Deep Freeze: *Evaluating Subrogation Claims Arising from the January 2014 Freeze in the Midwest and Eastern United States*
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January 5-7, 2014, a wide swath of subzero temperatures impacted much of the United States, from Montana eastward to New York, and southward to parts of Oklahoma and northern Alabama. Several major cities recorded their lowest temperatures in more than 20 years. Monday, January 6, 2014, ranked as the 40th coldest day on record since 1900, with an average temperature of 17.9 degrees for the Lower 48. Minneapolis spent more than 60 consecutive hours below zero and Chicago spent nearly 40 hours below zero. January 7, 2014 set at least 49 records for daily low temperatures across the country. The low temperature of 4 degrees in Central Park in New York City was an all-time low for that date, and sections of Niagara Falls in western New York froze over. Even normally warm cities in the South were impacted. Atlanta recorded a low temperature of 6 degrees on January 7.

These sub-freezing temperatures resulted in extremely high demand for electric and gas utilities. On January 6, an estimated 2,200 customers of Columbia Gas in Ohio lost natural gas service, allegedly due to low pressures and operational issues of an interstate pipeline supplier. Unlike an interruption in electrical service, when an interruption of gas service occurs, the gas company cannot simply flip a switch to restore the gas service. Gas supply lines must be purged of air and repressurized. Once that occurs, the gas meters need to be brought on line to each and every customer. In addition, representatives of the local gas companies must go door to door to re-light gas pilots. This process can take days, depending on the scope of the gas service interruption.

Lack of gas means lack of heat. The combination of no heat and extended subfreezing temperatures spells disaster for plumbing lines and fire sprinkler pipes. Ice forms in the systems, rupturing copper and PVC piping, joints and fittings. When the temperature rises above freezing and the ice thaws, water losses are inevitable.

Causes of Freeze Damage
Water expands by approximately 9 percent when it freezes. Pressure from this expansion causes pipes, fittings and valves to break — normally at their weakest points. Inevitably, as the temperatures rise, the ice thaws and water begins to flow out of the damaged portion of the water system. It is worth noting that freezing generally occurs in piping where the water is stationary, and it is less likely to occur in pipes when water is flowing.

The combination of utility outages and subfreezing temperatures of an extended duration can result in widespread freeze-related property damage claims for an insurer. What follows is a brief explanation of some of the factors that cause pipes to freeze.

Lack of Heat: Quite often water pipes freeze simply because the structure was not kept at an adequate temperature. Cost conscious owners are known to turn down the heat during the winter in order to save a few dollars. Wet pipe sprinkler systems are installed with the prerequisite that heat in the building must be maintained above a certain temperature — normally 40°F. A notation to that effect can be seen on the blueprints for most wet pipe sprinkler systems.

Vacation homes and other non-occupied buildings are partially susceptible to lack-of-heat freeze damage as owners of those structures often turn the heat down as a means to save money. Similarly, when cold temperatures hit, owners of primary residences often close off rooms that are not used in order to save expense of heating those areas. When the temperature drops low enough, pipes in and around those areas can freeze.

Failures of heating systems are also to blame for many freeze related claims. Furnaces can and do fail and automatic thermostats can also suffer from malfunctions that prevent the proper operation of a heating system. As with the case in Ohio, lack of gas supply is also a potential cause of lack of heating and structures.

Construction Defects: Poor construction can also be to blame for freeze related claims. Not surprisingly, codes require buildings to be designed and built so that freezing of domestic water and sewer lines does not occur when cold weather hits. The codes do this by specifying placement of pipes or, for pipes that cannot be placed properly, by requiring an alternate means of keeping the pipes warm. For example, the Uniform Plumbing Code, § 313.6 provides:

No water, soil, or waste pipe shall be installed or permitted outside of a building or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing.

Pipes located too close to exterior walls or near roof vents have a much higher chance of freezing. Likewise, improperly sealed openings in attics or other air gaps in an otherwise safe location can eventually lead to a frozen pipe. Pipes that cannot be located away from cold areas can be fitted with insulation sleeves or wrapping which slows the heat transfer. As discussed below, it is important to know that insulation sleeves or wrapping do not heat pipes — they simply slow heat transfer. Thus, cold temperatures over an extended period of time will eventually transfer enough heat away from the pipes to cause them to freeze.

Sprinkler systems have their own sets of codes that address the issues of freeze damage. NFPA 13R is titled "Standard for the Installation of Sprinkler Systems in Residential Occupancies Up To and Including Four Stories in Height." § 5.4.1 of that standard states:

A wet pipe system shall be used where piping is installed in areas that can be maintained reliably above 40°F (4°C).

Accordingly, it is incumbent that building sprinkler systems be designed and installed to account for how the structure will be used. Due to the nature of some buildings, heat cannot be readily maintained above 40°F so a wet pipe system may not be the right choice. In this instance, dry systems should be used.

When designing dry sprinkler systems, it is important to include proper drain points. Residual water from confidence testing or even condensation can accumulate at low points in the piping thus creating the possibility for freeze damage to occur. Likewise, proper drain points that are not used defeat the purpose of the drain points entirely.

Improper Insulation: In considering whether insulation played a role in a freeze loss, one must first have a basic understanding of how insulation works. Insulation is designed to combat heat transfer or the movement of heat from one place to another. As explained in the second law of thermodynamics, absent an external factor, heat transfer always occurs from a higher temperature region to a cooler temperature one. Simply put, this means that heat will always move from a warmer area to a colder one.

On a summer day, heat from outside your building is constantly trying to transfer inside your home until the two temperatures level out. On a cold winter day, heat from inside your structure is constantly trying to transfer outside your property until the two temperatures level out. Similarly, when water inside plumbing is warmer than the air surrounding the pipe, heat transfer begins to occur in an attempt to level out the temperature differential. This is the inherent problem that leads to pipe freezes.

Figure 1

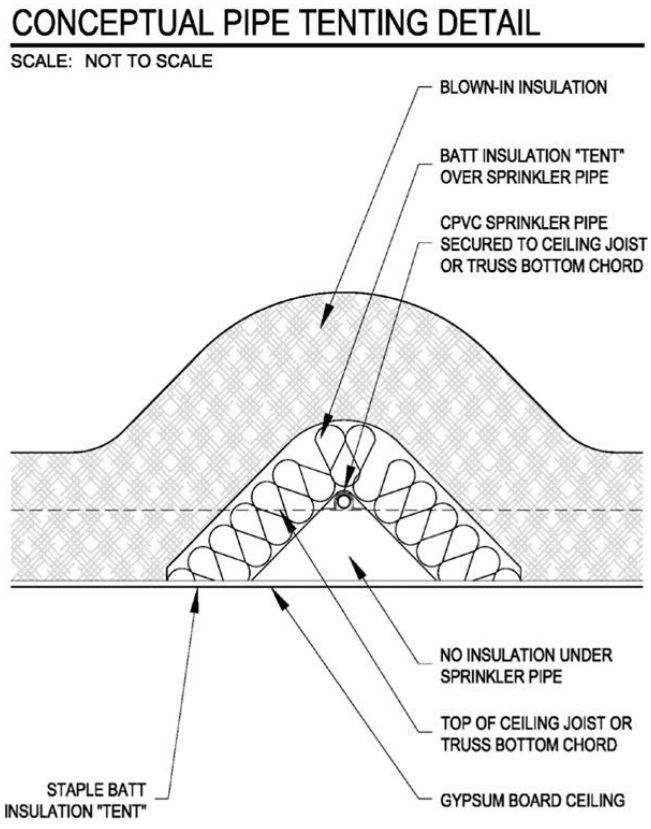

Diagram courtesy of CASE Forensics

Insulation works by slowing the process of heat transfer. Insulation does not act to produce either heat or cold. Thus, the same insulated cooler can act to keep food either colder or hotter for a longer period of time than food that is not in the cooler. So, while insulation will not actually heat water pipes, when properly used, it will keep them warm longer. That said, no matter how much insulation is around the pipes, a constant supply of heat is needed to maintain a steady temperature. If water pipes are installed in such a way that heat cannot reach them, the insulation will have no effect. Many well insulated sprinkler systems suffer freeze related damage for

this very reason.

To properly insulate sprinkler pipes, provisions must be made to allow heat to reach the pipes. Too often builders in an attempt to prevent freeze damage install insulation between the pipes and their heat source. In such instances, the insulation can act to prevent heat from ever reaching the pipes, thus laying the groundwork for a freeze related claim. Tenting the insulation over the top of sprinkler pipes allows heat from below to reach the pipes, while slowing heat transfer to the cold air above the pipes. In order to realize its benefits, however, it must be installed properly. The following diagram depicts the proper method of installing an insulation tent over a sprinkler pipe (**see figure 1**).

Subrogating Freeze Claims
Tough decisions must be made relative to the investigation of frozen pipe subrogation cases. The first item of business is normally stopping the leak and beginning remediation. In doing so, however, can the potential subrogation claim be prejudiced?

Spoliation: Take comfort that stopping the leak will not be spoliation of evidence, but rather viewed as mitigating the loss. Almost any action taken after a loss occurs can be "tenuously argued" as spoliation of evidence. However, common sense and developing guidelines recognize that investigating any loss requires movement of evidence and/or alteration of the scene. As one guidebook states, "in and of itself, such movement of evidence or alteration of the scene should not be considered spoliation of evidence."[1] Contractors are usually in a hurry to restore the system to ordinary operations, and they are not concerned with preserving the damaged evidence. The contractors need to be advised to preserve the evidence.

Identify and Preserve In order to preserve a potential pipe freeze subrogation claim, the first thing that needs to be done is to stop the flow of water. Thereafter, if possible, preserve the failed pipe, fitting, valve, etc., in their original condition. If possible, take pictures of the evidence in its original condition before emergency repairs are performed. Try to avoid altering or damaging the evidence during removal. Document how the evidence was removed and any observable damage. It may be necessary for evidence to be removed from the scene in order to protect and preserve its integrity. In addition, it may be necessary to partially disassemble the evidence to determine if that object contributed to the loss. Steps taken to protect the evidence and to identify potential responsible parties should not be considered spoliation of evidence.[2]

Consultant: Selection of an appropriate consultant is also critical to a water or freeze loss subrogation claim. Is a plumber necessary? A metallurgist? A mechanical engineer? A fire protection engineer or sprinkler expert? The type of water loss impacts expert selection, as does the loss amount. First, start with a basic investigation to identify the source of the water. Once the source is identified, selection of an appropriate consultant can be made. This decision, if time allows, should be made in consultation with your subrogation counsel. Be careful to advise your initial consultant not to disturb the failed device unless it is absolutely necessary to stop the water intrusion.

Notice: Prompt written notice to potentially responsible third parties is essential, especially with respect to utility companies and municipalities that often have strict notice requirements. Assuming emergency repairs must be performed before notice is provided,

make reasonable attempts to preserve the failed pipe, fittings, valves, etc., for future inspections. If the responsible parties cannot be identified until an off-site examination is conducted, so be it. The idea is to take reasonable steps to preserve the evidence, if possible, for future inspections by interested parties.

Document the Scene: You can never take too many photographs or video of a water loss. Water damage can be very difficult at times to document photographically. Thus, take extensive photographs (or ask the insured and/or his repair contractor to take photographs) of the area of origin before emergency repairs are performed. If possible, have the insured and/or the insured's repair contractor photograph the scene during emergency repairs. Take photographs that depict not only the origin of the loss, but also the extent and scope of damages.

Mold: Water losses also can lead to mold complaints. The scientifically supported health effects of mold continue to undergo study. The differences in human sensitivities to mold make quantifying any hazard difficult. An industrial hygienist or indoor air quality specialist may be needed to determine if the existing environment is acceptable for normal human occupancy. Please note that mold growth occurs when spores, sufficient moisture and nutrients exist. Further, temperature plays a vital role in mold growth. Drying the area is essential to combat mold growth. A contractor who has experience in properly drying and dehumidifying property should be consulted. Make sure the contractor has liability insurance. There is always a risk that the contractor will make the damage worse by spreading mold in the drying process.

By keeping the above-noted issues in mind when evaluating a water loss, you will maximize your opportunities in preserving your subrogation claim.

Subrogation Considerations

1. Consider retention of legal counsel to supervise the subrogation investigation. This will enable the adjuster to focus on immediate adjustment issues.

2. Consider immediate engagement of experts (may require hands-on trade person, such as a sprinkler installer, plumber, fire protection engineer, mechanical engineer, metallurgist, etc.)

3. Document the scene with photographs, the more the better, taken as soon after the occurrence as feasible.

4. To the extent possible, obtain and preserve the failed or broken portions of the system (e.g., broken pipes, cracked valves, fittings, etc.).

5. Determine the nature and type of heating system that may have failed or shut down and the reasons why.

6. Where tenants are involved, obtain a copy of the lease agreement to review for contractual legal obligations, exculpatory clauses, waivers of subrogation, etc.

7. Get names, dates, details and written documentation of recent work performed by a third-party contractor as well as regular, yearly maintenance performed by fire sprinkler contractors.

8. Obtain plans and blue prints of applicable system that failed (plumbing, sprinkler, HVAC, etc.)

9. Determine the date of the installation of the system that failed and the entity responsible for the location and amount of insulation or protection afforded the system. This is particularly important, because virtually all states have statutes of repose that could impact your subrogation claims.

10. Obtain meteorological information. Counsel or experts can obtain U.S. weather information from local reporting stations, including temperatures, wind velocity and wind direction.

11. Determine the names of the last occupant prior to the discovery of the loss and get statements from them as well as the building superintendant, plant engineer, tenants, maintenance personnel, etc., concentrating on:

    1. Temperatures in the building;

    2. Time periods unoccupied;

    3. Time of discovery of the loss and the last time someone was in the building prior to the loss;

    4. Details of any surveillance system, e.g., guards, sprinkler alarms, flow sensors, temperature monitors, etc.;

    5. Names and contact details of any outside supervising or monitoring services;

    6. Prior similar occurrences;

    7. If already repaired, the names of the repairing entities, and any written documentation; and

    8. Any admissions in post-loss meetings with outside parties.

12. While the adjuster assigned to the loss will be immediately concerned with establishing the scope of the loss, taking remedial measures to mitigate damages, and providing service to the policyholder, any and all of the tasks listed above can be accomplished by subrogation counsel.

Potential Claims Arising from the January 2014 Interruption in Gas Service
On January 6, 2014, North Central Ohio experienced a natural gas supply interruption that affected service to approximately 2,700 Ohio homes in parts of North Ridgeville, Eaton Township, and Elyria. The most likely source for the interruption was a supply shortage arising from the gas company's regional supply network. To properly restore the gas, personnel from the gas company were required to manually shut off the gas line at individual homes. Crews were then required to re-enter each home to restore gas service and ignite pilot lights. Logistically, this required the gas company to obtain assistance from neighboring counties and emergency services. Service was restored for approximately 80 percent of homeowners by January 8, and all homeowners had service by January 10. The gas company reported that numerous homeowners experienced damage from frozen pipes associated with the interruption in service.

Other Considerations
in evaluating potential subrogation claims against general contractors, subcontractors, architects and design engineers, consideration must also be given to the age of the subject property and the last time work was performed in the area where the pipe freeze occurred. Virtually all states have statutes of repose that bar suit filed beyond a certain amount of time after the substantial completion of construction.

Conclusion
The January 2014 freeze that hit the continental United States will undoubtedly result in hundreds if not thousands of property insurance claims. In Ohio, claims against Columbia Gas will likely be met with vigorous defenses based upon published tariffs. With respect to freeze claims unrelated to gas service interruptions, traditional subrogation evaluations must be conducted.

Footnotes
[1] NFPA Guide for Fire and Explosion Investigations (2001 Ed.) § 9.3.6.6.
[2] Id. at §9.3.6.6.

Steve Halbeisen is a member of Cozen O'Connor's Dallas office, where he is chair of the Subrogation & Recovery Department's South Central region. Steve has successfully litigated a wide variety of property damage disputes involving fires and explosions, product failures, petrochemical plant damages, flood damages, structural failures, material failures, heavy equipment losses, tower collapses, fine arts losses and construction defect losses, among others.

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Michael Melusky joined Cozen O'Connor in 2013 as an associate in the firm's Litigation Section. Michael graduated from Villanova University School of Law, *summa cum laude*, and Susquehanna University with a Bachelor of Arts in political science. Michael was honored with a Dean's Merit Scholarship and participated in *Villanova Law Review*.