

U.S. CHEMICAL SAFETY AND
HAZARD INVESTIGATION BOARD

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ConAgra Foods Explosion

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Public Meeting
Raleigh, North Carolina

Sheraton Downtown

Oak Forest Ballroom

February 4, 2010

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6:00 p.m.

PRESENT:

JOHN BRESLAND, Chairman

WILLIAM WARK, Board Member

WILLIAM WRIGHT, Board Member

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1 P-R-O-C-E-E-D-I-N-G-S

2 6:02 p.m.

3 CHAIRMAN BRESLAND: Good evening and
4 welcome to this public meeting of the United
5 States Chemical Safety Board, or as we know it,
6 the CSB. I'm John Bresland, Chairman of the
7 Chemical Safety Board, and with me this evening
8 are Board Members William Wark on my left and
9 William Wright on my right. Also joining us on
10 my left is our general counsel Chris Warner and
11 over here on my right are the CSB staff members
12 whose efforts have facilitated this meeting this
13 evening. Before we start I would like to request
14 that you turn off your cell phones or put them on
15 mute or vibrate so that the presenters aren't
16 interrupted inappropriately. I also would like
17 to point out that the exits to this room are in
18 the back and I would assume at that point then
19 you go back down the escalators to the second
20 floor and straight out to the street from the
21 second floor if there is any sort of emergency.

22 The CSB is an independent non-

1 regulatory federal agency that investigates major
2 chemical accidents in fixed facilities. Our
3 investigations examine all aspects of chemical
4 accidents including physical causes related to
5 equipment design as well as inadequacies in
6 regulations, industry standards and safety
7 management systems. The purpose of this
8 evening's meeting is to allow the Board to
9 consider and vote on urgent recommendations
10 resulting from the ongoing investigation into the
11 June 9, 2009, explosion and fire at the ConAgra
12 facility in Garner, North Carolina. The
13 explosion killed four workers and injured 67.
14 Immediately following this terrible tragedy I
15 traveled to North Carolina to visit the site and
16 I was struck by the extensive destruction that
17 this blast caused to the interior of the
18 building. Many of you here this evening were
19 present on the day of the accident and
20 experienced these events firsthand. Please allow
21 me to extend my sincere sympathies. We are well
22 aware that many of you sustained severe injuries

1 from this blast and from which you are still
2 recovering.

3 The CSB has a deep and abiding
4 interest in the safety of workers across the
5 country. While we occasionally may differ on how
6 to best bring about the needed changes, all of us
7 are committed to working to prevent future
8 serious accidents and we do that by making our
9 investigation result and our recommendations
10 public. At this time please allow me to go over
11 this evening's agenda. First, we'll hear from
12 the investigation team about their preliminary
13 findings. The investigation team is sitting over
14 here on my right. We'll also hear from Mr. Tom
15 Caldwell who is one of the urban search and
16 rescue experts who entered the collapsed building
17 trying to locate survivors. And as an aside, I
18 would like to point out that Mr. Caldwell has
19 just returned from Haiti where he was doing urban
20 search and rescue work there and was able to
21 assist in rescuing victims in Haiti and we're
22 very proud of the fact that he was down there.

1 Following the team's presentation the
2 Board will be given an opportunity to question
3 the team. The Board will then hear from a panel
4 of outside witnesses and this evening's witnesses
5 include Chris Noles representing the North
6 Carolina State Fire Marshal's Office, Mr. Ted
7 Lemoff representing the National Fire Protection
8 Association, and finally Belinda Thielen
9 representing the United Food and Commercial
10 Workers International Union. Welcome to each of
11 you and thank you for agreeing to participate in
12 this evening's meeting.

13 After the panel portion of the meeting
14 we'll open the floor to public comment. I
15 encourage all of you to come to the microphone
16 and let us hear your opinion. There will be
17 microphones set up, there's one over here on my
18 right, and we certainly encourage you to come up
19 and express your opinion. If you wish to
20 comment, please sign up at the tables in the
21 check-in area and I will call your name at the
22 appropriate time. I'll first call upon those who

1 have signed up and then I'll open the floor to
2 anyone else who may wish to speak. Please note
3 that we'll have to limit public comments to five
4 minutes each. Also note that we are not able to
5 take questions for the investigators directly
6 from the audience and so I'll ask that any
7 questions that you may have for the investigators
8 be directed to me as the presiding official. If
9 there is a point that is raised in your comment
10 where I believe the investigation team can
11 provide some immediate clarification I will ask
12 them to do so. And then we will conclude this
13 meeting by voting on the proposed urgent safety
14 recommendations proposed by the staff. I would
15 like to thank the team and there are team members
16 here, and there are some team members sitting in
17 front as well. I would like to thank them for
18 their diligent work on this investigation. And I
19 will now recognize any other board member for an
20 opening statement. Mr. Wark, Board Member Wark?

21 HON. WARK: Yes, I'd just like to
22 mention that I was a board member that deployed

1 with the team. I got to see the devastation and
2 injuries firsthand and I would like to extend my
3 condolences and sympathies to those folks as
4 well, and also thanks to the team. Thank you.

5 CHAIRMAN BRESLAND: Thank you, Board
6 Member Wark. Board Member Wright?

7 HON. WRIGHT: I would just like to
8 echo the comments expressed and offer my
9 sympathies and my thanks to the team for the hard
10 work that they've done in putting this
11 presentation and urgent recommendation together.
12 Thank you.

13 CHAIRMAN BRESLAND: Thank you, Board
14 Member Wright. At this time I'd like to
15 introduce the CSB Investigation Team:
16 Investigation Supervisor Donald Holmstrom and
17 Investigator Cheryl Mackenzie, Mary Beth Mulcahy,
18 Don Tillema and Lauren Wilson. I will now ask
19 Mr. Holmstrom to present the team's preliminary
20 findings. Mr. Holmstrom is a longtime
21 investigator with the CSB. He was the lead
22 investigator for several key CSB investigations,

1 including the BP Texas City refinery accident in
2 2005 that killed 15 people. He heads the CSB's
3 Western Regional Office in Denver, Colorado. Mr.
4 Holmstrom?

5 MR. HOLMSTROM: Thank you, Chairman
6 Bresland. I'd like to thank everyone for coming
7 this evening. It's a great turnout, we really
8 appreciate it. We're here to present a summary of
9 the U.S. Chemical Safety Board's preliminary
10 findings of the June 9th, 2009 explosion at the
11 ConAgra Foods Facility in Garner, North Carolina.
12 We are here today because of an explosion that
13 was in part caused by the release of natural gas
14 into the ConAgra facility during a process known
15 as purging. We've been told by companies, code
16 officials and inspectors that purging natural gas
17 piping into buildings like what was done at
18 ConAgra is a common practice. In light of this
19 tragedy and others that we will tell you about
20 this evening, the investigation team has
21 concluded that urgent recommendations are needed
22 to strengthen national safety standards which

1 address gas purging.

2 The outline for this evening's
3 discussion will begin with the background
4 information on the incident and the consequences
5 of the explosion, followed by a review of
6 preliminary findings and causes. We will then
7 discuss the planned and anticipated work still
8 needed for the CSB to complete its investigation
9 of the incident. We will also present to the
10 board a number of recommendations for safety
11 code-writing organizations.

12 A natural gas explosion occurred at
13 the ConAgra Slim Jim Factory in Garner, North
14 Carolina. Four deaths resulted. Additionally,
15 67 people were treated at local hospitals, many
16 with serious injuries, including three critical,
17 life-threatening burn injuries. The explosion
18 caused serious and extensive structural damage to
19 the packaging area of the plant. The structural
20 damage was the largest contributor to the deaths
21 and injuries that resulted that day. The
22 explosion also damaged piping from the plant's

1 large refrigeration system which contained
2 ammonia, a toxic chemical. The ammonia release
3 hampered emergency response efforts. The
4 accident caused serious economic harm to the
5 community by suspending the operations of the
6 plant which is a major regional employer. When
7 operations resumed, several hundred employees of
8 the plant were laid off.

9 This is a satellite photo of the
10 ConAgra facility taken before the incident.
11 Prior to the incident ConAgra had begun a project
12 to install a new gas-fired water heater into the
13 facility. To supply natural gas to the heater,
14 the new gas piping had to be installed. Existing
15 piping, shown here in the red, ran across a
16 facility route, but the water heater was to be
17 located here, also referred to as the vacuum pump
18 room, in a centrally located utility room.
19 Therefore, new piping (in blue) was added which
20 ran horizontally over 120 feet along the roof and
21 then descended into the vacuum pump room. When
22 construction of the new gas piping was complete

1 the line contained air. In order to start up the
2 water heater this air had to be removed and
3 replaced with a flammable fuel gas which in this
4 case is natural gas. This process is called
5 purging. There are a variety of techniques used
6 to purge air from fuel gas piping. On the day of
7 the incident the purging technique used was
8 direct displacement of the air with natural gas.

9 (Video narration)

10 In this type of purging operation
11 natural gas is fed into the new pipe, displacing
12 air through the pipe outlet. This operation
13 continues until the natural gas is released and
14 detected, at which point the opening at the end
15 of the piping is closed. If the opening at the
16 pipe end is indoors and is not closed when gas is
17 detected, a dangerous accumulation of natural gas
18 is possible inside the building. If an ignition
19 source is present this could cause an explosion.
20 Another way for a company to conduct this
21 operation is to direct the vented gas through a
22 pipe or temporary hose directly outdoors where

1 the gas can disperse away from ignition sources.

2 (End video narration)

3 MR. HOLMSTROM: Current safety codes
4 which are followed by companies and individuals
5 nationwide and also adopted by state and local
6 government do not require gas purging to be
7 formed outdoors. However, as was shown by the
8 ConAgra explosion, purging inside an occupied
9 building can result in a high risk to workers
10 through the additional potential of building
11 collapse. It is interesting to note, ConAgra
12 employees previously purged part of the existing
13 natural gas pipe by running a hose outdoors
14 without incident. I will now turn the
15 presentation over to Investigator Mary Beth
16 Mulcahy.

17 MS. MULCAHY: Thank you, Mr.
18 Holmstrom. ConAgra had hired Energy Systems
19 Analyst, or ESA, to build, install and start up a
20 new water heater seen in this post-accident
21 photograph. The stainless steel equipment is the
22 new water heater. This water heater was designed

1 to heat 105 gallons of water per minute to a
2 temperature of 150 degrees Fahrenheit. In the
3 photograph you can also see yellow piping which
4 leads from the roof down to the water heater, and
5 that yellow piping was for natural gas and
6 propane gas. While the ESA contractor was
7 starting up the water heater there were problems
8 igniting the pilot light. He communicated to
9 others that he thought perhaps the gas piping was
10 not yet effectively purged of air. The ESA
11 contractor attempted to purge the new gas piping
12 directly into the vacuum pump room rather than
13 using the outdoor method we described before.
14 ConAgra did not have a procedure for gas purging
15 and did not require ESA to vent the purged gases
16 to the outdoors. The nearly 200 workers in the
17 nearby packaging area were not informed of the
18 purging activities nor were they removed from the
19 vicinity of the vacuum pump room.

20 The photos seen on the left- and
21 right-hand side of the screen show a pressure
22 gauge which is being highlighted now by the white

1 arrows from two different angles so you can see
2 the pressure gauge here on the left and here on
3 the right, from a different angle, is the same
4 pressure gauge. The ESA contractor was observed
5 removing this pressure gauge to purge air from
6 the piping directly into the room through a 3/8-
7 inch hole that remained after the pressure gauge
8 was removed. If you'll notice on the ground
9 highlighted now by the white arrows there is this
10 cap right here and in the photo on the left you
11 can see it over here towards the left-hand side
12 of the screen. This cap actually belongs on a 2-
13 inch pipe seen up here on the right and that same
14 pipe is actually hidden in the left-hand
15 photograph. This could be another potential
16 purge point. The CSB will try and correlate
17 findings from blast analysis, gas flow metered
18 data and gas flow calculations in order to
19 determine the most likely purge point for the
20 gases that caused the explosion that day.

21 While purging was happening, several
22 people came into the room and noted the smell of

1 natural gas, but most were not seriously
2 concerned since they knew there was an indoor
3 purging occurring due to the water heater
4 startup. The ESA contractor relied on sense of
5 smell to determine when air had been purged from
6 the line and we will highlight some of the
7 dangers of using the sense of smell to detect
8 natural gas. Natural gas is actually an odorless
9 substance. To make the presence of natural gas
10 known, companies inject it with an odorant called
11 mercaptan. Just a small amount of this odorant
12 gives natural gas its rotten egg smell which
13 alerts people to its presence. However, using
14 one's sense of smell alone to detect natural gas
15 presents several problems. For instance, it has
16 been found that the amount of odorant in natural
17 gas can be greatly reduced when gas flows through
18 new piping. This is called "odor fade" and it is
19 caused by the absorption of the odorant into the
20 new piping or through a chemical reaction with
21 the piping material itself. A reduced level of
22 odorant can make it very difficult to detect the

1 presence of natural gas. Another issue is a
2 problem known as odor fatigue. When people are
3 exposed to a particular smell for a long period
4 of time they begin to lose the ability to
5 actually detect the odor around them. This could
6 lead a person to believe the smell of natural gas
7 is light when in fact the concentration of the
8 gas surrounding them may be quite high. Also,
9 there is a - the perceived smell of mercaptan
10 odorant is subjective and there is a large
11 variation amongst individuals in the detection
12 and the perception of its odor intensity.
13 Finally, it is impossible to detect when a
14 substance has reached its lower explosive limit
15 by using one's sense of smell alone. The lower
16 explosive limit, or LEL, is the lowest percentage
17 of gas or vapor in the air that can produce a
18 fire explosion in the presence of an ignition
19 source. The LEL can be measured analytically
20 using a relatively inexpensive portable
21 combustible gas detector. The ESA contractor
22 continued to purge into the vacuum pump room

1 intermittently over approximately a 2 and « hour
2 time period. In this timeframe, natural gas
3 accumulated in the room and that gas eventually
4 found an ignition source, resulting in the
5 explosion around 11:25 a.m.

6 Purging a flammable material directly
7 into a room presents many risks that otherwise
8 may not exist if the material were purged to an
9 outdoor location. One such risk is that confined
10 within a room gas cannot easily disperse. This
11 causes the concentration of gas within the room
12 to steadily increase with purging, especially if
13 the room does not have sufficient ventilation.
14 In the case of natural gas, the concentration
15 within the room only has to exceed 4 percent to
16 create an explosive atmosphere. Explosions
17 inside occupied buildings are likely to result in
18 higher risk to workers than an explosion of the
19 equivalent flammable material in the air
20 outdoors. Also, an explosion indoors can lead to
21 a substantially greater blast wave due to
22 confinement and constriction. Greater over-

1 pressure will increase the likelihood for
2 structural collapse and the creation of
3 projectiles, resulting in significantly higher
4 potential for catastrophic injuries. The blast
5 wave in the ConAgra accident was sufficient to
6 dislodge and bend metal doors, and according to
7 at least one witness was strong enough to cause
8 her to become airborne and collide with a wall.

9 It may be difficult for people to
10 understand the extent of the damage that happened
11 on the inside of the building. If we look at
12 this media footage taken just after the accident
13 you can only see three holes, one here at the
14 front of the building in the roof, there's a
15 second hole here in the middle of the building
16 near where the new water heater had been
17 installed, and then towards the back of the
18 facility in the warehouse section there is a
19 third hole in the roof. The roofing material
20 actually hides most of the severe damage
21 sustained within the building and it's the
22 buckling in this roof that you can see here that

1 is actually the only outside indicator of what is
2 happening - or what has happened beneath the
3 roofing material.

4 To understand why the damage could be
5 hidden as such it's important to understand how
6 the building itself was constructed. The
7 building is made up of prefabricated parts which
8 are shipped and then assembled onsite. Those
9 parts are precast concrete wall panels, precast
10 concrete columns, precast concrete girders and
11 precast concrete double tees. Now I will
12 highlight particularly the girders seen here and
13 the double tees seen here. The final phase in
14 connecting the different pieces of the building
15 together is to slot the double tees - and so this
16 is a double tee here - into the girders down
17 below. The slotting of this double tee into the
18 slot in the girder down below interlocks all of
19 the pieces together, helping hold them together
20 in the building. Over here on the right the
21 photo you see is of a double tee that's being
22 lifted by a crane and it's about to be slotted

1 into the slots of the girders that are located
2 over here to the building, seen in the
3 photograph. The double tees in the packaging
4 area weighed 11 tons apiece and those in the
5 warehouse and shipping area weighed 13.5 tons
6 each. There's insulation and roofing which lie
7 on top of the double tees seen here, and the
8 insulation and roofing lie on top of those double
9 tees, first the insulation, and then the roofing
10 on top of the insulation. In many of the images
11 that have appeared of the ConAgra facility and
12 even of the news footage I showed just before
13 it's the roofing membrane you see, but you are
14 unable to see the damaged tees that lie below it.
15 When the explosion occurred, there was a blast
16 wave that lifted up on the roof or the double
17 tees and pushed outward on the walls. This
18 caused the walls and girders and double tees to
19 move and either separate or break. Here is a
20 photograph indicating where some of the double
21 tees have actually separated from the girders.
22 So if you look here at the image on the left you

1 can see a girder and you can see empty slots
2 here. So prior to the explosion there were
3 double tees slotted into those areas. If you
4 look at the image on your right and note where
5 the arrow is pointing here, you can see a spacing
6 in between double tees and the wall. What's
7 actually happened here is the double tees have
8 fallen out of the girder and they have been
9 caught by cables and shelving in the warehouse
10 area, preventing them from falling to the ground,
11 and in essence preventing more serious potential
12 injuries than we saw the day of the accident.
13 Damage and injuries were greater in areas where
14 the double tees actually did fall to the ground.
15 Here, you can see a wall panel that has been
16 blown outwards. There was a girder that once sat
17 here where the dashed red line was and then you
18 see the collapsed double tees on the ground.

19 This video was taken of a 2009 entry
20 by the CSB into the damaged facility. What
21 you're seeing here is an image of the roof, and
22 if you'll notice you're looking at a sagged

1 portion of the roof. That's actually the roofing
2 membrane that you're seeing sagged in. The
3 double tees that used to be there now lie on the
4 ground and the camera is going to pan out and
5 show you insulation and double tees that have
6 fallen from the roof onto the ground. As the
7 camera pans up you can see here intact double
8 tees and what's beginning to show in the frame
9 now are the remnants of broken tees, the double
10 tees that you saw on the ground. The camera is
11 going to pan back out across the ceiling and it's
12 going to pause here to show you that on this
13 side, here's a girder and here are some slots
14 where there used to be double tees, but in this
15 instance they were separated from the girders and
16 fell to the ground rather than were broken. This
17 last image is an image of broken double tees that
18 have fallen on one of the lines in the facility
19 and this is the debris that people had to climb
20 around or over to get out of the building.

21 This is an image of the plant, or the
22 packaging facility, and I'm going to mark first

1 the location of the vacuum pump room where the
2 new water heater was being installed. We can
3 look at the damage or consider it in different
4 zones. The first zone is a zone marked by these
5 red boxes that indicates areas where there were
6 collapsed double tees that had fallen to the
7 ground. The second zone that I'll highlight are
8 areas that are so damaged that they are unsafe to
9 enter, marked by the yellow boxes here, and then
10 there are the green zones which were areas that
11 we were not able to observe. So these are
12 observations made during our entry this past
13 December into the building. If I lay that over
14 an aerial view pre-accident of the ConAgra
15 facility you can start to get an indication of
16 how much damage was sustained by the building.
17 Thirty-seven percent of the 87,000-square foot
18 packaging area of the plant actually experienced
19 collapse of double tees. Another 23 percent
20 experienced heavy damage that makes it unsafe to
21 enter. That's a total of 60 percent of the
22 building that was damaged during this accident.

1 And again, remember in the aerial footage you
2 only saw three holes in the roof, so 60 percent
3 of what was underneath of what was left was
4 actually severely damaged and collapsed.

5 After studying the initial location of
6 the blast damage indicators, preliminary data
7 indicates that there was a single explosion that
8 originated from the vacuum pump room. In
9 addition to the consequence of the explosion when
10 the double tees fell, rupturing ammonia
11 refrigeration lines, that additional consequence
12 was the release of ammonia, a toxic chemical.
13 This picture on the right shows one of the
14 emergency responders in a special protective suit
15 that he was required to wear in order to search
16 for victims of the blast. And you can also see
17 on his back he's carrying an air supply with him.
18 This was necessary due to the release of ammonia.
19 The Raleigh Fire Department reported using 62 of
20 these suits throughout the rescue and recovery
21 operations. Not only were search and rescue
22 efforts affected by the ammonia release, but also

1 ConAgra employees. Witnesses interviewed
2 described the overwhelming smell of ammonia that
3 caused them to cover their mouths or seek a
4 different direction when running for safety. I
5 would now like to ask Tom Caldwell from the Urban
6 Search and Rescue Team to come up to the podium
7 and provide further details on the search and
8 rescue activities.

9 MR. CALDWELL: Thank you very much.
10 The Chemical Safety Board has asked me to address
11 some of the challenges of the search and rescue
12 efforts at ConAgra after the June 9 blast. I've
13 got a very brief presentation. The very - they
14 wanted a perspective from the first responders.
15 The very first responders to the ConAgra accident
16 were the paramedics and firefighters who treated
17 and gave emergency medical care to the folks that
18 escaped the building. The second phase of the
19 emergency operation was to enter the damaged
20 building and search for people who were missing,
21 and that process is called urban search and
22 rescue. We're fortunate in this area to have a

1 state-sponsored urban search and rescue team,
2 North Carolina Task Force 8. I'm a member of
3 that as an engineer. Our leader is Raleigh Fire
4 Chief Frank McLaurin.

5 I'm going to talk a little bit about
6 the process of the search, some of the advantages
7 that we had and some of the challenges. I'll be
8 using this diagram on the right and it is a
9 diagram of the packaging area. The aerial view
10 on the left shows the yellow outline and that is
11 the affected area and the area of our search.
12 Here in this view north is to the left. We can
13 see down at the bottom of the photograph Jones
14 Sausage Road and we can see the west parking lot
15 area there kind of nestled in the L-shaped
16 outline.

17 Well, what we faced when we were
18 thinking - when we were planning entry into the
19 plant was this western elevation with the blown
20 out wall and a collapse behind it of at least one
21 structural bay. Using ladder trucks we made
22 observations over the top of the building and saw

1 the collapse areas that you had seen earlier. We
2 had blown out precast concrete wall sections on
3 the west side and also on the east. Also, we
4 realized that the area was filled with ammonia
5 gas and that entry for search purposes would have
6 to be equipped with self-contained breathing
7 apparatus and Tyvek suits. We had some very good
8 information from ConAgra about how many people
9 were missing, unaccounted for. Three were
10 unaccounted for. We also had an idea of where
11 they would most likely be found, and this was a
12 great advantage to us.

13 That area of - the most probable area
14 for the missing people is shown in blue. Our
15 first problem was how to get there. We had some
16 good maps, some good drawings of the plant and it
17 was realized that the administration building
18 there in the western part was a 2-story building
19 and we could tell that it was relatively intact.
20 The drawing showed a corridor leading straight
21 through that 2-story section, straight to the
22 plant area and the area of the collapse and the

1 area of the probable missing workers. So we
2 utilized that for our first USAR entry.

3 Here on the top is a picture of that
4 corridor. Those double doors that are damaged
5 lead directly into the plant area. Past those
6 doors and looking to the right or the south is a
7 view of the interior wreckage. In searching
8 that, a number of search teams who entered in
9 cycles with one team going in, coming back out,
10 giving briefings on what they saw, another team
11 going immediately in and cycling these teams in
12 and out for a continuous operation. The first
13 two missing people were found in the left-hand
14 stars within the search area and they were
15 determined to be deceased at that time. Second
16 entry over the rubble pile from the western
17 parking lot into another collapsed zone and the
18 final missing person was located as shown.

19 Down here on the photographs on the
20 left you can see some of the conditions of the
21 search. Much of the search was done after dark
22 so. The search also had to be made in Tyvek

1 suits with a self-contained breathing apparatus
2 and it made for a challenging environment.

3 In looking back on the search and
4 rescue effort, thinking about what went our way
5 and what we were up against, our challenges and
6 advantages, we had some real advantages working
7 for us on the USAR team. ConAgra knew that three
8 people were missing, three people unaccounted
9 for, knew approximately where they were most
10 likely to be found. And this was really precious
11 information and allowed us to concentrate our
12 search on the most fruitful area. ConAgra also
13 had good maps, good drawings of the area. Well,
14 we also had a trained and well-equipped USAR task
15 force based in Raleigh that was promptly on the
16 scene. That task force was very ably led by
17 Raleigh Chief McLaurin, Chapel Hill Chief
18 Bosworth, and I want to thank them for their
19 leadership during this operation. There were
20 many agencies on hand. Agency cooperation was
21 excellent and the USAR team got full support from
22 all agencies at the site. We had good road

1 access and could get heavy equipment onto the
2 site quickly. So these things helped us and
3 helped the search effort.

4 Some of the challenges: massive
5 structural damage, partial collapse of a very
6 heavy structure, the interior jammed with debris,
7 limited entry points. The largest impediment to
8 our search was the poison gas atmosphere
9 requiring the use of heavy protective gear and
10 self-contained air.

11 Well to wrap up on the search and
12 rescue effort. We had a very serious explosion,
13 massive structural damage, difficult access,
14 poisonous gas atmosphere. We did have excellent
15 information about the probable location and
16 number of missing people inside. It took roughly
17 600 man hours inside this building, most of those
18 hours spent with self-contained breathing
19 apparatus, many of those hours after dark.
20 Thirty hours of continuous search operations
21 concluded with the location and recovery of the
22 three victims. Thank you. Cheryl?

1 MS. MACKENZIE: Thank you, Mr.
2 Caldwell. Honorable members of the Board, as you
3 are aware the CSB is still conducting its
4 investigation of the ConAgra explosion. In the
5 next few months the CSB plans to complete a blast
6 analysis to determine over-pressures involved in
7 the accident. We plan to enter the pump room
8 when it is rendered safe for us to do so. We
9 plan to examine and test piping, valves and the
10 water heater igniter to determine whether they
11 were functioning properly prior to the explosion
12 and we plan to analyze how the central location
13 of the water heater within the building may have
14 contributed to its collapse.

15 CSB has noted that gas purging
16 explosion at ConAgra was not one of its kind.
17 Actually, there have been several similar
18 incidents across the country in recent years.
19 This is one such example. On February 1, 1999,
20 explosions and a fire occurred at the Ford River
21 Rouge plant in Dearborn, Michigan. This incident
22 killed six workers, injured 38 others and caused

1 approximately \$1 billion in property damage. An
2 OSHA investigation of the incident determined
3 that a natural gas explosion had occurred which
4 ignited a secondary coal dust explosion. The
5 natural gas explosion occurred when a gas pipe
6 which was being removed from service was purged
7 into a boiler instead of directly to the
8 outdoors. Due to a valve misalignment gas
9 accumulated to an explosive level inside the
10 boiler where it had contacted an ignition source.
11 In a safety bulletin OSHA noted that one cause of
12 the accident was the venting of gas into the
13 boiler instead of to the atmosphere.

14 Another notable incident was a serious
15 natural gas explosion that occurred on May 19,
16 2008, during the construction of a 30-story
17 Hilton Hotel in San Diego, California. The
18 explosion occurred during the purging of a gas
19 line. It damaged three floors of the building,
20 injured 14 workers, including three who had
21 suffered severe burns because of the incident.

22 Some other similar incidents include

1 an explosion on August 1, 1997, at a fitness
2 center in Cary, North Carolina, not far from the
3 ConAgra facility. A worker was attempting to
4 purge air out of a natural gas line into a
5 laundry room during the startup of a commercial
6 dryer in a fitness center. An explosion
7 occurred. The roof of the room collapsed and six
8 workers were injured, including two that were
9 severely burned.

10 An odor fade incident occurred in 2005
11 at a Triumph Foods facility in St. Josephs,
12 Missouri. This explosion resulted in the
13 fatality of one employee and also injured 19
14 others. OSHA citations state that natural gas
15 entered the building through an open valve of a
16 new piping system. Other published accounts
17 indicate that the gas was not detected by
18 personnel due to odor fade. Hot work was
19 believed to have ignited the gas. This was not a
20 purging incident, but it's important to study
21 because of its link to the problem of odor fade.

22 A November 2005 explosion at a school

1 in Porterville, California burned two plumbers.
2 Following the incident, Southern California Gas
3 company issued a safety bulletin about the
4 problem of odor fade, particularly during the
5 installation of new gas piping. The bulletin
6 warns against sole reliance on smell to detect
7 gas leaks and recommends venting purged gases
8 outdoors and using gas detection equipment.

9 Finally, I'd like to mention an
10 explosion that occurred more recently on August
11 7, 2007, as a result of purging into a hotel
12 under construction in Cheyenne, Wyoming. Two
13 plumbers were severely burned during this
14 incident. The plumbers stated afterwards that
15 they were unable to smell the odorized gas as it
16 filled the room.

17 It is the goal of the CSB to help
18 companies learn from these incidents in order to
19 prevent similar accidents from being repeated.
20 As a result of these incidents and our
21 investigation into the ConAgra case, the CSB has
22 compiled several key lessons in a safety bulletin

1 which we published in October of 2009. These
2 lessons can prevent future accidents and save
3 lives. Four of the lessons described within the
4 bulletin are, one, directly vent purged gases to
5 a safe location outdoors, away from ignition
6 sources and people. This simple action can
7 prevent the accumulation of gas, greatly reducing
8 the possibility of producing an explosive
9 atmosphere. This action also eliminates the
10 threat of a secondary impact such as building
11 collapse which, as we've seen with the ConAgra
12 explosion, can pose an even more significant
13 threat than the explosion itself. Two, purge
14 indoors only in limited circumstances where
15 purging outdoors is not practicable. This should
16 only be done as a last resort and every effort
17 should still be made to prevent the surrounding
18 atmosphere from reaching the lower explosive
19 limit. Three, always use a combustible gas
20 detector to monitor the gas concentration during
21 purging operations. And four, never rely on
22 perception of odor as the only warning signal.

1 As discussed previously, this method can be
2 misleading and can result in disaster. These are
3 four principles for safe gas purging that the
4 Board has endorsed. However, the Board has not
5 yet formally addressed potential shortcomings
6 within national safety standards that address gas
7 purging.

8 As part of its investigation into the
9 ConAgra case, the CSB has also researched safety
10 codes and standards produced by two prominent
11 organizations: the National Fire Protection
12 Association, or NFPA, and the International Code
13 Council, known as ICC. The NFPA and the ICC
14 produce codes and standards that are adopted by
15 state and local governments and are followed by
16 companies and individuals nationwide. After
17 reviewing these codes and standards that pertain
18 to gas purging, the CSB found that both the
19 National Fuel Gas Code and the International Fuel
20 Gas Code describe practices for purging newly
21 installed or modified fuel gas systems of air,
22 and for venting of purged gases. The codes state

1 identically, and I'll read along with the quote,
2 "The open-ended piping systems being purged shall
3 not discharge into confined spaces or areas where
4 there are sources of ignition unless precautions
5 are taken to perform this operation in a safe
6 manner by ventilation of the space, control of
7 purging rate and elimination of all hazardous
8 conditions."

9 The investigation team has concluded
10 that this language does not provide enough safety
11 guidance to discourage the unsafe practice of
12 purging indoors. For example, the NFPA and ICC
13 codes do not explicitly require purged gases to
14 be safely vented outdoors, away from personnel
15 and ignition sources, even when it is feasible to
16 do so. The codes do not define adequate
17 ventilation or hazardous conditions. They do not
18 require the evacuation of non-essential personnel
19 during the purging of fuel gas lines into
20 occupied buildings, nor do they require the use
21 of combustible gas detectors near open vents
22 where gases are being purged. The CSB expects

1 that through our proposed recommendations these
2 codes will be altered to reflect the lessons
3 learned from the ConAgra explosion.

4 At the time of the ConAgra accident,
5 the North Carolina Fuel Gas Code contained
6 identical purging provisions to that of the
7 National and International Fuel Gas Codes.
8 However, three months after the ConAgra incident
9 in September of 2009 the North Carolina Building
10 Code Council adopted emergency changes to the
11 state code to require outdoor venting during fuel
12 gas purging operations. When purging outdoors is
13 not possible strict safeguards are now required,
14 including the evacuation of non-essential
15 personnel, the elimination of ignition sources,
16 use of combustible gas detectors and adequate
17 ventilation to maintain the gas concentration
18 below 25 percent of the LEL. The revised state
19 code also requires training for personnel
20 involved in gas purging and prohibits attempting
21 to rely on odor to monitor gas concentrations.
22 North Carolina has been proactive in adopting

1 these changes. Chris Noles of the North Carolina
2 Building Code Council will present more
3 information on these changes later in the
4 evening.

5 It's important to note that ConAgra
6 has also made similar changes to its gas purging
7 policies. ConAgra established a procedure for
8 gas line purging to require direct venting of
9 purged gases via hose or piping to a safe
10 location outdoors, elimination of ignition
11 sources from the vicinity of purged gases,
12 continuous air monitoring using combustible gas
13 detectors, and the evacuation of non-essential
14 personnel from the facility. Now I will turn the
15 presentation back over to Mr. Holmstrom to
16 present the proposed urgent recommendations to
17 the Board.

18 MR. HOLMSTROM: Thank you, Cheryl.
19 Based on the agency's investigation into the
20 ConAgra incident and its research on a number of
21 other similar purging incidents and existing
22 codes and standards, the CSB staff has put

1 together a proposed draft urgent recommendation
2 that the staff is presenting to the Board
3 tonight. Ultimately, it is the Board that makes
4 the decision on whether or not to make a formal
5 recommendation. The proposed draft urgent
6 recommendation is as follows. To the National
7 Fire Protection Association (NFPA), American Gas
8 Association (AGA), and Chair of the NFPA 54
9 committee, enact a tentative interim amendment as
10 well as permanent changes to the National Fuel
11 Gas Code to require that during purging of gas
12 piping at industrial, commercial and public
13 facilities that purged fuel gases shall be
14 directly vented to a safe location outdoors, away
15 from personnel and ignition sources. If it is
16 not possible to purge - vent purged gases
17 outdoors, purging gas to the inside of a building
18 shall be allowed only upon approval by the
19 authority having jurisdiction of a documented
20 risk evaluation and hazard control plan. The
21 evaluation and plan shall establish that indoor
22 purging is necessary and that adequate safeguards

1 are in place such as, evacuating non-essential
2 personnel from the vicinity of the purging,
3 providing adequate ventilation to maintain the
4 gas concentration at an established safe level
5 substantially below the lower explosive limit,
6 and controlling or eliminating potential ignition
7 sources. Combustible gas detectors are used to
8 continuously monitor the gas concentration at
9 appropriate locations in the vicinity where
10 purged gases are released. And finally, that
11 personnel are trained about the problems of odor
12 fade and odor fatigue, and warned against relying
13 on odor alone for detecting the releases of
14 purged fuel gases. The other recommendation is
15 to the International Code Council and the Chair
16 of the International Fuel Gas Code committee.
17 Incorporate the revised gas purging provisions of
18 the National Fuel Gas Code consistent with the
19 CSB recommendation to NFPA into the International
20 Fuel Gas Code.

21 In summary, the staff has concluded
22 that a recommendation is needed on an urgent

1 basis because the NFPA code committee is nearing
2 its 3-year review cycle when changes to the code
3 can be made, making this an opportune time to
4 address gaps in the current safety code. A
5 hazard exists in general industry where gas-fired
6 equipment is common and supply piping is
7 routinely purged during construction and
8 maintenance, creating the potential for
9 widespread hazards if the gas piping is not
10 purged in the safest possible manner. We note
11 that a number of very serious explosions have
12 occurred in the last four years. Many parties
13 have told the CSB that purging gas lines into
14 buildings is a common practice. Moreover, in the
15 wake of this incident both ConAgra and the North
16 Carolina Building Code Council have revised their
17 safety recommendations in requirement that direct
18 fuel gas be purged to a safe location outdoors.
19 Purging outdoors is an inherently safer approach.
20 Gas that is purged to a safe location outdoors
21 cannot create a fire or explosion inside an
22 occupied building. Purging indoors can pose a

1 much greater risk to a large number of people. A
2 flammable mixture is more likely to be created
3 due to poor dispersion in an enclosed
4 environment. An explosion is more likely
5 indoors, and confinement and constriction can
6 lead to greater over-pressure and harm, including
7 structural collapse, projectiles, blocking of
8 emergency egress or exit and impairment of
9 rescue. All of these elevated risks were present
10 in the ConAgra incident. We thank you, honorable
11 Board, and we are now available for questions.

12 CHAIRMAN BRESLAND: Thank you, Mr.
13 Holmstrom, and your team, and also thanks to Mr.
14 Caldwell for his presentation as well. Before we
15 move to Board questions I'd like to take this
16 opportunity to introduce two distinguished guests
17 that we have here this evening. I'd like to
18 introduce Congressman Bob Etheridge and
19 Congressman David Price. Let me personally thank
20 both of you for attending tonight's meeting and
21 we at the CSB greatly appreciate your support.
22 The ConAgra facility is located in Congressman

1 Etheridge's 2nd Congressional District and
2 Congressman Etheridge is a native of North
3 Carolina and currently serves on the Committee on
4 Ways and Means. And Congressman David Price
5 represents the Research Triangle area in the -
6 North Carolina's 4th Congressional District. And
7 obviously, as we all know, this accident has had
8 a serious impact on workers and residents of the
9 area and the support of congressional leadership
10 has been an important factor in ensuring that
11 similar accidents are prevented. The Board
12 welcomes both congressmen here this evening and
13 we'd certainly appreciate it if you'd like to say
14 a few words to the audience this evening.

15 CONGRESSMAN ETHERIDGE: Thank you very
16 much, and we are honored to be here this evening,
17 and good evening ladies and gentlemen. Obviously
18 as you've already heard this is somewhat of a
19 somber occasion and I want to give my condolences
20 to the families of those who have lost their
21 lives and those who were injured in this tragedy.
22 I was there immediately after and those survivors

1 need to know that you are still in our prayers
2 daily.

3 This is a tragedy that healing alone
4 can't fix and we've just heard this evening that
5 it's so important that we have to learn from
6 these accidents so that they don't happen again.
7 And I commend the members of this Board for your
8 hard work and for the staff. And I really do
9 appreciate U.S. Chemical Safety Board's hard
10 work. The investigation to the causes of this,
11 and I really look forward to your dialogue this
12 evening and your conclusions. Let me also
13 express my appreciation to ConAgra for their
14 efforts to help the workers and their families,
15 and their willingness to help support those left
16 without employment, and their willingness to
17 adopt the improved safety standards. They worked
18 hard at it.

19 The purpose of this meeting is for the
20 Chemical Safety Board to consider improved safety
21 recommendations as we've just heard on gas
22 purging practices across this country. It is my

1 hope and my full expectation that those standards
2 will be adopted. It's also my further hope and
3 expectation that those recommendations will be
4 adopted by the National Fire Protection
5 Association and adopted from that point as
6 national standards for industrial fire gas safety
7 codes. I've written with my colleague
8 Congressman Price in support of those adoptions.
9 For as long as I can remember the ConAgra Slim
10 Jim plant has been one of the largest and the
11 most stable employers in my district and in this
12 area. It is my hope that this plant will someday
13 soon be open at full capacity and provide the
14 jobs that the men and women not only just in
15 Garner, but in a much larger region around this
16 area so desperately need at this time. More than
17 anything else, I want everyone affected by this
18 to know that you have our prayers and our
19 support. And I am grateful to this Board for
20 your concern, for your efforts, your
21 deliberations and all the work you put into it,
22 along with the folks from ConAgra. Thank you.

1 CONGRESSMAN PRICE: Good evening,
2 Chairman Bresland and members of the Board. We
3 do appreciate all your hard work and the
4 recommendations that you're going to be
5 deliberating on in just awhile here. We
6 appreciate your setting this meeting up tonight
7 and coming to share with us the results of your
8 investigation of the causes of the ConAgra
9 explosion. I'm here tonight in a couple of
10 capacities with my friend and colleague Bob
11 Etheridge. First and foremost I'm here as the
12 representative of a neighboring district. Many
13 of my constituents have worked at ConAgra which
14 has been a cornerstone, as Bob stressed, for
15 Garner and southeastern Wake County for nearly 50
16 years. I'm also here because of a strong
17 interest in the work of your Board, Mr. Chairman
18 and members. I serve on the House Interior
19 Appropriations Subcommittee which has funding
20 jurisdiction and oversight over the Chemical
21 Safety Board, but my main experience with the
22 Board dates back to the explosion at the EQ

1 facility in Apex a few years back. The EQ
2 incident was a frightening one and disruptive,
3 but we were fortunate that it did not involve the
4 loss of life.

5 The ConAgra explosion devastated the
6 Garner community. We lost both lives and
7 livelihoods, and for many here things will never
8 be the same. Our hearts go out to the families,
9 friends and coworkers of Ms. McLean Spears, Mr.
10 Watson, Ms. Pulley and Mr. Poppe who lost their
11 lives, and to the many who were injured on what
12 should have been just an ordinary day at work.
13 We can't change what happened, but today we will
14 have a chance to find out why it happened and
15 most importantly, what we can do to make our
16 workplaces safer so that an accident like this
17 does not happen again.

18 The Board has been investigating this
19 accident for over six months and your efforts
20 have identified a specific safety gap in the
21 standards for indoor gas purging. Although
22 there's some comfort in knowing the cause of the

1 explosion, it's dismaying to learn that this
2 wasn't an isolated incident. Indoor gas purging
3 has led to a number of incidents around the
4 country over the years, including an explosion in
5 Cary at the Rex Wellness Center in 1997. So it
6 is time to take action. I support the Board's
7 proposed recommendations which would in most
8 instances forbid indoor gas purging and would
9 require that when it must be done it be done
10 safely with numerous overlapping safeguards. I'm
11 hopeful these recommendations will be adopted
12 here tonight, and Congressman Etheridge and I as
13 he said will be urging the National Fire
14 Protection Association to revise the National
15 Fuel Gas Code accordingly. So again to both the
16 Board, the investigators, the community, thank
17 you for coming together tonight, for your concern
18 about this incident and your concern to make
19 things better for workers and communities in the
20 future. Thank you too for letting Bob Etheridge
21 and me join you tonight.

22 CHAIRMAN BRESLAND: Thank you both

1 very much for taking time from what are in
2 today's world very busy schedules and coming to
3 talk to us this evening. We'll now continue with
4 the agenda and the next part of the meeting is
5 the opportunity for the Board members to ask
6 questions of the staff who have made the
7 presentations. And I'll start on my left with
8 Board Member Wark.

9 HON. WARK: Yes. I have a couple of
10 questions. First of all, I'm kind of curious
11 where - if there is a situation where purging
12 outdoors is not feasible, or what would be a case
13 where it wouldn't be feasible.

14 MR. HOLMSTROM: The question is are
15 there cases where outdoor purging would not be
16 feasible. We certainly have considered several
17 examples, Board Member Wark, where outdoor
18 purging would be difficult. However, those
19 examples also involve greater hazards to purging
20 indoors. One example would be in a multilevel
21 basement structure if there was a gas-fired
22 equipment at the lowest level it may be more

1 difficult to vent to the outside under those
2 circumstances, but in those kinds of examples
3 where the location is remote or difficult to
4 purge to the outdoors it would also present other
5 difficulties if there were to be an explosion or
6 fire due to purging inside because of the
7 remoteness of the location and the difficulty of
8 egress and rescue and other factors. And because
9 of that we think the recommendation that calls
10 for a review of any such plans and the necessity
11 of purging indoors should be reviewed by
12 authorities such as local code officials, fire
13 marshals, et cetera, with a risk evaluation plan
14 and a hazard control plan that justifies the need
15 and presents the safety controls in relationship
16 to that need.

17 HON. WARK: I just have one other
18 question. The location of the pump room and the
19 installation of that water heater was in the -
20 pretty much in the center of the facility. Could
21 you explain how that happened as opposed to maybe
22 putting it on the perimeter near a blast wall?

1 MR. HOLMSTROM: The question was about
2 the central location of the water heater. We
3 noted in this incident there was a gas fire
4 boiler which also presented an explosion hazard
5 that was sited on an outside wall with a lightly
6 constructed wall that would allow any potential
7 explosion blast wave or over-pressure to be
8 vented to the outside of the building, we
9 understand that the water heater from witness
10 testimony was placed in the central location
11 because they desired to have it in a central
12 location and the existing water heater was also
13 located in that same room and minimized the
14 piping that was needed, et cetera.

15 CHAIRMAN BRESLAND: Board Member
16 Wright?

17 HON. WRIGHT: Thank you, Chairman
18 Bresland, investigative staff. Based upon your
19 presentation, let me make a few statements and
20 correct me if I'm wrong. One, we haven't found
21 an initiation source yet, is that correct? We
22 haven't identified one?

1 MR. HOLMSTROM: That's correct. We
2 haven't identified a specific source. We found a
3 number of potential ignition sources within the
4 vacuum pump room and witnesses said that that
5 area did not have controls for electrical
6 appliances for use in a hazardous environment.

7 HON. WRIGHT: And my presumption is
8 that we haven't been able to identify the
9 initiation point for the explosion? In other
10 words, it could have occurred outside the vent
11 room, it could have occurred anyplace else based
12 upon the damage, and we probably won't know that
13 until we identify some of the components in terms
14 of flashing, et cetera. Am I correct in that
15 assumption?

16 MR. HOLMSTROM: We have done some
17 preliminary analysis along with contractors who
18 are subject matter experts that we've hired, and
19 as indicated on the slide the preliminary
20 determination is that the source of the explosion
21 and the over-pressure was the vacuum pump room.
22 All the blast indicators are moving outward from

1 that location. And again, this is preliminary
2 information but we have found no other area
3 within the packaging area that looks like it
4 could have been a blast location.

5 HON. WRIGHT: Okay, good. Thank you.

6 And finally on that line of questioning, the 2.5-
7 inch cap that's shown in the photograph on the
8 floor, do we have any knowledge as to whether
9 that was in place at one point in time, or
10 whether it is a result of an explosion, or
11 whether somebody unscrewed it? That was not
12 clear to me during your presentations.

13 MR. HOLMSTROM: We've identified that
14 as a likely purge point. As indicated, there are
15 two likely purge points. One is the 3/8-inch
16 line where there's a pressure gauge connected to
17 it. We have witness statements that that
18 pressure gauge was removed and placed back on and
19 purged at different times in attempts to light
20 the boiler. In a post-incident observation of
21 the photographs we've noted that the cap had been
22 removed from that 2-inch line and we believe that

1 it is a likely purge point subject to further
2 analysis based on the amount of gas that appears
3 to have been released from observing the gas
4 usage data. And ultimately we want to correlate
5 the observed blast damage and look at the amount
6 of gas that likely would have to have been
7 released to cause that amount of damage,
8 correlate that with potential gas that we know
9 was likely used during this process given the gas
10 meter data and then also identify any other - you
11 know, we want to examine the piping. There's a
12 block valve upstream of all of that which
13 witnesses identified as being open and closed
14 during the process that would have either opened
15 or closed any of those openings as a result of
16 the purging activity.

17 HON. WRIGHT: Thank you. And I'd like
18 to shift my attention to the installation, ESA.
19 I think your presentation said he relied solely
20 on the sense of smell to determine the presence
21 of gas? Do we have any evidence that ESA was
22 aware of and cognizant of NFPA 54 Section 83-33.

1 MR. HOLMSTROM: Just one
2 clarification. The gentleman from ESA, we've
3 talked to coworkers of his. Unfortunately he
4 passed away.

5 HON. WRIGHT: I realize that.

6 MR. HOLMSTROM: Yes, we were unable to
7 interview him. We also talked to other people
8 who were in and out of the vacuum pump room for
9 various periods of time during the purging
10 process and our understanding is that in terms of
11 their perception of the purging activities that
12 they were using their perceived sense of - their
13 sense of smell and the perceived odor to
14 determine intensity of gas, et cetera.

15 HON. WRIGHT: Okay, but do you think
16 they were aware of 54 or not?

17 MR. HOLMSTROM: We asked various
18 witnesses about purging policies and codes and
19 standards, and in the case of ConAgra for example
20 they did not have a policy on purging and had no
21 corporate or at least policies applied to that
22 location on purging gas that were similar at all

1 to NFPA 54. And that was also true of ESA.

2 HON. WRIGHT: Well, I guess I'm trying
3 to determine whether or not the individual was
4 aware of the requirements which basically say,
5 and he pointed out in that last slide. I could
6 read the language again, but it's basically make
7 sure that you have well ventilation in the space
8 and aware of ignition points, et cetera. And I'm
9 trying to determine whether he was unaware of the
10 requirement, thought he was safe in the way he
11 was doing it. Do you have any conclusions as to
12 whether or not you think he thought he was safe,
13 or whether he ignored the requirement, or?

14 MR. HOLMSTROM: You know, in terms of
15 what he was thinking -

16 HON. WRIGHT: Well, I know you can't
17 tell me what he was thinking.

18 MR. HOLMSTROM: - it's very difficult.
19 It's obviously - he was - from what we gather
20 from other witness statements he was engaged in
21 troubleshooting because the heater would not
22 light, and he was attempting to - he believed

1 that it required further removal of air in order
2 to light it, and so we know that there were
3 several examples of him purging into the room and
4 trying to light the heater and then purging some
5 more. We do know from other individuals that we
6 asked them, you know, did they smell gas. We
7 probably interviewed over 150 people and the
8 information that we got from different people,
9 often in the same location, was very different
10 which we think is connected to the issues of odor
11 fade, odor fatigue that we discussed previously.

12 HON. WRIGHT: Okay, and I believe you
13 said that it's common practice to vent indoors
14 from various people that you talked to from
15 either this case or other cases. Have you
16 reached any conclusions as to whether or not
17 those people are aware of 833 and are attempting
18 to purge indoors by satisfying the requirements
19 of 833, or are just operating on a sense of smell
20 in terms of how they operate? I guess what I'm
21 trying to get at is 833 speaks about various
22 safety aspects that should be followed if you're

1 going to purge indoors. I guess we'll never know
2 whether or not in this particular case they
3 abided by those because it did find an ignition
4 source. And I'd also submit one more thing with
5 respect to gas metering. Not only should it be
6 done at the release point or the purge point, but
7 in the overhead because it's lighter than air.
8 So your concentration of 3.9 percent may be up
9 there as opposed to down here. And so I would
10 urge the NFPA and others to look at where they
11 measure and detect with those gas meters.

12 And finally, I hope finally - this
13 shows you I read your material by the way - in
14 your urgent recommendation in Paragraph 7 it
15 states, "After installation of the new gas
16 piping, both the new piping and the existing gas
17 supply line which provided natural gas to a
18 boiler were pressure-tested with air to check for
19 leaks. Following the successful pressure-
20 testing, ConAgra employees purged the gas supply
21 line of air, venting the purged gases directly
22 from the boiler room via a hose to the outdoors,

1 avoiding the possibility of flammable gases
2 accumulating inside the building. However, the
3 air was not immediately purged from the new
4 piping leading to the new water heater." So
5 which section of pipe does this refer to?

6 MR. HOLMSTROM: This refers to the
7 section of piping that cuts off the main gas
8 supply line that goes directly - it's the new
9 piping that goes directly to the new industrial
10 water heater. That's still - that was not purged
11 of air at the time that the boiler line which
12 cuts off separately from that gas supply line on
13 the roof.

14 HON. WRIGHT: So this at least implies
15 to me that ConAgra was thinking about purging
16 outside because the day before they did. ESA on
17 the other hand didn't the following day, for
18 whatever reason. You also cited within the
19 notebook that we had as a read-ahead various
20 cases, including the San Diego hotel case, where
21 Cal OSHA fined them significant amounts, \$27,000
22 I think in one case, \$48,000 in another, for

1 failure to abide by recommended practices, and I
2 assume part of that may have been NFPA 54
3 requirements, or do you know?

4 MR. HOLMSTROM: I think Cal OSHA has
5 specific requirements for control of flammable
6 environments in the interior of buildings.
7 That's my understanding, that you can't exceed 25
8 percent of the LEL. That are specific to
9 California.

10 HON. WRIGHT: And to play devil's
11 advocate for a second, if people involved in
12 these accidents in the past, not just in this
13 case but in others, did so because they were
14 unaware of or ignored the requirements of NFPA
15 54, how is it going to be helpful to make it
16 mandatory to purge outside if they either were
17 unaware then or ignored that requirement? What
18 makes you think they're going to abide by the new
19 requirement just because it's in the same book?
20 See where I'm going?

21 MR. HOLMSTROM: I think I understand
22 your point. I think that our understanding of

1 the language and also this is conversations we've
2 had with code officials as well is that the
3 current language is largely unenforceable. It
4 sets no specifications, for example, for
5 controlling the purge rate which we have
6 identified with other codes and standards such as
7 the LPG standard that OSHA has, to use a
8 combustible gas meter, for example, to limit the
9 gas that's being released to a certain percentage
10 substantially below the lower explosive limit.
11 Also, controlling ventilation - in this case the
12 room, the vacuum pump room did have ventilation.
13 Unfortunately, the ventilation that's provided in
14 many boiler rooms or rooms where they have gas-
15 fired utilities are designed not for ventilating
16 gas, but for combustion air, so there's
17 sufficient combustion air to supply the gas-
18 firing that's occurring inside the room.

19 HON. WRIGHT: I guess my next question
20 is do you see any education issues with respect
21 to NFPA 54 with respect to any of these cases?

22 MR. HOLMSTROM: I think that's a great

1 question. Part of the recommendation is to
2 provide education and particularly it references
3 issues like odor fade and odor fatigue and
4 recognizing not to rely on one's perception of
5 odor to determine or not whether you have a
6 hazardous situation which has been identified in
7 a number of these previous incidents that we've
8 examined, talked about today.

9 HON. WRIGHT: Okay. And you may not
10 know the answer to this one but I'll go ahead and
11 ask it. Do you know how many jurisdictions have
12 adopted NFPA 54 as sort of law, ordinance, or
13 rule?

14 MR. HOLMSTROM: I can't tell you
15 specifically and I think that would be a good
16 question for our representatives. I know that in
17 researching a number of NFPA codes in the past
18 oftentimes even if a code isn't adopted at state
19 level as it is in North Carolina, it's often
20 adopted by a number of local jurisdictions in
21 states, counties, et cetera, so there can be
22 substantial coverage within a state even if the

1 state itself has not adopted the code.

2 HON. WRIGHT: Thank you very much.

3 Appreciate it.

4 MR. HOLMSTROM: Thank you.

5 CHAIRMAN BRESLAND: Thank you, Board
6 Member Wright. A couple of questions for the
7 investigators. Looking at the damage to the
8 building, obviously it was quite catastrophic
9 with the amount of the heavy equipment and the
10 heavy beams that were falling. However, if you
11 set aside the issue of the fact that there was an
12 explosion inside the building, and I realize
13 you're not building construction experts, let's
14 forget that there was this explosion. Is this
15 type of construction common in the country and it
16 is appropriate and safe?

17 MR. HOLMSTROM: Putting aside the
18 issue of the hazard of a potential explosion from
19 equipment inside the building, this type of
20 construction is very common and is safe for
21 various types of industrial and commercial usage.

22 CHAIRMAN BRESLAND: However, as you

1 point out, because there was an explosion the
2 type of construction was sort of inherently kind
3 of unsafe in that sense, in the sense that the
4 building was blown apart, causing the beams to
5 fall. So if there had been a different location
6 for the heater and let's say there had been blow-
7 out panels in the wall on the edge of the
8 building that would have prevented the sort of
9 damage that we're seeing here.

10 MR. HOLMSTROM: That is certainly
11 something - I think that's a fair statement.
12 It's certainly something that we're examining,
13 and particularly we're focusing on industry
14 standards and guidelines, and we've examined some
15 already that address this issue. And this is a
16 future issue for our full report that we'll be
17 presenting to the Board at a future date.

18 CHAIRMAN BRESLAND: The use of
19 combustible gas detectors described in your
20 recommendation, how common are combustible gas
21 detectors? How easy are they to use? How
22 expensive are they to purchase?

1 MS. MACKENZIE: Combustible gas
2 detectors are relatively inexpensive. They range
3 in price, some are several hundred dollars. They
4 do require someone with knowledge of how to use
5 it and how to calibrate it. However, they are
6 prevalent in industry. Any location that would
7 do confined space entry would have a combustible
8 gas detector already onsite and already with
9 trained personnel to use it. So when it - it is
10 a very feasible tool for people to use to ensure
11 that their working environment is safe.

12 CHAIRMAN BRESLAND: Okay, thank you.
13 Those are the only questions that I have and with
14 that we'll move on to our panel presentations.
15 And we would invite the three panel members to
16 step up. We have Mr. Chris Noles from the North
17 Carolina State Fire Marshal's Office, we have Mr.
18 Ted Lemoff from the National Fire Protection
19 Association and we have Ms. Belinda Thielen from
20 the United Food and Commercial Workers Union.
21 And we will start with Mr. Noles. Please, you
22 need to press the little button on your speaker

1 so that the green light comes on and then we can
2 hear you.

3 MR. NOLES: Thank you. On behalf of
4 the Office of State Fire Marshal I want to thank
5 the U.S. Chemical Safety Board for providing the
6 information to our staff from their investigation
7 identifying a potential issue relating to the
8 North Carolina Fuel Gas Code. I want to thank
9 the CSB for the opportunity to allow Office of
10 State Fire Marshal to provide an update on the
11 action of the North Carolina Building Code
12 Council. The history of the building codes is
13 based on improving safety of construction
14 operations. Code development comes from the
15 observation of designers, contractors, code
16 officials and unfortunately cases where accidents
17 bring attention to an issue. North Carolina
18 State Fire Marshal's Office and the U.S. Chemical
19 Safety Board have worked together on previous
20 accidents, including a West Pharmaceutical
21 explosion resulting in North Carolina code
22 changes addressing combustible dust operation.

1 With the ConAgra investigation, the CSB staff
2 contacted OSFM near the end of their
3 investigation as a courtesy update to the
4 suspected cause of the accident. It was at this
5 point that the department understood that the
6 accident was caused by the presence of
7 combustible gas, possibly from a fuel gas purging
8 operation inside the building during the
9 installation of new industrial equipment.

10 The Office of State Fire Marshal makes
11 life safety a priority through the facilitation
12 of the North Carolina building codes. We carry
13 out our charge in the form of training,
14 interpretation or assistance to the public for a
15 consistent regulation of construction or
16 operations as provided for in the code. Our
17 charge is also in the form of assisting the North
18 Carolina Building Code Council with language that
19 improves the effectiveness of the codes,
20 especially when life safety is involved. After
21 reviewing the findings of how this tragic event
22 occurred and the potential for it occurring

1 again, the staff took immediate action. In
2 examination of the applicable North Carolina Fuel
3 Gas Code language with respect to the suspected
4 cause of the accident addresses venting a gas
5 line within a building by allowing purging into,
6 and I quote, "ventilated area of sufficient size
7 to prevent the accumulation of flammable
8 mixtures." The purging of a gas line outside
9 continues to represent a hazard due to its
10 inherent flammability to the material, but the
11 accumulation or concentration is not as great of
12 a concern. However, when the gas is purged
13 within the building the concentration of the
14 material increases to the point where the
15 potential for explosion is present, affecting
16 everyone within the building. In the codes, the
17 lowest concentration that will support an
18 explosion is called LEL, or lower explosion
19 limit. While the extent of the burning is a
20 great concern, the subsequent pressure increase
21 from a fuel gas explosion is also and an equally
22 dangerous event. Unless the building contains an

1 operation that represents an explosion hazard,
2 buildings are not designed to withstand the high
3 internal pressures such as the ignition of a fuel
4 gas purged into a building. Without design such
5 as explosion venting or reinforced walls the
6 building can face catastrophic failure such as a
7 collapsed roof or blown out walls.

8 Faced with the possibility of life
9 safety being compromised, staff took a closer
10 look on how the code guides a technician through
11 fuel gas purging operations. The code language
12 leaves a technician who is performing the purging
13 operation within the building the responsibility
14 of determining when the flammable gas has reached
15 its LEL, and it represents the flammable mixture
16 as identified by the North Carolina Fuel Gas
17 Code. Without a formal measuring practice to
18 follow, the presumption is that the technician
19 will use the odorant concentration to identify
20 when the flammable mixture is present. There are
21 factors that may make this process flawed due to
22 conditions - the conditions that make using the

1 odorant less reliable. These include factors
2 such as a technician with limited sense of smell
3 or nasal complications, temporary desensitization
4 to the odorant or odor fade due to the exposure
5 of new steel equipment or rust.

6 With the concern of the potential of
7 another accident compromising life safety, the
8 staff immediately drafted new language for the
9 gas purging operations for presentation to the
10 North Carolina Building Code Council for adoption
11 in the North Carolina Fuel Gas Code. The new
12 language removes the performance-based language
13 requiring the technician to estimate the
14 concentration of fuel gas and requires purging to
15 the outdoors. An exception was also added
16 allowing purging to the indoors with new
17 prescribed safety measures which include the use
18 of gas detectors measuring for 25 percent of the
19 LEL and an evacuation of affected personnel. The
20 basis for the current 2009 North Carolina Fuel
21 Gas Code is the 2006 International Fuel Gas Code
22 with amendments promulgated by the North Carolina

1 Building Code Council. The International Fuel
2 Gas Code is one of two documents traditionally
3 adopted across the United States. On September
4 15 of 2009 the Building Code Council approved the
5 petition for rulemaking which allows the council
6 to begin the process of permanently changing the
7 code. On December 7, this rule change was made
8 available for public comment in front of the 17-
9 member Building Code Council with no additional
10 public comments. In March, the permanent rule
11 will be voted on. In addition, on September 15
12 the Building Code Council also voted to approve
13 an emergency rule immediately changing the code
14 until the permanent rule is approved. By
15 immediately amending the language adopted from a
16 national code, North Carolina has taken action on
17 a code approach that we hope will receive more
18 attention over the next code cycle. Thank you.

19 CHAIRMAN BRESLAND: Thank you, Mr.
20 Noles. We'll now go to Mr. Lemoff.

21 MR. LEMOFF: Good evening, Chairman
22 Bresland, CSB board members and CSB staff,

1 members of the panel, ladies and gentlemen. I am
2 Theodore Lemoff, the principal gases engineer
3 with the National Fire Protection Association
4 (NFPA). Among my duties I serve as the staff
5 liaison to the technical committee that develops
6 NFPA 54, the National Fuel Gas Code. NFPA
7 appreciates the opportunity to participate in
8 this meeting and to describe what actions are
9 being taken by the National Fuel Gas Code
10 Technical Committee in response to serious
11 accidents that have occurred during purging of
12 fuel gases while placing new gas piping into
13 service.

14 First, let me provide some background
15 on NFPA. NFPA is a non-profit membership
16 organization that develops voluntary consensus
17 codes and standards that are adopted by state and
18 local jurisdictions throughout the United States
19 and the rest of the world. NFPA develops more
20 than 300 consensus codes and standards intended
21 to minimize the possibility and effects of fire
22 and other risks. Our mission is to reduce the

1 worldwide burden of fire and other hazards on the
2 quality of life. In addition to its consensus
3 codes and standards activity, NFPA also carries
4 out its mission through public education and
5 research. NFPA has nearly 75,000 members.

6 NFPA codes and standards are developed
7 through a process that is accredited by the
8 American National Standards Institute, known as
9 ANSI, as a fair, open and balanced consensus
10 process. To develop our codes and standards, we
11 convene more than 250 technical committees made
12 up of about 5,000 individuals representing the
13 stakeholders in diverse categories. All the
14 individuals are appointed through an open
15 application process that ensures each technical
16 committee is balanced and as many interest
17 categories as possible are represented. The NFPA
18 consensus process and the regular revision to all
19 NFPA codes and standards - I'm sorry, the
20 revision to all NFPA codes and standards must
21 undergo help ensure that the latest practices and
22 safeguards are included. NFPA codes and

1 standards provide a comprehensive set of
2 requirements applicable to safety in the built
3 environment. NFPA 54, also known as ANSI Z223.1,
4 the National Fuel Gas Code, is the ANSI-
5 accredited American national standard for the
6 safe use of fuel gas in buildings. NFPA 54
7 National Fuel Gas Code is formally adopted in
8 many states and forms the basis of other codes
9 addressing fuel gases, such as the International
10 Fuel Gas Code and the Uniform Plumbing Code.

11 At their meeting, November 2008, the
12 National Fuel Gas Code Technical Committee became
13 aware of the May 2008 gas purging incident in San
14 Diego, California, which was mentioned. This
15 accident resulted in significant damage and
16 injuries. In response to this incident, the
17 committee appointed a special task group, Piping
18 Task Group, to review purging provisions and to
19 make recommendations for revision to the National
20 Fuel Gas Code if appropriate. Subsequently, in
21 June 2009 the ConAgra incident occurred resulting
22 in fatalities and very serious injuries. Piping

1 Task Group has been assisted in its review of the
2 purging provisions by the CSB's ongoing
3 investigation of that accident and by information
4 on additional incidents CSB has identified in the
5 course of its investigation. Most recently, CSB
6 staff attended the January 21, 2010, meeting of
7 the Piping Task Group and made a presentation on
8 the ConAgra incident. Clearly, the hazards
9 underlying the ConAgra explosion should be
10 promptly rectified. Toward that end, Piping Task
11 Group at the January 21 meeting developed
12 proposed changes to NFPA 54 regarding the purging
13 of fuel gas piping for consideration by the
14 entire National Fuel Gas Code Technical
15 Committee. In developing the proposals I believe
16 that the task group has sought to be responsive
17 to the CSB staff views. For your review and
18 consideration, we will be providing your staff
19 with the agenda items for the upcoming technical
20 committee meetings and that will include any
21 final recommendations delivered here this
22 evening.

1 The Technical Committee will consider
2 and act on task group proposed code changes and
3 any final recommendations delivered this evening
4 and all other agenda items at its meeting
5 February 23-25, 2010 in San Francisco. The Chair
6 and I will ensure that any CSB recommendations
7 directed towards NFPA concerning the safe venting
8 of purged fuel gas are thoroughly reviewed and
9 addressed by the Technical Committee at its
10 meeting later this month. The decisions that
11 come out of that meeting, however, are not final
12 and the process at that point will be far from
13 over, and there will be further opportunities for
14 the CSB and others to provide input to share its
15 concern with the Technical Committee.

16 I would like to now briefly outline
17 the subsequent steps in our code development
18 process. The Technical Committee action
19 resulting from the upcoming meeting will be
20 published and made publicly available in what is
21 known as the Report on Proposals. At this point
22 our process is open for a second round of public

1 comment where any interested party can comment on
2 the work of the Technical Committee. Public
3 comment period on NFPA 54 will be open until
4 September 3, 2010, at which time the Technical
5 Committee will meet again to consider and act on
6 all comments received. In doing so, the
7 Technical Committee can reconsider or further
8 refine or revise any of its previous actions.
9 Any further action of the Technical Committee
10 will be published and made publicly available in
11 what is called the Report on Comments. Following
12 further procedures including an opportunity for
13 appeals, the NFPA 54 is scheduled to be issued in
14 the summer of 2011.

15 In addition to the full standards
16 development process that I have just described,
17 the NFPA process offers a means to prepare an
18 interim change to the current edition called a
19 tentative interim amendment, or TIA, that would
20 be enacted on an emergency basis. Anyone can
21 recommend a TIA to be initiated and NFPA will
22 welcome your input on this possible approach to

1 establishing additional protections in the code
2 more quickly. The interim code establishes the
3 lessons learned regarding the safe practices for
4 purging of gas piping to proceed without waiting
5 for the complete revisions of the 2012 edition of
6 NFPA 54 to be completed.

7 NFPA has a history of working
8 effectively with the CSB. NFPA has also a
9 history of acting quickly to revise its codes and
10 standards if warranted. For example, following
11 the tragic Station nightclub fire in Rhode Island
12 in 2003, NFPA convened the relevant technical
13 committees who issued emergency TIAs to address
14 issues raised from the investigation of that
15 fire. As our code development process continues,
16 we post all relevant information about the 2012
17 revisions to NFPA 54 at www.nfpa.org/54 and I am
18 also available to provide any additional
19 information you may need. We want to offer our
20 assistance to you in following the changes that
21 are being developed and we encourage your
22 continued input. We thank you for your attention

1 to this important matter and look forward to your
2 comments and participation when we move forward.
3 And Mr. Chairman, with your permission I also
4 have a letter from the chairman of the National
5 Fuel Gas Code committee that he's asked me to
6 read as he couldn't be here tonight.

7 CHAIRMAN BRESLAND: Please do.

8 MR. LEMOFF: Dear Chairman Bresland,
9 The purpose of this letter is to summarize my
10 observations regarding the National Fuel Gas
11 Code's work on purging. As you're aware, the
12 committee took up the issue of creating more
13 definitive guidelines for use in purging fuel gas
14 piping prior to the task force meetings which
15 were held in Ft. Lauderdale, Florida, in January
16 this year. Piping Task Force which met in
17 January also received the presentation from the
18 Chemical Safety Board as part of its
19 consideration of the issue and the perceived need
20 to create more definitive guidelines for purging.
21 The Piping Task Force which is comprised of only
22 a full - portion of the committee ultimately put

1 forth recommendations for purging guidelines
2 which would include an option for purging indoors
3 as long as specified standards are recommended as
4 spelled out in the pending proposal. Since the
5 adjournment of the panel meetings I've become
6 aware of additional discussions indicating the
7 interest in what might be termed additionally
8 stringent requirements regarding purging
9 conducted indoors. It is also pertinent to
10 reference incident data presented by the CSB as
11 well as incidents that I am personally familiar
12 with - that's the chairman - with regard to
13 purging incident explosions. These incidents
14 which have caused major structural damage and
15 personal injury are commonly associated with
16 large systems typical of industrial or commercial
17 situations as opposed to systems commonly
18 occurred in, for example, residences. To that
19 end it is my personal opinion that the language
20 which expresses the National Fuel Gas Code
21 requirements for purging should express rigorous
22 requirements for allowing and conducting any

1 indoor purging. While I believe the proposal
2 generated by the piping panel approaches this
3 goal through the use of stringent monitoring
4 requirements, it's my personal opinion that the
5 procedural requirements for allowing indoor
6 purging should go beyond the piping panel
7 recommendation. It is clear that the additional
8 requirements may take several different forms and
9 I'm aware that suggestions have been made which
10 would require risk evaluation and hazard control
11 plan as approved by the authority having
12 jurisdiction. I can neither endorse nor reject
13 that particular proposal pending an evaluation by
14 the full committee. It is also clear that the
15 wide range of technical knowledge and experience
16 represented by the various members of the
17 Technical Committee may bring additional
18 considerations to bear in the methodologies and
19 permissive requirements associated with indoor
20 purging. As my role as chairman of the National
21 Fuel Gas Code committee, it is my intent to
22 recommend to the full committee that in my

1 opinion language which has been generated to
2 cover indoor purging must be strengthened to more
3 effectively manifest the goal of this code which
4 is safety. And it's signed by Thomas R. Crane,
5 Chair of the National Fuel Gas Code. Thank you
6 very much.

7 CHAIRMAN BRESLAND: Thank you, Mr.
8 Lemoff. If you could provide us with a copy of
9 that letter for the official record of the
10 meeting.

11 MR. LEMOFF: Certainly.

12 CHAIRMAN BRESLAND: Ms. Thielen?

13 MS. THIELEN: Hello. My name is
14 Belinda Thielen and I am an industrial hygienist
15 with the Occupational Safety and Health
16 Department of the United Food and Commercial
17 Workers International Union, or UFCW. I would
18 like to thank you, thank the Chemical Safety
19 Board for giving me the opportunity to speak here
20 today. At the UFCW our motto is that we are a
21 voice for working America. We amplify the voices
22 of our 1.3 million members and of the millions

1 more who work in the same industries, including
2 our members who were affected the explosion in
3 the ConAgra plant. Some of our members from the
4 plant are here today and I'd like to take a
5 minute to ask them to stand up and be recognized
6 as being here today. If you could stand up,
7 members of the UFCW. Thank you very much.

8 We are here today to say something has
9 gone terribly wrong. The United States Chemical
10 Safety Board was established as an independent
11 agency of experts to investigate work site
12 disasters, an agency whose primary concern is to
13 protect workers, to protect the public and to
14 protect the environment, an agency independent of
15 corporations and industry, an agency paid for by
16 the American people and accountable solely to the
17 American people. The ConAgra plant explosion on
18 June 9, 2009, killed four workers, injured 70
19 other workers and traumatized hundreds of workers
20 and community members and their families. It
21 also threatened the future of an entire town. If
22 any good could possibly come from such a horrific

1 event it would be that we would find ways to
2 prevent this type of tragedy from ever happening
3 again. That is the job of the Chemical Safety
4 Board.

5 It quickly became clear to the staff
6 of the CSB that there were actions that could be
7 taken to prevent explosions like this one from
8 occurring again. They went to the members of the
9 Board with their recommendations, but in a
10 stunning display of callousness the Board refused
11 to act. Instead of immediately issuing a clear
12 recommendation to prohibit indoor purging of fuel
13 gases, the Board ducked their responsibility and
14 sought to pass the buck to other experts, such as
15 the National Fire Protection Association. Months
16 have passed and the Board has still failed to act
17 to prevent these types of tragedies from
18 occurring again. This is inexcusable and
19 demonstrates a clear failure of leadership on the
20 part of the members of this Board. I can only
21 hope that today the Board finds its way past its
22 previous failures to act and immediately

1 recommends a strong and comprehensive standard
2 prohibiting indoor gas purging.

3 The UFCW calls itself a voice for
4 working America. Today we speak for the four
5 workers who perished in Garner, North Carolina,
6 and for the millions more who remain at risk as
7 long as this hazardous practice is allowed to
8 continue. We urge the CSB to redeem themselves,
9 fix their errors and stand with us to make sure
10 that tragedies like this one never occur again.
11 Thank you.

12 CHAIRMAN BRESLAND: Thank you, Ms.
13 Thielen. We'll now have an opportunity for the
14 Board members to ask questions of the panel
15 members. Board Member Wark?

16 HON. WARK: I would like to thank all
17 of you for being here, but I think any questions
18 I had you answered them in your statements, so
19 thank you.

20 CHAIRMAN BRESLAND: Board Member
21 Wright?

22 HON. WRIGHT: I have no questions,

1 Chairman Bresland.

2 CHAIRMAN BRESLAND: I have a question
3 for Mr. Noles. Can you clarify the current
4 situation in North Carolina? Does it ban
5 absolutely the issue of venting outdoors, or is
6 there an opportunity under certain circumstances
7 that venting indoors would be permitted?

8 MR. NOLES: The language that the
9 emergency rule facilitated was an original
10 language that said that it had to be vented
11 outside with an exception, and the criteria
12 around the exception really made a more
13 prescriptive approach to explain exactly how -
14 where the operation had occurred around the
15 venting inside the building. So the language
16 within the new emergency rule as far as the
17 permanent rule is concerned is it addresses the
18 use of the meter, prescriptive requirement use of
19 the meter, it addresses the ventilation and it
20 addresses the ignition sources, but it is -
21 approach that really takes away more of the
22 performance-based and makes it more prescriptive,

1 so it spells out the procedure, and that's where
2 the procedure stands now. The permanent vote to
3 put that in there is actually going to occur in
4 March and part of that discussion is occurring
5 within committee. Now, there has been no real
6 big discussion or problems with the language
7 that's come out, but the committee has brought up
8 some interesting concerns and discussions which I
9 appreciate because there are some things that
10 have come up from that that have been very
11 fruitful. For example, you know, changing the
12 language from 25 percent of the LEL to being a
13 little more user friendly. Perhaps we need to
14 start talking about a percentage, something that
15 comes right off the meter, or perhaps we need to
16 address something that is a little bit friendlier
17 to the technician that's putting the gas pipe in.
18 But that's where it stands right now.

19 CHAIRMAN BRESLAND: Do you have any
20 current experience of how your new regulation is
21 working in North Carolina?

22 MR. NOLES: It is a relatively new

1 emergency rule. When I say "relatively new," it
2 was put into effect September 15 and the staff
3 has not really gotten any feedback for problems
4 in facilitating it. We have communicated it to
5 the best of our ability to the code officials
6 around North Carolina to let them know of the
7 emergency rule. We put it in the minutes, we put
8 it in our documentation on our website, but it's
9 one of those things that will slowly become
10 facilitated and people become more aware of. And
11 we'll probably hear more in the coming days.

12 CHAIRMAN BRESLAND: Is it a
13 requirement across the whole state, or do
14 localities have the option of adopting it or not
15 adopting it?

16 MR. NOLES: Well, North Carolina is a
17 central - it facilitates a central Building Code
18 Council so that when a code is adopted within
19 North Carolina it comes through this one body so
20 that there is really no opportunity for
21 jurisdictions to adopt a different standard. It
22 goes through the Building Code Council for a

1 standardized approach across the state.

2 CHAIRMAN BRESLAND: Okay, thank you.
3 I have no further questions. I'd like to thank
4 you for your participation in our meeting this
5 evening and we're going to move on now to public
6 comment. And take opportunity to allow the
7 members of the public who are here this evening
8 to express their points of view. And we have a
9 list of currently five people and I'm going to
10 call them in the order that they're written
11 assuming that I can pronounce the names
12 correctly. First one shouldn't be too hard for
13 me, it's Mr. Tom O'Connor from National C-O-S-H.
14 Mr. O'Connor, can you - just to clarify - you're
15 fine right there. Can you spell your name and
16 give us the title of your organization?

17 MR. O'CONNOR: It's Tom O'Connor, O
18 apostrophe C-O-N-N-O-R, National Council for
19 Occupational Safety and Health. And good
20 evening. I am the executive director of the
21 National Council for Occupational Safety and
22 Health and we are a non-profit organization

1 dedicated to improving workplace health and
2 safety conditions throughout the United States.
3 We're based here in Raleigh.

4 I'd like to commend the Chemical
5 Safety Board for convening this hearing. It's
6 too often the national government agencies like
7 the CSB make decisions in Washington without
8 getting out into the field and hearing from the
9 folks that are affected by those decisions so we
10 appreciate your coming here for this hearing.
11 It's a very positive step forward for public
12 participation in the CSB's process. Second, I'd
13 like to congratulate the dedicated staff of the
14 CSB for their in-depth investigation of this
15 case. It's a terrible tragedy at the ConAgra
16 plant. The investigation revealed a clear cause
17 for the explosion and led to a series of
18 recommendations that we've heard about tonight
19 that boil down to some very simple
20 recommendations. Third, I'd like to appreciate
21 the folks - workers from the plant who are here
22 tonight and I think without your presence here we

1 would - it would be harder for us to remember the
2 individual faces that are affected by this and
3 the families that are affected, and I would
4 encourage you to speak your piece tonight as
5 well.

6 The simple recommendations that we
7 have heard from the CSB staff tonight, well, they
8 were detailed in the details but they came down
9 to two simple things, that purged gases should be
10 vented to a safe location outdoors, not indoors,
11 and that we should never rely on our noses to
12 detect the release of fuel gases. These
13 recommendations are so simple and so
14 commonsensical that I struggle to understand why
15 eight months after this tragic event we're still
16 having this conversation. In addition to the
17 evidence that the - from the ConAgra plant, the
18 CSB staff identified no less than six other
19 incidents in which indoor gas purging resulted in
20 explosions. So we must ask why has the Board of
21 the CSB failed up until now to adopt these simple
22 recommendations that may prevent similar tragic

1 incidents and save lives in the future?

2 We've been hearing a lot and talking
3 a lot about the technical issues of pressure-
4 testing and gas purging, et cetera, but I would
5 suggest that this issue is not simply a technical
6 matter, but a basic question of public trust in
7 the ability of government agencies to protect the
8 health and safety of workers and community
9 members. In recent years our country has
10 experienced a number of serious industrial
11 incidents involving the deaths of dozens of
12 workers, including the explosion at the BP
13 refinery in Texas City that killed 15 workers and
14 injured 170 others, the combustible dust
15 explosion at the Imperial Sugar plant in
16 Wentworth, Georgia, that killed 14 workers and
17 injured dozens of others, an explosion at the
18 West Pharmaceutical plant in Kinston, North
19 Carolina, that killed six workers and injured
20 dozens. These are just a few of the many
21 incidents that have caused multiple fatalities in
22 recent years. We shouldn't refer to them as

1 accidents as we tend to do because in most cases
2 they're entirely preventable. In each of the
3 above cases investigators found that multiple
4 basic safety rules were ignored. These kind of
5 tragedies like the one at ConAgra are not acts of
6 God or nature, but incidents that can be
7 prevented by taking adequate precautions to
8 protect workers and the public.

9 If the federal government in general
10 and the CSB in particular is to restore its
11 credibility with the public in terms of its
12 ability to protect workers and community members,
13 one easy step would be for the CSB Board to adopt
14 these common sense but urgently needed
15 recommendations. People should not be asked to
16 risk their lives in order to keep a job. We owe
17 it to the working people of North Carolina and to
18 the entire country to take the most aggressive
19 action possible in order to prevent more
20 tragedies like the one at ConAgra in the future.
21 Thank you.

22 CHAIRMAN BRESLAND: Thank you, Mr.

1 O'Connor. The next person on the list is MaryBe
2 McMillan from the North Carolina AFL-CIO. Again,
3 please spell your name and give us your
4 affiliation.

5 MS. MCMILLAN: Good evening. I'm
6 MaryBe McMillan. My first name is M-A-R-Y-B-E.
7 My last name is M-C-M-I-L-L-A-N. I'm with the
8 North Carolina AFL-CIO. We represent over
9 130,000 union members throughout North Carolina.
10 I'd like to thank the Board for having this open
11 public hearing and for allowing a period for
12 public comments. On behalf of all workers I urge
13 the Board to pass these recommendations to
14 require outdoor purging. Stricter guidelines are
15 clearly needed to avert another tragedy like the
16 one that occurred here at ConAgra and at at least
17 seven other locations around the country.

18 I think it's fair to say that all of
19 us in this room tonight, when we went to work
20 this morning, we took for granted that we would
21 return home safely at the end of the day to our
22 families. For Barbara Spears, Lewis Watson,

1 Rachel Pulley and Curtis Poppe, that did not
2 happen. Tragically, they didn't make it home. I
3 say to you, honorable Board members, please don't
4 let those workers die in vain. Please don't wait
5 until there is another tragedy to add to the
6 incident list. Please don't let another worker
7 die or be injured. Honor the workers who died at
8 ConAgra, honor the workers who are here tonight
9 and who suffered injuries and will never be the
10 same. Let something good come out of this
11 tragedy. Pass these recommendations and educate
12 contractors, management and workers so that at
13 the end of the day they can all go home safely to
14 their families. Thank you.

15 CHAIRMAN BRESLAND: Thank you, Ms.
16 McMillan. Next speaker is Brian Murphy.

17 MR. MURPHY: Thank you, Mr. Chairman.
18 First of all my name is Brian Murphy. I'm
19 president of Local 204, United Food and
20 Commercial Workers. I've been president for 15
21 years and been with the ConAgra facility Slim Jim
22 and the other names the plant's had for 19.

1 First of all, I want to say Mr. Chairman,
2 unfortunately I got the time to work with your
3 staff on the field and unfortunately we had to do
4 it, but I want you to know that I think they're
5 some of the finest people that I've been able to
6 work with under this situation. You've got a
7 good group.

8 Mr. Chairman, I think it's important
9 for me to tell you the first seven days after the
10 explosion - I'll be brief, I'll let you know what
11 happened. One and half hours after the explosion
12 occurred I arrived with my business agent who had
13 already been at the facility who had called me in
14 a frantic conversation saying that I needed to
15 get here. In the background you could hear the
16 sirens going off and you could hear the people
17 screaming and yelling and it was frantic. That
18 hour and a half I sat with Michael and waited for
19 news with the three missing people that we knew.
20 As the day went on they were unable to locate
21 them and at the end of the day Michael and I both
22 knew, but nobody had been notified, that those

1 folks were gone. The following day I sat there
2 in the Garner facility and watched those family
3 members be notified their loved ones weren't
4 coming back. It's tragic, it was sad, it broke
5 my heart. Two to three hours after that I was
6 able to go to the UNC burn victims unit and sit
7 with those folks and try to console them about
8 the burning and what we need to do to protect
9 ourselves and make sure that we don't get caught
10 up with people that we don't need to get caught
11 up. The following couple of days I then got
12 introduced to the government agencies and the
13 interview process that we put our people through
14 to find out exactly what occurred at this
15 facility. The next couple of days after that I
16 had gone to funerals and watched those people
17 buried. Days after that I go back to the UNC-
18 Chapel Hill burn unit because those folks aren't
19 getting any better.

20 The reason why I say this is that what
21 happened in this facility, nothing's ever going
22 to change that. These people's lives are

1 destroyed. They're never going to be the same
2 again, and if anybody up there thinks that it's
3 going to be, it's not. I try to put myself in
4 the shoes of the folks that lost their people, or
5 the people that were burned beyond recognition
6 that are still sitting in hospitals suffering
7 because this tragic accident occurred. And the
8 reason why I bring this up to you is because you
9 took on this position, the Board took on this
10 position to say okay, I'm going to make tough
11 decisions. I find out that you go 2 to 2 on your
12 vote on whether to purge gas inside a facility.
13 So I try to put myself in your shoes and I can't
14 because I cannot imagine not going home to my
15 wife and my kids where some of these families
16 will never be the same. So I'm asking you in
17 times of difficult situations, sometimes we've
18 got to make a tough decision. Sometimes that
19 decision doesn't fit the mold, all right? But
20 you've got to make the right decision. You've
21 got to step up and do it. Don't cower behind
22 anything. People's lives were affected.

1 So I'll leave you with this, is that
2 we can't change what happened. I wish I could,
3 but if you don't act and you don't do the right
4 thing this is going to occur again. I don't need
5 a crystal ball, I don't need a Tarot card, I'm
6 telling you this is going to happen again. And
7 the only people we'll have to look at ourselves
8 when that happens, when you don't make the right
9 decision is yourselves because you have the
10 ability to make the right decision to make sure
11 that this does not occur again, and I hope you
12 do. Thank you.

13 CHAIRMAN BRESLAND: Thank you, Mr.
14 Murphy. Next speaker is Michael Clark. Mr.
15 Clark?

16 MR. CLARK: Yes. Again, my name is
17 Mike Clark. I'm a business agent and former
18 worker of the ConAgra plant. And I just want to
19 stand before you tonight and say that on June 9
20 we started this day as a normal day of any of the
21 days that we do at work. At around 11:25, 11:30
22 our lives changed forever. With this blast and

1 to watch that building crumble, you're standing
2 helplessly, nothing that you can do humanly to
3 help the situation and to see people, hear people
4 and know people fighting for their lives, doing
5 everything within their power to survive. It was
6 a situation that I hope no one ever has to endure
7 for the rest of their life. I hope no one from
8 this day forward with you all's help, with the
9 recommendations that have been given to you that
10 we think about this very seriously, put this into
11 effect so that no one has to go through what we
12 have did here at ConAgra. For a lot of us, yes,
13 we didn't get broken arms, broken legs, we didn't
14 get burns, but we are mentally scarred for the
15 rest of our life. We had to rally around each
16 other and which we did, and I want to thank every
17 one of the people that did and for the groups
18 that helped. There again, as Brian said earlier,
19 your group was one of the most professional
20 groups that we had to deal with. I also want to
21 thank our North Carolina OSHA group who's in the
22 room who did a marvelous job. But I just wanted

1 to just sit back and thank some of the people
2 because this situation traumatized a whole
3 community of people, the whole area around
4 Garner, Raleigh and surrounding areas.

5 And in closing, I just want to thank
6 everyone for their great support, love and
7 concerns during this difficult time. I would ask
8 you to just keep us in your prayers and just
9 remember that these were very, very difficult
10 days. We continue every day that we wake up with
11 it being a difficult day, but through it all
12 hopefully with your help we'll get through it.
13 Thank you.

14 CHAIRMAN BRESLAND: Thank you, Mr.
15 Clark. The next speaker is Mr. Derrick Turner.
16 Mr. Derrick Turner? Okay, we'll go on to the
17 next speaker, Mr. Brian Berger.

18 MR. BERGER: Hello. I'm Brian Berger,
19 I was also an investigator in the event with the
20 North Carolina OSHA. I'm not much of a public
21 speaker, Mr. Chairman, and I didn't really have a
22 pre - any pre-comments thought out before I came.

1 But during the presentation Mr. Holmstrom was
2 mentioning some things about the odor being
3 detected only by nose and no other device, and I
4 was just wanting to know in my investigative work
5 there was a possibility of a misuse of a tool by
6 a combustion analyzer which may have thrown
7 ConAgra folks and other people in the area down
8 the idea that there was an electronic device that
9 may have made the folks not trust their nose and
10 speak up, you know, speak up more.

11 And then likewise, the other comment
12 I'd like to make or question is when you have the
13 gas and you're doing a purge of such a large
14 volume and at such a large distance, you have -
15 you know, when you put the new gas line in it's
16 filled with the air and then when the gas gets
17 introduced you have a flammable mixture in the
18 pipe. And NFPA mentions in some tables about
19 using a nitrogen to separate so you don't have a
20 flammable mixture in the line itself, you know,
21 creating like a pipe bomb effect. And I was just
22 hoping that the investigation, that you continue

1 to - as you continue also, you know, explores
2 those options as my investigation had more of a
3 smaller limited timeline to complete where you
4 folks had more, you know, more time and resource
5 and opportunity to explore these areas. Thank
6 you much.

7 CHAIRMAN BRESLAND: Mr. Berger, just
8 to clarify, you're with North Carolina OSHA.
9 Were you involved with the North Carolina OSHA
10 investigation?

11 MR. BERGER: Yes, I was the - one of
12 the team members for root cause of the
13 investigation.

14 CHAIRMAN BRESLAND: Okay, thank you.
15 Thank you for coming. Mr. John Puskar?

16 MR. PUSKAR: Good evening. My name is
17 John Puskar, it's P as in Paul, U-S as in Sam K-
18 A-R. I'm a licensed mechanical engineer here in
19 the State of North Carolina and a number of other
20 states. I'm also involved in several national
21 code committees, so I'm not here representing
22 NFPA but I know Mr. Lemoff and I'm part of a

1 couple of committees there.

2 Just a few comments, some things to
3 follow up on what Mr. Berger said. One of the
4 items I'd like to bring up right at the
5 forefront, several people tonight mentioned
6 education and Mr. Wright, you brought up a few
7 things very subtly. I'd like to expand on a
8 couple of them. You mentioned, gee, did - in
9 some of the other incidents did people know about
10 NFPA 54, Section 8.3? I work with people who do
11 pipefitting, plumbing, maintenance people at
12 plants every day. It's all I do. I'm here to
13 tell you there's tremendous ignorance related to
14 natural gas piping. We're - there's a big
15 elephant in this room. We're not recognizing it.
16 We're talking about more paperwork, more rules,
17 more regulations that the gas piping geeks like
18 myself will learn about, but if we don't get that
19 information in the hands of the people with the
20 tools we're going to accomplish nothing and the
21 body count will go up. I'd like somebody here
22 tonight, maybe Mr. Noles? Can somebody here from

1 North Carolina commit to some workshops? Maybe
2 five workshops in the next six months regionally.
3 Maybe a couple of bucks for Mr. Berger's group to
4 do some workshops through North Carolina OSHA,
5 through the University of North Carolina.

6 They've got tremendous educational resources.

7 I'd like to see something very practical come out
8 of tonight besides, you know, we're going to have
9 more rules. So that's one thing I'd really
10 appreciate if somebody could come up with tonight
11 and maybe comment after me and commit to that.

12 I like the idea that you're doing
13 something. I think that you're removing gray.
14 You're making some things black and some things
15 white. You're taking the interpretation out of
16 some of the technicians' hands; that's a positive
17 thing. I'd like to see it go a little further
18 and in fact, here's a recommendation that
19 actually the State of North Carolina could
20 probably do immediately without waiting till
21 summer of 2011 when NFPA 54 comes out. What
22 about making design professionals have to put on

1 a drawing? When they do a drawing they stamp the
2 drawings, you know, the public assumes that a
3 mechanical engineer who stamps a drawing had to
4 have expertise in gas piping, right? That's what
5 we all assume. Well, how about if it goes a
6 little further and the person has to also put a
7 purging plan in there that identifies that he's
8 seen the site, he understands how to purge this
9 safely, he prescribes the pressure test that
10 needs to be done, he brings up Mr. Berger's point
11 about the fact that you're supposed to use
12 nitrogen to do parts of this. There's a whole
13 lot to doing a gas piping repair. I'm glad we're
14 talking about purging, but Mr. Lemoff, how many
15 pages in NFPA roughly, 100, 150? Yes. There's
16 hundreds of things to know about gas piping, so
17 I'd like to see design professionals be more
18 responsible for what they're getting paid for.

19 Another issue I just want to caution
20 you about, you talked about you're doing this 25
21 percent LEL thing here in North Carolina.
22 There's tremendous ignorance about LEL meters. I

1 think Mr. Berger was indicating possibly that
2 there was a Bacharach combustion analyzer in the
3 room. That's not an LEL meter. The man might
4 have thought it was. Some people mistake
5 molecule detectors for LEL meters. There's a
6 whole lot of education there. And besides that,
7 I won't get into the details, but if you assume
8 25 percent is some valid number that presupposes
9 that when you're monitoring the purge the rise in
10 the rate of gas accumulation in the room is going
11 to be slow. You could go from 25 percent to 100
12 percent under the right conditions in the blink
13 of an eye and everybody's dead, so got to be real
14 careful about that.

15 So, the one last item then is that we
16 talked about the need for having a risk analysis
17 and a plan if we planned to purge inside, right?
18 Because we're presupposing that that's a special
19 hazard. I think every gas piping repair is a
20 hazard. There should be a purge plan and a risk
21 analysis for every gas piping repair. I'm not
22 talking about writing a War and Peace novel, but

1 a few paragraphs so the local building official
2 who probably hasn't been trained can at least
3 understand the direction you're heading I think
4 would help. So I might suggest that might add
5 some additional teeth. Once again, I support
6 what you're doing, I'm glad we're moving from
7 gray to black, and thank you very much for your
8 time.

9 CHAIRMAN BRESLAND: Before you leave,
10 can we just clarify one question which also came
11 up with Mr. Berger? I think this is an issue
12 that I know we've been looking at, and that is
13 the issue of there was a meter of some sort
14 present. This is probably a question that might
15 be directed to Mr. Holmstrom. There was a meter
16 of some sort present at the scene of the
17 explosion. Was it a combustible gas meter, or
18 was it some other sort of meter?

19 MR. HOLMSTROM: There was a meter and
20 it has been secured after the incident and we
21 plan to examine it more carefully to see if
22 there's, for example, a memory chip and maybe we

1 can gather some information from it. But it was
2 a combustion meter that's designed to measure the
3 efficiency of the combustion as opposed to a
4 combustible gas meter which is designed to
5 measure the percentage of the lower explosive
6 limit so it was being used inappropriately. In
7 fact, the manual we have indicates that it was
8 not intended to be used for safety purposes.

9 MR. PUSKAR: And I will tell you,
10 people get that confused every day.

11 CHAIRMAN BRESLAND: Mr. Wright?

12 HON. WRIGHT: Mr. Chairman, I'd like
13 clarification from Mr. Holmstrom. Could it
14 possibly be that that combustion meter was used
15 to tune the boiler to max efficiency?

16 MR. HOLMSTROM: That was the intended
17 use. The individual, we have from witnesses
18 after the event, was using it at the purge point
19 to examine the gas that was coming out of the
20 purge point.

21 HON. WRIGHT: Thank you.

22 CHAIRMAN BRESLAND: I should observe,

1 I worked in the chemical industry for many years
2 and I used - or I oversaw the use of combustible
3 gas meters, especially on tank entries when
4 you're going inside a confined space. I also
5 used the combustion gas meters which are used in
6 large boilers to make sure that they're operating
7 as efficiently as possible. There is a
8 significant difference between the two and people
9 need to be aware of that difference. They are
10 not interchangeable.

11 MR. PUSKAR: Sure and they need to
12 calibrated regularly. That's a whole `nother
13 issue.

14 CHAIRMAN BRESLAND: Yes. Okay, thank
15 you very much. That's the list of people who
16 have signed up to speak, but we also wish to give
17 anybody else who may want to make a comment an
18 opportunity to stand up and speak as well. And
19 we find that we have one person here. Why don't
20 you come to the microphone so that everybody can
21 hear you?

22 MS. SAMAD: My name is Deborah Samad,

1 that's S-A-M-A-D, and I'm a member of the public.
2 And I'm asking because I don't know, and the
3 question is are persons that install natural gas
4 and other explosive gas pipelines required to be
5 certified in any way in North Carolina?

6 CHAIRMAN BRESLAND: The question is
7 are installers of this sort of equipment required
8 to be certified in any way in North Carolina.
9 And Mr. Noles is still here. If you're willing,
10 please.

11 MR. NOLES: Chris Noles, deputy
12 commissioner for Office of State Fire Marshal.
13 If I remember correctly, that is one of the
14 functions of the General Contractors Board. So
15 there is a certification that is required for
16 contractors in North Carolina.

17 CHAIRMAN BRESLAND: Thank you. Do we
18 have any other members of the audience who are
19 interested in asking a question or making a
20 comment? Please come up.

21 MS. KILLIAN: My name is Kimberly
22 Killian, K-I-L-L-I-A-N and I represent - I've

1 been a safety official here in the State of North
2 Carolina for 14 years working private and federal
3 sector. I'm not necessarily here representing my
4 company, but I currently am employed by a
5 facility with three plants here in North
6 Carolina. Two of them do have natural gas.

7 I wanted to strongly echo the
8 gentleman, the PE that was just up here and
9 encourage you not only to clarify the black and
10 white, but the education piece and the importance
11 and the availability of that information. The
12 NFPA and other technical committees are
13 fantastic, but it's not a quick Google search
14 either, so. The OSHA, and North Carolina OSHA
15 has been fantastic. Their websites and their
16 training capabilities and working with NCIC in
17 getting the information out there and readily
18 available and affordable for the small
19 businesses, not just the large corporations that
20 have greater resources. I think that's what we
21 really need to target. A lot of these small
22 businesses and contractors are the ones that do

1 this work, and they're the ones that need the
2 assistance. So that was my comment. Thank you.

3 CHAIRMAN BRESLAND: Thank you.

4 MS. PETTIWAY: Good afternoon
5 everyone. You all have to give me a little time.
6 I urge you all to pass this bill because Lewis
7 Watson, he was my son. He was my only son and
8 now he's gone and I can't hear or see him
9 anymore. Please you all need to pass this bill
10 because it's really hard, because he's gone and
11 he won't come back anymore. And I worked inside
12 there and I've been out there 30 years. Please,
13 this ain't right. Somebody need to look into it
14 because this shouldn't have happened, it
15 shouldn't have happened. I mean, I'm trying not
16 to get emotional, but you know, what happened on
17 June 9, it shouldn't have happened because it
18 built up. Everybody trying to push stuff under
19 the rug. But please you all, pass this bill for
20 their sake because the people, I mean, they
21 didn't have to die. Because they should have
22 brought somebody in there that know what they

1 were doing, because if somebody don't look into
2 it now it's going to happen again. Somebody need
3 to do something about it. Every day I go to work
4 I'm afraid to go to work, but I got to go to work
5 to make a living.

6 But you all please pass this bill
7 because you all just don't know how much I miss
8 my son. He was my only child and I have to go
9 out there every day and deal with this because -
10 I don't mean to get emotional. Please pass this
11 bill for these people can be alive for the work
12 they do. Because I mean, his life is gone. He
13 wasn't nothing but 33. His life, he got a son,
14 15 years old, won't never see him graduate, won't
15 never see him have children. But you all please
16 pass this bill because something needs to be done
17 about it. Please, please, for the people that
18 did die, please don't let them die for nothing.
19 Thank you.

20 CHAIRMAN BRESLAND: I understand that
21 - just following up on the comments from Mrs.
22 Watson. The victim was Lewis Watson. His wife,

1 his mother and his son are in the audience and we
2 certainly appreciate their attendance here this
3 evening and obviously we sympathize greatly with
4 them.

5 MR. TAYLOR: One quick question. My
6 name is Chris Taylor. Just a citizen in North
7 Carolina. General question regarding I guess the
8 regulatory world. I know it's tough to go from
9 being a performance-based code to a prescriptive
10 code, but have you considered - and I really
11 don't - I'm kind of overwhelmed here so I don't
12 know who to direct this question to. Have you
13 considered looking at the overall length of
14 piping, diameter of the pipe and the pressure in
15 the pipe when you create these new rules. I
16 would think that that's sort of important, 50
17 feet of pipe being purged at low pressure versus
18 a larger diameter, especially if your space is as
19 great as this or two or three times larger, or
20 you know, one-half of this. Those are the things
21 that I would think that the big brains would
22 consider and create a table, perhaps, in one of

1 these code books, whether it's North Carolina or
2 NFPA.

3 CHAIRMAN BRESLAND: Thank you. The
4 recommendation we're making will be to the
5 National Fire Protection Association and I would
6 assume that that would be - or am I assuming
7 incorrectly, Mr. Lemoff, or correctly that that
8 would be part of your deliberations?

9 MR. LEMOFF: Chairman Bresland, again,
10 Theodore Lemoff with NFPA. Certainly as I
11 mentioned we had an extensive - I didn't mention,
12 but the discussions at our meeting in January
13 were rather extensive and covered many aspects,
14 and certainly the - basically size, length of
15 piping, the volume of gas which is the important
16 point was certainly considered. Of course, there
17 are - as I mentioned, as our chairman mentioned,
18 there are many ways to approach safety and I
19 can't begin to predict which one the committee
20 will choose or believe is the best one, but I
21 certainly can assure you that this is one that
22 will be considered.

1 CHAIRMAN BRESLAND: Thank you. Do we
2 have any other audience members who are
3 interested in coming up? If not, I do have one
4 question that was submitted in writing and I
5 think it's an interesting question so I'm going
6 to read it and perhaps Mr. Holmstrom or even one
7 of the board members can address the answer. The
8 question is, "I have heard several times in your
9 presentation about OSHA investigations and CSB
10 investigations, the same cases. What are the
11 differences in the investigations and how well do
12 the two teams work together?"

13 Let me just talk about the differences
14 in the investigations because I think it's a
15 point that needs to be clarified. Simplifying it
16 here, when OSHA does an investigation they have
17 six months to complete it to come up with
18 penalties or conclusions. The OSHA
19 investigations tend to focus on regulations that
20 have been written and is the company in
21 compliance with those regulations. Chemical
22 Safety Board takes a broader look at the accident

1 and we don't have any time limit obviously as
2 well. Our investigations typically take about a
3 year. We look at the broader picture, we look at
4 what changes should be made, could be made in
5 industry standards, in codes as we're talking
6 about this evening. So OSHA looks at the more
7 narrowly focused on what regulations did the
8 company comply with or not comply with. The
9 Chemical Safety Board looks at it in a much
10 broader sense and hopefully comes up with not
11 only a recommendation that would impact on the
12 facility here in Garner, North Carolina, but also
13 across the country as a whole, changes that will
14 make a difference across the country.

15 The question on how well do the teams
16 work together. Mr. Holmstrom was here on the
17 site with North Carolina OSHA and as we are on a
18 regular basis at all of our investigations with
19 either federal OSHA or the state OSHAs. Mr.
20 Wright points out we are independent. We're not
21 connected with OSHA in any way. We're completely
22 independent of them.

1 MR. HOLMSTROM: From our arrival on
2 the scene the day after the incident we were
3 immediately - we were in contact with North
4 Carolina OSHA. Prior to our departure and upon
5 arriving at the scene we interacted and worked
6 together professionally and I think both teams
7 were able to complete their investigations
8 successfully and we appreciate the communications
9 that we received back and forth. We found them
10 to be fruitful and professional.

11 CHAIRMAN BRESLAND: Okay. Thank you,
12 Mr. Holmstrom. With that we'll close the public
13 comment section of the meeting and we'll turn to
14 a discussion by the Board members of the - what's
15 been heard this evening and the recommendations
16 that have been made by the staff. And again, I
17 will start this time with Board Member Wright if
18 you have any thoughts or comments on what we've
19 heard today and what.

20 HON. WRIGHT: I'd just like to thank
21 the staff for all the information you've provided
22 and answering all those questions that I had.

1 And maybe clear up some misperceptions that exist
2 with various people with respect to the vote that
3 we did have where we ended in a 2-2 tie. Board
4 Member Visscher and myself felt that the
5 recommendation and the language that it contained
6 was too prescriptive for the Board to provide and
7 therefore we voted no and Board Member Wark and
8 Chairman Bresland voted yes and in essence, you
9 have an impasse there. During the intervening
10 months we have provided what we thought was
11 acceptable alternative language. And in my
12 particular case I'm a strong believer that we do
13 our job in identifying the gaps in standards and
14 in this particular case even though there is not
15 a particular causative linkage between what is
16 found in NFPA 54 and this particular accident -
17 in other words, we're not exactly sure why they
18 vented into that room. It could have been as I
19 articulated earlier that he thought he had
20 adequate ventilation, he may have thought that he
21 had control over the ignition sources, et cetera.
22 Do I believe that the recommendation that the

1 staff has submitted to us will prevent accidents
2 like this in the future if everybody vents to the
3 outside? Yes.

4 Philosophically I'm not sure that I
5 agree that we should be writing the standard for
6 the NFPA. And the recommendation that was
7 presented to us at that time and is probably
8 similarly drafted now basically tells the NFPA,
9 the owners of the standard, the experts who
10 produce that document, please insert this
11 language into your document. From Bill Wright,
12 as a board member on the Chemical Safety Board, I
13 think our position would be better served by
14 saying you have a gap in your document. We don't
15 see where you address clearly and definitively
16 whether or not people should mandatorily vent to
17 the outside, whether or not you should educate
18 people about the hazards associated with purging
19 either indoors or outdoors, whether you should
20 address the use of metering and how that would
21 take place. As was discussed, there's a lot of
22 issues associated with that, the volume of the

1 room, the type of gas. Just knowing the LEL at
2 the purge point is not necessarily going to
3 prevent an explosion. And I would guess that the
4 ignition may have taken place somewhere near the
5 roof in this particular case, but that's just a
6 guess because we haven't gone inside, examined
7 any of the piping or anything yet. So our job is
8 to find gaps in those requirements. We don't own
9 the standards, we don't write the standards. And
10 I'll try to give an example of where we
11 identified some weaknesses for OSHA. When we did
12 a dust study, we identified the fact that OSHA
13 should have a comprehensive dust standard similar
14 to the grain standard that they had which
15 prevented grain explosions and we were in hopes
16 that they would prevent dust explosions. We
17 didn't write the standard for them, we did not
18 provide the language for that, we told them that
19 they were lacking in that area and they should
20 address that. And on the same token I think our
21 recommendation to the NFPA, and I submitted
22 alternative language back in July and August and

1 September that says recommend the NFPA review
2 their guidance and revise it to include various
3 things, and I can read the list if you like, but
4 one was education because I think part of the
5 problem here was a lack of education or awareness
6 of what happened here. And that's particularly
7 poignant if in fact the individual was using the
8 wrong meter to try to determine whether or not
9 there was an LEL of gas in this particular case.
10 Thank you, Mr. Chairman.

11 CHAIRMAN BRESLAND: Thank you, Board
12 Member Wright. Board Member Wark?

13 HON. WARK: Well, first of all I'd
14 like to thank the team as well. I think you've
15 done a great job on this. We did go back and
16 forth with the language as Member Wright has
17 said, and it was an internal deliberation and
18 that was part of the reason for the delay. We do
19 that occasionally. Any deliberative body
20 certainly will - there will be a lot of internal
21 back and forth on the best way to approach a
22 situation like this or a tragedy like this

1 certainly.

2 When we speak around the country, when
3 I speak around the country, one thing I always
4 point out, and this is kind of a tenet of faith,
5 is that the Chemical Safety Board is about
6 prevention. And then we're faced with the idea
7 of how do we get to that point. How do we take
8 an accident like this, a tragic accident, and
9 make sure that to the extent possible as far as
10 we're concerned we can prevent that sort of thing
11 from happening in the future, and these dear
12 folks who perished or were severely injured will
13 not have done so in vain, it will not have
14 happened to them in vain. The language which Mr.
15 Wright proposed actually I could have lived with
16 as well. I voted for the original proposal and I
17 could have, looking at what I considered to be
18 very similar language and language pretty much -
19 it was a distinction without a difference in my
20 opinion, but I think that we've come to a point
21 here where we have the opportunity to go ahead
22 and make a difference when it comes to this sort

1 of thing. I'm one, quite frankly, who I share
2 with what Chairman Bresland said this morning is
3 I get nervous when I turn the gas on on the stove
4 until the clicking stops and it lights. So you
5 know, that's the position that I'm coming from
6 and I think that it's important that we take the
7 opportunity here to turn this tragedy into
8 something positive. Thank you.

9 CHAIRMAN BRESLAND: Thank you, Member
10 Wark. I've listened to the presentations this
11 evening and I certainly have long conversations
12 with Mr. Holmstrom about this issue and also with
13 the other Board members as well, and I believe
14 that the recommendations that we're going to be
15 voting on this evening are a very positive step
16 in the right direction. But they're only the
17 beginning, and there are - there are - these
18 recommendations are going to be made to the
19 National Fire Protection Association, to the
20 American Gas Association, to the International
21 Code Council. They will take it and they will
22 rewrite and improve their regulations based on

1 our recommendation. And our hope is, as our hope
2 is all the time, that our recommendations and the
3 work that comes out of our recommendations will
4 make a difference.

5 But I agree with Board Member Wright
6 that - and also with one of the commenters this
7 evening that this - regardless of what we do, and
8 regardless of what NFPA does, there certainly
9 needs to be education as well. People need to be
10 aware of the hazards. We see this all the time
11 in our investigations. We go to these individual
12 investigations and we think to ourselves how
13 could this possibly happen. Why didn't they
14 know? An example that I used a couple of weeks
15 ago happened in Georgia, sugar refinery
16 explosion. The insurance company paid out a
17 check of \$345 million to the company that
18 exploded and the insurance company's inspectors
19 were in there looking at the facility and they
20 certainly could have seen that this was an
21 accident waiting to happen so they just threw
22 away \$345 million unnecessarily. Had there been

1 better education there and we hope there will be
2 better education here with this issue so that
3 people truly understand the hazards and the risks
4 associated with venting of natural gas and other
5 combustible gases inside buildings, and hope that
6 they would take to heart our recommendation that
7 venting does take place outside. So I agree that
8 we need several things. We need improved codes,
9 but we absolutely need improved education as well
10 so that people are aware of what happened and we
11 don't have the tragedy that our visitors from
12 ConAgra faced on that terrible day back in June
13 of last year. So with that we will - please.

14 HON. WRIGHT: Mr. Chairman, I'd just
15 like to point out that during this time we did
16 approve a safety bulletin which is a document
17 that we wholly owned and we put out there for
18 education in terms of what hazards are present
19 for people when they're trying to deal with
20 purging of gas. And that document I think we
21 unanimously put out there because we all agree,
22 we own it, it's our job to alert people to these

1 things. It's not our job to rewrite NFPA
2 standards necessarily from Bill Wright's
3 perspective, but the others may see it a
4 different way. Thank you, Mr. Chairman.

5 CHAIRMAN BRESLAND: Time for the vote
6 on the urgent - we're going to ask for a motion
7 and we'll ask Board Member Wark.

8 HON. WARK: Thank you, Mr. Chairman.
9 Pursuant to the authority under 42 U.S.C.
10 Subsection 7412(R)(6)(c) and in the interest of
11 preventing the serious harm that could result if
12 the hazards underlying the explosion at ConAgra
13 are not properly rectified, I hereby move that
14 the Board approve the urgent safety
15 recommendations to the National Fire Protection
16 Association, the American Gas Association and the
17 Chair of the NFPA 54 ANSI Z223.1 committee and
18 the International Code Council and the Chair of
19 the International Fuel Gas Code Committee, as
20 more fully set forth by the staff report on the
21 ConAgra urgent recommendations which is attached
22 and made a part of this motion.

1 CHAIRMAN BRESLAND: I will second that
2 motion. Do we have any comments from the Board
3 members?

4 HON. WRIGHT: I pretty much said my
5 piece. I think everybody knows where I stand.
6 Thank you, Mr. Chairman.

7 CHAIRMAN BRESLAND: We'll call for a
8 vote and we'll start with Board Member Wark.

9 HON. WARK: I vote affirmative.

10 CHAIRMAN BRESLAND: Board Member -
11 Board Chairman Bresland. I vote affirmative.
12 Board Member Wright?

13 HON. WRIGHT: Thank you, Mr. Chairman.
14 Trust me, I would like to see safety improved.
15 My vote is predicated on a difference in
16 philosophy as to how we make that happen. I wish
17 we were an agency of experts. We're only about
18 40 people strong. We don't have expertise in all
19 areas and we have to rely upon others in order to
20 make decisions for us. Had we used the language
21 that I had proposed which said please address the
22 following things when you look at the purging for

1 gas to the NFPA, for example, evacuation of
2 unnecessary personnel, training of personnel, use
3 of gas meters, safely venting inside as somebody
4 related earlier, changing the gray to black and
5 white with respect to when you do purge indoors
6 so that you do it safely. All of those things
7 need to be addressed by the experts and not
8 necessarily ourselves. Where we come in to bear
9 is when they come to us with the answers after we
10 provide them that recommendation, and then we
11 decide whether or not they adequately addressed
12 the things we gave them to include there or at
13 least to address there. So therefore based upon
14 the philosophical difference I vote no.

15 CHAIRMAN BRESLAND: The vote is two in
16 favor and one against and the motion carries.

17 With that we've got a few closing
18 remarks. I would like to thank each of the board
19 members for their participation this evening.

20 I'd like to thank the members of the audience for
21 their participation. I'd like to thank the panel
22 members for their participation as well. We have

1 an open process here and we express our points of
2 view openly and honestly, and I think we had a
3 very excellent meeting this evening thanks to the
4 investigation staff. All of us share a strong
5 interest in preventing these tragic explosions
6 from occurring. Our hope is to make sure that
7 workers, the community and emergency response
8 personnel are not forced to experience an
9 incident similar to this one. In the next few
10 months the CSB will be writing its final report
11 and its recommendations and we will follow up on
12 those recommendations. I'd also like to thank
13 Congressmen Price and Etheridge for their
14 participation in tonight's meeting. And we will
15 be back in Raleigh for a final report and final
16 recommendations which will be in addition to the
17 recommendations that we voted on this evening.
18 I'd like to thank everyone for participating this
19 evening and with that the meeting is adjourned.
20 (Whereupon, the foregoing matter went off the
21 record at 8:47 p.m.)

22

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