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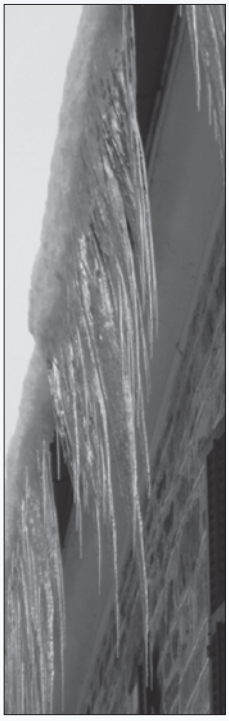
December 2010

Are You Ready for Winter?



It is time for plants in the northern hemisphere to get ready for cold weather! Winter weather can cause major problems for process plants. For example:

• Water pipes can freeze, possibly causing loss of critical cooling water flow or damaging fire-protection systems that use water.

• Condensate lines from steam traps can freeze, rendering the traps ineffective.

• Some process materials can freeze at winter temperatures, or solids may precipitate from process solutions, causing loss of flow and requiring maintenance operations to clear blocked pipes or equipment.

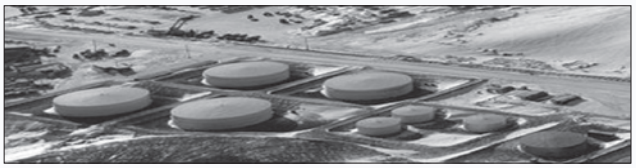
• Incoming raw materials may arrive frozen, or with solid precipitated from a solution in the bottom of the transport container (drum, truck, railroad car, ISO container). This may be a concern even if your plant is in a place that does not have cold winter temperatures – the shipment may have passed through cold weather on the way to your plant, froze, and not had enough time to thaw before arrival.

• Don't forget about the physical hazards of ice and snow – the possibility of slips and falls. And, look for places where large icicles or heavy accumulations of ice might form – for example, on structures near steam vents, near cooling towers, or where water-spray fire-protection systems have been activated.

• Remember that water expands when it freezes. The pressure from the ice can be enough to break pipes and rupture or damage process equipment.

• You can get short periods of cold weather even in areas that normally have mild winters. Be prepared for this possibility.

• Read the December 2001 and October 2008 issues of the Beacon for some examples of winter weather process safety problems ("read only" copies available at www.sache.org; the October 2008 issue is also available at www.aiche.org/cep).



What Can You Do?

• Have a "winterization" checklist to ensure that your plant is ready for cold weather. It should include checking that: steam or electric tracing of pipes and equipment is turned on and working; insulation is in good condition; heating systems in warehouses are working; safety showers and eye-wash stations are prepared for cold weather; engine-driven equipment, such as fire water pumps, are protected with antifreeze; and other things appropriate to your plant.

• Review procedures for thawing frozen pipes and equipment and incoming raw materials that might freeze in cold weather, and make sure you understand them. Think about this even if you are in a warm climate – do you receive materials that could freeze on the way to your plant?

• Review nonroutine activities and identify possible impacts of cold weather.

• Be ready for thawing temperatures, when leaks may appear and ice accumulations on piping and structures may fall to the ground.

Be prepared for cold weather!

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