

Are you ready for winter?

December 2010



It is time to be are ready for cold weather! Winter weather can cause major problems for process plants. Some examples:

- Water pipes can freeze, possibly causing loss of critical cooling water flow or damaging fire protection systems using water.
- Condensate lines from steam traps can freeze causing the traps to be 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). Note that this may be a concern even if your plant is in a place which does not have cold winter temperatures – the shipment may have passed through cold weather on the way to your plant, frozen, 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 which 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).



What can you do?

- Have a “winterization” checklist to ensure that your plant is ready for cold weather. It should include things such as 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, anti-freeze protection of engine driven equipment such as fire water pumps, and other things appropriate to your plant.
- Review procedures for thawing frozen pipes and equipment, and incoming raw materials which 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 which could freeze on the way to your plant?
- Review non-routine activities and jobs for cold weather impact.
- Be ready for thawing temperatures, when leaks may appear, or ice accumulations on piping and structures may fall to the ground.

Be prepared for cold weather!