Areas of concern	Date of Incident	Location	Description		
Illegal disposal of natural gas pipeline condensate (which contains a complex mixture of hydrocarbons, including benzene) and mercury	From 1950 to mid-1980's	Compressor Stations & Metering Stations from Texas to New York	<ul> <li>2/1/02: Transco agreed to a Consent Decree to -</li> <li>(1) test &amp; cleanup soil and groundwater contamination related to waste disposal at 26 of its 53 compressor stations along it's natural gas pipeline which crosses 12 states from TX to NY;</li> <li>(2) cleanup polychlorinated biphenyl (PCB) contamination, complete a stormwater monitoring program, conduct stormwater sampling at several compressor stations; and</li> <li>(3) pay a \$1.4 million civil penalty for disposing of pipeline condensate &amp; other materials in unlined earthen pits &amp; debris areas at its compressor stations. Often, the waste in the pits was burned. They also used PCB containing lubricants at the compressor stations and, at their metering stations, used mercury. Use of mercury ended in 1989, but the soil remained contaminated.</li> </ul>		
			This settlement resolved claims for Transco's violations of the Resource Conservation and Recovery Act (RCRA), Clean Water Act (CWA) and Toxic Substances Control Act (TSCA). This case was brought by the US EPA & Dept. of Justice.		
USA v. Transcontinent	al Gas Pipe Line Corp	ooration in the US Distri	ct Court – Southern District of Texas: Civil Action H-02-0387 – Consent Decree 2/1/2002		
	5/1/03	Lake Tapps. WA	5/2/03: Corrective Action issued by PHMSA following 5/1/03 failure on 26" NG pipeline (constructed in 1950's) where a 42' section broke & flew 250' away. 21' of pipeline was not recovered. Gas released for an hour; evacuations = within 4 miles. No fire or injuries. Cause: Stress Corrosion Cracking (SCC) & not from land movement even though this area has seismic activity & unstable slopes. Coal Tar coating is a possible factor in SCC. Concern: They had 4 previous pipeline failures in the area: 1992 – failure due to SCC; March 1999 – leak due to SCC, and between June & August 1994, there were 22 failures due to SCC on a 16" lateral near Oregon City, OR		
Pipeline failures – repeatedly	& & & & & & & & & & & & & & & & & & &	12/18/03: Amendment to Corrective Action Order (CAO) after 12/13/03 rupture on this line near Toledo, WA – This time, gas was released for at least 3 hours; evacuations of 4/12 nearby homes done voluntarily; indications of corrosion on pipe = dark stain at edge of rupture; moisture between 1957 vintage coal tar coating and the pipe; and saw significant longitudinal cracking that appear to be Stress Corrosion Cracking. This occurred despite the fact that earlier SCC resulted in Williams reducing pressure by 20%. (This amendment ordered Williams to take additional corrective action on 3 other lines along with transmission lines in a specified area.)			
			4/9/04: Post-Hearing Decision to the Amendment to the CAO – PHMSA added another amendment (communication & liaison procedures)		
	PHMSA: CPF 5-2003-1003H Corrective Action Order + 3 Amendments				

Areas of concern	Date of Incident	Location	Description	
Gas release from backhoe operator hitting pipeline; procedural & oversight violations	10/3/05	Chantilly, VA	<ul> <li>Backhoe operated by Williams' contractor struck their active 36" gas transmission pipeline in an area where there were 4 pipelines. Natural gas was released; nearby school &amp; homes were evacuated. PHMSA Final Order (7/30/07) assigned a civil penalty of \$590,385, but this was reduced to \$190,385 following Williams' 1/9/09 proposal to sponsor 2 projects (\$300,000 for VA's GPS Cell Phone Locator Pilot Project I &amp; \$262,000 for VA's Locator Technology Pilot Project (VA Phase II).</li> <li>Violations: not following own procedures (remove/cover cutting teeth side of backhoe, not hand-digging within 2' of an existing pipeline, not verifying existence of 2 other pipelines before digging, accepting a contracted weld inspector's acceptance of a weld that was defective &amp; allowing the pipeline to go back into service for 13 days before repairing it, lack of damage prevention program that included inspectors, not adequately marking crossover of 2 pipelines, &amp; not verifying qualifications of contract surveyor or contract excavation inspector. OPS also noted that backhoe approximate the diaging if a potter acropit there for visual quidance.</li> </ul>	
		 PHI	MSA: CPF 1-2005-1007	
Not following prescribed timelines to correct deficiencies from external corrosion	6/8/06	Charlottsville, VA	<ul> <li>PHMSA's OPS completed an onsite safety inspection of the Virginia Lateral. A civil penalty of \$41,000 was initially proposed, and this was reduced to \$24,600 following a hearing.</li> <li>Violation: Williams did not take prompt remedial action to correct deficiencies indicated by external corrosion according to requirements to do so within 2 ½ months. Three problems took from 3 months. 8 days to 6 months. 2 days to fix.</li> </ul>	
PHMSA: CPF 1-2007-1011				
Violations led to Compliance Order	June to August 2008	Inspection of facilities & records in GA, ID, TX, UT, WA & NJ	<ul> <li>Violations:</li> <li>broken plastic casing vents (not protected from winter) at 1 location</li> <li>External corrosion: For 2 consecutive years, cathodic protection systems at 15 locations did not have negative voltage of at least 850 mV</li> <li>Failed to conduct leakage surveys of an odorless gas transmission line in a Class 3 location [at intervals not to exceed 7 ½ months and at least 2x/year] – did not do 4 of these required surveys between 2006 &amp; 2008 in TX.</li> <li>did not follow procedures manual specifying that they were not to use composite sleeves for pipeline repair of leaking defects/cracks/weld imperfections since it does not provide a seal for the leak &amp; doesn't address risk of cracks spreading. (They used a Clock Spring composite sleeve to repair a crack on the Transco Pipeline at MP1828.139-1828.143 in Linden NJ (Dig #6) after identifying 2 gouges and then a crack when repairing the gouges.) They also used a composite sleeve to repair a weld imperfection at MP1827.950 (Dig #5).</li> <li>As part of addressing the Compliance Order, Williams removed the damaged segments of pipe that had composite sleeves &amp; replaced them.</li> </ul>	
PHMSA: CPF 5-2009-1003				

Areas of concern	Date of Incident	Location	Description	
Gas pipeline explosion Fire Serious injuries Property damage - significant	9/14/08	9/14/08 Appomattox, VA	<ul> <li>From a natural gas pipeline explosion, a 32' section of 32" diameter pipeline segment was ripped from the ground after Line B failed, spewing gas &gt; the pipeline section, along with dirt &amp; rocks, was hurled into the air. Power line came down from the power of the blast, struck the ground &amp; caused fire.</li> <li>This accident released an undetermined amount of gas that ignited &amp; formed a fireball &gt; crater 37' wide x 15'deep (1125' diameter burned area);</li> <li>5 people were seriously injured &amp; needed hospitalization;</li> <li>2 homes totally destroyed; over 100 homes were damaged; over 3 million in property damage</li> </ul>	
Fined for safety violations			<b>Violations:</b> Williams did not maintain cathodic protection on each buried transmission line installed before 8/1/71 sufficient to control corrosion; Williams' readings of pipes in the vicinity of the accident (2003 & 2006) demonstrated inadequate cathodic protection & they failed to take prompt remedial action. Results of an in-line inspection of Line B (6/23/08) got to Williams on 8/15/08, and the vendor said there was no immediate safety problem. However, it exploded on 2/14/09	
Though Williams/Transco said they'd address this issue, the same thing happened again. (* See 12/3/11)			9/14/08. In 2009, PHMSA issued a penalty fine to Williams/Transco of \$952,500 for <b>safety violations</b> (failure to monitor corrosion that was responsible for the blast). PHMSA's case was opened 8/6/09 & closed 11/17/09. Williams paid the fine. The Corrective Order issued 9/25/08 by PHMSA stayed in effect until 11/3/11. (Sources = on the next page)	
PHMSA: CPF 1-2008-1004H and CPF 1-2009-1007; <u>http://www.newsadvance.com/news/local/article_b24d1de0-f64c-51d3-a3c5-dab3ad7afee9.html</u> <u>http://www.newsadvance.com/news/local/article_e239385d-dd9d-5e89-b66f-b4b4bf84a0e3.html</u> <u>http://pstrust.org/about-pipelines1/map-of-major-incidents/transco-virginia-accident/</u>				
safety violations	Inspection from 8/31/09 to 9/3/09	Staten Island, NY	Onsite inspection by representative of NY Dept. of Public Service (agent for PHMSA) found <b>violations:</b> not verifying the electrical isolation of cased pipelines by surveying & analyzing case-to-soil potentials at least 1x every 5 years (preferably 1x/year), and 3 casings on Staten Island did not have test leads. Penalty: \$50,000 was paid by Williams.	
PHMSA: CPF 1-2011-1015				

Areas of concern	Date of Incident	Location	Description		
Leak in gas pipeline discovered during annual cathodic inspection	4/26/10	King Ranch property near Kingville, TX (Kleberg County)	A technician, doing annual cathodic protection readings, saw bubbles in standing water along the NG pipeline ROW on 4/22/10. Since this area had criss-crossed crude oil pipelines that are not regulated, not cathodically protected, old & poorly mapped, they were not initially sure of the cause. Inspection revealed a ¼" opening in their 24" gas A Pipeline (constructed in 1949 & coated with coal tar enamel), and they suspected that leaking hydrocarbons from a pipeline above this deteriorated the pipeline & could have created environment conducive to growth of sulfate-reducing bacteria. Cause was determined to be microbiologically-influenced corrosion (MIC) & degraded coal tar coating near the leak. During repair of this pipeline, they discovered black powder on the inside of the pipe (indication of corrosion since it's a form of iron oxide). They replaced 30' of the 24" pipeline & returned the line to service on 4/29/10. Williams planned to replace valves in 2011 to allow pigging of the line & perform ILI's to assess the integrity of the pipeline. Williams, in their Failure Investigation Report (4/26/10) noted, "Typically, small leaks of this type are difficult to detect through normal SCADA monitoring."		
	Failure Investigat	ion Report- Williams(Tr	ansco) Corrosion Failure (3/31/11); PHMSA Report (3/31/11)		
Waited 7 months to fix violations from stormwater management during construction (gas drilling activities)	November 2010	Parachute, CO	Williams was fined \$275,000 by the State for failing to implement and/or maintain storm water measures to prevent potential pollutants during planned construction (leaking liner of pit holding hydrocarbons & other chemicals including benzene contaminated a spring used for drinking water). In Nov. 2010, Williams (subsidiary, Bargath) was told by State inspectors to immediately take action. <i>They did not fix the violation for 7 months.</i> Note: Previously (2004), Williams was fine \$30,000 for a fire at a well in Parachute, CO.		
CODPHE Civil Penalty #SP-121105-1 (11/5/12) & Compliance Order #SP-120821-1 (8/21/12)					
Violations: Fire protection from improper calibration & faulty monitoring corrosion control	Week of 12/6/10	Carlstadt, NJ LNG Facility	<ul> <li>Onsite inspection by PHMSA representatives at the LNG facility revealed violations:</li> <li>(1) They used methane gas at a concentration of 50% of the lower explosive limit when calibrating the propane &amp; ethylene gas detectors which resulted in improperly calibrated detectors &amp; alarm systems (thus, could not demonstrate facility maintained fire protection) when the rule is to activate audible &amp; visual alarm at no more than 25% of the lower flammable limit of the gas/vapor being monitored.</li> <li>(2) Incorrect monitoring for corrosion on each component protected from atmospheric corrosion at intervals not to exceed 3 years. They failed to remove the insulation on a carbon steel pipeline during atmospheric corrosion surveying (thus, could not visually inspect).</li> <li>Penalty = \$74,300. Williams did not contest &amp; paid this.</li> </ul>		
	·	PH	IMSA: CPF 1-2012-3002		

Areas of concern	Date of Incident	Location	Description		
Gas pipeline explosion			43' long section of natural gas <b>pipeline exploded &amp; flew 190' over treetops.</b> There was a massive explosion heard more than 30 miles away; flames were over 100' high & burned for 90 minutes. PHMSA ordered a corrective order (12/6/11).		
Fire – huge & long	12/3/11	Sweet Water, AL (Marengo County)	One landowner who grew a sustainable pine forest lost 65 acres of trees & estimated that 5 of his acres were now hydrophobic (like fired clay pottery) & now will just shed water.		
Scorched Earth			Cause: coating failure & extremely corrosive soil conditions. Landowner who lost his trees said he knew there was testing of the pipeline (pig technology) the week before, but the company did not receive the data back from the contractor in time.		
PHMSA C <u>http</u>	orrective Action Order ://www.texassharon.co	CPF 2-2011-1011H; <u>h</u> pm/2012/01/02/pictures	ttp://www.demopolistimes.com/2011/12/03/crews-battling-gas-explosion-fire/ -acres-of-devistation-from-williams-gas-pipeline-explosion-in-alabama/		
Violations: records and inspection	3/26/12	Ellicott City, MD	<ul> <li>PHMSA inspectors at this facility found the following violations:</li> <li>no records to verify the adequate depth of cover for a line from the Granite Pipeline Replacement Project of 2010, and</li> <li>when a pipe segment was cut-out for replacement (11/10/10), they did not inspect the internal surface for evidence of corrosion.</li> </ul>		
Penaity: \$42,500 (not contested) was paid by Williams. PHMSA: CP1-2012-1019					
Gas leak caused fire Williams re-started within 24 hours even though PADEP requested that they wait.	3/29/12	Springville, PA (Susquehanna County)	Lathrop Compressor Station had a fire caused by a gas leak, initially reported as an explosion, and about <b>1 ton of methane was released</b> into the air from the gas leak. This was below the threshold that would have required them to seek a permit used by bigger facilities. This "fire" blew a hole in the roof of the compressor station house, and it shook homes ½ mile away. Williams restarted the station & pumping of fracked gas within 24 hours despite a request from the Pennsylvania Dept. of Environmental Protection not to do so. DEP said that they were very clear in this request but, because it was not an official order, no fines were issued.		
	<u>http://thetime</u>	es-tribune.com/news/ex	plosion-rocks-natural-gas-compressor-station-1.1292502		
Gas leak	4/2/12	North Bergen, NJ	While excavating for an anomaly that was identified during an in-line inspection tool run on 3/5/12, the contractor (Napp-Grecco) found a rock in contact with the gas line in a Class 3 (HCA) area. A dent & crack in the pipeline were present prior to excavation. The dent was discovered in 2005, but metal loss was not reported due to analyst error. When they removed the rock, there was a "pinhole" size natural gas leak in a 36" diameter pipeline segment (constructed in 1959) at the 72 <sup>nd</sup> Street Interstate Transmission Lateral. Williams replaced 7' of this pipe segment & 6' of pipe downstream. There was no internal corrosion on the pipe that leaked.		
	PI	HMSA Failure Investiga	tion Report 7/12/13; PHMSA Report (3/22/16)		

Areas of concern	Date of Incident	Location	Description
While venting, lightning struck & caused Fireball + Explosion	7/23/12	Windsor, NY	<ul> <li>Windsor Compressor's ventilation stack was hit by lightning at this Birmingham-area compressor station, causing an emergency shut-down which, because it "purged" a lot of remaining gas, caused a fireball. They were venting gas in a "routine procedure" during a lightning storm when the vent was ignited by lightning, causing an explosion and huge fireball. (* See January 2014 for another fire here.)</li> <li>Note: Residents report that Williams has consistently violated local noise ordinances at this compressor station since the facility opened.</li> </ul>
<u>http://</u>	documents.dps.ny.gov	//public/Common/ViewE	Doc.aspx?DocRefId={005276CE-59F5-45B4-86AC-DDE139362CA0}.pdf
http://toxics	/8) targeting.com/Marceli	16/12 Read & Laniado, lusShale/news/2016-02	LLP letter to NY State Dept. of Public Services) -06/gas-pipeline-feeds-demand-distress-for-some (The Ithaca Journal 2/6/16)
<u></u>		http://www	v.naturalgaswatch.org/?p=1459
Ruptured pipeline	3/22/13	Cameron, VA (Marshall County)	A 24" natural gas pipeline of Williams Energy ruptured on a line off Reid Ridge near Fish Ridge. There were no injuries, and the amount of released methane is not known. Due to the explosion and released gas, evacuations were made within a 3-mile radius.
	<u>http://www.huffing</u>	tonpost.com/2013/03/22	2/marshall-county-pipeline-explosion-wv-wva_n_2934220.html
Chemical leak (Benzene) polluted soil & groundwater Note:			Prior to this incident, Williams was fined \$423,300 by State regulators (CO Oil & Gas Conservation Commission) for a benzene leak in Parachute which contaminated a spring used for drinking water after a man became ill in 2008. The source of contamination was said to have been from a leaking liner in a pit of Williams, and Williams disagreed.
of LNG evaporate (ethane, propane, butane & isobutene), and heavier parts can reach the ground & sink (benzene, toluene,	5/31/08 complaint &		12/20/12: A Williams-owned natural gas liquid natural gas (LNG) 4" pipeline began to leak during construction to expand the plant. This 4" line ran from the gas plant to the storage tank where gas was stored prior to sale as product. Parachute Creek runs through the small town of 1,000 which is next to the Colorado River. The leak was found by accident (on Jan. 3, 2013) & stopped, but
ethylbenzene & xylenes – considered to be BTEX	12/20/12	Parachute, CO	Benzene, a cancer-causing agent that breaks down bone marrow, had contaminated the soil. Williams said that the leak was not affecting the creek.
constituents). Note: Benzene is considered to be	through		3/8/13: Williams began cleanup of the Benzene leak & notified authorities and landowners that the soil had been contaminated. They said that they did not notify anyone earlier (December 2012) since they estimated that less than 25 gallons had leaked. No mention was made at that time that aroundwater was poisened
hazardous waste at levels above 0.5 parts per million (ppm) in groundwater. Readings at 11	July 2013		Their natural gas plant leaked over 10,000 gallons of hydrocarbon liquids, and benzene contaminated the groundwater.
from 7.5 to 38 ppm.			CONTINUES

Areas of concern	Date of Incident	Location	Description
Chemical leak (Benzene) polluted soil & groundwater Note: During such a leak, lighter parts of LNG evaporate (ethane, propane, butane & isobutene), and heavier parts can reach the ground & sink (benzene, toluene, ethylbenzene & xylenes – considered to be BTEX constituents). <u>Note:</u> Benzene is considered to be hazardous waste at levels above 0.5 parts per million (ppm) in groundwater. Readings at 11 sites around this leak ranged from 7.5 to 38 ppm.	5/31/08 complaint & 12/20/12 through July 2013	Parachute, CO	3/15/13: The public was informed that the spill had contaminated the groundwater with Benzene to levels as high as 36,000 times greater than the level considered safe for drinking water. April 2013: Residents questioned credibility of Williams' tests of their water & requested that the government conduct testing instead. Contamination continued to seep into the creek. Williams stated that a faulty pressure gauge caused the leak. Diesel was found at the gates of the Parachute water supply, and Benzene was detected in the creek. The State Health Dept. took over oversight of the leak. May 2013: Benzene levels rose in Parachute Creek & Colorado Creek. State agency told Williams that they violated the law. Williams announced that they would not proceed with the planned plant expansion here, citing low gas prices as the reason. 6/22/13: Reported amount of siphoned contaminated groundwater = over 396,000 gallons. Of this, 155,000 g. were buried in a disposal well, and 214,000 g. went to storage tanks to then be treated and pumped back into the groundwater. 7/10/13: Williams (& its subsidiary, Bargath) was fined \$7,854 by OSHA for failing to protect workers they sent to excavate toxic soil here. The OSHA report stated that Williams did not have a decontamination procedure & did not ensure its employees received safety training related to the spill. Williams disagreed with this. 7/13/13: Benzene level in surface water near this site doubled again, by report. 130 tons per day of contaminated soil were stockpiled. 280 cubic yards of contaminated soil were sent to East Carbon Development Co. landfill (1150 miles SE of Salt Lake City) 7/20/13: Williams expected to remove & treat as many as 26 million gallons of groundwater over 12-18 months at this site. About 155,000 gallons of tainted groundwater removed in March = disposed of in an injection well in Grand County, Utah. Colorado Dept. of Public Health & Environment (CDPHE) said that the August 2013 Compliance Order would not include fines since the release was no

Areas of concern	Date of Incident	Location	Description		
Chemical leak (Benzene) polluted soil & groundwater	5/31/08 complaint & 12/20/12 through July 2013	Parachute, CO	<ul> <li>Daily Sentinel report (9/19/13): Williams believes that the leak occurred from 12/20/12 to 1/3/13 and estimates that 50,000 gallons of hydrocarbons leaked (most vaporized &amp; 10,000 gallons reached the ground). Williams discovered the leak on Jan. 3 when workers responded to reset a valve that had automatically closed due to cold weather/freezing of an airline, and they initially thought it leaked 25 gallons. Workers closed the valve to stop the leak, shoveled up snow and unfrozen soil that appeared to have been impacted, and restarted the pipeline. Williams assumed it became over-pressurized from the frozen airline + closed valve, and that this broke the gauge. Only later did they realize that the gauge had broken much earlier. During excavation in March 2013, they discovered the actual size of the leak. (note: There were no regular maintenance requirements for the inside of a gauge.)</li> <li>Stop the Bluegrass Pipeline website: The leak was 3 gallons per minute. The pressure drop &amp; volume reduction caused by this leak were too small to trigger alarms in the automatic sensors.</li> </ul>		
2008 incident: (The Daily Sentinel of Grand Junction CO – 7/23/10 & 8/13/10; <u>http://www.gjsentinel.com/news/articles/record_fine_for_williams_in_be</u> & <u>http://www.gjsentinel.com/news/articles/energy_giant_agrees_to_pay_rec</u> and the Administrative Order by Consent (Order No. 1V-350) – Oil & Gas Conservation Commission of the State of Colorado (7/2/10)) 2012/2013 incident: <u>https://www.garfield-county.com/oil-gas/hydrocarbons-parachute.aspx</u> <u>http://www.postindependent.com/news/local/2013-5-parachute-creek-plume-spills-hydrocarbons-into-environment/</u> <u>http://gisentinel.com/news/articles/second-state-agency-tells-williams-it-violated-law</u> <u>http://www.gjsentinel.com/news/articles/williams-entity-found-in-violation-for-leak</u>					
Methane leak	5/14/13	Mosquito Bay, LA	A small methane leak was discovered during normal pipeline patrol in an unpopulated swamp area.		
<u>http</u>	http://www.brecorder.com/2013/05/13/119522 - and - https://saneenergyproject.org/2013/12/07/williams-safety-record/				
Fire	5/15/13	Montrose, PA	A fire occurred in the Williams Central Station compressor station at this Brooklyn Township site. There was no explosion according to Williams, but PADEP suggested that bulging walls, discovered at the site after the fire, indicated that there was an explosion.		
http://thetimes-tribune.com/news/fire-possible-explosion-at-susquehanna-gas-compresor-station-thought-to-be-accidental-1.1489789					

Areas of concern	Date of Incident	Location	Description
Explosion Injuries Violation: Prevention of Accidental Ignition (no on-location monitoring prior to welding)	5/30/13	Neshanic Station (Branchburg), NJ Compressor Station 505	<ul> <li>During maintenance work to install a new valve &amp; tee section of piping (part of Northeast Supply Link Modification Project) at Compressor Station 505,</li> <li>Williams did not adequately monitor for a combustible atmosphere in the area of work during the pre-heat phase of welding a 30" diameter cap onto a nonactive section of pipe.</li> <li>Monitoring was done at educer locations (remote). When the cap was prepped for welding, the educer that ran all day (to keep gas away from the work area) was turned down.</li> <li>A combustible mix of vapor accumulated inside the pipe &amp; ignition occurred from the heat of the propane torch being used to pre-heat the pipe prior to welding. This blew the 30" cap from the pipe. This line has several valve tie-ins with high pressure gas on the other side of the valve. At least one of those valves was leaking. Williams/Transco believed that gas migrated to the work area. The source of accumulating vapors inside the pipe was not determined.</li> <li>There were 3 injuries, and 13 people were treated at the site by first responders. PHMSA case opened 3/6/14, closed 10/8/14; Williams paid civil penalty: \$167,000.</li> </ul>
PH	IMSA: CPF 1-2014-10	02 - and - <u>http://www.r</u>	nj.com/somerset/index.ssf/2013/05/multiple_injuries_reported_at.html
Violation: Procedures for Valve Maintenance	6/2/13 to 10/24/13	Linden Unit 15121 & NY Unit 65651	Inspections revealed that Williams/Transco failed to partially operate 5 valves in Linden, NJ and 4 valves in the NY area during 2012 when valve maintenance requires that each valve on transmission lines that may be needed during an emergency be inspected & partially operated every 15 months but at least one each calendar year. Penalty of \$56,800 was not contested & was paid by Williams.
		PH	MSA: CPF 1-2014-1009

Areas of concern	Date of Incident	Location	Description	
			A heat exchanger (reboiler) suffered catastrophic failure, due to being unprotected from overpressure, at a cracker (chemical) facility that processes natural gas liquids for the plastic manufacturing industry, and it exploded violently. <b>Two people were killed</b> , and <b>167 were injured</b> . 13 people were airlifted to hospitals and burn units. This plant was in the middle of a \$350 million expansion, and 700 contracted workers were present. It was shut down for 18 months & reopened in January 2015.	
			With a fire that lasted 3 $\frac{1}{2}$ hours and took nearly 6 hrs. to extinguish, flames were as high as 200' in the air, and 31,000 to 62,000 pounds of toxic chemicals were released (inc. flammable hydrocarbons).	
Explosion – violent			The June 2014 investigation revealed that this site had three years of noncompliance with the	
tall fire		Williams Geismar Olefins Plant (subsidiary of	Federal Clean Air Act. Also, Williams had not completed an OSHA inspection in 10 years, and they were fined \$99,000 by OSHA in December 2013 for <b>6 safety violations</b> . This was reduced to \$36,000 when one violation, called "willful" (\$70,000 fine) was reduced to "serious" (\$7,000),	
2 Deaths		Williams Partners LP)	also avoiding possibility that OSHA could file criminal charges.	
167 injuries	6/13/13	Bayou Black Drive Geismar, LA Note: Williams sold this on July 6, 2017	<ul> <li>Issues revealed by studies:</li> <li>In the 12 years prior to the explosion, a series of process safety management deficiencies caused the boiler to be unprotected from overpressure.</li> </ul>	
Fined for noncompliance for many years			<ul> <li>The reboilers were put into service without adequate overpressure protection.</li> <li>When they put on a new valve, they did not complete the Management of Change protocol before starting operations. The process valve on the operating reboiler was properly locked open, but this was not true for the standby reboiler. Both should have been locked open.</li> </ul>	
Since this is chemical, it is investigated by the US Chemical Safety & Hazard Investigation			Nov. 2014: Williams paid \$194,306 in fines to the LA Dept. of Environmental Quality (3 for this blast + 32 for violations dating back to 2008).	
Board (CSB)			7/29/16: DOT levied a \$1.6 million civil penalty on Williams.	
			9/26/16: Jury awarded \$13.6 million to four of the injured (two seriously). They noted that Williams knew that the explosion was "substantially certain." (Williams will appeal.)	
			11/17/16: Jury awarded 4 other injured workers \$16 million (blame: 83% Williams & 16% to Sabic Petrochemicals, a Saudi energy company). Basis: Williams knew for years that one of the 2 reboilers was isolated from pressure and, therefore, at risk of over-pressurizing & exploding, and they ignored these warnings. (Williams will appeal.) October 2016: US Chemical Safety & Hazard Investigation Board (CSB) released the case study & independent metallurgical evaluation about this accident.	
CSB Case Study No.2013-	03-1-LA (10/19/16); A	namet Metallurgical Evalu	Jation EA-425B, Report#5004.9095B (September 2016); CSB Video, "Blocked In" (1/25/17)	
http://www.nola.com/business/baton-rouge/index.ssf/2014/12/williams_olefins_site_of_geism.html				
http://www.tuisawond.com/business/energy/williams-orientis-cited-by-osna-in-ratia-iouisiana-explosion/anticle_azee445a-bc73-5703-9eeb-e77011bb9e96.html http://www.theadvocate.com/baton_rouge/news/article_6ef6ce7d-a369-51b1-8045-545bd5366dd6.html				
http://w	ww.theadvocate.com/	baton_rouge/news/comm	unities/westside/article_e41259a4-8435-11e6-a5d0-a7e34674fd30.html	
	http://ehstodav.com/s	safetv/four-workers-award	led-16-million-iurv-second-williams-olefins-plant-explosion-case	

Areas of concern	Date of Incident	Location	Description	
Gas releases for 3 months before residents were notified	Incident: 1/10/14 Pressure Iowered: 3/19/14	Sauvie Island serving Portland, OR	Repeated equipment failures at a gas transfer station caused several evacuations after a relief valve was activated to reduce pressure. Following a fire & loud noise with gas released for 70 minutes, it was shut off for repair. <b>Gas releases went on for 3 months before residents were notified.</b> Residents complained that regulators failed to investigate until they brought political & media pressure. They thought it was likely due to debris in the line & a failed rubber diaphragm; eventually, they reduced pressure in the lines to compensate for malfunctioning equipment. PHMSA said this was an "abnormal operating condition" and not a reportable incident involving death, injury or loss of over \$50,000 in product. PHMSA "deputized" Oregon's PUC to	
	<u>http://www.pamplinn</u> <u>http://portlandti</u> <u>http://ww</u>	iedia.com/scs/83-news/20 ibune.com/pt/9-news/20 ww.kvewtv.com/article/20	07797-64927-sauvie-island-gas-leak-prompts-response-review 7141-gas-leak-forces-sauvie-island-residents-from-homes 14/apr/01/background-williams-northwest-pipeline/	
Fire	Jan. 2014	Windsor, NY	Fire at Windsor's compressor station (2 <sup>nd</sup> in less than 2 years). A flex fuel line (above ground) was stressed due to rupture in service with 40 psi NG escaping & igniting on the turbo charger manifold. There was a stress crack in a 1" nipple that likely resulted from the rapid stop of the engine during the emerg. shutdown, the braid-reinforced fuel line ruptured likely as a result of stress to the line in a tight bend & a brazed oil return line failed as a result of a NG fire impinging directly onto the joint.	
	NYS Dept.	of Public Service – Incide	ent Investigation Report (Matter #14-00083) (10/23/14)	
Evolosion + Fire			There was a fire & explosion at their Liquid Natural Gas facility (Peak Shaving where NG is stored as methane after being liquefied in spring & summer and then vaporized for delivery during high demand fall & winter months). This happened during a routine annual liquefaction startup operation.	
Injuries	Explosion + Fire Injuries 3/31/14 Evacuation	Plymouth, WA (LNG Facility)	<b>Five workers were injured</b> from shrapnel & fire, with one transported to a major burn center. Up to 1,000 residents were evacuated within a 2-mile radius of the explosion. Many were out of their homes overnight. The gas that escaped (various amounts in reports) evaporated. Estimated damage to the facility was \$72 million. The plant was shut down for 2 years.	
			A report (4/28/16) noted the cause (incorrect operation; inadequate purge) as vessel & piping failure from detonation caused by internal auto-ignition due to a pack&purge process (3/18/14) that failed to remove a gas-air mixture from the system (procedures did not meet AGA standards).	
Pipeline Safety Violation Report by Williams (7/16/14); PHMSA Report (4/28/16)				

Areas of concern	Date of Incident	Location	Description		
Explosion + Fire	4/5/14	Moundsville, WV Glen Dale, WV (Marshall County)	At construction of Williams' Energy Oak Grove plant on a 300+ acre site (to refine ethane from Marcellus & Utica shale), a 12" natural gas pipeline running near the plant ruptured. This explosion was likely caused by a small landslide after heavy rains, and the rupture was most likely at a weld on the pipeline that was buried and along a steep slope. The fire burned out in a few hours. There was no damage to 3 <sup>rd</sup> party property or injuries, but the explosion left a 10' crater. However, newspaper reports noted that it scorched trees in more than a 2-acre area & forced evacuation of 400 residents. WV DEP said there'd be no citations since there was no groundwater contamination		
	http://www	wvmetronews.com/2014	/04005/natural-gas-line-explosion-in-marshall-county/		
	http://www.theintellin	igencer.net/news/top-hea	ndlines/2014/04/pipeline-rupture-at-oak-grove-site-leads-to-fire/ dlines/2014/04/pipeline-rupture-at-oak-grove-site-leads-to-fire/		
<u>http://www.shalepla</u>	ayohiovalley.com/page	content.detail/id/500853	/DEPMarshall-Pipeline-Rupture-Scorched-Trees-Over-Two-Acres.html?nav=5024		
http://www.sh	aleplayohiovalley.com	/page/content.detail/id/50	00863/No-Action-Against-Williams-For-Marshall-Pipleine-Blast.html?nav=5024		
Explosion without fire Residents evacuated	4/23/14	Opal, WY	The entire town was evacuated after an explosion & fire at a Natural Gas processing facility and a major national pipeline hub. (September 2016) – While investigating the death of a worker at this plant (See 9/15/16 incident at the end), OSHA discovered that it had not sent notice to Williams about the amount of a fine agreed to in 2014 after an investigation led to a penalty of \$46,000 for failing to provide safety guardrails & improper handling of hazardous chemicals. Williams asked for reduced fines, and an informal agreement was reached on 11/25/14 (amount unknown)		
	<u>htt</u> http://www.fox	<u>p://www.pinedaleonline.c</u> (news.com/us/2014/04/24	om/news/2014/04/ExplosionatWilliamsG.htm 4/wyoming-gas-explosion-prompts-evacuation-town.html		
<u>ht</u>	tp://www.nydailynews.	com/news/national/explo	sion-natural-gas-plant-evacuates-wyoming-town-article-1.1766778		
http://trib.com/bu	http://trib.com/business/energy/opal-fire-penalties-went-unpaid-due-to-state-clerical-error/article_78ee0dc7-3950-5bb6-b824-08917c785f7c.html				
Procedural violation during a repair	9/15-19/14	Elliott City in Owings Mills, MD	Inspection of Transco's replacement of sections of Mainlines A, B & C within Unit #2881 revealed a <b>violation:</b> failed to nondestructively test a weld in accordance with its written procedures (did not place an image quality indicator (IQI) across the repaired area of a repaired weld). Notice of Probable Violation (11/2/16) = \$39,700.		
PHMSA: CPF 1-2016-1009 (case is still open)					

Areas of concern	Date of Incident	Location	Description			
Pipeline rupture & condensate leak into creek; 4 hours later, another Williams pipe segment failed nearby	4/9/15	Glen Dale, WV (Marshall County)	Glen Dale: A 4" condensate conduit ruptured (probably due to heavy rain that caused mud to shift). This leaked 132 barrels (5,500 gallons) of Marcellus Shale condensate into Little Grave Creek (discovered 4 days later) & contained benzene, toluene, ethylbenzene & xylene. This was still found in the stream 2 weeks later. Fed.EPAs fined Williams a "penalty" of \$14,440 (paid 3/28/16), & WVEPA said they'd also fine Williams for condensate pipe leak since it contaminated 6 miles of a creek. Williams located the source of the leak 2 weeks later. Three to 4 hours later, at a site in the Bane Lane area of Marshall County, a 12" NG pipeline of Williams failed. It collected natural gas from nearby wells for shipment to nearby Fort Beeler plant.			
http://content.theintelligencer.net/?p=630275.html/						
nttp://www.snaiepiayoniovaliey.com/page/content.detail/id/511240/Enects-Of-Marshain-County-Ruptures-Still-Linger.html/ http://content.theintelligencer.net/?p=631489/Effects-Of-Ruptures-Still-Linger.html/						
http://www.marcellusdrilling.com/2016/03/williams-pays-epa-14k-penalty-for-wv-condensate-pipeline-accident/						
Explosion without fire Residents evacuated	6/9/15 PHM	Failure site = about 3 miles from Unityville, PA (Lycoming County)	On Transco's Leidy Line B, a rupture without a fire was felt a mile away. The 194.06 mile Leidy Line B starts at CS505 (White Haven) & ends at the Leidy Storage Field in Tammerack, PA. The rupture was 34' long on this 24" diameter pipe (carbon steel with coal tar coating; constructed in 1963), and it was operating under maximum allowable operating pressure (MAOP).			
			People said they were rocked by an "explosion" followed by a prolonged "jet engine" sound. This was not an explosion – It was the sound of immediate methane release that shot up in the air. People smelled gas in the air 5 miles away, and some at this distance could hear the sound. Over 130 residents were evacuated for several hours within a 2 to 3-mile radius. Williams isolated the failed pipeline within ½ hour. The "affected segment" was from CS517 mainline valve to Leidy Storage Field (78.9 miles); the "isolation segment" (turned off after the failure) is a 14.3 mile segment between 2 mainline valves.			
			Unintentional gas release = 93,379 MCF (thousand cubic feet); intentional & controlled gas release/blowdown = 16,812 MCF (190,832 MSFC escaped; gas did not ignite) (In Sept. 2010, Williams did an in-line inspection of Line B from CS515 to Station 520 – 88 miles > a total of 29 location were selected for remediation, and that work was completed in 2011.)			
			Cause: Near-neutral pH stress corrosion initiated on external surface. Indications that the cracking was from this = transgranular cracking, corrosion of crack sides, external corrosion pitting where external coating had locally disbanded from the pipe, & corrosion deposits containing iron carbonate (siderite). There was no mechanical or 3 <sup>rd</sup> party damage, and the pipe material met standards. Possible Contributing Factors: localized shielding & coating failure, and cyclic pressures during bi-directional flow			
			Corrective Action Order (6/12/15): reduce pressure on affected segment; do not operate isolated segment; submit a restart plan; instrumented leak survey, confirmation of MAOP, review prior inline inspection results, mechanical & metallurgical testing, failure analysis of failed pipe, root cause failure analysis & review emergency & awareness plans			

Areas of concern	Date of Incident	Location	Description			
Explosion & fire		Station 62 Bayou Black Drive Gibson, LA	<b>4 deaths &amp; 2 serious burn injuries</b> resulted from an explosion at a natural gas plant. The plant was not in operation (gas was not flowing through the pipeline) but maintenance work was being completed. The fire burned for over 6 hours.			
			When Transco called the National Response Center at 12:06 after the 11:00 explosion, they did not include all reportable events (# fatalities & injuries), and the media reported at least 1 fatality at 11:32.			
			PHMSA issues a Notice of Probable Violation and Compliance Order (7/29/16), proposing a penalty of \$1,600,000 to address 5 violations (below). Williams asked for an informal meeting on 8/25/16. (no more docs. on PHMSA site)			
Evacuations & highway closure 4 deaths & 2 serious injuries	10/8/15		<ol> <li>Violations:         <ol> <li>did not take adequate steps to minimize danger of accidental ignition of gas in area where the presence of gas during welding was a combustion hazard;</li> <li>failed to stop work when gas was detected in the 42" liquids header;</li> <li>operator did not follow Hot Work procedure (Transco allowed contractor personnel to assume safety &amp; monitoring procedures without prerequisite training and oversight by a trained operator);</li> <li>did not follow own Operator Qualification Plan – allowed unqualified personnel to perform Covered Task (Atmospheric Monitoring), did not verify &amp; identify the Covered Tasks for contractor personnel for the request for services (RFS) for this job, and did not include Covered Task for "Installation &amp; Use of Vapor Barriers";</li> <li>Procedural Manual for Operations, Maintenance &amp; Emergency did not show development of a detailed purge plan for the complex purging of the slug catcher with engineering &amp; District Manager support to ensure a safe purge.</li> </ol> </li> </ol>			
PHMSA: CPF 4-2016-1008 (case is still open)						
erosion & sedimentation control violations by Williams during construction	10/25/15	Lancaster County PA	Following two sets of complaints to the County Agency charged to investigate complaints, State inspector found 10 erosion & sedimentation control violations of Williams' workers during two recent inspections of the Rock Springs Expansion Project (CP14-504) pipeline construction. Violations were first noted on 9/29/15, the day before the start of the 5-day rainstorm (3" of rain over 5 days in late Sept. & early Oct.). Two weeks later, violations were found in the same categories but in different locations. <b>Violations:</b> (1) Failure to implement effective erosion & sedimentation best management practices (BMPs);(2) failure to use best-available technology BMPs for discharges into Fishing Creek, a HQ stream;(3) failure to provide temporary stabilization of the earth disturbance site; (4) for having site conditions that present a potential for pollution to state waters; & (5) failure to comply with permit conditions.			
http://lancasteronline.com/news/local/williams-cited-for-earth-disturbance-violations-for-rocks-springs-gas/article_4442a170-78ee-11e5-9471-5f7c4512895f.html						

Areas of concern	Date of Incident	Location	Description		
Death of worker at plant	9/14/16	Opal, WY	At Williams' natural gas processing facility, a 36-year old operator technician was thrown off his feet into surrounding structures, resulting in the head trauma that led to his <b>death</b> . He was found near a <b>burst pipe</b> and suffered burns (not causal in his death), and a witness reported seeing a cloud of natural gas. The County Sherriff's Office reported receiving a call regarding a gas leak at this facility at 2:30 am, and they closed the highway while they investigated for 2 hours. After roll call, it was discovered that one man was missing, and officers found him when they were allowed in the facility. OSHA is investigating.		
http://www.kemmerergazette.com/v2_news_articles.php?heading=0&page=72&story_id=4276 http://trib.com/business/energy/head-injury-caused-worker-s-death-officials-say/article_da9bc54b-6745-531e-893d-88380ad57233.html					