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DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

[Docket No. PHMSA-2026-0397]

Pipeline Safety: Advisory Bulletin on Protecting Pipeline Integrity During Extreme Winter Weather, Rapid Thaw, and Geohazard Events

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Notice; issuance of advisory bulletin.

SUMMARY: PHMSA is issuing this advisory bulletin to all owners and operators of gas and hazardous liquid pipeline facilities to highlight safety risks associated with extreme winter weather. This includes impacts from heavy snowfall, ice expansion within pipeline facilities, flooding related to winter thaw, and frost heave resulting from sustained, unusually cold temperatures. This bulletin emphasizes the need for winterizing facilities in anticipation of cold weather events and heightened monitoring of ground movement and external loads to ensure the continued safe operation of the Nation's energy infrastructure.

FOR FURTHER INFORMATION CONTACT: Owners and operators of pipelines subject to regulation by PHMSA should contact the appropriate PHMSA Region Office. The PHMSA Region Offices and their contact information are as follows:

- Eastern Region: 609-771-7800 (Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia)
- Southern Region: 404-832-1147 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, and Tennessee)

- Central Region: 816-329-3800 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin)
- Southwest Region: 713-272-2859 (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)
- Western Region: 720-963-3160 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming)

Owners and operators of intrastate pipelines should contact the appropriate State pipeline safety authority. A list of State pipeline safety authorities is available at www.napsr.org.

SUPPLEMENTARY INFORMATION:

The winter of 2025–2026 has brought record-breaking snowfall and unusually low temperatures to many regions across the United States. PHMSA is aware that certain parts of the country are experiencing temperatures significantly below historical norms. These extreme conditions present unique risks to pipeline systems that may not have been originally designed for sustained sub-zero environments or the rapid changes associated with a winter thaw.

I. Identified Safety Threats

1. Heavy Snowfall and Ice Accumulation

Excessive snow and ice accumulation can impose significant external loads on above-ground pipeline facilities, including tank roofs, valves, regulators, and meter sets. Heavy snow can also block essential vents for pressure relief valves or gas regulators, potentially leading to overpressure conditions or the accumulation of hazardous vapors in confined spaces.

2. Rapid Winter Thaw and Flooding

As temperatures rise following heavy snowfall, the resulting "winter thaw" often leads to localized flooding and high-water velocity in rivers and streams. This presents several risks:

- **Scour and Erosion:** Rapidly moving water can expose buried pipelines or undermine the supports of above-ground facilities.
- **Buoyancy:** Flooding can exert upward pressure on large-diameter pipelines, potentially causing them to shift or float if the soil cover is saturated or eroded.

3. Frost Heave and Ground Movement

Sustained cold temperatures may lead to deep frost penetration. In areas currently experiencing unusually cold temperatures, the soil may be subject to frost heave—the upward swelling of soil during freezing conditions. Impacts of frost heave may include:

- **Unusual Stress/Strain:** When soil freezes and expands, it exerts significant longitudinal and lateral forces on the pipe.
- **Geohazard Impact:** Pipelines in these areas may be subject to unusual stress or strain due to ground movement. If the pipeline is constrained by rigid "stress-based" design or legacy repairs, these forces can lead to buckling, girth weld failure, or the propagation of existing cracks.

4. Ice Expansion

Ice expansion—specifically, frost heave and the freezing of trapped water inside components causing damage to valves, pipes, and fittings—is the primary cause of cold-weather failures reported to PHMSA. Instrumentation and control lines are also highly vulnerable during extreme temperature changes.

II. Advisory Bulletin (ADB-2026-03)

To: Owners and Operators of Gas and Hazardous Liquid Pipeline Facilities.

Subject: Pipeline Safety: Protecting Pipeline Integrity During Extreme Winter Weather, Rapid Thaw, and Geohazard Events

Advisory: Owners and operators are advised to consider implementing the following measures:

- **Accelerate Field Patrols:** Conduct aerial and ground patrols in areas with heavy snow and ice accumulation or emerging flood conditions to identify exposed pipe, leaning equipment, or blocked vents.
- **Monitor Unusual Cold Zones:** Operators in regions experiencing temperatures well below their typical design thresholds should consider evaluating the potential for frost heave. Use instrumentation where available to monitor for unexpected strain or displacement.
- **Review Geohazard Plans:** Update geohazard management plans to account for rapid thaw cycles. Ensure response teams are staged in areas where historical data suggests high vulnerability to washouts or flooding.
- **Inspect Above-Ground Facilities:** Clear snow and ice from essential safety equipment, including emergency shutdown valves, relief vents, and instrumentation. Verify that snow removal equipment (e.g., plows) has not accidentally struck or damaged pipeline components.
- **Winterize Above-Ground Facilities:** Drain water from valves, flanges, and piping prior to freezing conditions, keep control boxes dry and monitor for moisture, and ensure vulnerable components are upgraded to models designed for cold weather.
- **Communication with Emergency Responders:** Maintain clear lines of communication with local officials as weather conditions transition from freezing to thaw, ensuring a coordinated response to any localized energy crises.

III. Regulatory Oversight

Owners and operators are reminded that under 49 Code of Federal Regulations (CFR) 192.613 and 195.401, they must have a procedure for continuing surveillance of

their facilities to determine and take appropriate action concerning changes in conditions. Extreme weather events constitute a change in condition that may require a proactive safety response.

PHMSA notes that this advisory bulletin does not have the force and effect of law and is not meant to bind owners, operators, or the public in any way.

Issued in Washington, D.C., under authority delegated in 49 CFR 1.97.

Linda Daugherty,

Acting Associate Administrator for Pipeline Safety.

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