EMERGENCY PREPAREDNESS

Handbook

for Natural Gas Utilites

AGA Emergency Preparedness Handbook

The American Gas Association (AGA), founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 73 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 69 million customers — receive their gas from AGA members. Today, natural gas meets more than one-fourth of the US' energy needs.

FIND MORE
ONLINE

www.AGA.org

Purpose

This handbook provides a framework for collaboration in addressing potential crisis activities impacting member natural gas utilities of AGA, MEA Energy Association, Northeast Gas Association (NGA), Southern Gas Association (SGA), and the Western Energy Institute (WEI) by outlining mutual assistance opportunities. This includes delineating roles of the lead gas association, which may be a regional gas association or AGA depending upon the extent of the impacted utilities' needs. This handbook ensures government and industry are communicating and available to support response and recovery efforts if necessary – leveraging and coordinating the unique roles, responsibilities, capabilities, and assets of both.

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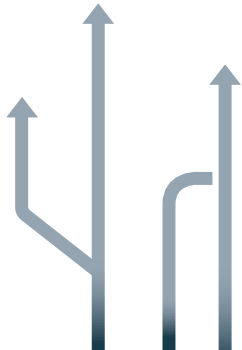
NATURAL GAS

Value Chain

Natural gas is an odorless, colorless, naturally-occurring hydrocarbon consisting mostly of methane (70-90 percent) and other gases. The natural gas value chain is extensive and spans from the production well-head to the consumer burner-tip. The natural gas industry and associated response, recovery, and emergency preparedness activities are best distinguished by three distinct segments.



Production & Processing

Found in reservoirs deep within the earth and brought to surface through production wells. Gathering lines transport natural gas from wellhead to transmission.

Transmission & Storage

Transmission lines transport natural gas from processing to storage facility and/or large-volume customer (e.g., local distribution system, natural gas-fired power generation, etc.).

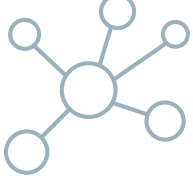
Distribution

Distribution lines receive natural gas from the transmission line and transport the gas to the consumer (residential/commercial/industrial).

See Appendix A for further description of each segment and associated function.

Each segment approaches emergency preparedness and response/recovery differently. For example, natural gas distribution companies generally participate in mutual assistance programs with other gas utilities and contractors, while upstream natural gas production companies have assistance programs which are more contractor-based, taking into consideration different business models and antitrust laws. Depending upon the segment of the value chain, the policies and practices may differ to best match the needs of and regulatory restrictions on the segment of interest.

This handbook focuses on natural gas distribution emergency preparedness programs and practices.



Stakeholders

AGA works closely with federal government partners and other organizations at the request of AGA members or regional natural gas associations to facilitate efficient information sharing, build situational awareness and enable effective risk-informed decision-making.

AGA

MEMBERS

- Gas Utilities
- Transmission
- Vendors

AGA STAFF

DNG ISAC

Non-AGA

- Other Trade Associations
- Oil & Natural Gas Sector Coordinating Council
- Cross-sector
- Energy industry

Government

FEDERAL

- Sector Specific Agency's
  - Department of Homeland Security
  - Transportation Security Administration
  - Department of Energy
- U.S. Coast Guard
- Federal Energy Regulator Commission
- Energy Information Agency
- Environmental Protection Agency

STATE

- Local Utilities Commission
- Governor

LOCAL

- Municipal or County Leadership and
- Incident Commanders

See Appendix B for further description of each segment and associated function.

Working with state and local governments as well as local media is generally handled by the impacted utilities and/or regional gas associations as appropriate.

Structure

Natural gas distribution mutual assistance depends upon the extent of damage to the distribution system. If response/recovery can be managed using regional resources, then the natural gas association, in the region in which the crisis is occurring, takes the lead in helping coordinate activities of neighboring utilities.* AGA monitors response/recovery efforts and offers a channel of communication to the Federal government, e.g., requesting waivers for Operator Qualification requirements to be instituted, as appropriate. If needs exceed the capacity of regional resources, the AGA mutual assistance program is initiated at the request of the regional association.

** This is generally the case unless AGA is requested to by the impacted AGA member company to take the lead in helping coordinate efforts.*

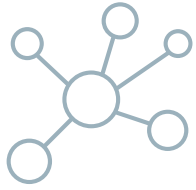
AGA Mutual Assistance Program

AGA offers its members (utilities, transmission, and manufacturers/suppliers/service providers) a voluntary, no-fee mutual assistance program designed to suit the wide variation of needs of its member companies across the United States and Canada.

The purpose of the AGA program is to supplement local, state and regional mutual assistance programs and is intended for unprecedented man-made or natural disasters requiring the dedication of response/recovery/restoration resources outside the limits of existing mutual aid programs.

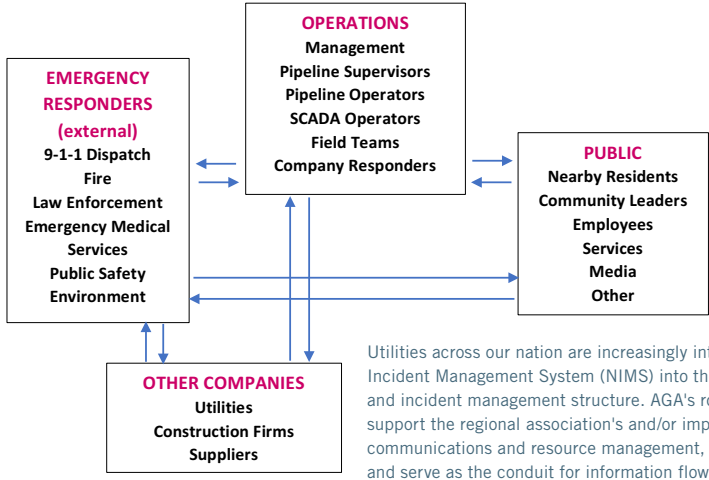
AGA Mutual Assistance Program

The AGA program is based on a coalition of AGA member companies, which agree to a set of baseline provisions that govern mutual assistance and agree to populate and maintain the AGA Mutual Assistance Database with company-specific emergency contact information, field capabilities and other key resources available for mutual assistance. The incorporation of the AGA Mutual Assistance Program into a company's emergency planning portfolio enhances advanced planning and effectuates response efforts in time of extenuating circumstances.



Natural gas utilities operate differently across the U.S. Mutual assistance is administered, communicated, and managed non-linearly among natural gas utilities to afford flexibility.

The chart below delineates the process for gas.



Utilities across our nation are increasingly integrating National Incident Management System (NIMS) into their planning and incident management structure. AGA's role in this is to support the regional association's and/or impacted utilities' communications and resource management, as appropriate, and serve as the conduit for information flow and situational awareness to and from the federal government.

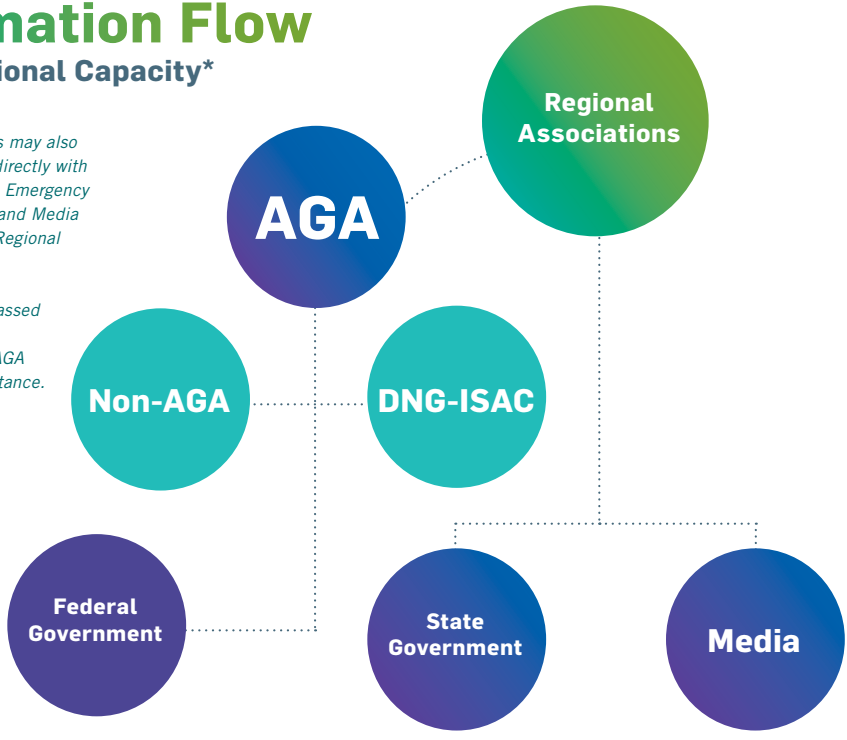
Source: Guide for Communicating Emergency Response Information for Natural Gas & Hazardous Liquids Pipelines.

Information Flow

Within Regional Capacity*

NOTE: The operators may also be communicating directly with their state and local Emergency Operations Centers and Media as well as with the Regional Association.

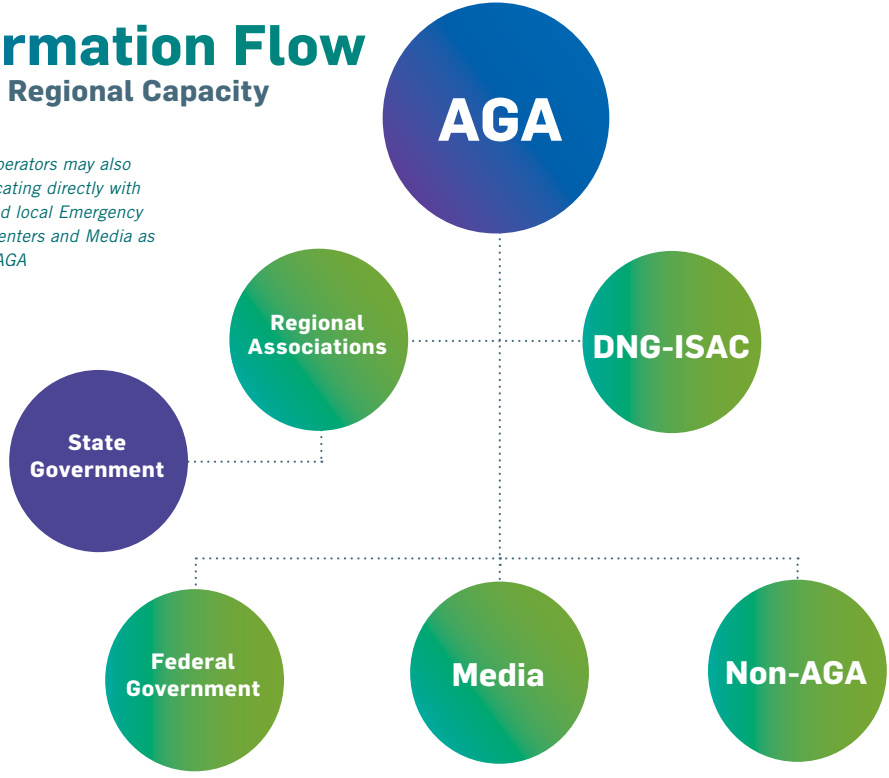
** This model is bypassed when an operator directly requests AGA coordination assistance.*



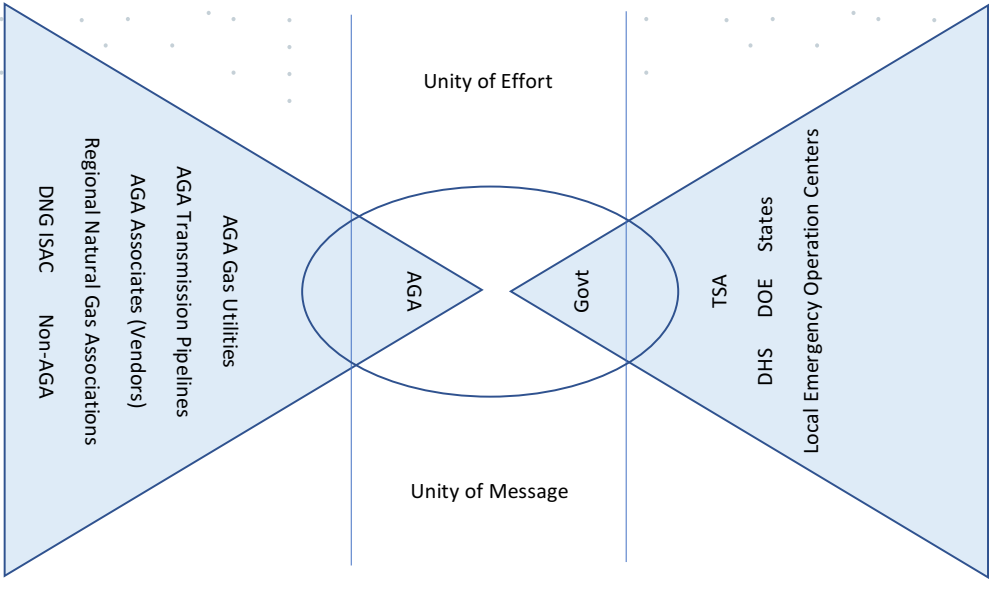
Information Flow

Beyond Regional Capacity

NOTE: The operators may also be communicating directly with their state and local Emergency Operations Centers and Media as well as with AGA



Unity of Message



Preparedness & Alternatives

The leading priority of natural gas distribution companies is public and worker safety. This does not change in response/ recovery. In general, field workers locate leaks, evacuate as necessary, and stop gas flow. The value chain structure ensures natural gas delivery. Built-in redundancies and alternatives in the natural gas system minimize natural gas outages.

Natural gas can be delivered despite impacts to natural gas infrastructure. This may include delivery via over-the-road CNG or redundant pipeline feeds, where connections remain intact or may be repaired.

Cross-sector Coordination

AGA generally serves as the communication channel bridging the varying sector stakeholders impacted by significant natural gas pipeline disruption. The mutual assistance process differs across the various critical infrastructure sectors. For example, between the natural gas and electricity sectors, the electric process has a highly structured format, while natural gas utilities have a process that is intentionally not as linear. These differences are noted and acclimated through drills. One sector's mutual assistance program may not suit the operations and business models of another. See Appendix C for list of elements associated with gas utility preparation, response, and recovery in contrast to electricity.

Appendices

Appendix A

Natural Gas Value Chain - Key Segments and Functions

Operation	Segments & Functions	U.S. Infrastructure*
Production & Processing	**Production.** Companies explore and drill for natural gas and sell their product to marketers, local distribution companies (LDCs), or end users.	487,000 production wells
	Gathering System. Small-diameter pipelines move natural gas from the wellhead to the natural gas processing plant or to an interconnection with a larger mainline pipeline.	20,000 miles of gathering pipelines
	Processing. This operation extracts natural gas liquids and impurities from the natural gas stream.	493 processing plants
Transmission & Storage	**Transmission Compression.** The purpose of compressor stations is to maintain the movement of natural gas along the pipeline.	1,400 compressor stations
	Transmission Pipeline. Large-diameter, long-distance pipelines transport natural gas from the producing area to market areas.	305,000 miles of transmission lines
	Underground Storage. Natural gas is stored in depleted oil and gas reservoirs, aquifers, and salt caverns for future use.	400 underground storage facilities
Distribution	**Distribution.** Natural gas utilities typically transport natural gas from delivery points located on interstate and intrastate pipelines to households and businesses through small-diameter distribution pipelines.	2.2 million miles of distribution pipelines; 1,200 LDCs

** Approximate/estimated data available as of May 2012. Sources: EIA, PHMSA*

Transportation Security Admin., DHS Infrastructure Security Compliance Division, DOT Pipeline & Hazardous Materials Safety Admin., U.S. Coast Guard, DOE, Federal Energy Regulatory Commission

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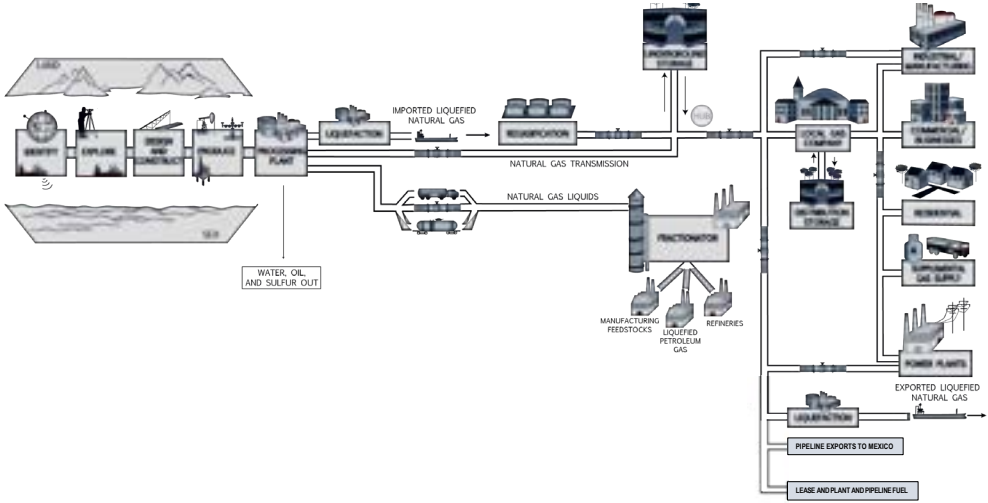
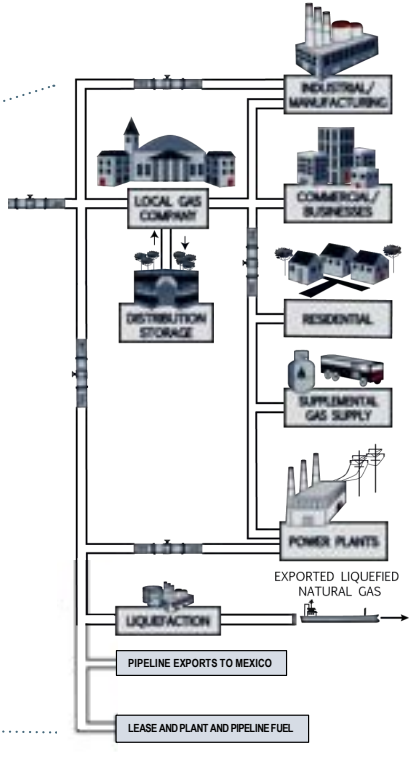


Local Distribution Segment



Appendix B

Acronyms

AGA	American Gas Association
API	American Petroleum Institute
DHS	Dept of Homeland Security
DNG ISAC	Downstream Natural Gas Information Sharing & Analysis Center
DOE	Dept of Energy
DOT PHMSA	Dept of Transportation Pipeline & Hazardous Materials Safety Admin.
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
NGA	Northeast Gas Association
ONG SCC	Oil & Natural Gas Sector Coordinating Council
SGA	Southern Gas Association
SSA	Sector Specific Agency
TSA	Transportation Security Administration
USCG	United States Coast Guard
WEI	Western Energy Institute

Appendix C

Elements Associated with Gas Utility Preparation, Response, And Recovery

Natural Gas Utility Response/ Recovery Differs from Electric

Unlike electricity systems, which are designed to shutdown under abnormal conditions, natural gas operations are designed to remain in service for the purposes of public safety and to maintain pipeline integrity.

Gas service cannot undergo rolling brownouts or blackouts. System resilience is built in up front. If the decision is made for gas service to be shutdown, bringing the system back on is a labor-intensive, multi-step process that requires running integrity tests on each repaired pipeline, visiting individual homes and businesses to shut off individual services, re-pressurizing pipelines, and finally inspecting and turning on individual services meters and appliances. This final step requires that the home or business is habitable and has electric service restored. Often the pipeline has been repaired; is re-pressurized and ready to supply natural gas; but, the structures are not yet repaired or replaced.

Appendix D

Event Scenarios

Two Categories of Event Types

Advanced notice event

Specific events that can be anticipated (allow for preparation) and may disrupt delivery operations beyond a utility's response capabilities. These events generally include severe weather events (e.g., hurricanes, wildfires, ice storms).

No-notice event

Occurs with little or no warning, disrupting delivery operations beyond a utility's response capabilities. These events can include natural disasters (e.g., tornados), cyber compromise, or physical attacks.

Response/Recovery Play-by-Play Based on Impact

IMPACT DOES NOT EXCEED REGIONAL CAPACITY

Response/recovery coordination remains at the regional level. AGA involvement for situational awareness and messaging to federal entities.

IMPACT EXCEEDS REGIONAL CAPACITY OR AGA MEMBER GAS UTILITY SPECIFICALLY REQUESTS AGA ASSISTANCE

AGA coordinates response/recovery. Play-by play on following pages.

IMPACT DOES NOT EXCEED REGIONAL CAPACITY*

1. Impacted gas utilities assess needs
2. Impacted gas utilities contact regional gas association(s)
3. Regional gas association
   - Coordinates regional mutual aid activities
   - Contacts AGA to provide situational awareness
   - Supports impacted gas utilities on messaging and outreach to states and media
   - Supports impacted gas utilities in requesting state government waivers
   - Continuously assesses whether needs can be addressed by regional resources
4. AGA contacts federal government to provide situational awareness and advises of needs for regulatory waivers

** Select regional gas associations have pre-event correspondence with potentially impacted gas utilities*

IMPACT EXCEEDS REGIONAL CAPACITY OR AGA MEMBER GAS UTILITY SPECIFICALLY REQUESTS AGA ASSISTANCE*

1. Impacted gas utilities assess needs
2. Impacted gas utilities contact regional gas association(s)
3. Regional gas association determines if needs exceed regional capacity for response/recovery and contacts AGA
4. AGA implements AGA Mutual Assistance Program
   - Coordinates regional mutual aid activities
   - Works with regional gas association(s) for situational awareness
   - Works with impacted gas utilities on messaging; outreach to states and media
   - Works with impacted gas utilities to advise state government of needs for state waivers
5. AGA contacts federal government to provide situational awareness and advises of needs for regulatory waivers
6. AGA coordinates messaging outreach to Federal Government, regional associations, and media
   - Regional gas associations message with state governments, as necessary

** Select regional gas associations have pre-event correspondence with potentially impacted gas utilities*

AGA.org

TrueBlueNaturalGas.org

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Facebook.com/naturalgas

Instagram.com/aga_natgas