

Trees, Trees, Confusing Trees

December 2003



Above are three pictures of “Christmas trees.” The center one is what we expect to see this time of year. In the chemical industry we see the other (piping) “Christmas trees” year-round at work. These “Christmas trees” are actually concentrated concoctions of piping, valves, instruments tubing, gages and fittings. In many cases, these systems were never really “designed,” they just evolved—one valve, one gage, and one instrument at a time. When the changes were originally made in the field, they seemed to make sense; but as time went on, they grew in to a bigger and bigger mess—a dangerous mess!

So, What happened? In the case on the left, an operator added an incorrect gas to a still by mistakenly opening the wrong valve in the Christmas Tree. Fortunately, this mistake only killed the reaction and no damage was done. But just think what might have happened if an other incompatible chemical had been added .



What You Can Do

Recognize a piping “Christmas Tree” for what it really is—a potential trap waiting for you to make a valving alignment mistake.

Don’t accept just “making do” with what’s there. Make sure that coworkers know the correct operating procedures and keep communications flowing.

Label—**Label—Label!** Label all valves and pipes so that their function can be determined easily and quickly.

What Allowed this to Happen?

The real problem is that the Management of Change (MOC) process did not work very well. Operator usability was not considered and the PHA did not recognize the human factors issue--visual confusion added by the changes.

Simply Enjoy Christmas Trees at home, but Analyze them at work !
The CCPS Process Safety Beacon wishes you a Happy Holiday season!