







**PG&E System-Wide GT Incident Statistics 2006-2017<sup>1</sup>**  
**(6530 miles of gas transmission pipeline)**

Year	Total Incidents	Serious Incidents	Fatalities	Injuries	Property Damage
2006	1				\$358,000
2007	3				\$667,500
2008	2				\$114,300
2009	5				\$1,847,000
2010	4	1	8	51	\$558,590,512
2011	5				\$5,569,000
2012	4				\$1,050,710
2013	4				\$1,045,457
2014	9				\$9,550,814
2015	8	2	2	13	\$5,574,404
2016	6				\$2,052,778
2017 (thru Nov)	9	1		1	\$17,321,844
12 Yr Totals	60	4	10	65	\$603,742,319

PG&E Yearly Averages '06-'09

Avg Total Incidents: 2.8  
 Serious Incidents: 0  
 Fatalities: 0  
 Injuries: 0  
 Prop Damage: \$746,700

← San Bruno pipeline explosion

PG&E Yearly Averages '14-'17

Avg Total Incidents: 8.0  
 Serious Incidents: 0.8  
 Fatalities: 0.5  
 Injuries: 3.5  
 Prop Damage: \$8,624,960

<sup>1</sup> 2017 Data is through Nov; all data for this analysis was extracted from PHMSA website on 1/8/18  
<https://primis.phmsa.dot.gov/comm/reports/operator/Operatorlist.html?#>

**PG&E GT Pipeline Safety Results Versus Peers**

Equally troubling is PG&E's rank on these same metrics for the nearly 12-year period 2006-2017 YTD within its peer group of the 40 largest U.S. gas transmission operators (those with at least 2,000 miles of gas transmission pipeline). The data for this analysis (see Appendix, [page 11 below](#)) came from the same PHMSA database cited above.

Here is what we found:

Safety Attribute	PG&E Rank Among the 40 Largest U.S. Gas Transmission Operators for 2006-2017 YTD
Total Incidents	35 <sup>th</sup> out of 40
Incidents per pipeline mile	37 <sup>th</sup> out of 40
Total Serious Incidents	40 <sup>th</sup> out of 40
Serious Incidents per pipeline mile	40 <sup>th</sup> out of 40
Total Fatalities	40 <sup>th</sup> out of 40
Fatalities per pipeline mile	40 <sup>th</sup> out of 40
Total Injuries	40 <sup>th</sup> out of 40
Injuries per pipeline mile	40 <sup>th</sup> out of 40
Total Property Damage	40 <sup>th</sup> out of 40
Property Damage per pipeline mile	40 <sup>th</sup> out of 40



N. INDIANA PUBLIC SERVICE CO	12.2	16.4	33,618
NIAGARA MOHAWK POWER CORP	9.1	9.2	22,148
MIDAMERICAN ENERGY COMPANY	8.9	13.7	22,717
SPIRE ALABAMA INC.	8.4	12.8	23,814
PIEDMONT NATURAL GAS	4.6	9.7	43,565
DOMINION ENERGY - UT/WY/ID	0.0	23.5	28,356
PUBLIC SERVICE CO OF N CAROLINA	0.0	22.2	20,426

### The 30 Largest GD Operators – Serious Incidents per million miles

Operator Name	5 Year Average (incidents per million miles)	10 Year Average (incidents per million miles)	2016 Miles
OKLAHOMA NATURAL GAS	34.4	22.3	26,923
DTE GAS COMPANY	30.5	23.2	39,650
PUBLIC SERVICE ELECTRIC & GAS	23.0	11.5	34,995
CENTERPOINT ENERGY RESOURCES	21.0	10.5	30,588
BLACK HILLS ENERGY	20.4	15.3	40,452
CONSUMERS ENERGY CO	19.7	15.9	51,040
ATMOS ENERGY - MID-TEX	19.3	25.6	42,460
NORTHWEST NATURAL GAS CO	17.3	8.7	23,415
WASHINGTON GAS LIGHT CO	15.1	15.8	26,389
COLUMBIA GAS OF OHIO	14.4	9.6	41,683
AMEREN ILLINOIS COMPANY	13.5	10.2	29,545
PUBLIC SERVICE CO OF COLORADO	11.7	21.1	34,444
MIDAMERICAN ENERGY COMPANY	8.9	4.4	22,717
INDIANA GAS CO	8.7	8.7	23,076
SPIRE ALABAMA INC.	8.4	4.2	23,814
PUGET SOUND ENERGY	7.9	7.9	25,801
PACIFIC GAS & ELECTRIC	[17 <sup>th</sup> worst] 7.8	[14 <sup>th</sup> worst] 10.1	77,573
SOUTHWEST GAS CORP	7.6	7.8	53,036
NORTHERN ILLINOIS GAS	6.3	11.1	63,060
CENTERPOINT ENERGY RESOURCES	3.1	8.6	66,113
ATLANTA GAS LIGHT	3.1	9.6	64,369
SOUTHERN CALIFORNIA GAS	2.0	3.1	99,872
DOMINION ENERGY - UT/WY/ID	0.0	15.6	28,356
PUBLIC SERVICE CO OF N CAROLINA	0.0	10.3	20,426
DOMINION ENERGY OHIO	0.0	6.3	31,034
PIEDMONT NATURAL GAS	0.0	4.9	43,565
CENTERPOINT ENERGY RESOURCES	0.0	4.1	25,577
N. INDIANA PUBLIC SERVICE CO	0.0	0.0	33,618
NIAGARA MOHAWK POWER CORP	0.0	0.0	22,148

As noted earlier in this report, the gas distribution system, because of its significantly lower operating pressure and smaller diameter pipes, represents a somewhat lower risk of a major incident compared to the gas transmission system. But both systems have the potential to cause injuries, fatalities, and significant property damage.

PG&E's GD pipeline safety in the category of serious incidents is "middle of the pack" versus peers, and their serious incident performance has shown improvement over the last five years in an absolute sense and relative to peers. However, on the dimension of significant incidents, PG&E's safety performance has deteriorated in the past five years (absolute incident rate and relative to peers). PG&E's GD significant incident rate over the past five years is second-worst among its peers.

Our conclusion is that the overall safety performance of PG&E's GD system is disappointing, especially considering its status as the second-largest in the U.S. and the company's commitment to become the safest operator in the U.S. The increase in their significant incident rate over the past five years, compared to the 10-year period that includes the San Bruno incident, is especially disheartening. However, we also want to acknowledge that PG&E's GD serious incident rate has improved modestly in the most recent five years.

Additional safety performance details for each of the 30 GD operators in our analysis are shown in the Appendix section of this report ([page 13](#)).

## **PG&E GT + GD Pipeline Incidents Caused by Excavation Damage**

In addition to providing overall safety incident rates for GT and GD pipeline operators, PHMSA provides incident statistics organized by the cause of the incident. With one exception (excavation damage), PHMSA presents their pipeline incident cause data separately for GT and GD operators. This reflects the high priority that PHMSA has placed on reducing pipeline excavation damage, which can result in fatalities, injuries, property damage, unintentional fire or explosions. In August 2017, PHMSA submitted to Congress a report titled [A Study on Improving Damage Prevention Technology](#). This study looks at improving existing damage prevention programs through technological improvements in location, mapping, excavation, and communications practices. From 2012 to 2016, PHMSA awarded over \$1.7 million to state organizations to improve pipeline damage prevention technologies and practices, and over \$3.5 million in R&D and CAAP funding to improve damage prevention. In 2007, "811" was established as the nationwide one-call number, enabling excavators to call from anywhere to help avoid damaging underground utilities.

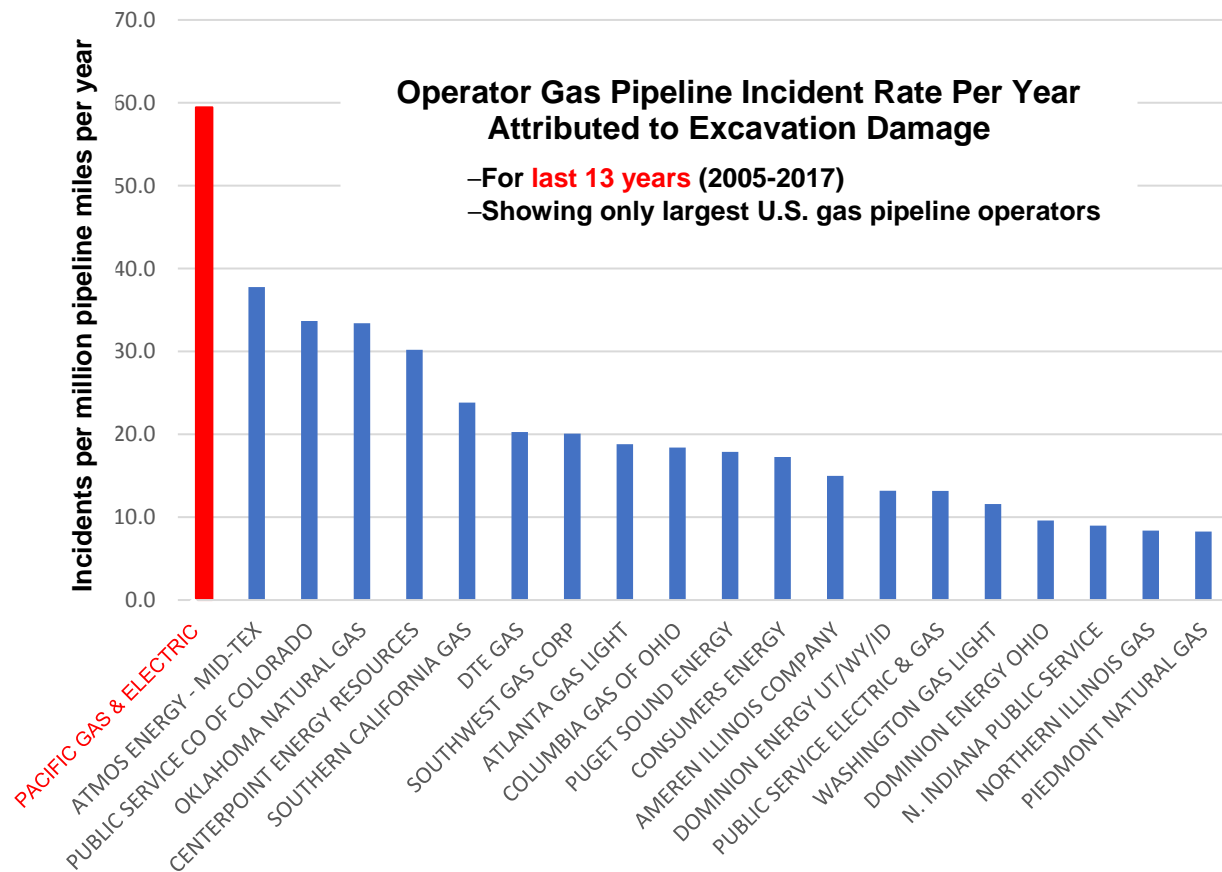
During the past five years, the above and other steps have produced some noticeable reductions in pipeline incidents caused by excavation damage among U.S. gas pipeline operators collectively. But excavation damage remains a leading cause of pipeline accidents resulting in fatalities and injuries. And PHMSA is very clear: excavation damage to pipelines can be prevented. The susceptibility of a pipeline to excavation damage depends on multiple factors, including the extent and type of excavation along the pipeline right-of-way, the effectiveness of the One-Call System in the area, the amount of patrolling of the pipeline by the operator, the placement and quality of right-of-way markers, and the depth of soil cover over the pipeline.

Because excavation damage is one of the greatest challenges to safe pipeline operations nationwide, we looked into PG&E's performance on this dimension. We analyzed the past 13 years of PHMSA data from their table showing GT + GD pipeline incidents caused by excavation damage. For this section of our report, we discuss below only the GT and GD operators whose total pipeline mileage (GT + GD) exceeds 25,000 miles (21 operators). On a national basis, PG&E's GT + GD mileage ranks #2 (84,103 miles) among all gas pipeline operators; Southern California Gas ranks #1 (103,327 miles).

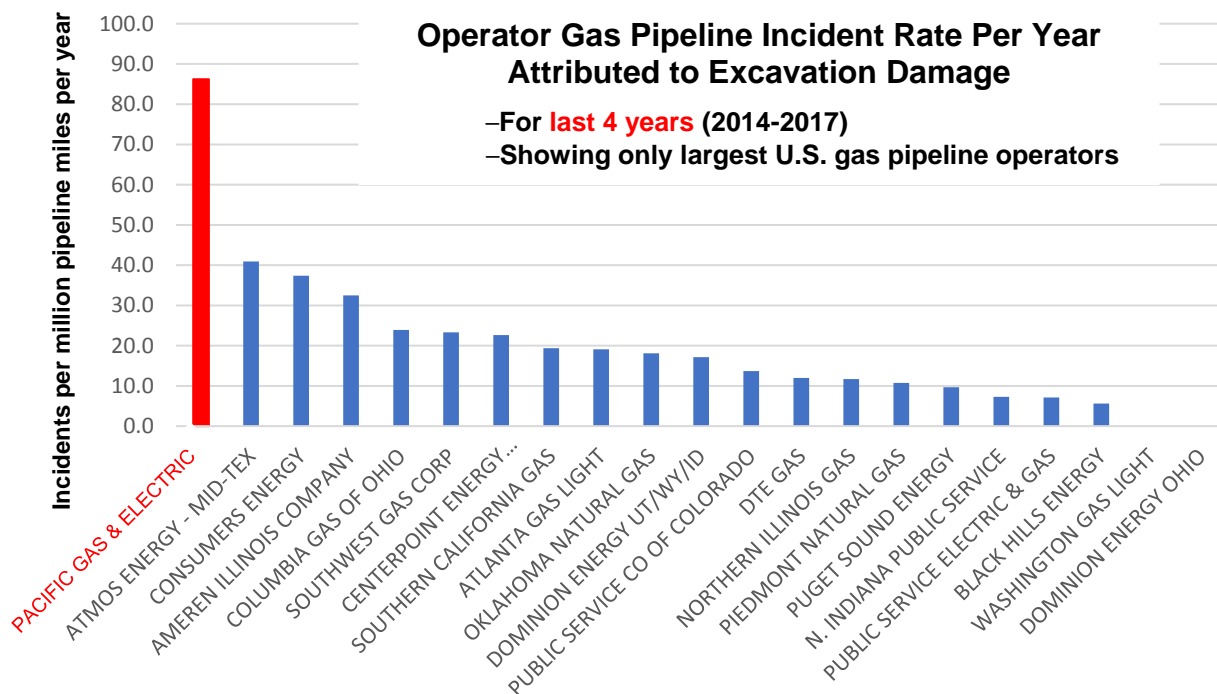
The comparison performance metric we selected is incidents per year caused by excavation damage per million miles of pipeline. The data details are available in the Appendix, [page 15](#). We considered three time intervals for this metric:

- The past 13 years (2005-2017), which is the maximum currently available from PHMSA for this data set
- The past 5 years (2013-2017)
- The past 4 years (2014-2017)

The reason for looking at the shorter intervals was to explore recent trend evidence. The first chart on the next page shows a comparison among the 21 largest operators for average pipeline incidents caused by excavation damage over the past 13 years.



When we looked for PG&E trend information on this performance metric over the past four and five years, we found that PG&E's incident rate increased (got worse) by about the same percentage: +45% over the past four years, and +44% over the past five years. Here is a chart comparing PG&E to their industry peers over the past four years:





Obviously, PG&E’s substantial increase in incidents attributable to excavation damage in recent years is a major concern, as is their high incident rate relative to their peers. Not surprisingly, given its large size, PG&E’s absolute incidents in this category over the past 13, 5, and 4 years are significantly higher than absolute incidents of their peers. This is shown in the Appendix, [p 15](#) (refer to incident count shown in red in that table).

As a separate issue for follow-up study, we noticed that PG&E’s average incident rate per million pipeline miles per year is much higher on their transmission lines compared to their distribution lines. And this pattern is remarkably similar in the Southern California Gas data (both covering the last 13 years for excavation damage):

	GT incident rate/million pipeline miles	GD incident rate/million pipeline miles
PG&E	365	34
Southern Calif Gas	245	16

It is the much higher operating pressures and significantly larger pipe diameters in gas transmission lines that make the order-of-magnitude differences in the middle column versus the right column in the above table worth additional analysis.

## Lessons from San Bruno

After nearly a year of investigation, in 2011 the National Transportation Safety Board (an independent U.S. government agency) issued its [final report on the San Bruno pipeline explosion](#). We provide key points from the Executive Summary of that report here because we believe that the San Bruno lessons provide relevant additional context for the conclusions section of our analysis that follows. (Page references below are to NTSB final report.)

According to the NTSB, the probable cause of the San Bruno accident (page xii) was:

- (1) Inadequate quality assurance/quality control during installation of a substandard section of transmission pipe in 1956, in combination with
- (2) An inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section

A contributing factor to the accident (page xii) was the California Public Utilities Commission’s failure to detect the inadequacies of PG&E’s pipeline integrity management program.

The NTSB pointed out (page 38) that transmission line 132 (involved in the San Bruno accident) had a prior history of pipeline seam defects. Specifically, line 132 experienced a longitudinal seam leak in 1988 (22 years prior to San Bruno) at a point less than nine miles from the San Bruno rupture.

## Conclusion

In this report we have looked at multiple dimensions that Save Lafayette Trees believes are highly relevant in assessing PG&E’s gas pipeline safety performance. Our data came from the PHMSA website. (PHMSA is the federal agency charged with ensuring the safe operation of the nation’s pipelines.) Although there is some minor overlap, our overall assessment approach is quite different from what PG&E used in their 2017 Gas Safety Plan. That plan speaks to many worthwhile initiatives that the company has put in place since the 2010 San Bruno incident. For example, the plan asserts the company’s commitment to become the safest, most reliable gas company in the U.S. Key performance metrics in the plan include miles of GT pipeline capable of accepting an inline inspection tool, response time to reports of gas odor, automated valves installed, and becoming the first company in the U.S. to meet the rigor of a new industry standard for pipeline safety management. The 2017 plan says (on page 1) that “While more remains to be done, *PG&E has made great progress* [emphasis added] in achieving Gas Safety Excellence over the past six years [2011-2016]”. In support of this, in the same paragraph, we read, “Notably, excavation damage per 1,000 excavation tickets continued its downward trend from 2.11 in 2015 to 2.02 in 2016.”

We do not dispute the potential utility of a performance metric for excavation damage that calculates damage per 1,000 excavation tickets. But to quote a 4% performance improvement from the prior year to the current year, with no other data offered, is not persuasive. We think that our multi-year analysis, comparing U.S. pipeline operators of

similar size in areas such as serious incidents/injuries/fatalities/property damage/excavation damage incident rate per pipeline mile provides an essential focus on pipeline safety *outcomes*. Using this as the standard for Gas Safety Excellence, Save Lafayette Trees concludes:

- PG&E has *not* made great progress in achieving Gas Safety Excellence in the period 2011-2016; in fact, there has been remarkably little progress. This is especially the case with the company's gas transmission network and with respect to excavation damage incidents. For both, there is an alarming pattern of safety performance deterioration.
- PG&E ranks among the largest U.S. gas pipeline operators, yet their safety incident rates place them among the worst of the large U.S. gas pipeline operators.
- Seven years post-San Bruno, the combined efforts of PG&E management, CPUC regulatory oversight, and PHMSA regulatory oversight have not produced a much-needed overall improvement in PG&E's unsatisfactory overall safety incident rates.
- PG&E and its customers would benefit from creating a monitoring system that annually publishes PG&E pipeline safety performance data using the metrics in this report.
- A significant change is urgently needed in PG&E's gas safety management practices.

Safety management of a large gas pipeline system is a challenging undertaking, and to be successful the management system must address many facets, including a hierarchy of performance metrics, emergency response, risk assessment, inspection system, maintenance system, and much more. PHMSA calls this an [Integrity Management program](#). It has been required for all GT operators since 2004 and for all GD operators since 2011.

What is the explanation for PG&E's poor, and overall worsening, safety performance, despite the 2010 San Bruno wakeup call? We don't have access to the details needed for a comprehensive analysis. Clearly an effective safety improvement plan needs to start with a small set of key safety outcomes to guide safety planning and decision making. These might be in place at PG&E (perhaps part of their Integrity Management program), but if so the company is keeping this a secret from the public.

PG&E's Integrity Management program is supposed to be grounded in relevant performance metrics and a comprehensive safety risk analysis, which should in turn drive the allocation of resources to improve safety results. Following San Bruno, PG&E has launched multiple programs intended to improve pipeline safety. For example, their Pipeline Pathways program began in 2013 and included precision mapping of GT location, soil cover depth assessment, improved pipeline markers to reduce excavation damage, and the targeting for potential removal of thousands of trees within the pipeline right-of-way. The Pipeline Pathways program was renamed Community Pipeline Safety Initiative in 2015. It has a \$500 million budget, which is part of PG&E's \$3 billion GT pipeline upgrade commitment post-San Bruno. But the deterioration in the company's GT safety performance over the past four years, in contrast to their much better performance in the four years immediately preceding San Bruno ([p 4 above](#)) demands an explanation. Perhaps their poor safety performance over the past 4-5 years is due primarily to choosing the wrong improvement priorities. Or ineffective planning and execution of the targeted improvement priorities. It's also quite possible that, following decades of neglect, a much larger commitment than \$3 billion is needed to achieve "Gas Pipeline Excellence," PG&E's stated goal.

In support of our belief that a major part of PG&E's continuing poor safety performance is choosing the wrong improvement priorities, Save Lafayette Trees has a separate analysis available on its website titled "[What Is the Safety Risk of Trees Above PG&E's Transmission Pipelines?](#)" As part of that analysis we examined every significant gas pipeline safety incident that has occurred anywhere in the United States over the past 20 years. This amounted to a total of 2,076 incidents, and each of them was carefully analyzed for cause. Amazingly, *out of 2,076 safety incidents in the past 20 years there were zero in which a tree was found to be the cause of damage to an underground gas transmission pipeline!*

We are also concerned because there are multiple long-standing pipeline safety concerns in Lafayette, unrelated to trees, that PG&E still has not corrected.

The residents of Northern and Central California deserve a gas utility that delivers superior gas pipeline safety results. The available evidence indicates that today we are getting the exact opposite.

# Appendix

## 1. Pipeline Incidents for Large U.S. Gas Transmission Operators – 2006-Nov 2017<sup>1</sup>

Operator	Gas Transmission Mileage	Total Incidents	Serious Incidents	Fatalities	Injuries	Property Damage
PG&E (CA)	6530	60	4	10	65	\$603,742,319
So Cal Gas (CA)	3455	15	0	0	0	\$6,455,452
ANR (16 states)	9257	72	1	1	0	\$49,917,467
ATMOS (TX)	5682	15	0	0	0	\$7,060,910
Black Hills (6 states)	4049	0	0	0	0	\$0
Colorado Interstate (9 states)	6187	14	1	1	0	\$8,416,106
Columbia Gas (10 states)	10,480	61	2	0	5	\$43,082,605
Columbia Gulf (4 states)	3331	36	1	1	0	\$94,504,254
Consumers Energy (MI)	2447	21	0	0	0	\$7,419,127
Dominion Questar (6 states)	2659	11	0	0	0	\$707,172
Dominion Trans (6 states)	3568	13	0	0	0	\$2,428,576
DTE Gas (MI)	2071	8	0	0	0	\$872,124
El Paso N Gas (5 states)	10,051	25	1	0	3	\$3,228,461
Enable Gas (6 states)	5948	65	1	0	1	\$13,583,684
Enable Oklahoma (2 states)	2292	18	1	0	1	\$5,218,575
Energy Transfer (6 states)	7270	16	0	0	0	\$7,940,836
Enterprise Products (8 states)	4078	29	1	1	7	\$7,250,225
Florida Gas (5 states)	5361	18	2	0	5	\$9,439,538
Great Lakes Gas (3 states)	2115	5	0	0	0	\$2,148,375
Gulf South (5 states)	6541	54	2	1	1	\$41,553,955

<b>Operator</b>	<b>Gas Transmission Mileage</b>	<b>Total Incidents</b>	<b>Serious Incidents</b>	<b>Fatalities</b>	<b>Injuries</b>	<b>Property Damage</b>
Kinder Morgan Tejas (TX)	2815	8	0	0	0	\$22,743,183
Natural Gas of America (11 states)	9031	26	2	0	3	\$7,154,689
Northern Natural (11 states)	14782	62	1	0	2	\$14,394,417
Northwest (6 states)	3857	19	0	0	0	\$3,641,673
Northwestern (2 states)	2153	0	0	0	0	\$0
Oneok Gas Trans (OK)	2620	11	1	0	1	\$3,703,728
Oneok Westex (TX)	2436	17	0	0	0	\$3,243,815
Panhandle Eastern (7 states)	5979	21	0	0	0	\$9,799,430
Piedmont (3 states)	2936	5	0	0	0	\$1,092,043
Public Service (CO)	2116	8	0	0	0	\$2,168,455
Southern Natural (7 states)	7006	42	0	0	0	\$33,299,826
Southern Star (7 states)	5831	37	2	1	1	\$17,901,655
Tallgrass (5 states)	4304	3	0	0	0	\$808,797
Tennessee Gas (16 states)	11,751	111	2	0	2	\$89,815,380
Texas Eastern (17 states)	9070	39	2	0	2	\$21,734,308
Texas Gas (9 states)	6011	31	1	0	1	\$5,097,163
Transcontinental (13 states)	8241	28	1	4	1	\$44,994,723
Transwestern (5 states)	2573	4	0	0	0	\$909,388
Trunkline (8 states)	2218	11	0	0	0	\$44,691,091
WBI Energy (4 states)	3659	12	2	1	1	\$1,617,010

<sup>1</sup>As reported to PHMSA, showing data for all active operators with 2,000 miles or more of gas transmission lines

Data source: <https://primis.phmsa.dot.gov/comm/reports/operator/Operatorlist.html#> (last downloaded 1/8/18)

## 2. 30 Largest GD Operators – Significant Incidents<sup>2</sup>

Operator ID	Operator Name	10 Year Average (incidents per million miles)	5 Year Average (incidents per million miles)	10 Year Incident Count	5 Year Incident Count	2016 Miles
2748	CONSUMERS ENERGY CO	37.7	55.2	19	14	51,040
15007	PACIFIC GAS & ELECTRIC	45.3	54.3	36	21	77,573
14210	OKLAHOMA NATURAL GAS	40.8	52.3	9	6	26,923
2596	COLUMBIA GAS OF OHIO	50.6	48.0	19	10	41,683
12408	DTE GAS COMPANY	38.7	45.7	15	9	39,650
31348	ATMOS ENERGY - MID-TEX	45.8	38.6	18	8	42,460
15359	BLACK HILLS ENERGY	33.1	35.5	7	4	40,452
8070	INDIANA GAS CO	21.8	34.9	5	4	23,076
15952	PUBLIC SERVICE ELECTRIC & GAS	28.9	34.6	10	6	34,995
22189	PUGET SOUND ENERGY	27.6	31.4	7	4	25,801
603	CENTERPOINT ENERGY RESOURCES	17.6	27.5	5	4	30,588
18484	SOUTHERN CALIFORNIA GAS	23.5	24.2	23	12	99,872
15931	PUBLIC SERVICE CO OF COLORADO	46.4	23.6	15	4	34,444
792	ATLANTA GAS LIGHT	27.2	18.8	17	6	64,369
13840	NORTHWEST NATURAL GAS CO	17.6	17.3	4	2	23,415
12350	CENTERPOINT ENERGY RESOURCES	24.3	15.9	6	2	25,577
13710	NORTHERN ILLINOIS GAS	23.7	15.9	15	5	63,060
18536	SOUTHWEST GAS CORP	23.2	15.2	12	4	53,036
22182	WASHINGTON GAS LIGHT CO	35.9	15.1	9	2	26,389
32513	AMEREN ILLINOIS COMPANY	10.2	13.5	3	2	29,545
4060	DOMINION ENERGY OHIO	28.6	12.9	9	2	31,034
4499	CENTERPOINT ENERGY RESOURCES	18.5	12.5	11	4	66,113
13730	N. INDIANA PUBLIC SERVICE CO	16.4	12.2	5	2	33,618
13480	NIAGARA MOHAWK POWER CORP	9.2	9.1	2	1	22,148
30750	MIDAMERICAN ENERGY COMPANY	13.7	8.9	3	1	22,717
180	SPIRE ALABAMA INC.	12.8	8.4	3	1	23,814
15518	PIEDMONT NATURAL GAS	9.7	4.6	4	1	43,565
12876	DOMINION ENERGY - UT/WY/ID	23.5	0.0	6	0	28,356
15938	PUBLIC SERVICE CO OF N CAROLINA	22.2	0.0	4	0	20,426

<sup>2</sup> As reported to PHMSA, showing significant incident data for all active operators with 20,000 miles or more of gas distribution lines

Data source: [https://opsweb.phmsa.dot.gov/primis\\_pdm/significant\\_inc\\_trend.asp](https://opsweb.phmsa.dot.gov/primis_pdm/significant_inc_trend.asp) (last downloaded 1/17/18)

(see next page for GD operator serious incidents data)

### 3. 30 Largest GD Operators – Serious Incidents<sup>3</sup>

Operator ID	Operator Name	10 Year Average (incidents per million miles)	5 Year Average (incidents per million miles)	10 Year Incident Count	5 Year Incident Count	2016 Miles
14210	OKLAHOMA NATURAL GAS	22.3	34.4	5	4	26,923
12408	DTE GAS COMPANY	23.2	30.5	9	6	39,650
15952	PUBLIC SERVICE ELECTRIC & GAS	11.5	23.0	4	4	34,995
603	CENTERPOINT ENERGY RESOURCES	10.5	21.0	3	3	30,588
15359	BLACK HILLS ENERGY	15.3	20.4	3	2	40,452
2748	CONSUMERS ENERGY CO	15.9	19.7	8	5	51,040
31348	ATMOS ENERGY - MID-TEX	25.6	19.3	10	4	42,460
13840	NORTHWEST NATURAL GAS CO	8.7	17.3	2	2	23,415
22182	WASHINGTON GAS LIGHT CO	15.8	15.1	4	2	26,389
2596	COLUMBIA GAS OF OHIO	9.6	14.4	4	3	41,683
32513	AMEREN ILLINOIS COMPANY	10.2	13.5	3	2	29,545
15931	PUBLIC SERVICE CO OF COLORADO	21.1	11.7	7	2	34,444
30750	MIDAMERICAN ENERGY COMPANY	4.4	8.9	1	1	22,717
8070	INDIANA GAS CO	8.7	8.7	2	1	23,076
180	SPIRE ALABAMA INC.	4.2	8.4	1	1	23,814
22189	PUGET SOUND ENERGY	7.9	7.9	2	1	25,801
15007	PACIFIC GAS & ELECTRIC	10.1	7.8	8	3	77,573
18536	SOUTHWEST GAS CORP	7.8	7.6	4	2	53,036
13710	NORTHERN ILLINOIS GAS	11.1	6.3	7	2	63,060
4499	CENTERPOINT ENERGY RESOURCES	8.6	3.1	5	1	66,113
792	ATLANTA GAS LIGHT	9.6	3.1	6	1	64,369
18484	SOUTHERN CALIFORNIA GAS	3.1	2.0	3	1	99,872
12876	DOMINION ENERGY - UT/WY/ID	15.6	0.0	4	0	28,356
15938	PUBLIC SERVICE CO OF N CAROLINA	10.3	0.0	2	0	20,426
4060	DOMINION ENERGY OHIO	6.3	0.0	2	0	31,034
15518	PIEDMONT NATURAL GAS	4.9	0.0	2	0	43,565
12350	CENTERPOINT ENERGY RESOURCES	4.1	0.0	1	0	25,577
13730	N. INDIANA PUBLIC SERVICE CO	0.0	0.0	0	0	33,618
13480	NIAGARA MOHAWK POWER CORP	0.0	0.0	0	0	22,148

<sup>3</sup>As reported to PHMSA, showing serious incident data for all active operators with 20,000 miles or more of gas distribution lines

Data source: [https://opsweb.phmsa.dot.gov/primis\\_pdm/serious\\_inc\\_trend.asp](https://opsweb.phmsa.dot.gov/primis_pdm/serious_inc_trend.asp) (last downloaded 1/15/18)

#### 4. Operator Gas Pipeline Incident Rate Per Year Due to Excavation Damage<sup>4</sup> (based on last 13, 5, & 4 years for largest GT + GD operators)

Operator ID	Operator Name	Incid last 13	Incid last 5	Incid last 4	GD Miles	GT Miles	Tot GT+GD Miles	Incid per mm/yr last 13	Incid per mm/yr last 5	Incid per mm/yr last 4	% chg 13 v 5	% chg 13 v 4
15007	PACIFIC GAS & ELECTRIC	65	36	29	77,573	6,530	84,103	59.5	85.6	86.2	44.0%	45.0%
31348	ATMOS ENERGY - MID-TEX	21	9	7	42,460	312	42,772	37.8	42.1	40.9	11.4%	8.3%
15931	PUBLIC SERVICE CO OF CO	16	5	2	34,444	2,116	36,560	33.7	27.4	13.7	-18.8%	-59.4%
14210	OKLAHOMA NATURAL GAS	12	4	2	26,923	706	27,629	33.4	29.0	18.1	-13.3%	-45.8%
4499	CENTERPOINT ENERGY RES	26	8	6	66,113	120	66,233	30.2	24.2	22.6	-20.0%	-25.0%
18484	SOUTHERN CALIFORNIA GAS	32	11	8	99,872	3,455	103,327	23.8	21.3	19.4	-10.6%	-18.8%
12408	DTE GAS	11	5	2	39,650	2,071	41,721	20.3	24.0	12.0	18.2%	-40.9%
18536	SOUTHWEST GAS CORP	14	6	5	53,036	596	53,632	20.1	22.4	23.3	11.4%	16.1%
792	ATLANTA GAS LIGHT	16	7	5	64,369	1,067	65,436	18.8	21.4	19.1	13.8%	1.6%
2596	COLUMBIA GAS OF OHIO	10	5	4	41,683	132	41,815	18.4	23.9	23.9	30.0%	30.0%
22189	PUGET SOUND ENERGY	6	1	1	25,801	27	25,828	17.9	7.7	9.7	-56.7%	-45.8%
2748	CONSUMERS ENERGY	12	10	8	51,040	2,447	53,487	17.3	37.4	37.4	116.7%	116.7%
32513	AMEREN ILLINOIS COMPANY	6	4	4	29,545	1,246	30,791	15.0	26.0	32.5	73.3%	116.7%
12876	DOMINION ENERGY UT/WY/ID	5	2	2	28,356	822	29,178	13.2	13.7	17.1	4.0%	30.0%
15952	PUBLIC SVC ELEC & GAS	6	2	1	34,995	62	35,057	13.2	11.4	7.1	-13.3%	-45.8%
22182	WASHINGTON GAS LIGHT	4	0	0	26,389	182	26,571	11.6	0.0	0.0	-100.0%	-100.0%
4060	DOMINION ENERGY OHIO	4	0	0	31,034	1,014	32,048	9.6	0.0	0.0	-100.0%	-100.0%
13730	N. INDIANA PUBLIC SERVICE	4	1	1	33,618	666	34,284	9.0	5.8	7.3	-35.0%	-18.8%
13710	NORTHERN ILLINOIS GAS	7	3	3	63,060	1,158	64,218	8.4	9.3	11.7	11.4%	39.3%
15518	PIEDMONT NATURAL GAS	5	3	2	43,565	2,936	46,501	8.3	12.9	10.8	56.0%	30.0%
15359	BLACK HILLS ENERGY	4	1	1	40,452	4,049	44,501	6.9	4.5	5.6	-35.0%	-18.8%

<sup>4</sup>As reported to PHMSA, showing excavation damage incident data for all active operators with 25,000 miles or more of combined GT + GD lines

Data source: [https://opsweb.phmsa.dot.gov/primis\\_pdm/excavation\\_damage.asp](https://opsweb.phmsa.dot.gov/primis_pdm/excavation_damage.asp) (last downloaded 1/17/18)