

APPENDIX E

Industry Practices Questionnaire

Enhancement of Gas Distribution Infrastructure Integrity
Information Questionnaire
(URS Corporation, 02-27-2004)

The American Gas Foundation (AGF) is currently conducting a study to identify ways to enhance the safety of the Nation's natural gas distribution pipeline infrastructure, specifically gas mains and services. The purpose of the study is to examine the adequacy of current regulations and practices in maintaining the integrity of that infrastructure and to identify areas where improvements might be required. The desired result of the study is to provide technically-based arguments as to current state of regulations, practices, technologies and processes in place that ensure the integrity of the Nation's natural gas distribution pipeline infrastructure.

As part of that study, AGF is surveying selected local distribution companies (LDCs) for data and information. Based on their experience, we believe would that their input will be helpful and necessary to support this effort. Because operators may consider some information to be business sensitive, the AGF contractor will conduct the survey in strictest of confidence and will maintain the anonymity of the respondents. The contractor will present information internally to the AGF Distribution Integrity Steering Committee (DSIG) and externally, in any draft or final project reports, without in any way identifying the specific operator who provided the information.

Please fill out the information below so that, if questions arise or clarification is needed, the contractor will be able to contact the appropriate person.

Operator Name: _____
Operator Contact: _____
Contact Phone Number: _____
Contact Email Address: _____

The questionnaire consists of seven parts.

- Part 1 seeks opinions and factual information as to the difference between gas transmission pipelines and gas distribution infrastructure.
- Part 2 asks operators about the adequacy of current federal regulations in addressing the threats against Nation's gas distribution infrastructure. Included are questions related to state and/or local regulations the go beyond the minimum requirements of the federal regulations.
- Part 3 asks questions related to current prevention and mitigation (P&M) measures that operators incorporate into design or operational practices to address these threats. The questions will address practices that meet the minimum standards of the regulations and those that go beyond them. The operator's decision process for "out coding the code" is requested.
- Part 4 asks operators to describe their current programs more on a macro basis. Questions regarding risk-ranking models, one-call systems and damage prevention originations will be asked.
- Part 5 solicits operator's processes for identifying, evaluating and implementing new measures for enhancing the distribution integrity infrastructure. These measures include design and operational practices and emerging

technologies.

- Part 6 will ask if there are any other areas of concern that the commenter would like the study to cover.
- Part 7 will solicit operator statistics that will be used to demonstrate the range of operators that responded to the survey.

On a recommendation of the pilot group that helped refine this questionnaire, it is suggested that the questionnaire be completed as a group exercise with personnel familiar with both field and staff activities relating to distribution infrastructure integrity. With the appropriate personnel, the pilot group estimated the questionnaire could be completed in less than 4 hours.

Please respond to the questionnaire in the MS Word format, rather than hand writing your answers. This will facilitate in the compilation of responses.

The completed questionnaire needs to be returned to the email address below no later than **COB, Friday, March 12, 2004**.

If you have any questions or need clarification, please contact

Mike Musial
URS Corporation
Chicago, IL
(312) 697-7221
mike_musial@urscorp.com

Thank you for your participation.

Section 1 – Differences Between Gas Transmission Pipelines and Gas Distribution Infrastructure

Unique Differences	Transmission	Distribution
Type of System	Lineal pipeline	Network grid
Type of Materials	Homogeneous Coated & wrapped steel	Heterogeneous Cast / ductile iron Bare steel Coated & wrapped steel Copper Plastic
System Pressures	High Pressure Normally >20% SMYS	Low Pressure Inches W.C. Intermediate Pressure < 100 psig > 100 psig - < 20% SMYS
Typical Failure Mechanism	Rupture	Leak

Question 1.01

The questionnaire solicits operator inputs as to the major differences between transmission pipelines and distribution infrastructure. The above table lists 4 such unique differences. Are there other differences that you believe should be emphasized in the report in differentiating between transmission pipelines and distribution infrastructure?

Yes ____ No ____

If yes, please list below:

- 1.

- 2.

- 3.

Question 1.02

How would you rank the differences between transmission pipelines and distribution infrastructure in level of significance?

Please place an "X" in the appropriate category	Highly Significant	Medium	Low Significance
Type of System			
Type of Materials			
System Pressures			
Typical Failure Mechanism			
Question 1.01, item 1			
Question 1.01, item 2			
Question 1.01, item 3			

Question 1.03

As a result of analysis of gas pipeline incident data, ASME B31.8S identifies 22 root causes. Each of these root causes is represented as a threat to pipeline integrity. One of the 21 causes is "other." ASME B31.8S groups the remaining 21 threats into 9 categories. Excluding the threat of stress corrosion cracking (not applicable to distribution infrastructure) and expanding the threats of external corrosion, manufacturing related defects, construction related defects and weather related, we are asking your input on the following 14 threats to distribution infrastructure.

Please indicate with an "X" to what level you believe the threat category is to distribution infrastructure integrity.	Significant Threat	Medium Threat	Low / No Threat
1a. External Corrosion coated & wrapped steel pipe			
1b. External Corrosion bare steel pipe			
1c. External Corrosion graphitization of cast iron pipe			
2. Internal Corrosion			
3a. Manufacturing Related Defects (<i>ie, defective pipe, pipe seam, etc.</i>) steel pipe			
3b. Manufacturing Related Defects (<i>ie, pin holing, early generation plastic, etc.</i>) plastic pipe			
4a. Construction Related Defects (<i>ie, defective welds, stripped threads, installation error, etc.</i>) steel pipe			
4a. Construction Related Defects (<i>ie, fusion, mechanical joints, installation error, backfill</i>) plastic pipe			
5. Equipment Malfunction (<i>ie gasket, o-ring, control/relief, valve seal, service riser failure</i>)			
6. Excavation / Mechanical Damage (<i>ie, 1st, 2nd or 3rd party damage, vandalism, etc.</i>)			
7. Incorrect Operational Procedures and Operator Error			

8a. Outside Force and Weather Related (<i>ie, cold weather, earth movement, floods, electrical surge, etc.</i>) steel pipe			
8b. Outside Force and Weather Related (<i>ie, cold weather, earth movement, floods, etc.</i>) cast iron pipe			
8c. Outside Force and Weather Related (<i>ie, cold weather, earth movement, tree roots, lightning, etc.</i>) plastic pipe			

Question 1.04

In addition to the threat categories listed in Question 1.03, what additional threats do you feel are there to distribution infrastructure integrity?

Please place an "X" in the appropriate category	Significant Threat	Medium Threat	Low Threat
Describe threat:			
Describe threat:			

Section 2 – Current Regulations That Address Threats to Distribution Infrastructure

The purpose of questions in this section is to solicit information on which current regulations and initiatives cover threats to **distribution infrastructure** as described in Question 1.03

Questions will be asked according to the sub parts of 49 CFR 192. Only those sections that are applicable to distribution infrastructure will be included. In questions (b) and (c) of each sub part, you will be asked to give your top 3 answers. In no way do we intend to deliberately limit your answers. If you believe strongly that there are more than 3 answers that should be considered, please include them. The column “Additional Threats” relates to the threats listed in Question 1.04.

Question 2.01a		In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses. <i>Note: A section could address any or all of the 16 threats</i>															
		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part A – General																	
.5	Class locations																
.13	General																
.14	Conversion to service subject to this part																
.16	Customer notification																

Question 2.01b	
Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?	
Section _____	Please explain reason.
Section _____	Please explain reason.

Section _____ Please explain reason.

Question 2.01c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.02a

In the matrix below, please place an "X" under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part B – Materials																	
.53	General																
.55	Steel pipe																
.59	Plastic pipe																
.63	Marking of materials																

Question 2.02b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.02c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.03a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part C – Pipe Design																	
.103	General																
.105	Design formula for steel pipe																

.107	Yield strength (S) for steel pipe																	
.109	Nominal wall thickness (t) for steel pipe																	
.111	Design factor (F) for steel pipe																	
.113	Longitudinal joint factor (E) for steel pipe																	
.115	Temperature derating factor (T) for steel pipe																	
.121	Design of plastic pipe																	
.123	Design limitations for plastic pipe																	
.125	Design of copper pipe																	

Question 2.03b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.03c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.04a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part D - Design of Pipeline Components																	
.143	General requirements																
.144	Qualifying metallic components																
.145	Valves																
.147	Flanges and flange accessories																
.149	Standard fittings																
.151	Tapping																
.153	Components fabricated by welding																
.155	Welded branch connections																

.157	Extruded outlets																	
.159	Flexibility																	
.161	Supports and anchors																	
.181	Distribution line valves																	
.183	Vaults: Structural design requirements																	
.185	Vaults: Accessibility																	
.187	Vaults: Sealing, venting, and ventilation																	
.189	Vaults: Drainage and waterproofing																	
.191	Design pressure of plastic fittings																	
.193	Valve installation in plastic pipe.																	
.195	Protection against accidental over-pressuring																	
.197	Control of the pressure of gas delivered from high-pressure distribution systems																	
.199	Requirements for design of pressure relief and limiting devices																	
.201	Required capacity of pressure relieving and limiting stations																	
.203	Instrument, control, & sampling pipe and components																	

Question 2.04b
Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?
Section _____ Please explain reason.
Section _____ Please explain reason.
Section _____ Please explain reason.

Question 2.04c
Does your state regulatory body require more stringent requirements for any of the sections in above matrix?
<i>Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.</i>

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.05a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part E - Welding of Steel in Pipelines																	
.225	Welding - General																
.227	Qualification of welders																
.229	Limitations on welders																
.231	Protection from weather																
.233	Miter joints																
.235	Preparation for welding																
.241	Inspection and test of welds																
.243	Nondestructive testing																
.245	Repair or removal of defects																

Question 2.05b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.05c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.06a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part F - Joining of Materials Other Than by Welding																	
.273	General																
.275	Cast iron pipe																
.277	Ductile iron pipe																
.279	Copper pipe																
.281	Plastic pipe																
.283	Plastic pipe: qualifying joining procedures																
.285	Plastic pipe: qualifying persons to make joints																
.287	Plastic pipe: inspection of joints																

Question 2.06b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.06c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Sub Part G - General Construction Requirements for Transmission Lines & Mains																		
.303	Compliance with specifications or standards																	
.305	Inspection: General																	
.307	Inspection of materials																	
.309	Repair of steel pipe																	
.311	Repair of plastic pipe																	
.313	Bends and elbows																	
.315	Wrinkle bends in steel pipe																	
.317	Protection from hazards																	
.319	Installation of pipe in a ditch																	
.321	Installation of plastic pipe																	
.323	Casing																	
.325	Underground clearance																	
.327	Cover																	

Question 2.07b
Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?
Section _____ Please explain reason.
Section _____ Please explain reason.
Section _____ Please explain reason.

Question 2.07c
Does your state regulatory body require more stringent requirements for any of the sections in above matrix?
<i>Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.</i>
State _____
Section _____ Please list additional actions required.

Sub Part H - Customer Meters, Service Regulators, & Service Lines																			
.353	Customer meters and regulators: Location																		
.355	Customer meters and regulators: Damage Protection																		
.357	Customer meters and regulators: Installation																		
.359	Customer meter installations: Operating pressure																		
.361	Service lines: Installation																		
.363	Service lines: Valve requirements																		
.365	Service lines: Location of valves																		
.367	Service lines: Requirements for connections to main piping																		
.369	Service lines: Connections to cast / ductile iron mains																		
.371	Service lines: Steel																		
.373	Service lines: Cast iron and ductile iron																		
.375	Service lines: Plastic																		
.377	Service lines: Copper																		
.379	New service lines not in use																		
.381	Service lines: Excess flow valve performance standards																		
.383	Excess flow valve customer notification																		

Question 2.08b
Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?
Section _____ Please explain reason.
Section _____ Please explain reason.
Section _____ Please explain reason.

Question 2.08c
Does your state regulatory body require more stringent requirements for any of the sections in above matrix?
<i>Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3</i>

states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.09a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part I - Requirements for Corrosion Control																	
.452	Applicability to converted pipelines																
.453	General																
.455	External corrosion control: Buried or submerged pipelines (after 07/31/1971)																
.457	External corrosion control: Buried or submerged pipelines (before 08/01/1971)																
.459	External corrosion control: Examination of buried pipeline when exposed.																
.461	External corrosion control: Protective coating																
.463	External corrosion control: Cathodic protection																
.465	External corrosion control: Monitoring																
.467	External corrosion control: Electrical isolation																
.469	External corrosion control: Test stations																
.471	External corrosion control: Test leads																
.473	External corrosion control: Interference currents																
.475	Internal corrosion control: General																
.477	Internal corrosion control: Monitoring																
.479	Atmospheric corrosion control: General																
.481	Atmospheric corrosion control: Monitoring																
.483	Remedial measures: General																
.487	Remedial measures: Distribution lines other than cast iron or ductile iron lines																
.489	Remedial measures: Cast iron and ductile iron pipelines																
.491	Corrosion control records																

Question 2.09b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.09c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.10a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part J - Test Requirements																	
.503	General requirements																
.507	Test requirements for pipelines to operate at a hoop stress less than 30 percent of SMYS and at or above 100 p.s.i. (689 kPa) gauge																
.509	Test requirements for pipelines to operate below 100 p.s.i. (689 kPa) gauge																
.511	Test requirements for service lines																
.513	Test requirements for plastic pipelines																
.515	Environmental protection and safety requirements																
.517	Records																

Question 2.10b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.10c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.11a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub part K - Uprating																	
.553	General requirements																
.557	Uprating: Steel pipelines to a pressure that will produce a hoop stress less than 30 percent of SMYS; plastic, cast iron, and ductile iron pipelines.																

Question 2.11b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.11c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.12a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part L - Operations																	
.601	Scope																

.603	General provisions																	
.605	Procedural manual for O&M and emergencies																	
.609	Change in class location: Required study																	
.611	Change in class location: Confirmation or revision of maximum allowable operating pressure																	
.613	Continuing surveillance																	
.614	Damage prevention program																	
.615	Emergency plans																	
.616	Public education																	
.617	Investigation of failures																	
.619	Maximum allowable operating pressure: Steel or plastic pipelines																	
.621	Maximum allowable operating pressure: High-pressure distribution systems																	
.623	Maximum and minimum allowable operating pressure; Low-pressure distribution systems																	
.625	Odorization of gas																	
.627	Tapping pipelines under pressure																	
.629	Purging of pipelines																	

Question 2.12b
Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?
Section _____ Please explain reason.
Section _____ Please explain reason.
Section _____ Please explain reason.

Question 2.12c
Does your state regulatory body require more stringent requirements for any of the sections in above matrix?
<i>Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3</i>

states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Question 2.13a

In the matrix below, please place an “X” under each of the threats that you feel the individual section addresses.

Note: A section could address any or all of the 16 threats

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part M - Maintenance																	
.703	General																
.721	Distribution systems: Patrolling																
.723	Distribution systems: Leakage surveys																
.725	Test requirements for reinstating service lines																
.727	Abandonment or deactivation of facilities																
.739	Pressure limiting and regulating stations: Inspection and testing																
.741	Pressure limiting and regulating stations: Telemetering or recording gauges																
.743	Pressure limiting and regulating stations: Testing of relief devices																
.747	Valve maintenance: Distribution systems																
.749	Vault maintenance																
.751	Prevention of accidental ignition																
.753	Caulked bell and spigot joints																
.755	Protecting cast-iron pipelines																

<p>Question 2.13b</p> <p>Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?</p> <p>Section _____ Please explain reason.</p> <p>Section _____ Please explain reason.</p> <p>Section _____ Please explain reason.</p>

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Question 2.13c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix? <i>Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.</i>
--

State _____
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.
State _____
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.
State _____
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.
Section _____ Please list additional actions required.

Question 2.14a

In the matrix below, please place an "X" under each of the threats that you feel the individual section addresses. <i>Note: A section could address any or all of the 16 threats</i>

		External Corrosion C & W Pipe	External Corrosion Bare Steel Pipe	External Corrosion Cast Iron Pipe	Internal Corrosion	Manuf. Related Defects Steel Pipe	Manuf. Related Defects Plastic Pipe	Const. Related Defects Steel Pipe	Const. Related Defects Plastic Pipe	Equipment Malfunction	Excavation/Mechanical Damage	Incorrect Operations & Operator Error	Outside Force Steel Pipe	Outside Force Cast Iron Pipe	Outside Force Plastic Pipe	Additional Threat (1.04)	Additional Threat (1.04)
Sub Part N - Qualification of Pipeline Personnel																	
.805	Qualification Program																

Question 2.14b

Of the sections in the above matrix that you checked as addressing distribution integrity which, if any, in your opinion are out dated or add little or no value to the integrity of the distribution infrastructure?

Section _____ Please explain reason.

Section _____ Please explain reason.

Section _____ Please explain reason.

Question 2.14c

Does your state regulatory body require more stringent requirements for any of the sections in above matrix?

Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

State _____

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section _____ Please list additional actions required.

Section 3 – Current P&M Measures (Practices and Technologies) Currently Being Utilized to Address Threats to Distribution Integrity

Note: After discussion with the DSIG Leadership Team subsequent to the initial emailing of the questionnaire the focus of this section changed. In a separate email the focus of this section has changed to identify measures that operators use that exceed current federal safety regulations.

Question 3.01

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of external corrosion of coated & wrapped steel pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.02

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of external corrosion of bare steel pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.03

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of external corrosion (graphitization) of cast iron pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ___ No ___
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ___ No ___

Measure 2: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ___ No ___
Does this measure follow a formal, written process?	Yes ___ No ___
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ___ No ___
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ___ No ___

Measure 3: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ___ No ___
Does this measure follow a formal, written process?	Yes ___ No ___
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ___ No ___
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ___ No ___

Question 3.04
What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of internal corrosion?

Measure 1: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ___ No ___
Does this measure follow a formal, written process?	Yes ___ No ___
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ___ No ___
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ___ No ___

Measure 2: _____	
Does this measure meet or exceed current regulatory requirements?	Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.05

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of manufacturing related defects in steel pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Question 3.06

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of manufacturing related defects in plastic pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ____ No ____
If yes, please describe how implementation differs?

Question 3.07

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of construction related defects in steel pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ____ No ____

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ____ No ____

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ____ No ____

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ____ No ____

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ____ No ____

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ____ No ____

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ____ No ____

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ____ No ____

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ____ No ____

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ____ No ____

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ____ No ____

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ____ No ____

If yes, please describe how implementation differs?

Question 3.08

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of construction related defects in plastic pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.09

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of equipment malfunction?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Question 3.10
 What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of excavation / mechanical damage?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.11

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of incorrect operations / operator error?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ____ No ____
Does this measure follow a formal, written process?	Yes ____ No ____
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ____ No ____
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ____ No ____

Question 3.12

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of weather related damage to cast iron pipe?

Measure 1: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ____ No ____
Does this measure follow a formal, written process?	Yes ____ No ____
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ____ No ____
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ____ No ____

Measure 2: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ____ No ____
Does this measure follow a formal, written process?	Yes ____ No ____
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ____ No ____
Does implementation of this differ within your distribution system? (i.e., materials, location, etc.) ? If yes, please describe how implementation differs?	Yes ____ No ____

Measure 3: _____	
Does this measure meet or exceed current regulatory requirements? If yes, please describe how and why you exceed minimum safety standards.	Yes ____ No ____
Does this measure follow a formal, written process?	Yes ____ No ____
Do you have performance measures to monitor the effectiveness of this program/practice? If yes, please describe the performance measure you use:	Yes ____ No ____

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
If yes, please describe how implementation differs?

Question 3.13

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of weather related damage to plastic pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.14

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the threat of weather related damage to steel pipe?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Question 3.15

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the first additional threat you identified in Question 1.04?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Question 3.16

What preventive and mitigative (P&M) measures (programs and/or practices) do you currently have in place to protect your distribution infrastructure against the second additional threat you identified in Question 1.04?

Measure 1: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___
 If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___
 Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___
 If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___
 If yes, please describe how implementation differs?

Measure 2: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Measure 3: _____

Does this measure meet or exceed current regulatory requirements? Yes ___ No ___

If yes, please describe how and why you exceed minimum safety standards.

Does this measure follow a formal, written process? Yes ___ No ___

Do you have performance measures to monitor the effectiveness of this program/practice? Yes ___ No ___

If yes, please describe the performance measure you use:

Does implementation of this differ within your distribution system? (i.e., materials, location, etc.)? Yes ___ No ___

If yes, please describe how implementation differs?

Section 4 – Programs and Risk Models Currently Being Used to Address Threats to Distribution Integrity on a Macro Basis

Question 4.01

Do you use risk ranking in evaluating your distribution infrastructure? Yes No

If yes, Is the process formal or informal? Formal Informal
 Is the process written? Yes No

If no, please describe how you set priorities for addressing threats to your distribution infrastructure

Question 4.02

In regards to one-call systems,
Note: If you operate in multiple states, please answer this question for each state separately. If you operate in more than 3 states, please respond for the 3 states in which you operate the most facilities.

State #1 _____

When did your state initiate its one-call system? Year _____

Have you seen a noticeable decline in “hits” since the inception of the one-call system? Yes No

Does your state mandate participation in the one call system? Yes No

If no, do you voluntarily participate? Yes No

Does your state exempt anyone from participation Yes No
 If yes, please list who is exempted:

Does your state mandate reporting of excavation damage? Yes No

If yes, please provide what is required?

If no, do you voluntarily report excavation damage? Yes No

Does your state’s one-call regulation/legislation include penalties against excavators? Yes No
 If yes, please list what the penalties are:

State #2 _____

When did your state initiate its one-call system? Year _____

Have you seen a noticeable decline in “hits” since the inception of the one-call system? Yes No

Does your state mandate participation in the one call system?	Yes ___ No ___
If no, do you voluntarily participate?	Yes ___ No ___
Does your state exempt anyone from participation If yes, please list who is exempted:	Yes ___ No ___
Does your state mandate reporting of excavation damage?	Yes ___ No ___
If yes, please provide what is required?	
If no, do you voluntarily report excavation damage?	Yes ___ No ___
Does your state's one-call regulation/legislation include penalties against excavators? If yes, please list what the penalties are:	Yes ___ No ___
State _____	
When did your state initiate its one-call system?	Year _____
Have you seen a noticeable decline in "hits" since the inception of the one-call system?	Yes ___ No ___
Does your state mandate participation in the one call system?	Yes ___ No ___
If no, do you voluntarily participate?	Yes ___ No ___
Does your state exempt anyone from participation If yes, please list who is exempted:	Yes ___ No ___
Does your state mandate reporting of excavation damage?	Yes ___ No ___
If yes, please provide what is required?	
If no, do you voluntarily report excavation damage?	Yes ___ No ___
Does your state's one-call regulation/legislation include penalties against excavators? If yes, please list what the penalties are:	Yes ___ No ___

Question 4.03

In regards to damage prevention (DP) councils/organizations,

Does your company participate in local, regional and national DP councils/organizations (i.e., Common Ground Alliance)?

Yes ____ No ____

If yes, please list the organizations

Organization 1: _____

Organization 2: _____

Organization 3: _____

Question 4.04

Questions 3.01 through 3.09, looked at measures currently in place that address each individual threat category related to distribution infrastructure.

On a more macro basis, please list the top 5 major processes you have in place that you feel are the most effective for identifying, addressing and mitigating the consequences of threats to distribution infrastructure.

Process #1: _____

What threats does this process address?

Is this process formal or informal?

Formal ____ Informal ____

Is the process written?

Yes ____ No ____

What performance measures do you use to evaluate this process?

Process #2: _____

What threats does this process address?

Is this process formal or informal?

Formal ____ Informal ____

Is the process written?

Yes ____ No ____

What performance measures do you use to evaluate this process?

Process #3: _____

What threats does this process address?

Is this process formal or informal?

Formal ____ Informal ____

Is the process written?

Yes ____ No ____

What performance measures do you use to evaluate this process?

Process #4: _____

What threats does this process address?

Is this process formal or informal?

Formal ____ Informal ____

Is the process written?

Yes ____ No ____

What performance measures do you use to evaluate this process?

Process #5: _____

What threats does this process address?

Is this process formal or informal?

Formal ____ Informal ____

Is the process written?

Yes ____ No ____

What performance measures do you use to evaluate this process?

Question 4.05a

Do you have a planned program for replacement for the following types of systems

Cast / ductile iron Yes ____ No ____

Bare steel Yes ____ No ____

Plastic Yes ____ No ____

Copper Yes ____ No ____

If you have a planned program for cast / ductile iron:

Is the program formal or informal?

Formal ____ Informal ____

Is the program written?

Yes ____ No ____

Has the program been presented to your state agency?

Yes ____ No ____

Is there a time frame for completion of this program?

Yes ____ No ____

If yes, please indicate time frame _____

If you have a planned program for bare steel:

Is the program formal or informal?

Formal ____ Informal ____

Is the program written?

Yes ____ No ____

Has the program been presented to your state agency?

Yes ____ No ____

Is there a time frame for completion of this program?

Yes ____ No ____

If yes, please indicate time frame _____

If you have a planned program for plastic:
 What types of plastics are included? _____

First Type of Plastic:

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

Second Type of Plastic:

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

If you have a planned program for copper:

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

Question 4.05b

Do you have planned programs for other types of systems besides those listed above? Yes ____ No ____

If yes, please explain below

Type of System? _____

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

Type of System? _____

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

Type of System? _____

Is the program formal or informal? Formal ____ Informal ____
 Is the program written? Yes ____ No ____
 Has the program been presented to your state agency? Yes ____ No ____
 Is there a time frame for completion of this program? Yes ____ No ____
 If yes, please indicate time frame _____

Section 5 – Process for Identifying, Evaluating and Integrating Best Practices and Emerging Technologies

Question 5.01

Do you have processes or practices in place to *identify* new practices and emerging technologies? Yes ___ No ___

If yes,
please provide examples of your processes or practices?

Are your processes or practices formal or informal? Formal ___ Informal ___
Are your processes or practices written? Yes ___ No ___

If no, please explain how new practices and emerging technologies are identified?

Question 5.02

Do you have processes or practices in place to *evaluate* new practices and emerging technologies? Yes ___ No ___

If yes,
please provide examples of your processes or practices?

Are your processes or practices formal or informal? Formal ___ Informal ___
Are your processes or practices written? Yes ___ No ___

If no, please explain how new practices and emerging technologies are identified?

Question 5.03

Do you have a process in place to *integrate/implement* new practices and emerging technologies? Yes ___ No ___

If yes,
please provide examples of your processes or practices?

Are your processes or practices formal or informal? Formal ___ Informal ___
Are your processes or practices written? Yes ___ No ___

If no, please explain how new practices and emerging technologies are integrated/implemented?

Section 6 – Areas or Issues of Concern Not Addressed in the Questionnaire

Question 6.01

Given the purpose of this questionnaire is to review the state of current regulations, practices and processes in place that enhance distribution infrastructure integrity, are there any other issues or questions that you feel are important and need to be emphasized? Yes ____ No ____

If yes, please describe your issues / concerns below:

Issue / Concern 1:

Issue / Concern 2:

Issue / Concern 3:

Issue / Concern 4:

Issue / Concern 5:

Section 7 – Operator Statistics

Question 7.01

In order to demonstrate the range of operators who have responded to this questionnaire, please complete the following statistics as they apply to your company.

States in which you operate distribution mains and services:

Customer base:

Number of residential customers	_____
Number of commercial customers	_____
Number of industrial customers	_____
Total customers	_____

Total mileage of distribution mains	_____
Mileage of unprotected bare	_____
Mileage of protected bare	_____
Mileage of unprotected coated	_____
Mileage of protected coated	_____
Mileage of plastic	_____
Mileage of cast / wrought iron	_____
Mileage of ductile iron	_____
Mileage of copper	_____
Mileage of other	_____

Total number of distribution services	_____
Number of unprotected bare	_____
Number of protected bare	_____
Number of unprotected coated	_____
Number of protected coated	_____
Number of plastic	_____
Number of cast / wrought iron	_____
Number of ductile iron	_____
Number of copper	_____
Number of other	_____

Operating pressures (Distribution mains and services only):

Total mileage utilization pressure (UP)	_____
Total mileage > UP, < 60 psig	_____
Total mileage > 61 psig, < 100 psig	_____
Total mileage >101 psig	_____