearing is tentatively scheduled for August 3rd."

So it's going to get done and it's going to get done quickly and efficiently and competently. And Connecticut can be a leader in this area under the leadership of Derek Phelps and others on his Council and other people who have an interest in this, including people at this table.

Mr. BRESLAND. Mr. Chairman?

Mr. COURTNEY. Sure.

Mr. BRESLAND. May I make a comment? At our hearing this evening, we will have an expert who has a lot of experience in the issue of this sort of natural gas blowing and has done it over the years and has converted himself to not doing it any more. He'll be talking to us about the issues of using nitrogen instead of natural gas. And I anticipate that he will say that it's less expensive and more efficient to use nitrogen rather than natural gas so it will be interesting to hear and we'll have an opportunity to question him when he testifies this evening.

Mr. COURTNEY. Great. Thank you, Mr. Bresland. And thank you, Mr. Phelps, for sharing that update.

Mr. Mayor?

Mr. GIULIANO. Mr. Chairman, there is another power plant in Middletown that is under construction right now. They're building two peaking generators. They've advised us that their blow downs will be done with nitrogen. Their engineers simply don't like natural gas. They just deem it too risky. So I think the industry is catching on that while purging, while doing this blowdown with natural gas at Kleen Energy might have seemed like a good idea at the time, in retrospect, the loss—as I said, it's obviously something very, very minor that changed the whole picture, caused loss of life, loss of property, loss of limb. It's just not worth it. It's just not worth it.

Mr. COURTNEY. Again, clearly, the people in the State of Connecticut's awareness and sensitivity to this issue was raised dramatically, but as committee staff can verify, there still are other power plants across the country that are still using natural gas and that's why I think we have work to do too on this side of the microphone.

And for the record, I just wanted to share also which the staff reminded me is that NFPA was invited to be here today. We didn't issue subpoenas for this hearing, but they declined the opportunity to testify, but obviously we had some great input from Professor Corbett.

Did you want to make one final comment and then we'll start to wrap up?

Mr. CORBETT. Just to follow up with Congressman Murphy's question. I just would encourage the congressional delegation to consider exactly what we just talked about because there's a lot of history of unfortunately disasters happening at one place and it's geographic. The changes only are made in this case in Connecticut. We've had that happen. With the overfill of big tanks, New Jersey's Fire Code carried that for years and the rest of the country did not. So it could happen in California, Alabama, what have you.

Speed is important, but also recognize we need to get it across the country.

Mr. COURTNEY. And obviously with 125 of these plants going up—

Mr. CORBETT. Right, there are going to be other places.

Mr. COURTNEY. Thank you. For the purposes of final remarks, I wanted to defer to the Congresswoman for the City of Middletown and I want to again thank the witnesses for their great testimony here today, Rosa.

Ms. DELAURO. I want to say thank you to the Chairman and to my colleague, Chris Murphy, and John Larson, who is here this morning as well. I want to say thank you to the committee staff and my staff for your efforts in putting this together. I want to particularly thank the witnesses. As I said a moment ago, it's striking the candor, the clarity and the concreteness of your recommendations about how we should try to move forward. You have given us real direction and with the wrap up comments that you all have made and with Siting Council, with the hearing tonight, I think we can move forward.

I appreciate what you said, Professor Corbett. We have to make these standards national. This cannot be 50 different kinds of procedures. They have to be national in order to ensure the safety of the men and women who work in these facilities and are constructing these facilities. To that, I want to just say again thank you, but especially to you, Jodi, because we owe it to you. We owe it to the families of the victims to act on what we've heard this morning.

You said something very poignant. Quite frankly, it harkened me back to listening to testimony right after Katrina, not Katrina, the September 11th, when a woman in Oregon said "my husband left in the morning and he didn't come back at night. It's your job," she said to us, "it's your job to give us the confidence that when they go off in the morning that they're going to come home at night."

We cannot remedy the situation for you or for Tyler or for Dylan, but it is you and the other families that are our starting point and our ending point as we try to move forward.

I think in these four months and I will say in great part due to the work of the CSB, Judge Nevas, of your work in the Commission that we do understand that there is a wide gap in the regulatory

framework that needs to ensure worker safety. It's clear that we should not rely on voluntary compliance and voluntary self-regulation. It does not work, and that the practice of gas blowing or even gas purging should be regulated at the local, state, and federal levels.

There is an inherent risk in this practice and we cannot allow more lives to be lost. Failure to act and I know this is true for all of my colleagues here, failure to act is not an option and that's why Mr. Courtney, Mr. Murphy, Mr. Larson, with this Committee, with Chairman Woolsey and Chairman Miller, that we intend to develop a legislative remedy.

So I look forward to work with all of my colleagues and listening to state and local officials with whom we have worked closely with over the last several months to come to a remedy to this effort. So I thank you very, very much again for being here with us this morning.

Mr. COURTNEY. Thank you, Rosa. On behalf of the Education and Labor Committee, I want to thank again all of the witnesses for their outstanding testimony. They have given us just fabulous information to take back and we look forward to working with you as the Subcommittee moves forward in terms of the recommendations and possible legislation that we'll move forward on.

So I have to, according to the rules, state that as previously ordered, Members will have 14 days to submit additional materials for the hearing record. Any Member who wishes to submit followup questions in writing to the witnesses should coordinate with majority staff within 14 days and without objection, we are hereby adjourned. Thank you very much.

[Whereupon, at 12:03 p.m., the subcommittee was adjourned.]

