

# 8th Annual HazMat Symposium

## Incident Command & Emergency Response for Natural Gas Transmission Pipelines





# Safety – Emergency



# Safety Moment

## HOTEL SAFETY

Here are some helpful safety tips for keeping safe during your stay at hotels or motels:

- Choose a hotel/motel that is protected by both smoke alarms and a fire sprinkler system.
- When you check in, try to book a room between the 3rd and 6th floors (high enough to be difficult to be broken into from the outside, but where fire engine ladders can easily reach).
- Locate the escape plan posted in your room and determine how you would access the emergency exits. Take the time to find the exits and count the number of doors between your room and the exit. Make sure the exits are unlocked. If they are locked, report it to management right away.
- Keep your shoes, room key, wallet and cell phone next to the bed in case there is a fire and you need to evacuate the room quickly.
- When the alarm sounds, leave right away, closing all doors behind you.
- Always use the stairs — never use elevators during a fire.
- If you must escape through smoke filled corridors, crouch as low as possible under the smoke to the nearest exit.

If you can't escape ...

- Shut off all fans and air conditioners in your room.
- Stuff wet towels in the crack around the doors.
- Call the fire department and let them know the location of your room.
- Wait at the window and signal with a flashlight or light colored cloth.



# Natural Gas Pipeline Emergency Response



# Who is Florida Gas Transmission?

- Florida Gas Transmission (FGT) operates nearly 5,400-miles of interstate natural gas transmission pipelines, a system that extends from South Texas to South Florida.
- Florida's original natural gas transmission pipeline operator – in-service since 1959.
- Operating in all but 13 counties in Florida.
- Capability of our system to flow 3.2 BCF/D.

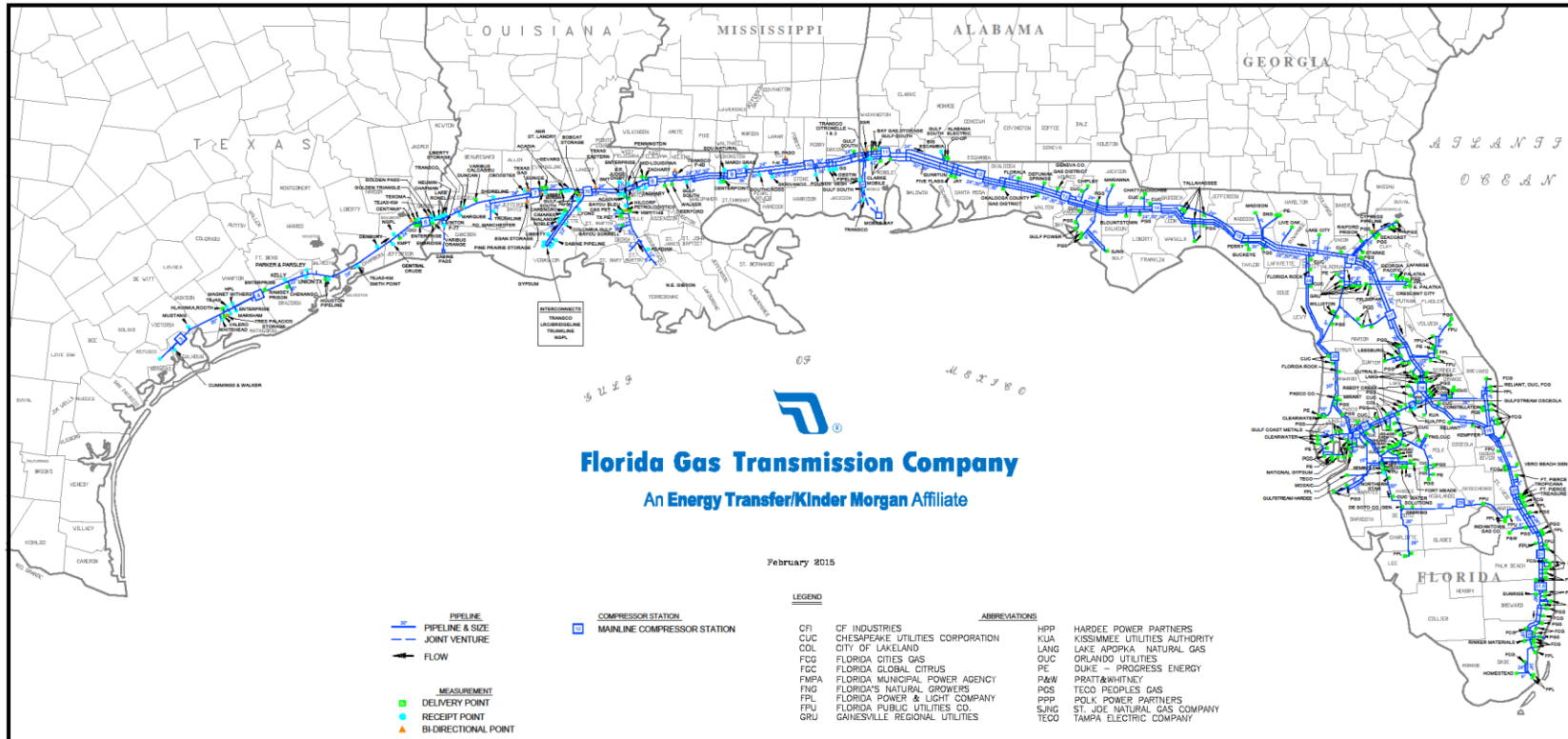


**Florida Gas Transmission Company**

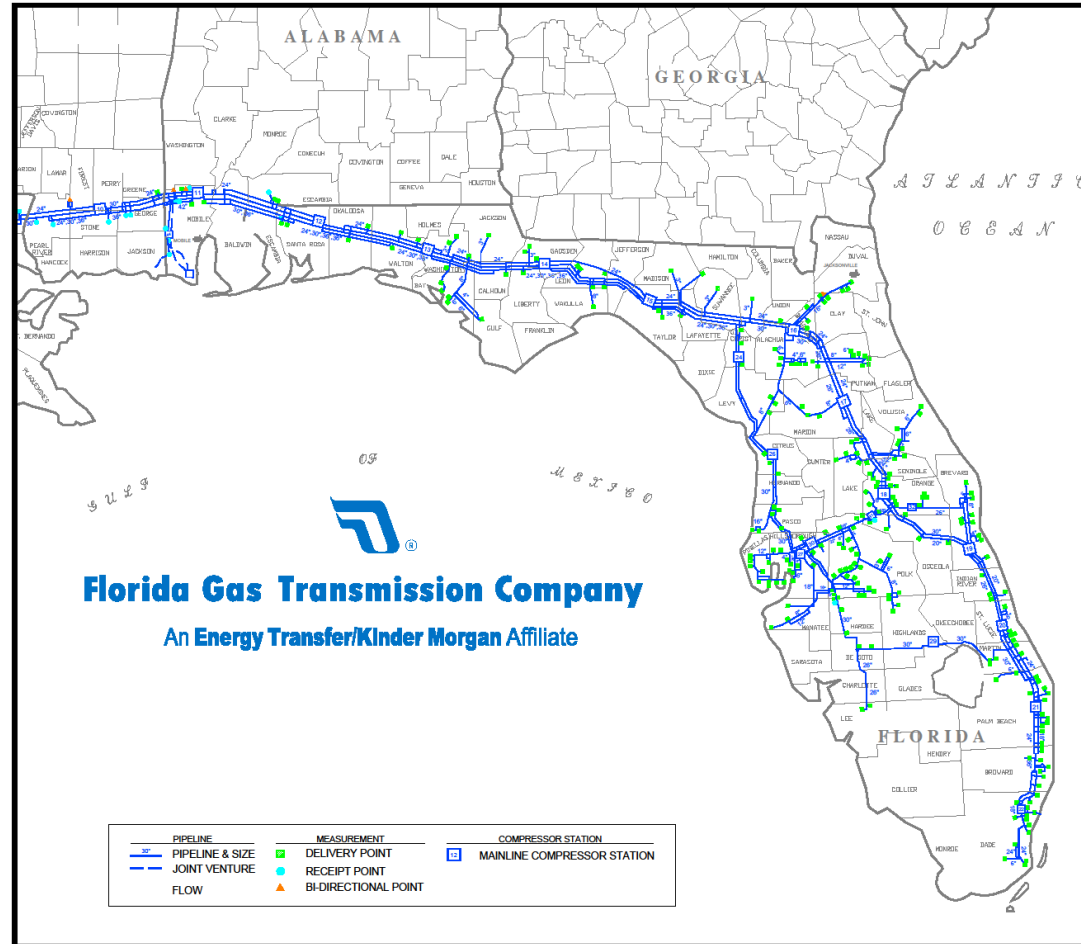
An Energy Transfer/Kinder Morgan Affiliate



# Florida Gas Transmission Overview



# Florida Gas Transmission Overview



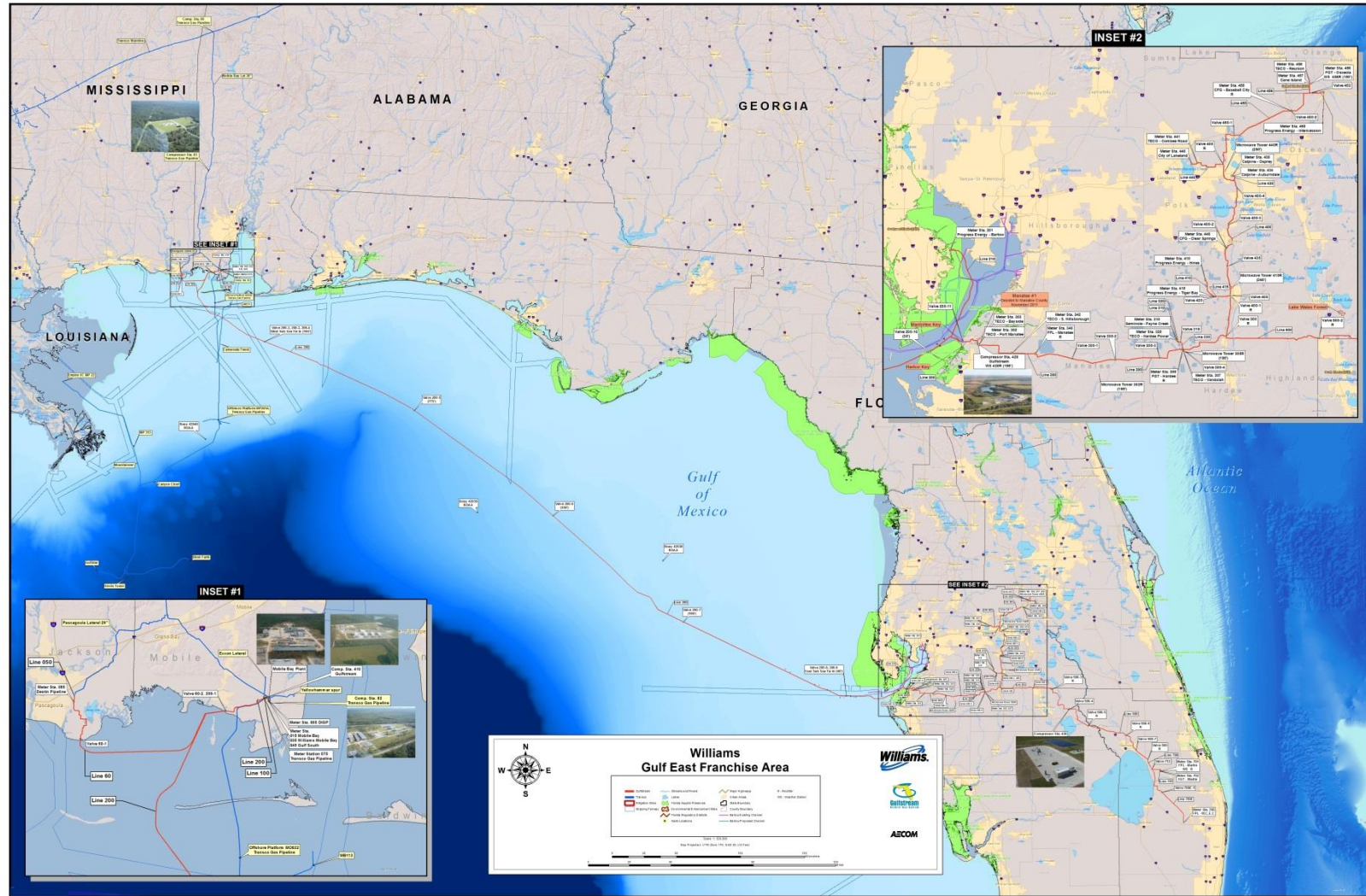


# Who is Gulfstream?

- The Gulfstream Natural Gas System was placed into service in May of 2002, Gulfstream is partnership between Williams, legacy Spectra Energy (Enbridge) and their respective affiliates. The 713-mile interstate transmission pipeline delivers up to 1.5 BCF of clean-burning natural gas across the Gulf of Mexico to meet Florida's rapidly growing residential and power needs.
- Pipeline:
  - 419 miles of offshore pipeline to Tampa Bay at up to 2180 PSI
  - 294 miles of onshore pipeline across Florida at up to 1480 PSI
  - Compression in Alabama and Florida
- In 2002, Gulfstream became the first new natural gas pipeline to serve Florida in more than 40 years, with enough natural gas to meet the electricity needs of over 4.5 million Florida homes.



# Gulfstream Overview



# Gulfstream Overview



# Who is Sabal Trail Transmission?

- Sabal Trail Transmission, LLC ("Sabal Trail"), a joint venture of Spectra Energy Partners, NextEra Energy, Inc. and Duke Energy, is a 517-mile interstate natural gas pipeline providing transportation services for power generation needs to Florida Power and Light ("FPL") and Duke Energy of Florida ("DEF").
- Sabal Trail is capable of transporting over 1 billion cubic feet per day or more of natural gas to serve local distribution companies, industrial users and natural gas-fired power generators in the Southeast markets.
- Sabal Trail's Phase I facilities were placed into full commercial service on July 3, 2017. The full Phase I capacity of the Sabal Trail pipeline is 830,000 Dth/day over nearly 517 miles of interstate natural gas pipeline. Phase II construction activities are currently taking place at our Albany and Dunnellon Compressor Stations. Both stations are projected to be in-service May 1, 2020.
- The Sabal Trail pipeline route encompasses four counties in Alabama, nine counties in Georgia and 13 counties in Florida.



# Sabal Trail Overview



# Sabal Trail Overview



# Today's Agenda

- Pipeline Facilities
- Hazardous Conditions
- Incident Command Center
- Scenarios
- Pipeline Personnel



# Natural Gas Pipelines

- Transmission pipelines known as the “interstate highway” for natural gas.
- High-strength, large-diameter steel pipe.
- Range in diameter from 3 to 42 inches.
- Safely moves trillions of cubic feet of natural gas from producing regions to market.
- Supply natural gas to local distribution companies, public utilities, and power plants.





# Compressor Stations

- Gas is transported at high pressure using compression (up to 1480 psi).
- Located approximately every 75 miles.
- Large turbines, motors or engines pressurize the gas and move it through the pipeline.



# Compressor Stations

- All compressor stations are monitored – and some are even controlled remotely – by highly trained personnel at a centralized gas control center.
- Compressor stations use a variety of systems to protect the public. Every station has an emergency shutdown system that stops the compressor units and isolates and vents the station gas piping.
- Regulations require that compressor stations periodically test or perform maintenance on the emergency shutdown system to ensure reliability.
- During maintenance activities, sometimes a blowdown will need to be performed. This is the release of gas from the pipeline to the atmosphere to relieve pressure in the pipe. Many times during a blowdown, a blowdown silencer will be used to control the noise associated with venting these pressurized gases into the atmosphere.



# Meter Stations

- The “city gate” is the point where a distribution company receives gas from a transmission pipeline.
- Local utility reduces the operating pressure and typically adds odorant bringing natural gas service to homes and businesses.



# Valves

***Valves should only be operated by qualified company personnel only.***

## Mainline Valve

- Shut-off devices designed to stop the flow of gas.
- Some are manually operated, while others are either automatic or operated by remote control.
- Located **about** every 15 miles along the pipeline.



## Lateral Line Block Valve

- Approximately 15 miles apart.
- Allows isolation of pipe section.
- Allows blow down “venting”.



# Pipeline Markers

- Transmission pipelines normally follow well-defined easements, and some share the same utility corridor.
- **Pipeline markers alert you to the presence of pipeline.**
- Markers contain the name of the **operator, emergency contact information, product and caution.**
- Markers are located near road, rail, fence, water crossings & curbs.
- Markers do not necessarily represent the exact location of the pipeline facilities within the easement.
- Markers or signs should never be **removed or relocated by anyone other than company personnel.**



# Pipeline Markers



# Natural Gas

## Composition

- Natural gas is a naturally-occurring hydrocarbon mixture.
- After processing, it is composed mostly of methane (about 94-98%) and also contains ethane (about 1-4%).

## Properties

- **Odorless:** Natural gas is a colorless, odorless substance in its natural state. The smell of rotten egg often associated with natural gas is normally due to an odorant (mercaptan) that is added by the pipeline company or local distribution company.
- **Non-Toxic:** Natural gas is non-toxic. The fuel is listed as a “hazardous material” due to its flammability, not due to its toxicity.
- **Lighter than Air:** Natural gas is 40 percent lighter than air. When natural gas escapes into an open area, it rises into the air and dissipates, although gas odorant is heavier than air and may still sink to the ground.



# Natural Gas

## Properties

- **Asphyxiant:** Suffocation can occur if natural gas displaces the oxygen in an enclosed area where it will collect first near the ceiling.
- **Ignition Temperature:** Natural gas has a very high ignition point - nearly 1200 degrees Fahrenheit. However, static electricity, pilot lights, matches, and sparks from telephones, electric motors and internal combustion engines can easily reach this temperature and ignite natural gas.
- **Combustion Products:** There are no significant releases of harmful compounds as a result of natural gas combustion. However, incomplete combustion may produce carbon monoxide and warrant the use of self-contained breathing apparatuses by emergency response teams.





# Leak(s)

- Mercaptan is added at only certain areas along the pipeline based on population density, so you may not always be able to detect a leak by smell.
- Mercaptan is heavier than air, therefore ***the strong smell of natural gas does not always mean that methane is present***. Always use a detection instrument to determine if natural gas is present.
- Population density determines the requirement for odorant.



# Leak(s)

The following signs can be an indication of a natural gas pipeline leak:

- Dust, water, or vegetation blowing around a pipeline
- Discolored or dead vegetation near a pipeline
- A hissing sound
- Bubbling in a wet area, marshland, river or creek
- A dry spot in a moist field

If you suspect a leak, look for the nearest pipeline marker and call the emergency phone number listed.



# Rupture

- More dramatic indicators.
- Loud **roaring** sound of escaping gas.
- Doesn't always lead to a fire, but if it does, the resulting explosion produces large flames burning at high temperatures.
- Fire and emergency officials should be aware of the potential for **secondary fires** and disturbed earth in the vicinity of a rupture.



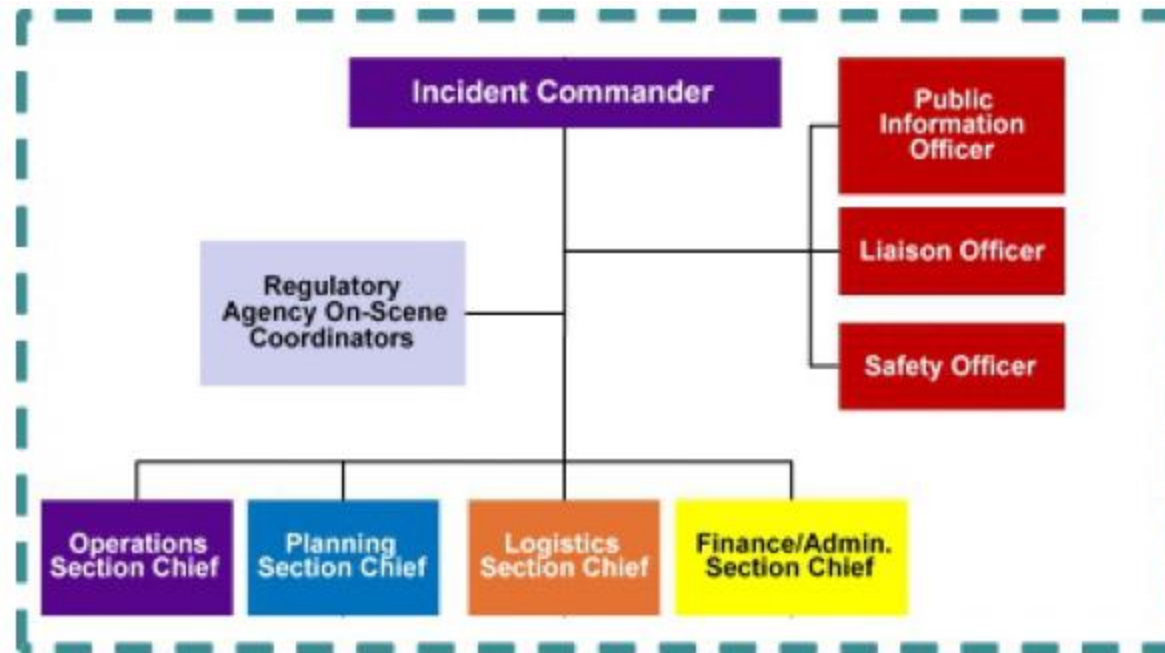
# Hazardous Conditions

- Because of large volumes and high pressures, accidents involving natural gas transmission pipelines can be dangerous.
- There are two primary hazardous conditions you should be aware of:
  - Encroachment (excavation activities)
  - Rupture



# Incident Command Center

Pipeline emergencies require coordination of information and resources to safely and efficiently resolve the situation. In the event of a crisis response, we will deploy a response team based on the National Incident Management System (ICS) which is comprised of five major functional areas – Command, Operations, Planning, Logistics and Finance/Administration.



# Incident Command Center

This response team will lead response activities. Emergency response personnel and the pipeline company may be called upon to assist and support as directed.

Title	Duties	Pipeline Company's Role
Incident Commander	Responsible for all aspects of an emergency response, including quickly developing incident objectives, managing all incident operations, application of resources as well as responsibility for all persons involved.	<b>If first to arrive</b>
Operations Section Chief	Supervises organization elements in accordance with the Incident Action Plan (IAP) and directs its execution.	<b>Involved</b>
Planning Section Chief	Prepares IAP and Demobilization Plan (DP); determines the need for specialized resources.	<b>Involved</b>
Logistics Section Chief	Identifies and prepares service and support elements of IAP and DP.	<b>Involved</b>
Finance/Admin Section Chief	Manages all financial aspects of incident.	<b>After the fact</b>
Public Information Officer	Gathers facts and distribute them to the media. A public information officer may be responsible for organizing special events such as news conferences and media updates.	<b>Company involvement</b>
Liaison Officer	Facilitates the integration of local and state wide agency resources into the incident organization. Point of contact for representatives from assisting and cooperating agencies.	<b>Involved</b>
Safety Officer	Monitors and assesses hazardous and unsafe situations and developing measures for assuring personnel safety. Coordinates safety efforts and ensures emergency response safety.	<b>Involved</b>

# Scenarios – Odorant Complaint

- ⇒ 911 receives a call concerning a smell of gas and you are dispatched to the scene.
- ⇒ Upon arrival ... you do smell the gas odorant ... but do not hear any leaks.
- ❖ What is your first action?
- ❖ Who else should be notified?
- ❖ You see two (2) different gas company markers ... now what?



# Scenarios – Small Natural Gas Leak

- ⇒ 911 receives a call of a gas leak and you are dispatched to the scene.
- ⇒ Upon arrival at XYZ Natural gas valve site ... which is just off a busy highway ... you hear the sound of gas escaping, but see no visual evidence.
- ❖ **What are your first actions?**
- ❖ **Would you set up an Incident Command control point? Where?**
- ❖ **You notice there are overhead powerlines in close proximity to the gas release. What would you do?**
- ❖ **The gas ignites ... what now?**
- ❖ **What response would change if the release is out in an isolated area and the gas ignites?**





# Scenarios – Large Natural Gas Leak

- ⇒ 911 receives a call of a large gas leak and you are dispatched to the scene.
- ⇒ Upon arrival at XYZ Natural gas valve site you realize the rupture is large, but has not ignited.
  
- ❖ Where would you set up Incident Command?
- ❖ Who would you contact to get the gas leak isolated?
- ❖ After you have been at the scene for a few minutes ... the gas ignites.
- ❖ What actions would you take now?



# Emergency Response

- Park vehicles a safe distance from the incident and turn off engines.
- Clear the area around the site and evacuate people to an upwind location.
- Provide first aid and call for additional emergency medical assistance if needed.
- Barricade the area and keep onlookers a safe distance away.
- Keep roads to and from the site clear for emergency and pipeline personnel.
- Verify that no electronic devices such as cell phones or radios are in being used.



# Response

- Do not attempt to extinguish the gas fire with water or other chemicals ***(high probability of re-ignition and explosion).***
- The best method to control a gas-fed fire is to stop the flow of gas.
- ***Never attempt to operate pipeline valves.***
- Extinguish perimeter fires and wet down exposed flammable areas in the vicinity. Radiant heat from the gas fire is intense and can cover a large area.



# Response



# Response



# Minimum Evacuation Distances

FIGURE 2.3-1 - RECOMMENDED MINIMUM EVACUATION DISTANCES

		Pipeline Size (inches)											
		4	6	8	10	12	16	20	22	24	30	36	42
Pressure (psig)	100	91	137	182	228	274	365	456	502	547	684	821	958
	200	129	193	258	322	387	516	645	709	774	967	1161	1354
	300	158	237	316	395	474	632	790	869	948	1185	1422	1659
	400	182	274	365	456	547	730	912	1003	1094	1368	1642	1915
	500	204	306	408	510	612	816	1020	1122	1224	1529	1835	2141
	600	223	335	447	558	670	894	1117	1229	1340	1675	2011	2346
	700	241	362	483	603	724	965	1206	1327	1448	1810	2172	2534
	800	258	387	516	645	774	1032	1290	1419	1548	1935	2322	2709
	900	274	410	547	684	821	1094	1368	1505	1642	2052	2462	2873
	1000	288	433	577	721	865	1154	1442	1586	1730	2163	2596	3028
	1100	302	454	605	756	907	1210	1512	1664	1815	2269	2722	3176
	1200	316	474	632	790	948	1264	1580	1738	1896	2369	2843	3317
	1300	329	493	658	822	986	1315	1644	1809	1973	2466	2959	3453
	1400	341	512	682	853	1024	1365	1706	1877	2047	2559	3071	3583
	1500	353	530	706	883	1060	1413	1766	1943	2119	2649	3179	3709
	1600	365	547	730	912	1094	1459	1824	2006	2189	2736	3283	3830
	1700	376	564	752	940	1128	1504	1880	2068	2256	2820	3384	3948
	1800	387	580	774	967	1161	1548	1935	2128	2322	2902	3482	4063
	1900	398	596	795	994	1193	1590	1988	2186	2385	2981	3578	4174
	2000	408	612	816	1020	1224	1631	2039	2243	2447	3059	3671	4283
2100	418	627	836	1045	1254	1672	2090	2299	2508	3134	3761	4388	
2200	428	642	856	1069	1283	1711	2139	2353	2567	3208	3850	4492	

Source: Pipeline Association of Public Awareness



# High Consequence Area (HCA)

A High Consequence Area (HCA) for natural gas transmission pipelines focuses solely on populated areas.

US Pipeline safety regulations use the concept of “High Consequence Areas” (HCAs), to identify specific areas where a leak could have the most significant consequences. Once identified, operators are required to devote additional focus, efforts, and analysis in HCAs to ensure the integrity of pipelines.



# Pipeline Personnel

- Trained for pipeline emergencies - can supply you with information regarding the facilities involved in the incident.
- Pipeline response team will stop the flow of gas to the accident site.
- Damaged section is isolated by closing valves on either side of the rupture.
- Any fire will burn itself out once the fuel is consumed and the remaining gas will be ***vented to the atmosphere.***





# Coordinated Response

- Pipeline emergencies require coordination of information and resources among the various players in order to safely and efficiently resolve the situation.
- Florida Gas Transmission, Gulfstream Natural Gas and Sabal Trail Transmission system's response protocol are all based on the National Incident Management System.



# Things to Remember

- LEL-UEL of Natural Gas is ~ 4%-16%
- Stopping the flow of gas is the BEST method of controlling a gas-fed fire
- DO NOT attempt to operate pipeline valves
- Always refer to your agency's Policies and Procedures for Emergency Response guidance
- Know what pipelines are operating in your AO
  - ☑ Florida Gas Transmission's 24-Hour Emergency Gas Control Center -- **800-238-5066**
  - ☑ Gulfstream Natural Gas System's 24-Hour Emergency Gas Control Center -- **800-440-8475**
  - ☑ Sabal Trail Transmission's 24-Hour Emergency Gas Control Center -- **888-568-7269**



# To Learn More

## ...about pipelines operating in your jurisdiction

- Visit the National Pipeline Mapping System (NPMS) at [www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov)
- Created by the Department of Transportation / Pipeline and Hazardous Material Safety Administration (PHMSA)
- Local and state emergency response officials can access data pertaining to interstate and intrastate gas and hazardous liquid transmission pipelines.



# Our Commitment

**We are strongly committed to operating a safe, reliable pipeline system. As part of that commitment, we strive to strengthen and expand our relationships with Emergency Responders.**



# Emergency Preparedness

**If you are interested in other training opportunities, please let us know...**

- Conducting Safety Meetings on a Regular Basis
- Participating in Table Top Exercises and Mock Drills
- Investigating Incidents, Focus on “Lessons Learned”
- Enhancing Incident Management Training



# Emergency Contacts

## FLORIDA GAS TRANSMISSION (FGT)

*In case of emergency, contact our 24-Hour Gas Control group*

# 1-800-238-5066

### Operations

Rick Barrett, South Florida Region

407-468-6851

[Rick.Barrett@energytransfer.com](mailto:Rick.Barrett@energytransfer.com)

Mike Laycock, Central Florida Region

407-276-6939

[Michael.Laycock@energytransfer.com](mailto:Michael.Laycock@energytransfer.com)



# Emergency Contacts

## GULFSTREAM NATURAL GAS SYSTEM

*In case of emergency, contact our 24-Hour Gas Control group*

# 1-800-440-8075

### Operations

James Villarreal, Operations Technician Lead

941-232-2412 (cell)

[James.P.Villarreal@Williams.com](mailto:James.P.Villarreal@Williams.com)



# Emergency Contacts

## SABAL TRAIL TRANSMISSION

*In case of emergency, contact our 24-Hour Gas Control group*

**1-888-568-7269**

### Operations

Steve Peek

407-966-2930 (office)

[Steven.PEEK@enbridge.com](mailto:Steven.PEEK@enbridge.com)





# Questions?

**Thank you for attending. We would be happy to answer any questions you may have.**

