

February 8, 2021

Mr. Howard W. (Mac) McMillan
Executive Director
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Ave., SE
Washington, DC 20590

The attached letter from the NTSB Chairman provides information about the NTSB's January 12, 2021, report *Atmos Energy Corporation Natural Gas-Fueled Explosion, Dallas, Texas, February 23, 2018*, PAR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendations by number (for example, P-21-1 through -3). We encourage you to submit your response to ExecutiveSecretariat@nts.gov. If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.



Executive Secretariat-LRM
Office of the Managing Director
National Transportation Safety Board
490 L'Enfant Plaza SW
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National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

February 8, 2021

Mr. Howard W. (Mac) McMillan
Executive Director
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Ave., SE
Washington, DC 20590

Dear Mr. McMillan:

This letter provides information about the National Transportation Safety Board's (NTSB) January 12, 2021, report *Atmos Energy Corporation Natural Gas-Fueled Explosion, Dallas, Texas, February 23, 2018*, PAR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- **Incident investigation.** Neither Dallas Fire-Rescue Department (DFR) nor Atmos Energy Corporation (Atmos) identified the causes of the two incidents that occurred in the days immediately preceding the explosion. DFR arson investigators and Atmos technicians did not effectively investigate, communicate, or collaborate to determine the cause of either incident. Further, Atmos did not gather enough evidence to determine if gas migrated from their piping and fueled the first two incidents.
- **Leak investigations and repairs.** Atmos dedicated significant resources to its response following the second incident, finding 13 leaks determined to present an existing or probable future hazard. However, none of its employees questioned the integrity of the system. As a result, Atmos did not take appropriate action to secure the safety of the area and its residents. This was attributed, in part, to inadequate procedures for performing leak investigations in wet weather conditions.
- **Methane detection.** Although Atmos added odorant to its gas distribution system in a manner consistent with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, none of the residents at any of the affected homes smelled gas. Although odorant can act as an early warning of a gas release to prevent an explosion and fire, it is known to become depleted if it travels through soil.
- **Incident reporting.** Incident reporting requirements mandated by the PHMSA rely on the judgement of the operator to determine whether an incident resulted from a leak in their system and do not specify the level of investigation necessary to make the determination. While operators have an option to report events that may have been caused by their system,

Atmos relied on an incomplete investigation to support its position not to report the first two incidents.

Accordingly, the NTSB makes the following safety recommendations to PHMSA. Additional information regarding these recommendations can be found in the noted sections of the report.

- Expand incident reporting requirements in Title 49 *Code of Federal Regulations* Part 191 so that events that may meet the definition of “incident” are immediately reported to the National Response Center even when the source of the natural gas has not been determined. (P-21-1) (See section 2.6.1.)
- Evaluate industry’s implementation of the gas distribution pipeline integrity management requirements and develop updated guidance for improving their effectiveness. The evaluation should specifically consider factors that may increase the likelihood of failure such as age, increase the overall risk (including factors that simultaneously increase the likelihood and consequence of failure), and limit the effectiveness of leak management programs. (P-21-2) (See section 2.7.)
- Assist the Railroad Commission of Texas in conducting the audit recommended in Safety Recommendation P-21-4. (P-21-3) (See section 2.7.)

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendations by number (Safety Recommendation(s) P-21-1 through -3). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Ms. Christi Craddick
Chairman
Railroad Commission of Texas
PO Box 12967
Austin, TX 78711-2967

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Office of the Chairman

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February 8, 2021

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Railroad Commission of Texas
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Dear Chairman Craddick:

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We are providing the following information to urge the Railroad Commission of Texas (RRC) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

This letter provides information about the National Transportation Safety Board's (NTSB) January 12, 2021, report *Atmos Energy Corporation Natural Gas-Fueled Explosion, Dallas, Texas, February 23, 2018*, PAR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- **Incident investigation.** Neither the Dallas Fire-Rescue Department (DFR) nor Atmos Energy Corporation (Atmos) identified the causes of the two incidents that occurred in the days immediately preceding the explosion. DFR arson investigators and Atmos technicians did not effectively investigate, communicate, or collaborate to determine the cause of either incident. Further, Atmos did not gather enough evidence to determine if gas migrated from their piping and fueled the first two incidents.
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system. As a result, Atmos did not take appropriate action to secure the safety of the area and its residents. This was attributed, in part, to inadequate procedures for performing leak investigations in wet weather conditions.

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- **Incident reporting.** Incident reporting requirements mandated by the PHMSA rely on the judgement of the operator to determine whether an incident resulted from a leak in their system and do not specify the level of investigation necessary to make the determination. While operators have an option to report events that may have been caused by their system, Atmos relied on an incomplete investigation to support its position not to report the first two incidents.

Accordingly, the NTSB makes the following safety recommendation to the RRC. Additional information regarding this recommendation can be found in the noted section of the report.

- With assistance from the Pipeline and Hazardous Materials Safety Administration, conduct a comprehensive audit of Atmos Energy Corporation's incident-reporting practices; policies and procedures for responding to leaks, fires, explosions, and emergency calls; and integrity management programs. (P-21-4) (See section 2.7.)

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement this recommendation. When replying, please refer to the safety recommendation by number (Safety Recommendation 9-21-4). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Mr. Dominique Artis
Chief
Dallas Fire-Rescue Department
1500 Marilla St.
Dallas, TX 75201

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February 8, 2021

Mr. Dominique Artis
Chief
Dallas Fire-Rescue Department
1500 Marilla St.
Dallas, TX 75201

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We are providing the following information to urge the Dallas Fire-Rescue Department (DFR) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

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Accordingly, the NTSB makes the following safety recommendations to DFR. Additional information regarding these recommendations can be found in the noted sections of the report.

- Revise the continuing education requirements for your arson investigators to include training on building fuel gas systems. (P-21-5) (See section 2.3.1.)
- Revise your procedures to require gas monitoring after the occurrence of a gas-related structure fire or explosion. (P-21-6) (See section 2.4.)
- Develop and implement a formal process to alert appropriate local, state, and federal agencies of potential systemic safety issues that should be investigated further. (P-21-7) (See section 2.6.2.)

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Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Mr. Kevin Akers
President and Chief Executive Officer
Atmos Energy Corporation
5430 Lyndon Baines Johnson Freeway, Suite 1800
Dallas, TX 75240

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February 8, 2021

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President and Chief Executive Officer
Atmos Energy Corporation
5430 Lyndon Baines Johnson Freeway
Suite 1800
Dallas, TX 75240

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We are providing the following information to urge Atmos Energy Corporation (Atmos) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

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Accordingly, the NTSB makes the following safety recommendations to Atmos. Additional information regarding these recommendations can be found in the noted sections of the report.

- Provide initial and recurrent training to Dallas Fire-Rescue Department arson investigators and firefighters on the local natural gas distribution system and associated hazards. (P-21-8) (See section 2.3.1.)
- Develop and implement more rigorous inside leak investigation requirements in response to fires and explosions when gas involvement cannot be excluded, including clear guidance on pressure testing and inside gas measurements and the potential need to return to the property after firefighters have departed. (P-21-9) (See section 2.3.2.1.)
- Develop a clear procedure to coordinate with local emergency responders when investigating all fires and explosions that may be gas related to conclusively determine whether your system can be excluded as a potential contributor, and collecting the necessary evidence to support the conclusion of your investigations. (P-21-10) (See section 2.3.2.3.)
- Revise your policies and procedures for responding to leaks, fires, explosions, and emergency calls to address the challenges caused by wet weather conditions. The revised policies and procedures should include: (1) leak investigation methods that are reliable in wet weather; (2) leak investigation procedures that assess all viable gas migration paths; (3) criteria for when to shut down or isolate gas distribution systems and pressure test main and service lines; and (4) an alternate safe response such as evacuation when reliable leak investigations are not possible due to wet weather or other circumstances. (P-21-11) (See section 2.4.)
- Without delay, assess your integrity management program, paying particular attention to the areas identified in this investigation, and revise the program to appropriately consider: (1) threats that degrade a system over time, and (2) the increased risk that can result from

factors that simultaneously increase the likelihood and consequence of failure. (P-21-12)
(See section 2.7.)

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Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Ms. Leticia Quezada
Chairman
Gas Piping Technology Committee
Nicor Gas
1844 Ferry Rd.
Naperville, IL 60563

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February 8, 2021

Ms. Leticia Quezada
Chairman
Gas Piping Technology Committee
Nicor Gas
1844 Ferry Rd.
Naperville, IL 60563

Dear Ms. Quezada:

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We are providing the following information to urge the Gas Piping Technology Committee (GPTC) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

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Accordingly, the NTSB makes the following safety recommendations to the GPTC. Additional information regarding these recommendations can be found in the noted sections of the report.

- Develop additional guidance that identifies steps gas distribution operators can take to safely respond to leaks, fires, explosions, and emergency calls, considering the limitations due to wet weather conditions, that includes: (1) criteria for when to shut down or isolate gas distribution systems, pressure test main and service lines, and begin evacuations; (2) leak investigation methods that are reliable in wet weather, (3) require an alternate safe response, such as an evacuation when reliable leak investigations are not possible due to wet weather, and (4) leak investigations that assess all viable gas migration paths, including granular backfill and crawlspaces. (P-21-13) (See section 2.4.)
- Develop guidance that identifies steps that gas distribution operators can take to ensure that their gas distribution integrity management program, at a minimum, appropriately considers (1) threats that degrade a system over time, and (2) the increased risk that can result from factors that simultaneously increase the likelihood and consequence of failure. (P-21-14) (See section 2.7.)

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International Code Council
500 New Jersey Ave., NW, 6th Floor
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The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendation by number (for example, P-19-006). We encourage you to submit your response to ExecutiveSecretariat@nts.gov. If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

All communications regarding safety recommendations will be stored by the NTSB and viewable by the public. Please do not send privileged or confidential communications in response to this recommendation. Responses marked as confidential or privileged (or similar designations) will be considered nonresponsive. If you have concerns about this protocol, please contact us at ExecutiveSecretariat@nts.gov.



Executive Secretariat-LRM
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National Transportation Safety Board
490 L'Enfant Plaza SW
Washington, DC 20594
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National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

February 8, 2021

Mr. Dominic Sims
Chief Executive Officer
International Code Council
500 New Jersey Ave., NW
6th Floor
Washington, DC 20001

Dear Mr. Sims:

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to assist victims and their family members affected by major transportation disasters.

We are providing the following information to urge the International Code Council (ICC) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

This letter provides information about the National Transportation Safety Board's (NTSB) January 12, 2021, report *Atmos Energy Corporation Natural Gas-Fueled Explosion, Dallas, Texas, February 23, 2018*, PAR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- **Incident investigation.** Neither Dallas Fire-Rescue Department (DFR) nor Atmos Energy Corporation (Atmos) identified the causes of the two incidents that occurred in the days immediately preceding the explosion. DFR arson investigators and Atmos technicians did not effectively investigate, communicate, or collaborate to determine the cause of either incident. Further, Atmos did not gather enough evidence to determine if gas migrated from their piping and fueled the first two incidents.
- **Leak investigations and repairs.** Atmos dedicated significant resources to its response following the second incident, finding 13 leaks determined to present an existing or probable future hazard. However, none of its employees questioned the integrity of the system. As a result, Atmos did not take appropriate action to secure the safety of the area

and its residents. This was attributed, in part, to inadequate procedures for performing leak investigations in wet weather conditions.

- **Methane detection.** Although Atmos added odorant to its gas distribution system in a manner consistent with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, none of the residents at any of the affected homes smelled gas. Although odorant can act as an early warning of a gas release to prevent an explosion and fire, it is known to become depleted if it travels through soil.
- **Incident reporting.** Incident reporting requirements mandated by the PHMSA rely on the judgement of the operator to determine whether an incident resulted from a leak in their system and do not specify the level of investigation necessary to make the determination. While operators have an option to report events that may have been caused by their system, Atmos relied on an incomplete investigation to support its position not to report the first two incidents.

Accordingly, the NTSB reiterates the following safety recommendations to the ICC. Additional information regarding this recommendation can be found in the noted section of the report.

- In coordination with the Gas Technology Institute and the National Fire Protection Association, incorporate provisions in the International Fuel Gas Code that requires methane detection systems for all types of residential occupancies with gas service. At a minimum, the provisions should cover the installation, maintenance, placement of the detectors, and testing requirements. (P-19-006) (See section 2.5.)

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement this recommendation. When replying, please refer to the safety recommendation(s) by number (Safety Recommendation P-19-006). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Mr. James Pauley
President and Chief Executive Officer
National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters.

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The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendation by number (for example, P-19-007). We encourage you to submit your response to ExecutiveSecretariat@nts.gov. If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

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National Transportation Safety Board

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Office of the Chairman

February 8, 2021

Mr. James Pauley
President and Chief Executive Officer
National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Dear Mr. Pauley:

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to assist victims and their family members affected by major transportation disasters.

We are providing the following information to urge the National Fire Protection Association (NFPA) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

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As a result of this investigation, we identified the following safety issues:

- **Incident investigation.** Neither Dallas Fire-Rescue Department (DFR) nor Atmos Energy Corporation (Atmos) identified the causes of the two incidents that occurred in the days immediately preceding the explosion. DFR arson investigators and Atmos technicians did not effectively investigate, communicate, or collaborate to determine the cause of either incident. Further, Atmos did not gather enough evidence to determine if gas migrated from their piping and fueled the first two incidents.
- **Leak investigations and repairs.** Atmos dedicated significant resources to its response following the second incident, finding 13 leaks determined to present an existing or probable future hazard. However, none of its employees questioned the integrity of the system. As a result, Atmos did not take appropriate action to secure the safety of the area

and its residents. This was attributed, in part, to inadequate procedures for performing leak investigations in wet weather conditions.

- **Methane detection.** Although Atmos added odorant to its gas distribution system in a manner consistent with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, none of the residents at any of the affected homes smelled gas. Although odorant can act as an early warning of a gas release to prevent an explosion and fire, it is known to become depleted if it travels through soil.
- **Incident reporting.** Incident reporting requirements mandated by the PHMSA rely on the judgement of the operator to determine whether an incident resulted from a leak in their system and do not specify the level of investigation necessary to make the determination. While operators have an option to report events that may have been caused by their system, Atmos relied on an incomplete investigation to support its position not to report the first two incidents.

Accordingly, the NTSB reiterates the following safety recommendations to the NFPA. Additional information regarding this recommendation can be found in the noted section of the report.

- In coordination with the Gas Technology Institute and the International Code Council, revise the National Fuel Gas Code, National Fire Protection Association 54 to require methane detection systems for all types of residential occupancies with gas service. At a minimum, the provisions should cover the installation, maintenance, placement of the detectors, and testing requirements. (P-19-007) (See section 2.5.)

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement this recommendation. When replying, please refer to the safety recommendation(s) by number (Safety Recommendation P-19-007). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman

February 8, 2021

Mr. David Carroll
President and Chief Executive Officer
Gas Technology Institute
1700 S. Mount Prospect Rd.
Des Plaines, IL 60018

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The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendation by number (for example, P-19-008). We encourage you to submit your response to ExecutiveSecretariat@nts.gov. If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

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Office of the Chairman

February 8, 2021

Mr. David Carroll
President and Chief Executive Officer
Gas Technology Institute
1700 S. Mount Prospect Rd.
Des Plaines, IL 60018

Dear Mr. Carroll:

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We are providing the following information to urge the Gas Technology Institute (GTI) to act on the safety recommendation in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

This letter provides information about the National Transportation Safety Board's (NTSB) January 12, 2021, report *Atmos Energy Corporation Natural Gas-Fueled Explosion, Dallas, Texas, February 23, 2018*, PAR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- **Incident investigation.** Neither Dallas Fire-Rescue Department (DFR) nor Atmos Energy Corporation (Atmos) identified the causes of the two incidents that occurred in the days immediately preceding the explosion. DFR arson investigators and Atmos technicians did not effectively investigate, communicate, or collaborate to determine the cause of either incident. Further, Atmos did not gather enough evidence to determine if gas migrated from their piping and fueled the first two incidents.
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- **Incident reporting.** Incident reporting requirements mandated by the PHMSA rely on the judgement of the operator to determine whether an incident resulted from a leak in their system and do not specify the level of investigation necessary to make the determination. While operators have an option to report events that may have been caused by their system, Atmos relied on an incomplete investigation to support its position not to report the first two incidents.

Accordingly, the NTSB reiterates the following safety recommendations to the GTI. Additional information regarding this recommendation can be found in the noted section of the report.

- In coordination with the National Fire Protection Association and the International Code Council, work to develop standards for methane detection systems for all types of residential occupancies in both the International Fuel Gas Code and the National Fuel Gas Code, National Fire Protection Association 54. At a minimum, the provisions should cover the installation, maintenance, placement of the detectors, and testing requirements. (P-19-008) (See section 2.5.)

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement this recommendation. When replying, please refer to the safety recommendation(s) by number (Safety Recommendation P-19-008). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III
Chairman