



What's New in Gas Industry Safety – Recent Incidents



Forming Partnership.
Delivering Results.
www.skw-inc.com

Presented by Curtis “Skip” Blake
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Experience

- **40 years Natural Gas Industry Distribution and Transmission**
 - Engineering , Corrosion Control, Facilities Planning and Design
 - 6 years Gas Transmission/ Integrity Project Management
- **6 Years as Shafer, Kline and Warren Safety Officer**
 - NCCER/Veriforce OQ Trainer & Evaluator
 - OSHA General Industry & Construction Trainer
 - American Red Cross First Aid, CPR, & AED Trainer

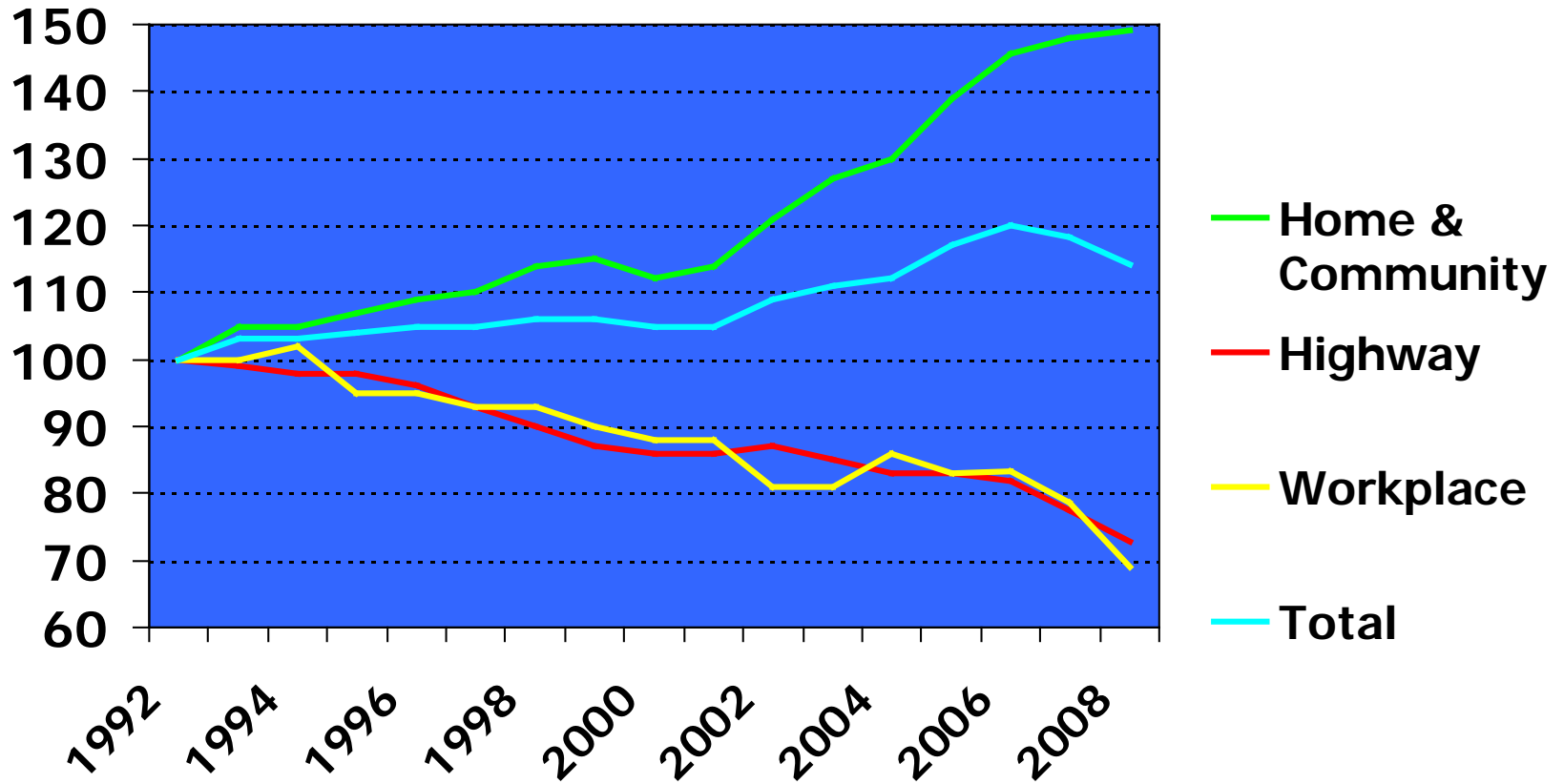
National Workplace Statistics

- **~13 People Die Every Day at Work**
 - **5,214 Workers Died on the Job in 2008**
 - 4551 in 2009 down 11%
 - 4690 in 2010
 - **12 Injuries Every Minute Perspective – Safer at Work**
- **~ 40 Murders Every Day**
 - **14,482 Homicides a Year**
 - **Preliminary Pending Death of Injured 2010**
Nationally, Murder Declined 4.4 Percent, 682 Less

The 5 Leading Causes of Death

- **Heart Disease**
- **Cancer**
- **COPD**
- **Stroke**
- **Accidents (Unintentional Injuries)**

Recent Trends Death Rate Indexes (1992=100)



*Deaths per 100,000 population.

Source: *Injury Facts*, 2010 Ed.

10 Leading Causes of Injury Deaths

10 Leading Causes of Injury Deaths by Age Group Highlighting Violence-Related Injury Deaths, United States – 2009

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Suffocation 907	Unintentional Drowning 450	Unintentional MV Traffic 378	Unintentional MV Traffic 491	Unintentional MV Traffic 7,451	Unintentional Poisoning 6,209	Unintentional Poisoning 7,388	Unintentional Poisoning 9,675	Unintentional Poisoning 3,913	Unintentional Fall 20,422	Unintentional MV Traffic 34,485
2	Homicide Unspecified 152	Unintentional MV Traffic 362	Unintentional Drowning 119	Suicide Suffocation 181	Homicide Firearm 4,051	Unintentional MV Traffic 5,651	Unintentional MV Traffic 4,856	Unintentional MV Traffic 5,448	Unintentional MV Traffic 3,894	Unintentional MV Traffic 5,854	Unintentional Poisoning 31,758
3	Homicide Other Spec., classifiable 97	Unintentional Fire/Burn 169	Unintentional Fire/Burn 88	Homicide Firearm 115	Unintentional Poisoning 3,044	Homicide Firearm 3,300	Suicide Firearm 2,874	Suicide Firearm 3,975	Suicide Firearm 3,191	Suicide Firearm 4,248	Unintentional Fall 24,792
4	Unintentional MV Traffic 91	Homicide Unspecified 155	Homicide Firearm 53	Unintentional Drowning 90	Suicide Firearm 2,002	Suicide Firearm 2,379	Suicide Suffocation 1,935	Suicide Poisoning 2,015	Unintentional Fall 1,888	Unintentional Unspecified 4,139	Suicide Firearm 18,735
5	Undetermined Suffocation 49	Unintentional Suffocation 125	Unintentional Other Land Transport 31	Suicide Firearm 64	Suicide Suffocation 1,686	Suicide Suffocation 1,793	Homicide Firearm 1,869	Suicide Suffocation 1,889	Suicide Poisoning 1,231	Unintentional Suffocation 3,263	Homicide Firearm 11,493
6	Unintentional Drowning 45	Unintentional Pedestrian, Other 112	Unintentional Suffocation 26	Unintentional Other Land Transport 56	Unintentional Drowning 548	Suicide Poisoning 733	Suicide Poisoning 1,383	Unintentional Fall 1,341	Suicide Suffocation 922	Adverse Effects 1,647	Suicide Suffocation 9,000
7	Undetermined Unspecified 27	Homicide Other Spec., classifiable 81	Homicide Unspecified 23	Unintentional Fire/Burn 53	Homicide Cut/Pierce 419	Undetermined Poisoning 590	Undetermined Poisoning 738	Homicide Firearm 1,152	Unintentional Suffocation 540	Unintentional Poisoning 1,414	Suicide Poisoning 6,398
8	Homicide Suffocation 26	Homicide Firearm 55	Unintentional Pedestrian, Other 21	Unintentional Suffocation 41	Suicide Poisoning 348	Homicide Cut/Pierce 453	Unintentional Fall 551	Undetermined Poisoning 1,066	Homicide Firearm 520	Unintentional Fire/Burn 1,027	Unintentional Suffocation 5,939
9	Unintentional Fire/Burn 25	Unintentional Fall 46	Unintentional Struck by or Against 19	Unintentional Poisoning 37	Undetermined Poisoning 284	Unintentional Drowning 396	Unintentional Drowning 392	Unintentional Drowning 507	Undetermined Poisoning 484	Suicide Poisoning 676	Unintentional Unspecified 5,098
10	Unintentional Poisoning 22	Two Tied* 37	Unintentional Poisoning 13	Unintentional Other Transport 25	Unintentional Other Land Transport 230	Unintentional Fall 302	Homicide Cut/Pierce 375	Unintentional Suffocation 497	Unintentional Fire/Burn 456	Suicide Suffocation 584	Unintentional Drowning 3,517

*The two causes are: Unintentional Natural/Environmental and Unintentional Poisoning.

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.

Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC using WISQARS™.



Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

In Your Medicine Cabinet

- **2009 Prescription painkiller overdoses responsible for 15,500 deaths**
- **Exceeds deaths from heroin and cocaine combined.**
- **Adults in their 40's and 50's.**



Top 10 Lost Time Injuries

- **Strain or Sprain of the Lumbar (Lower) Region of the Back**
- **Sprain or Strain of the Neck**
- **Sprain or Strain of the Lumbo-sacral (Lower Including the Base of the Backbone) Region of the Back**
- **Sprain of the Shoulder or Upper Arm**
- **Sprain of the Leg And Knee**
- **Sprain or Strain of the Thoracic (Middle) Region of the Back**
- **Lumbar Disc Displacement**
- **Sprain of the Ankle**
- **Contusion (Bruise) of the Knee**
- **Tear of the Medial Meniscus (Shock-absorbing Tissues Between the Bones of the Knee)**

The Industry Believes

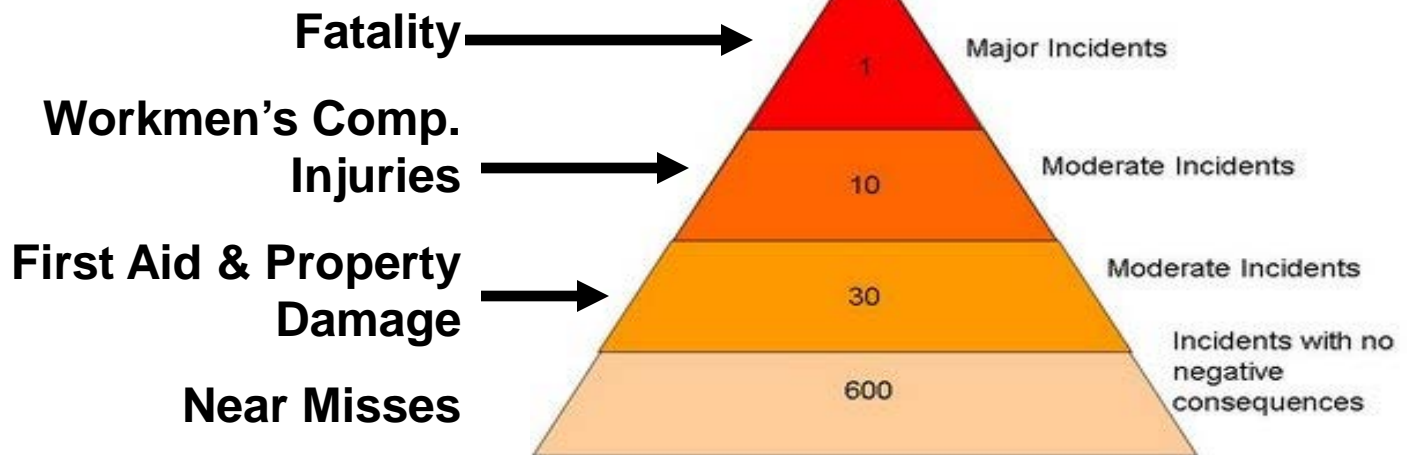
- **Employees are our Most Valuable Asset**
- **“Everyone Goes Home Safe”**
- **No Job is so Important that we Can't Take the Time to do it Safely**

Typical Incident Pyramids

Oil and Gas Pyramid



General Workforce Pyramid



The Most Important Factor in Safety

- **Routine Activities are the Most Dangerous**
- **Repetition Causes Complacency**
- **You're not Expecting Something Different when You have Done it a Hundred Times**
- **Don't Shortcut Dangerous Processes**
- **Be Aware of Change**
- **Stick to What Works**

Here's All The Excuses



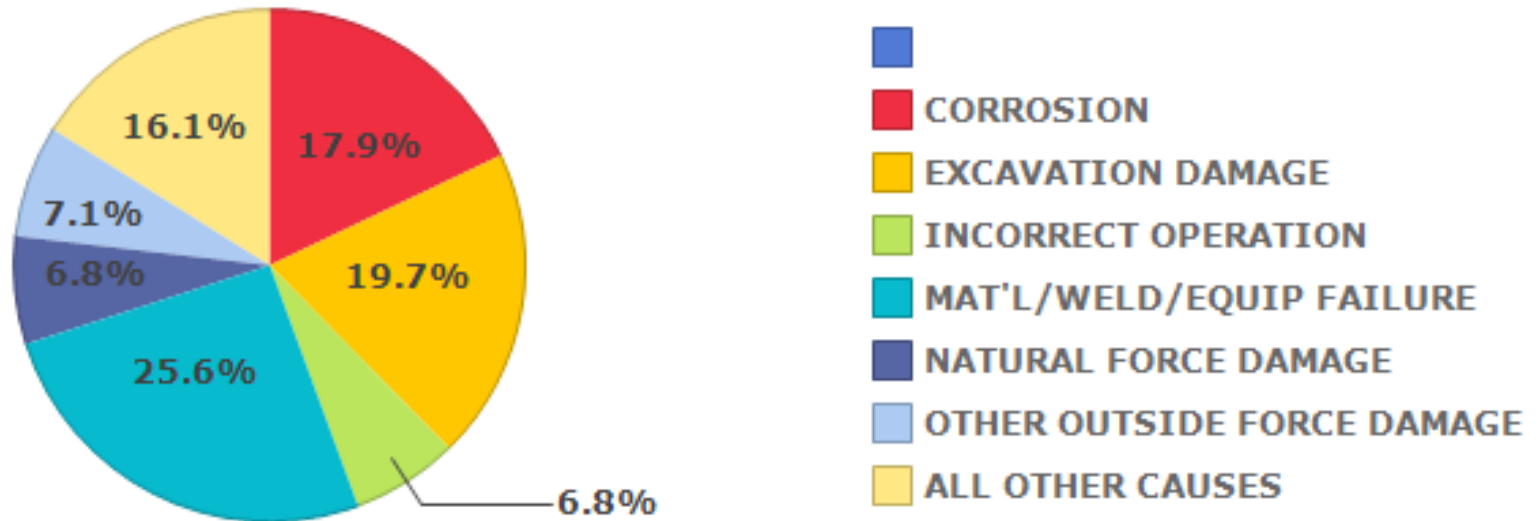
2012 All Incidents

(As of 9/26/2012) PHMSA Data

	Year to Date	3 Year Average	5 Year Average	10 Year Average
Incidents	385	603	617	644
Fatalities	7	16	15	16
Injuries	31	78	68	61

Historical Root Cause of Incidents

All Reported Incident Cause Breakdown
National, All Pipeline Systems, 1992-2011



Source: PHMSA Significant Incidents Files May 31, 2012

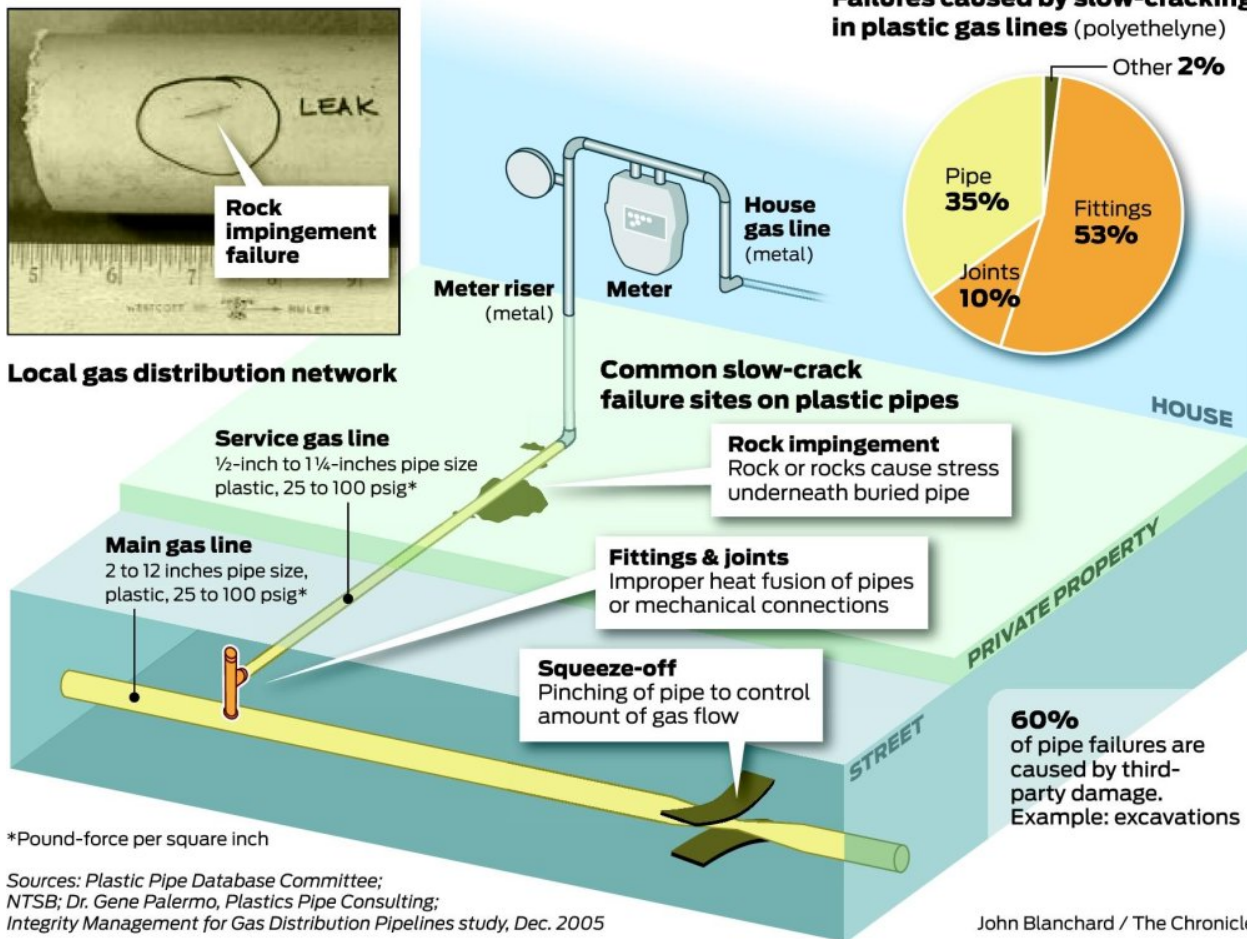
Please Pay Attention

If you See Something **SAY SOMETHING**

Plastic gas line failures



Local gas distribution network



*Pound-force per square inch

Sources: Plastic Pipe Database Committee; NTSB; Dr. Gene Palermo, Plastics Pipe Consulting; Integrity Management for Gas Distribution Pipelines study, Dec. 2005

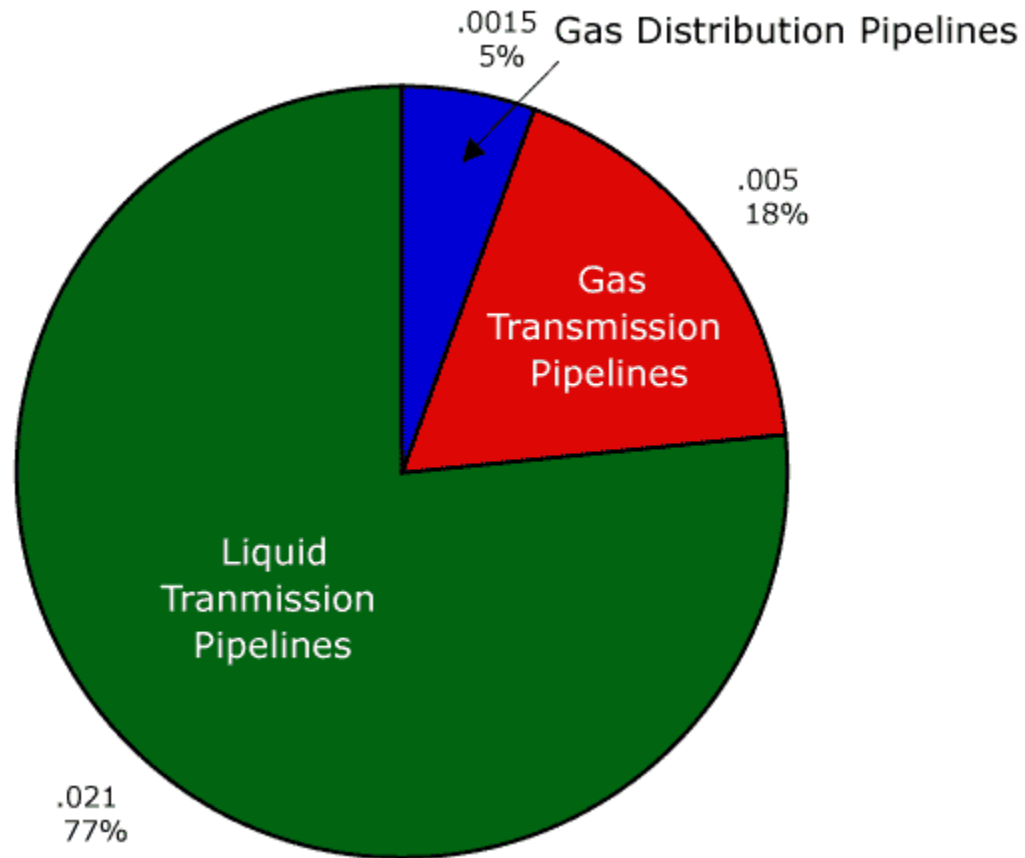
John Blanchard / The Chronicle

Gas Distribution

(As of 9/26/2012) PHMSA Data

	Year to date	3 Year Average	5 Year Average	10 Year Average
Incidents	61	133	139	143
Fatalities	4	11	10	12
Injuries	20	50	47	45

Incidents /Pipeline Mile

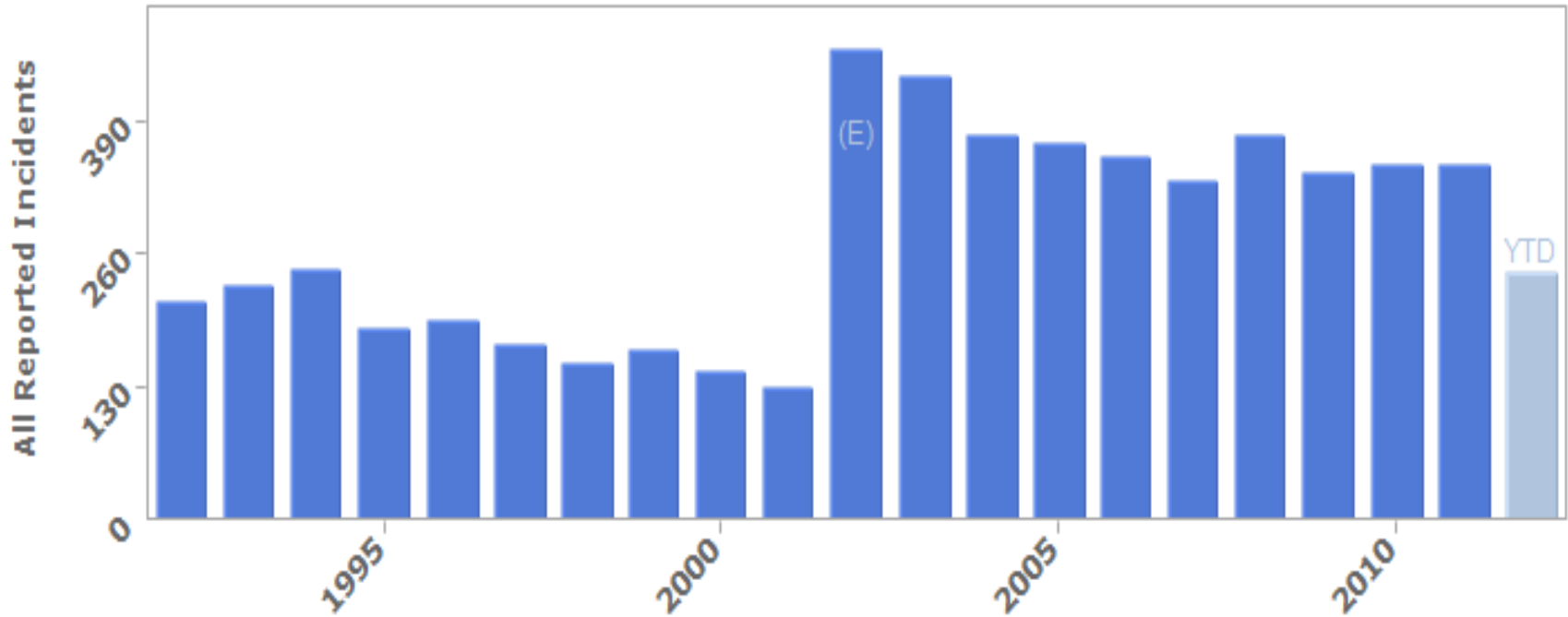


Gas Transmission Statistics

	Incidents	Fatalities	Injuries
2012 YTD	63	0	7
2011	108	0	1
3 Year Average	95	3	24
5 Year Average	93	2	17
10 Year Average	90	2	11

Liquids Incidents Are Double the Gas

National, Hazardous Liquid, All Reported Incidents: Count 1992-2011



Source: PHMSA Significant Incidents Files September 28, 2012

Kansas Statistics

Total 10 Years	7	2	11
	Incidents	Fatalities	Injuries
2012 YTD	2	1	4
3 Year Average	1	0	2
5 Year Average	1	0	1
10 Year Average	1	0	1

PHMSA Generated: 10/07/12 08:24:48 AM

Where Are We Most Vulnerable



TABLE 2. Number of fatal injuries among oil and gas extraction workers, by type of injury event — United States, 2003–2006*

Injury event	No. of fatal injuries
Highway crash	110
Struck by object	88
Explosion	36
Fall to lower level	30
Fire	27
Caught or compressed in moving machinery or tools	26
Electric current	20
Aircraft crash	18
Other	49
Total	404

SOURCE: US Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries (2003–2006).

* Data for 2006 are preliminary.

#1 Pipeliner Hazard

2 hours to job site

**10 Hour Days
+ Overtime**

2 Hours Back

Equals



Exhaustion

Coke Driver Stops For Some Wild Turkey (and Coke?)



? Would you believe

71 Highway South of Kansas City

**Deer Collisions
are not the
Only Road Hazard**



Trucker's Hate Texter's



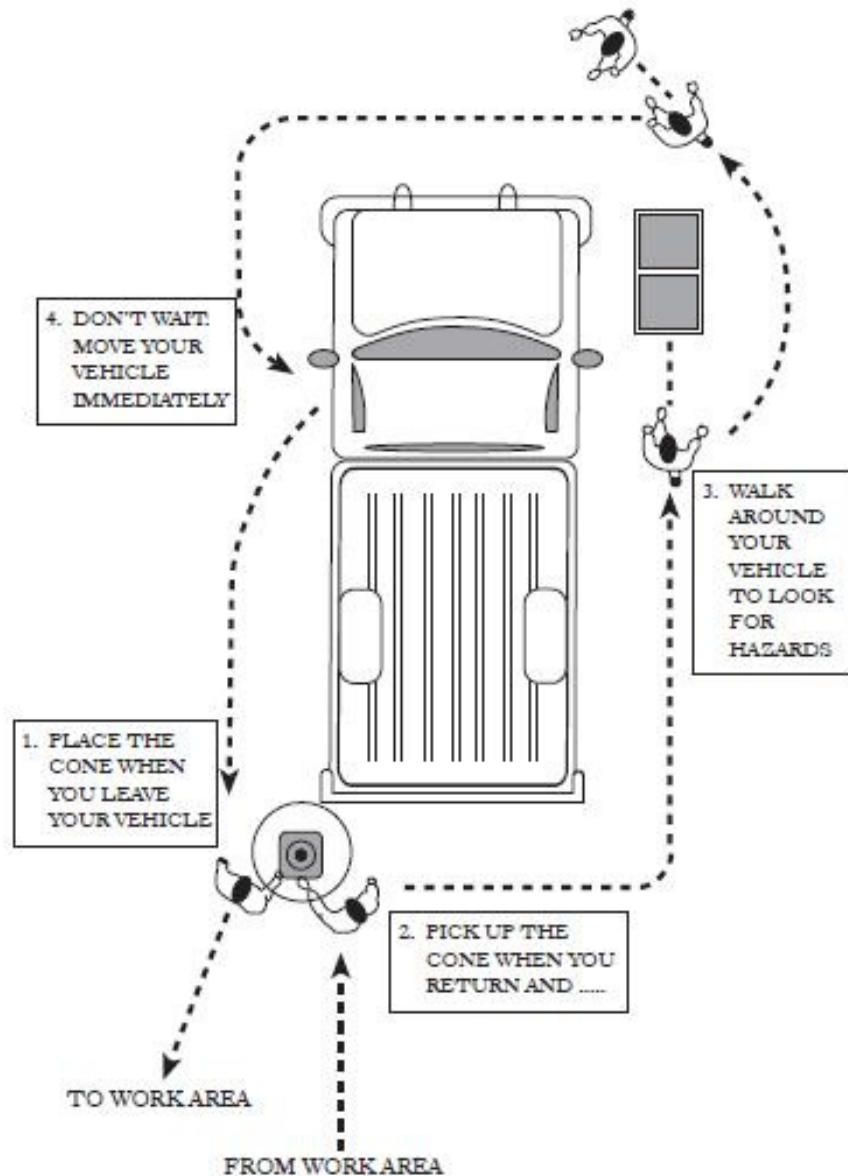
I learned to text today

Now He
can ~~Call~~
Text His
Dad and
Ask for A
Ride
Home



Safety Circle

We Use a Safety Circle Magnet Instead of a Cone



Distracted Walking

Emergency Room Visits have Quadrupled in the Past 7 Years



Top 10 Most Recently Cited OSHA Standards Violated in FY2011

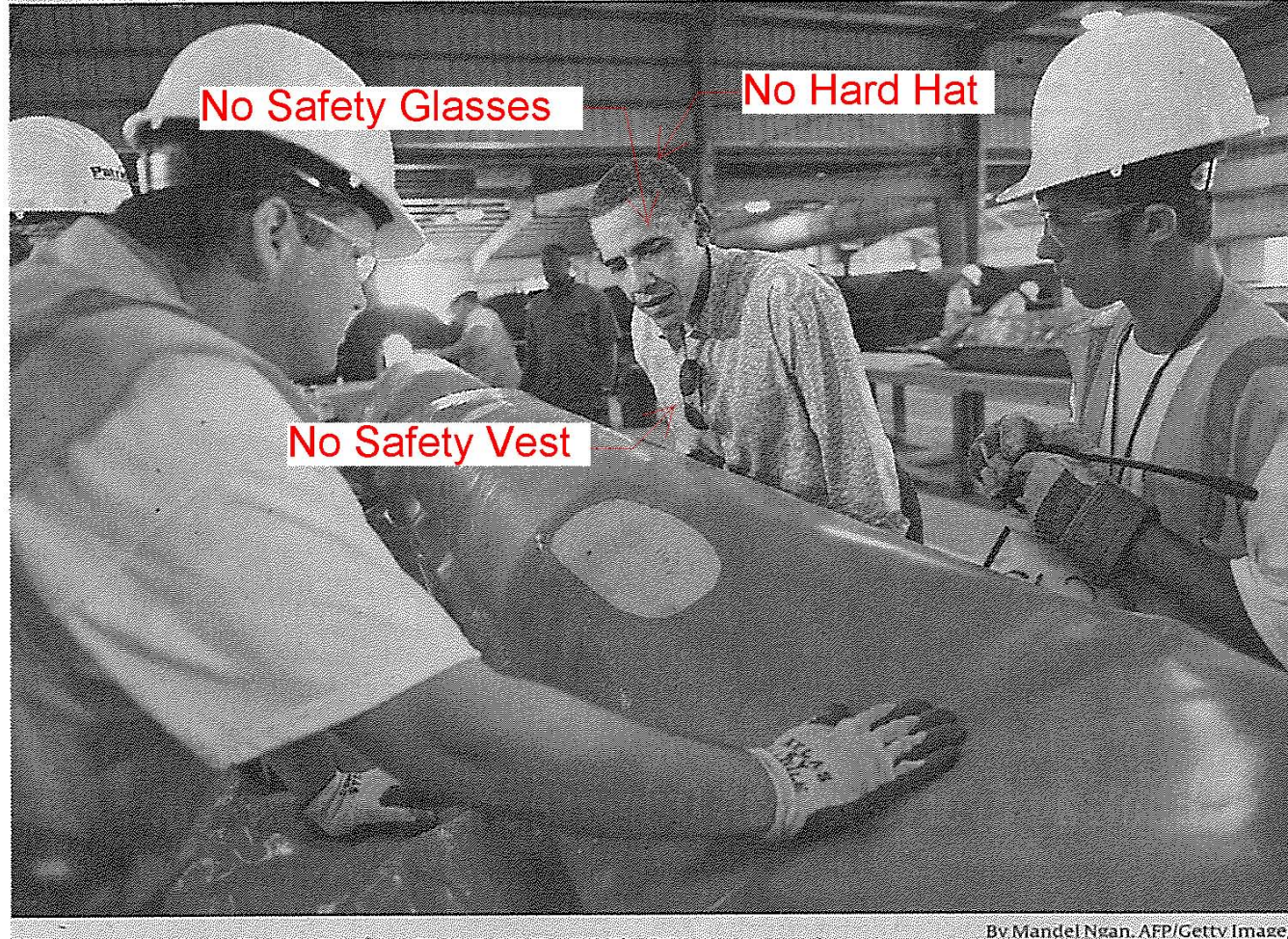
- **Scaffolding, General Requirements, Construction** (29 CFR 1926.451)
- **Fall Protection, Construction** (29 CFR 1926.501)
- **Hazard Communication Standard, General Industry** (29 CFR 1910.1200)
- **Respiratory Protection, General Industry** (29 CFR 1910.134)
- **Control of Hazardous Energy (lockout/tagout), General Industry** (29 CFR 1910.147)
- **Electrical, Wiring Methods, Components and Equipment, General Industry** (29 CFR 1910.305)
- **Powered Industrial Trucks, General Industry** (29 CFR 1910.178)
- **Ladders, Construction** (29 CFR 1926.1053)
- **Electrical Systems Design, General Requirements, General Industry** (29 CFR 1910.303)
- **Machine Guarding (Machines, General Requirements, General Industry)** (29 CFR 1910.212)

Whistleblower – Not Me!

President Obama at an oil rig repair shop in Gulf area –

When everyone around you is wearing gear –

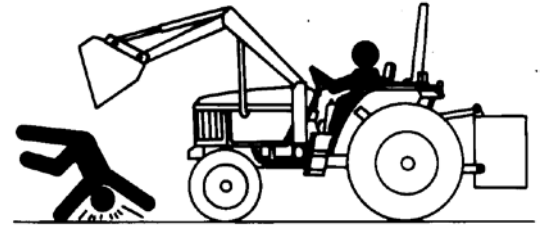
You better go get some unless you are in the Federal Executive Branch



By Mandel Ngan. AFP/Getty Images

2010 Constructions “Fatal 4”

- **Falls – (34%)**
- **Electrocutions – (10%)**
- **Struck by Object – (8%)**
- **Caught-in/between – (4%)**



Can We Get A Little Help Here?



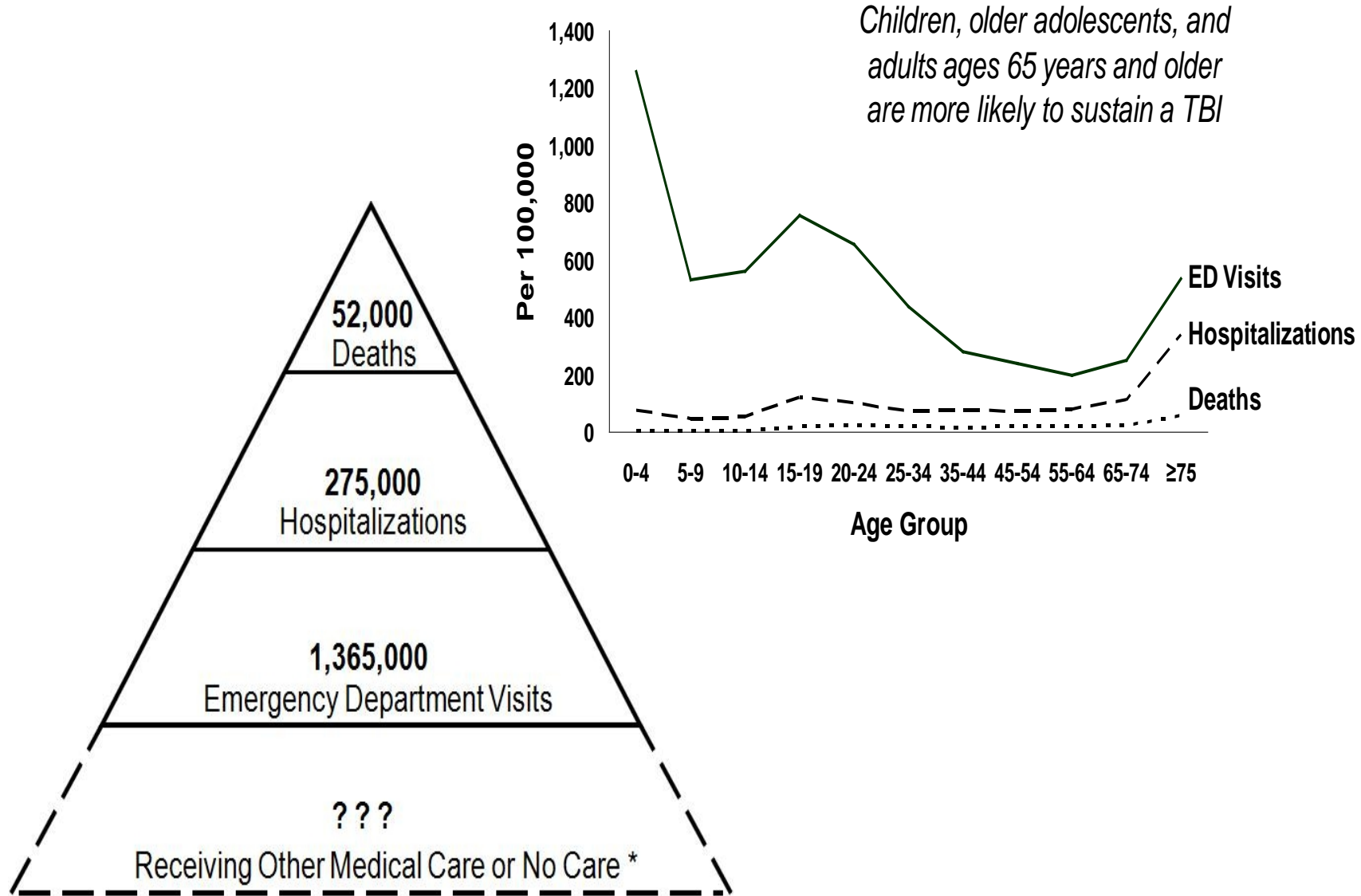
We Need To Learn From Our Mistakes

OSHA Eye Candy



We Don't Need No Fall Protection

Traumatic Brain Injuries



Cranes Are Dangerous Places

Never Stand Between the Pipe and the Ditch



Construction Dangers

Friday January 27, 2012

**Horseshoe
Casino
Concrete Pour
Support
collapsed**

**Minor Cuts and
Bruises**



BP Compression Station -

Pinion, CO

1 Dead

2 Injured



Pneumatic Overpressure During the Launching of a Maintenance Device

Pneumatic Test failure

1 Died

3 Injured

Three companies (Same Incident) were cited by OSHA for exposing workers to hazards during the construction of a gas pipeline meter station

Lesson – STOP
Bleed it down – Start Again
Follow the Best Practices

OSHA/APCA Alliance Best Practice



PRESSURE TESTING BEST PRACTICES

For Personnel Conducting the Test

PRE-TEST

- Obtain written test procedure and verify proper test medium.
- Collect all equipment and material needed to complete the Pressure Test.
- Verify that test equipment and materials are rated to withstand the test pressures.
- Wear appropriate personal protective equipment (PPE) as required by the task being performed and as required per OSHA regulations.
- Place signs, barricades, or protective barriers at the adequate distance to protect personnel from unanticipated pressure release or equipment failure.
- Check and secure all supply lines and hose connections with retaining device(s).
- Ensure valves are in proper location and valve openings are set as per written test procedure requirements.

TEST

- Check all visible connections for leaks.
- Never tighten connections that are under pressure. If a leak develops, you must depressurize to a safe level and then re-tighten.
- Ensure unauthorized personnel are kept out of the test area.
- Conduct test according to written test plan procedure.
- Confirm acceptance of test by authorized Operator representative.

POST TEST

Purging & Testing Best Practices

- **The Danger - Whenever Gas Piping is Repaired, Extended, or Newly Installed it Must be Purged, Tested and Purged Again**
 - Ignition Sources- Trucks, Welders, Cell Phones, Passersby, Smoking
- **The Law - OSHA 1910.147 LO/TO NFPA 54, and NFPA 85 or NFPA 86.**
- **The Hazards-**
 - Remember Plug Valves Bleed by 60-80% Industry
 - Nitrogen Poisoning
 - Catastrophic Failure – Pneumatic Testing

PRE-TEST (APCA)

- **Develop written test procedure and share w/all stakeholders**
- **Verify proper test medium.**
- **Do equipment / materials ratings meet/exceed the test pressures.**
- **Wear all required (PPE) for the task**
- **Place signs, barricades away from failure perimeter**
- **Check all supply lines and connections with retaining device(s)**
- **Ensure valves are in proper location and valve openings are set as per written test procedure requirements.**

Test (APCA)

- **Check all visible connections for leaks.**
- **Never tighten connections that are under pressure.**
- **If a leak develops, depressurize then re-tighten.**
- **Ensure unauthorized personnel are kept out of the test area.**
- **Conduct test according to written test plan procedure.**
- **Confirm acceptance by authorized Operator representative.**

Post Test

- **Properly discharge and dispose of the test medium as per Operator requirement.**
- **Remove all warning signs, flagging, and barricades.**
- **Notify all personnel that the area is all clear.**

Purging & Testing Best Practices

- **Design – Purge (Loading) Points, Isolation Points, Piping Support, Gaskets, Material Specifications, Nitrogen, Purge Blowdown /Discharge Locations, Multi-Gas Detectors, Piping Integrity(Pre-testing/documentation), Emergency Isolation Attended 100%**
- **Procedures - Written Procedures , Job Site Hazard Communication, Pre-purge/test Tailgate**
- **Isolate Workspace – If You are Not Essential to the Task Evacuate the Area – Distance is Your Best Friend**

Looks Good On TV



**Fun At The Beach – But On The Job 400 Lbs.
Per Sq. Ft. If You're Buried**

Excavation Safety Program

- **Competent Person Training**
- **Hazard recognition – water
Atmosphere**
- **Soil Type Classification – Clay, Sand,
Rock**
- **Shoring Guidelines – Trench Boxes,
Shields**
- **Sloping Guidelines $\frac{3}{4}$:1 sides, 1;1**
- **Regulatory Requirements for Access
& Egress**

Quick Disconnect Buckets



Sandblasting Hazard – Distance is

Coal Slag Abrasive has Dangerous Levels of Beryllium, which has been Linked to Cases of Cancer

Coal Slag Abrasive is Used to Prep Pipelines for Coating and Painting



OMB's 1 Year hold up on Silicosis

- **According to OSHA's risk assessment, the delay in approving the silica dust rule could have prevented 60 worker deaths and 2,400 cases of silicosis in the last year. It should only take 45 days to review and initiate a public comment period. Lobbyists want to kill the rule.**

New GHS Pictograms

Flammable With Division #

5.2

Acute toxicity

Environmental

Explosives

Respiratory Health Hazard

Oxidizers

Compressed Gases

Toxic

Corrosives

Flammable

New Label Awareness Required by 2013

GHS Chemical

Danger!
Toxic If Swallowed, Flammable Liquid and Vapor



Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat / sparks / open flame - No smoking. Wear protective gloves and eye / face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in a cool / well ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor / physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO2 or "alcohol" foam.

Chemical Name

CAS# 55-55-5

Health Hazards / Target Organ Effects

Irritant to: Eye, Respiratory system and mucos membranes, Liver, Kidney, Eyes, Skin, Lungs and/or Respiratory System

Physical Hazards
Flammable Liquid

Route of Entry: Inhalation, Skin, Eye, Ingestion



Workzone and Job Site Handouts

OSHA now Requires 10 Question Test on Each 10 HR Training Segment and a Final Exam

Use of Hand-Signaling Devices by Flaggers

Preferred Method
STOP/SLOW Paddle

Emergency Situations Only
Red Flag

To Stop Traffic

To Let Traffic Proceed

To Alert and Slow Traffic

Lane Closure on Two-Lane Road Using Flaggers

MUTCD, Figure 6H-10
Typical Application 10

Note: The buffer space should be extended so that the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.

OSHA 3559-03A-07

Occupational Safety and Health Administration

Work Zone Traffic Safety During Disaster Recovery Efforts

Inform recovery crews about the special hazards they will face and how to protect themselves when they work in areas with moving equipment and traffic.

Develop and use a traffic control plan for the work zone – provide traffic flow details and train crew members to stay clear of all motorized equipment.

Provide all crew members with high-visibility apparel and headwear that can be seen in daylight and at night, and that are suited to the conditions. Ensure that apparel is used by crew members so that they are conspicuous to motorists and equipment operators.

Signs – Protect recovery crews exposed to traffic by giving motorists plenty of advance warning of upcoming work zones. Post warning signs (e.g., REDUCED SPEED AHEAD, WORK ZONE AHEAD, ROAD CLOSED, EVACUATION ROUTE, FLAGGER AHEAD, MERGE AHEAD, etc.) along the roadway to warn drivers of the work in progress.

On urban streets, place the first warning sign ahead of the work zone at a distance (in feet of 4 to 5 times the speed limit (in mph). The high end of the range should be used when speeds are relatively high. For example, at 35 mph the first warning sign should be 140 feet ahead of the work zone.

Traffic Control – Use positive protective barriers (e.g., concrete, sand-filled barriers), highway channeling devices, traffic cones, and flaggers to steer traffic away from work crews.

Flaggers – Ensure flaggers use high-visibility apparel and headwear that can be seen in daylight and at night, and are:

- Trained/certified and use authorized signaling methods.
- Clearly visible to the first approaching vehicle at all times and are located to allow the first approaching vehicle plenty of advance notice.
- Stationed far enough ahead of the work zone that they have time to warn road crews if approaching vehicles appear dangerous or out of control (use audible warnings devices such as horns or whistles).
- Standing on the shoulder adjacent to the traffic being controlled or in the closed lane, not in an active lane.
- Standing alone. Never permit other crew members to gather around the flagger station.

Lighting – Ensure that the work zone, including the flagger, is well lit, but control glare so that work crews and passing motorists are not blinded.

Training – Train crew members not to stand between mechanical equipment and fixed objects, or in blind spots.

Go to <http://www.osha.gov/Publications/> for training materials

Production and Gathering



API Just Adopted These 8 Pipeline Safety Principles

- **Zero Incidents**
- **Organization Wide Commitment**
- **A Culture of Safety**
- **Continuous Improvement**
- **Learn from Experience**
- **Systems for Success**
- **Employ Technology**
- **Communicate with Stakeholders**

OSHA Safety Topics

- **General Safety**
- **Safety and Health Program**
- **Hot Work-Welding**
- **Hydrogen Sulfide Gas H₂S**
- **Special Precautions**
- **Site Preparation**
- **Conductor Hole, Rathole and Mousehole**
- **Transporting Equipment to the Site**
- **Drilling**



H2S Prevalent Around Wells



Shell's Methane Migration



BP Horizon



April 20, 2010

11 Dead

12 Injured

Columbia Gas Irvine, KY

January 2, 2012



Gas Well Explosion

January 5, 2012

A Rig Drilling for a Company in Oklahoma Burned Thursday Night after Hitting a Shallow Gas Pocket and Suffering a Blowout Before Key Safety equipment was Rigged Up, the Company Said

The Rig Burned for 3 Days



Enid, OK Oil Well Explosion

January 20, 2012

**4 Workers
Injured**



Eagle Ford Shale

January 20, 2012

**OSHA issues 10
Safety Violations**

While Offloading

**Saltwater with Skim of Oil - Welders Working
in the Area Ignition the Source**



Marshall, MI

July 26, 2010

**30" Oil Pipeline
Rupture Releases
20,000 Barrels
into Tallmadge
Creek**



**2,000 People Involved in Cleanup
30 Homes Purchased**

Marshall Incident \$3.7Million Fine

The Houston limited partnership incurred \$595 million of emergency response and environmental expenses and provisions for third-party claims related to that incident and to a subsequent release on Sept. 9, 2010, from its Lakehead 6A line near a Romeoville, Ill., industrial area, EEP said in its 2010 10-K filing with the US Securities and Exchange Commission.

7/2/2012 Contact Nick Snow at nicks@pennwell.com.

San Bruno, CA

Sep 9, 2010

8 Dead

15 Injured

53 Homes

Destroyed

120 Homes Damaged



Feb 2012 PG&E

Fines at \$200,000,000 Estimated

San Bruno Financial Judgment

- **A California State Supreme Court Judge ruled that**
- **PG&E will have to pay about 55% of the estimated \$2.2 billion it will cost to upgrade the utility's natural gas transmission pipelines.**
- **45% to the ratepayers**

PG&E Integrity Projects

In 2012, PG&E has Eight “Smart Pig” Projects Inspecting up to a Total of 206 Miles.

Replace about 39 Miles of Transmission Pipelines

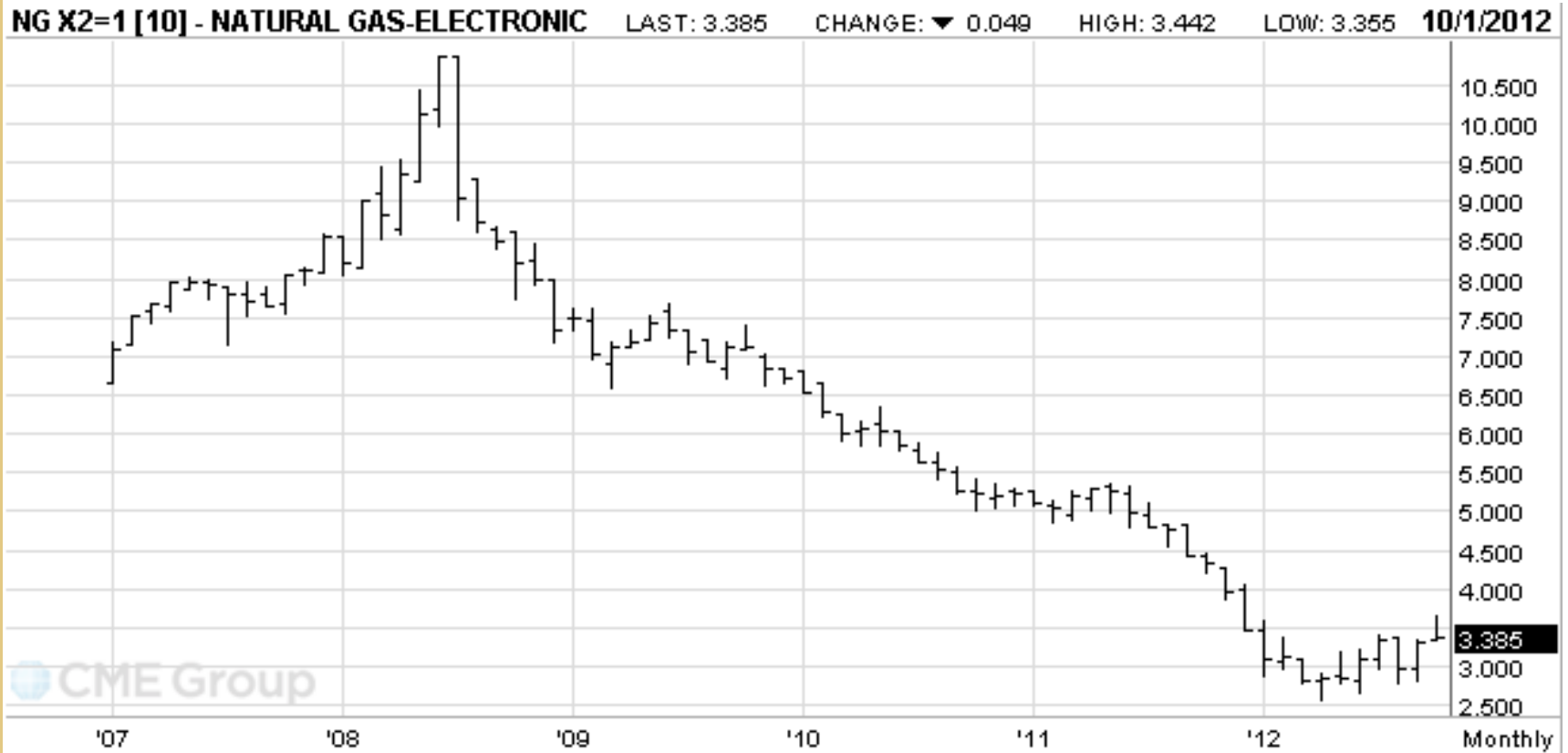
Strength-test About 170 Miles of Pipelines

Automating 46 Valves, for Remote Control and Automatic Shutoff



PennEnergy Petroleum Daily News

Profits Pay for New Pipelines



Allentown, PA February 9, 2011

July 3, 2012

**\$386,000 Fine
PUC Blame Placed
On Gas Company
for Low Odorant
Levels and
Failure to Replace Mains**



Company Disputes Findings

1 Lightning Bolt Follows Tracer

Apple Valley, MN

June 11, 2012

Hit Tree First

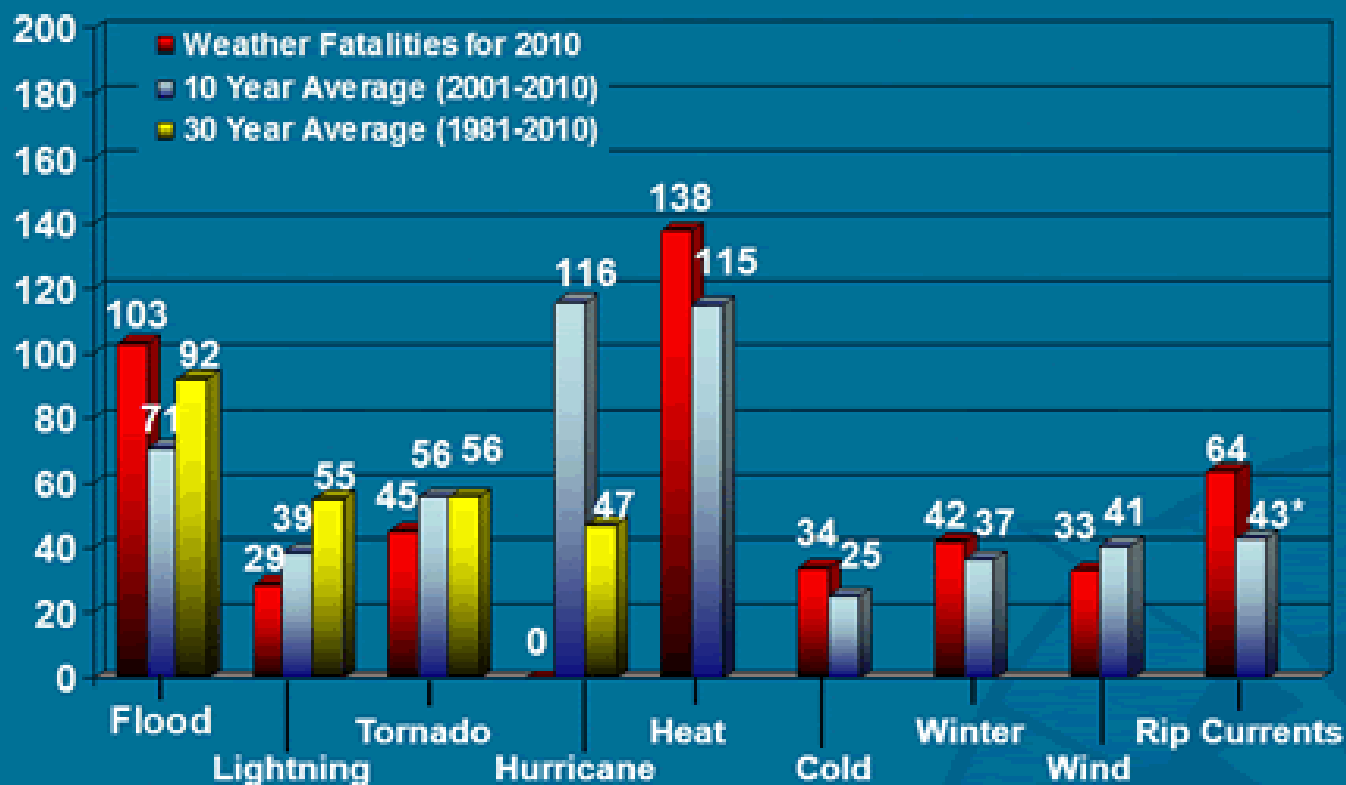
**House in
Between Not
Damaged**



Dangerous Weather Facts



Weather Fatalities



*9 year average

When Thunder Roars Go Indoors!

Lightning Strikes More than 400 People in the United States Each Year, Causing Devastating and Permanent Disabilities for those Who Survive



Turn Around Don't Drown



Get the Word Out

Don't Delay – Get Away



Call 911

Sensationalism Sells

And Everybody Has A Camera

Naturalgaswatch.Org

Headline

400% Increase in

Natural Gas Explosions

▪ **According to (PHMSA,)**

Two Serious or Significant

Incidents in New York City's Natural Gas Distribution Pipelines in 2010

• **In 2011, that Number Increased to Eight.**



Incidents September 2011

- **Encinitas (Calif.):** McDonald's Destroyed, No Reported Injuries
- **Bakersfield (Calif.):** One Home Damaged, One Severely Injured
- **Norfolk (Va.):** One Home Destroyed, No Injuries Reported
- **Blacksburg (Va.):** Gas Leak, Evacuations, No Injuries
- **Long Island (N.Y.):** One Home Leveled, Three Firefighters injured
- **Plainfield (N.J.):** One Home Destroyed, One Severely Burned
- **Murphysboro (Ill.):** Three Homes Destroyed, No Injuries
- **Girard (Ill.):** One Home Destroyed, One Killed
- **Kenedy (Texas):** Well Head Explosion, One Killed, Three Injured
- **Mont Belvieu (Texas):** Natural Gas Plant Fire, One Killed
- **Leavenworth (Kansas):** Faulty Regulator Caused Gas Leak and Evacuation of a School, No Injuries Reported
- **Philadelphia:** One Killed, Six Injured
- **Fairport (Ohio):** Nine Buildings Destroyed, Safe Evacuations, No Injuries Reported
- **Hanoverton (Ohio):** Two Homes Damaged, One Injured. (1,6,8)

Wellington OH

January 12, 2012

**Sunoco Logistics 8”
Leaked 116,760
Gallons of Gasoline
from a 30” Split – 70
Homes evacuated
for Over a Week**



The Incidents Continue

January 16, 2012

West Havershaw, NY



Topeka, KS Jan 30, 2012

**Contractor Installing Irrigation Nicks Gas Line
One died – Homeowner Rescued Alive but
Died Later**



East Prairie, MO

- **February 21, 2012**
- **4.0 Earthquake Just North of New Madrid**



Galloway Township, NJ

Smelled Gas but it Dissipated-



Then the Crawl Space Exploded

Charlotte, NY

July 16, 2012 - A Leak in the Basement



Minor Injuries to Residents

Natural Gas Watch.org -Atlantic City Press

Well Tied to Quakes

- **A Northeast Ohio Well Used to Dispose of Wastewater from Oil and Gas Drilling Almost Certainly Caused a Series of 11 minor Quakes in the Youngstown Area Since Last Spring**
 - Seismologist Investigating the Quakes Said Monday
- **It Might Take a Year for the Wastewater-related Rumbblings in the Earth to Dissipate**
 - said John Armbruster of Columbia University's Lamont-Doherty Earth Lab

Earthquake Drill 2012

February 7, 2012

**EMA Suggests
a Wrench**



Emergency Action Plan

- **Shelter in Place Locations –
Not just in the Office**
- **Fines**
- **Every
Employee
Rule**



Let Your Family Know You're Safe

- **If Your Community has Experienced a Wild Fire, or any Disaster, Register on the; American Red Cross Safe and Well Web Site Available Through RedCross.org to Let Your Family and Friends Know about Your Welfare.**
- **If You Don't have Internet Access, call **1-866-GETINFO** to Register Yourself and Your Family**

Stroke - to Recognize Symptoms

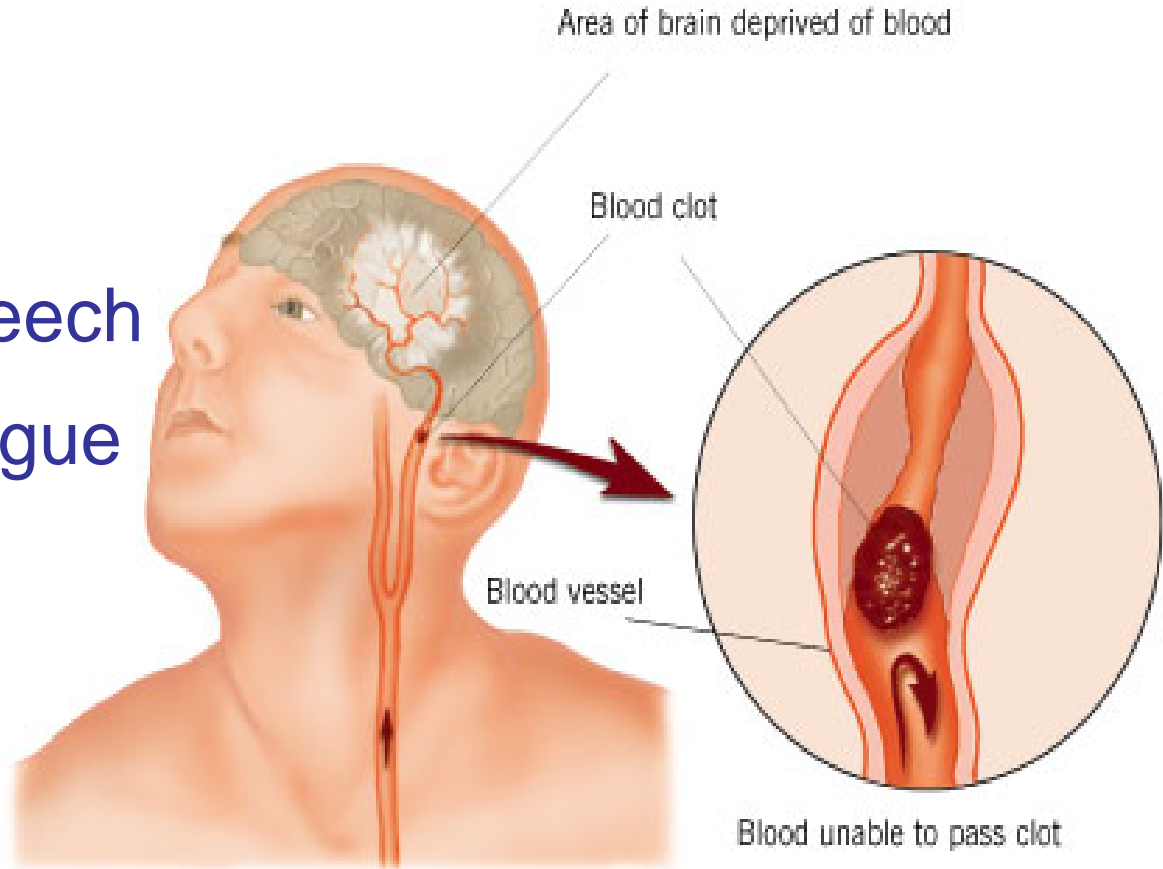
FAST

Face

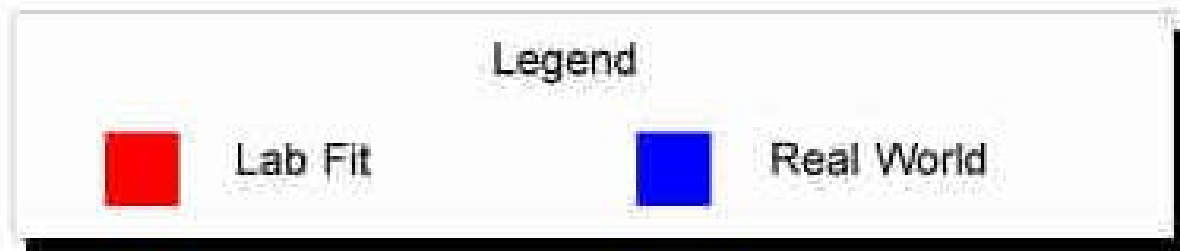
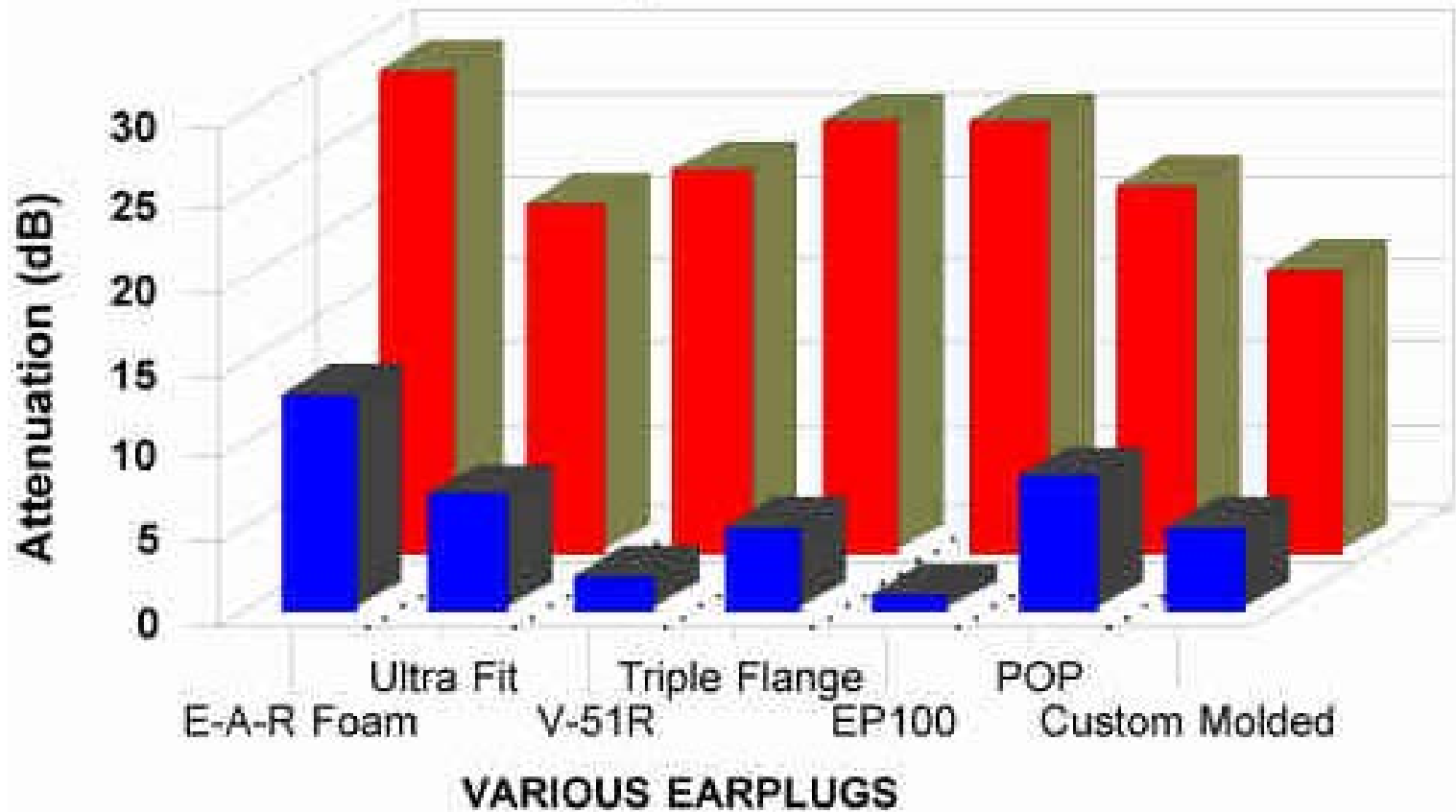
Arms

Smile or Speech

Time or Tongue



NRR Hearing Protectors



Inner Ear Comparison



**Healthy Inner Ear
Lined with Cilia**



**Damaged Inner Ear -
Inner Ear Showing
Damage to the Cilia**

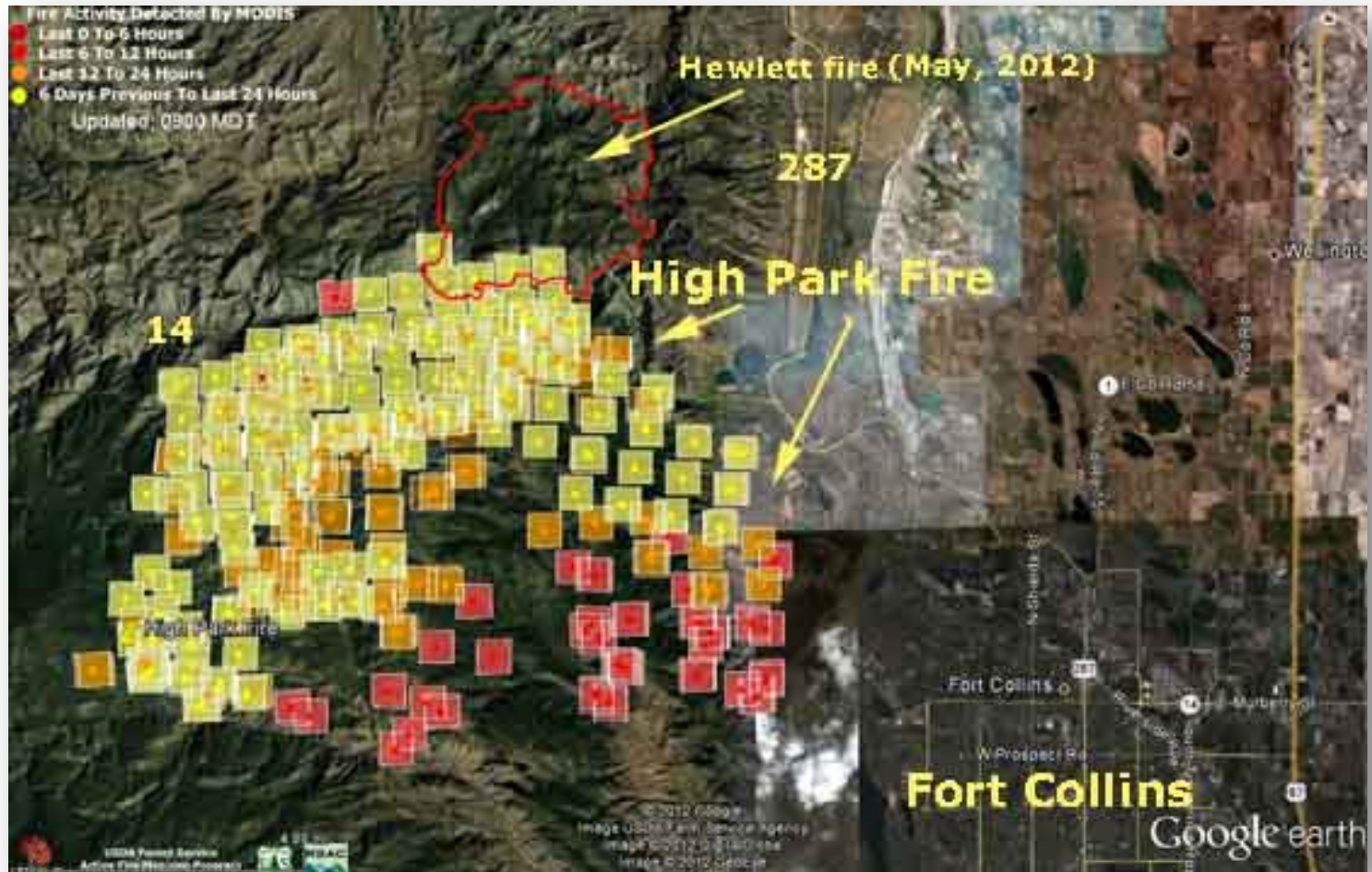
Cilia - Tiny Hair Cells that Help You Hear

Wildfire Dangers are a Potential

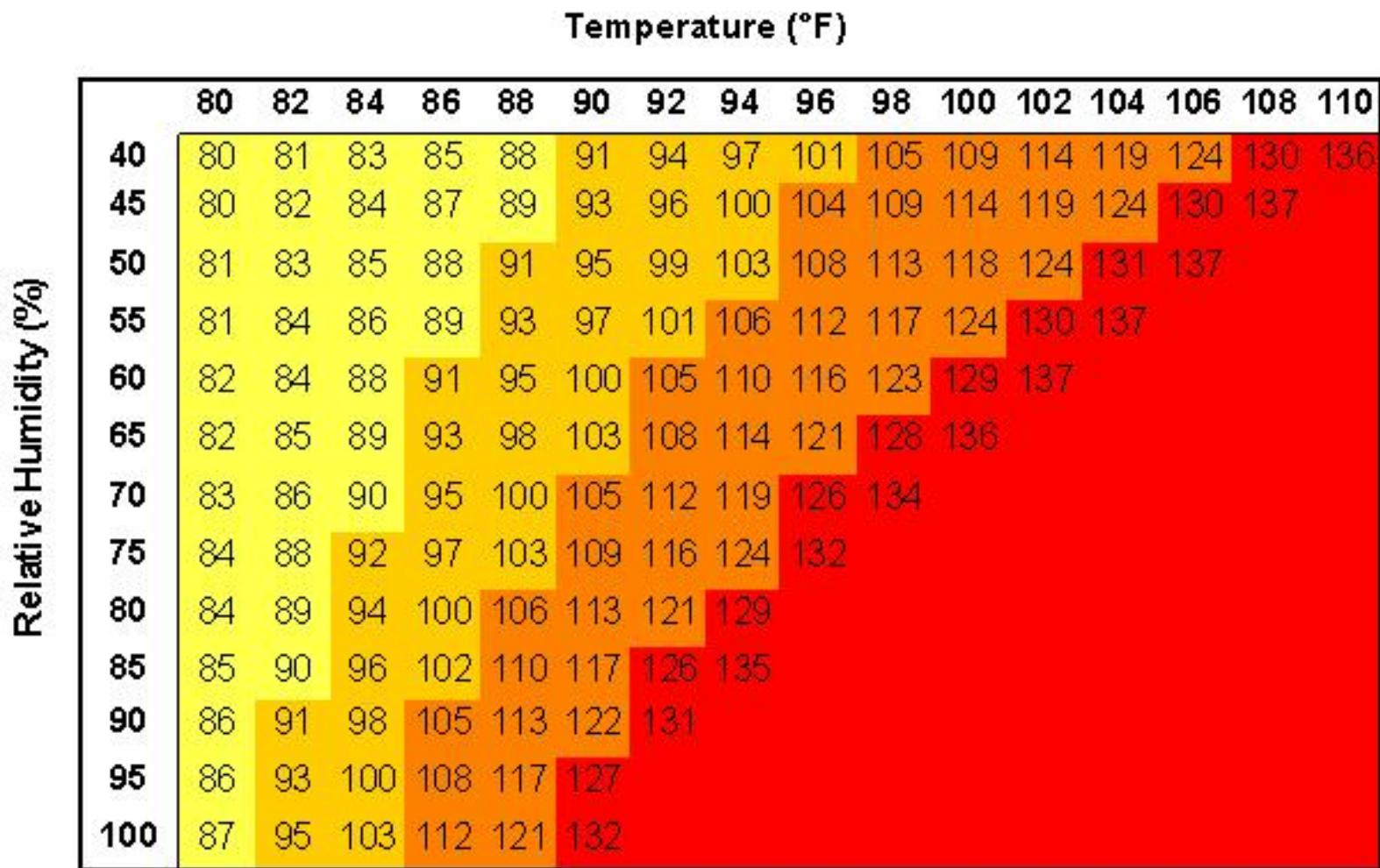


Wildfire Maps from NOAA

Check Your Destination



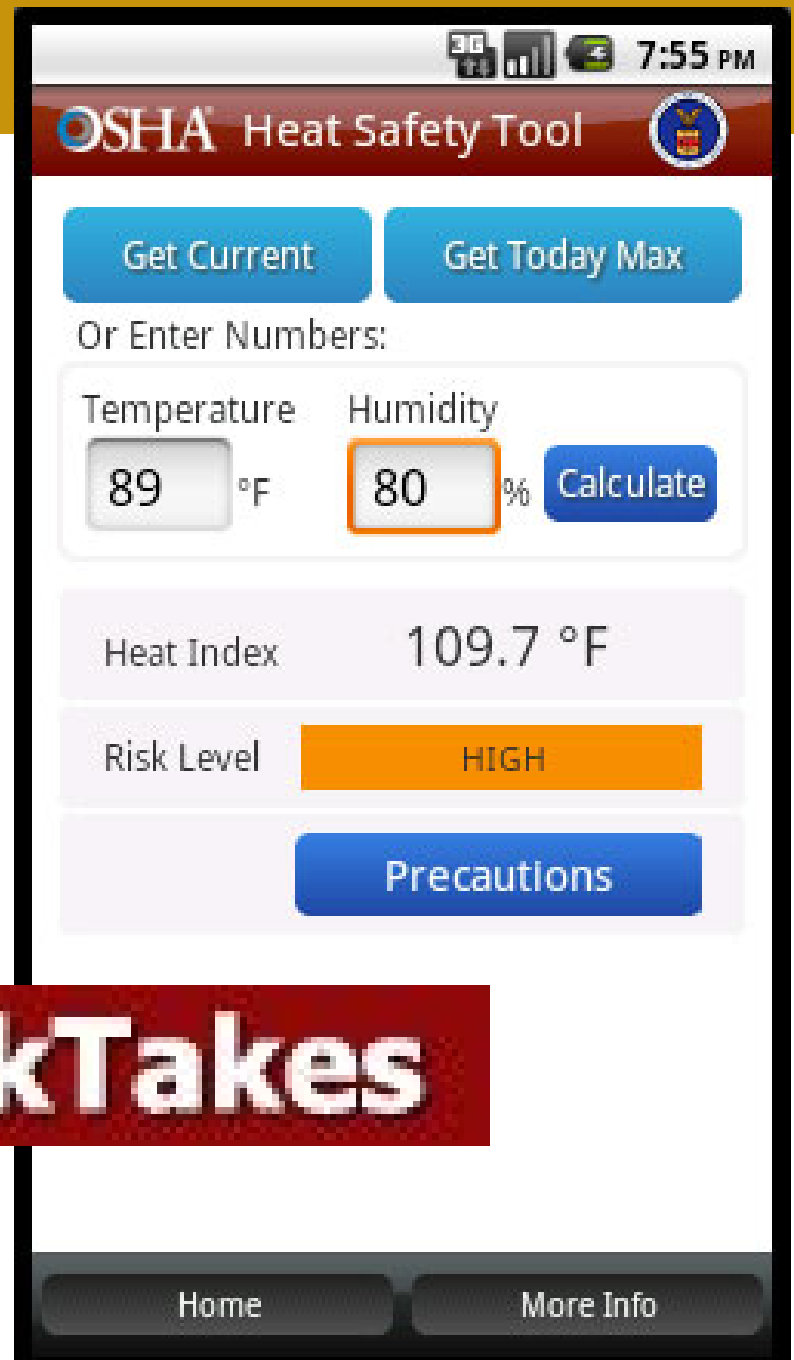
Heat / Humidity Stress



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Extreme Caution
 Danger
 Extreme Danger

Heat App



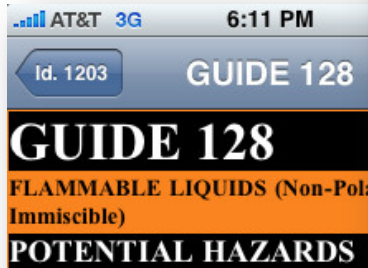
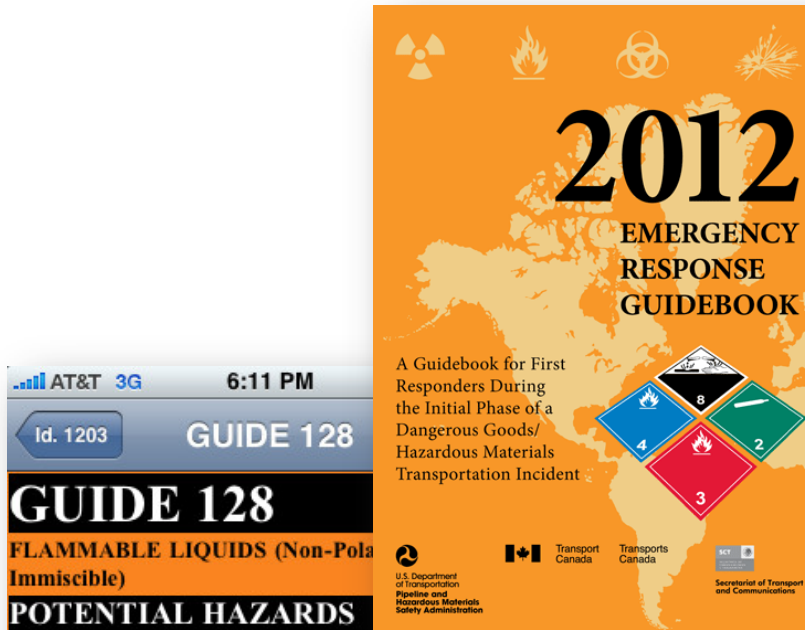
OSHA QuickTakes

Car Seat and Heat Warning App

The First Years Brand from TOMY International has an Alert System that Calls Smartphone to Warn of Faulty car Seat Restraint, Excessive Heat or if Child Left Behind



There's an App for That



FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a "P" may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.



St. Louis, MO

July 12, 2012 - Apartment



Naturalgaswatch.org/St,Louis Today

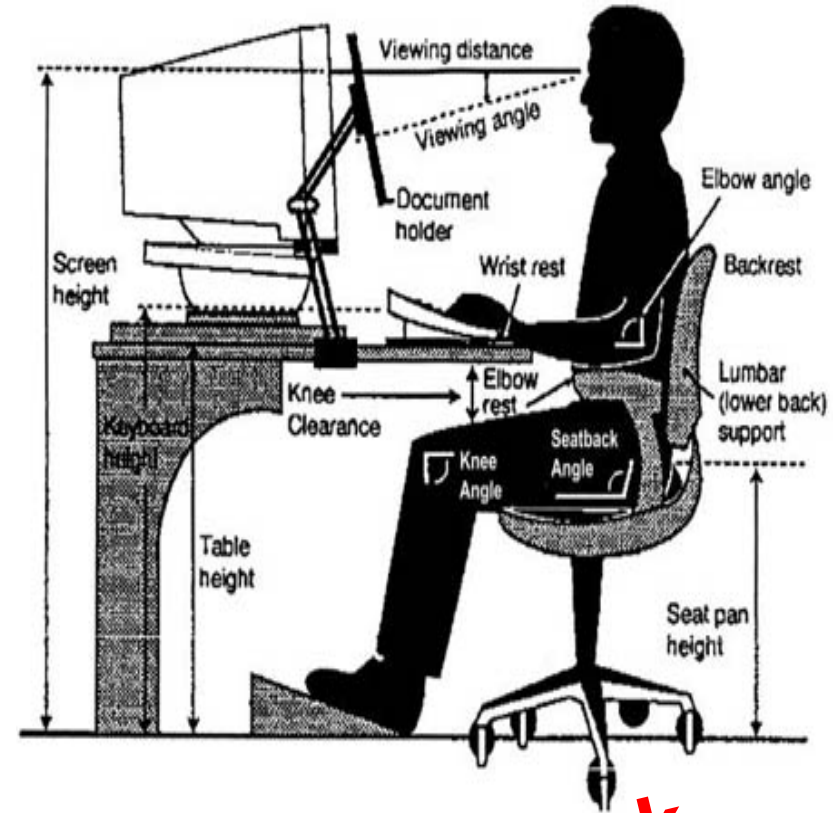
Beware of Vicious Dogs

- **May 20-26 is National Dog Bite Prevention Week**
- **Dogs Bite More than 4 million People Each Year**
- **Most of These Victims are Children and Senior Citizens.**



Computer Fatigue – The 3 R's

- **Readjust**
 - The Screen Make Sure You are Looking Down
- **Refocus**
 - look 20' Away at Least Once Every ½ Hour
- **Remove**
 - Your Whole Body at Least Once an Hour



And Don't Forget to Blink

Tool Safety

**Machetes and
Brush Hooks
Need Scabbards**



Hazardous Plants

- **Poison Ivy Creeper**



Hazardous Insects

Ticks



Recluse Spider

- **About ½ Inch Long**
- **A Distinct Violin-Shaped Patch on its Head and Mid-Region**



Questions



Forming Partnership.
Delivering Results.
www.skw-inc.com

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