



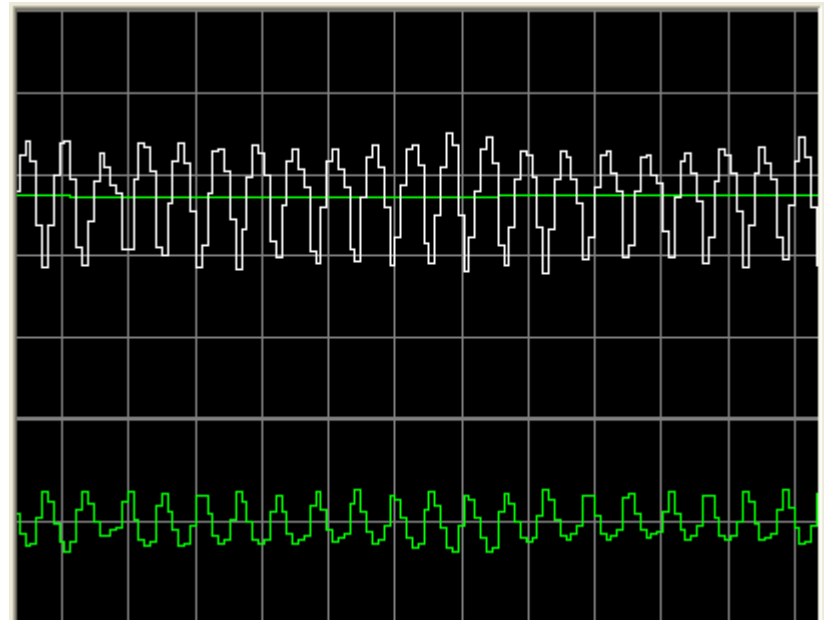
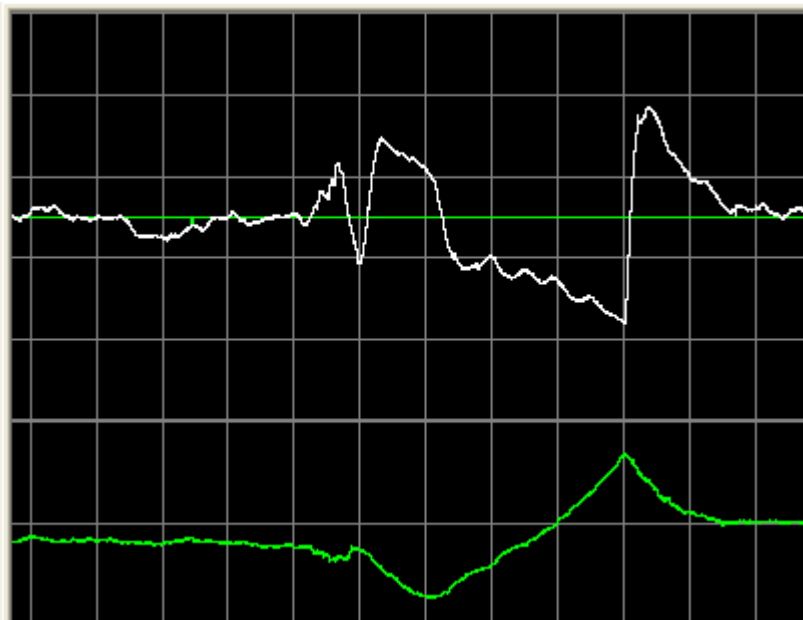
Modern Techniques to Address Process Disturbances

Presented by
Steven Obermann

ExpertTune®

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- Something that upsets the steady state behavior of an operating process.
- Something that causes a cycle in an otherwise constant system.



- Self Induced: Controls in manual, Poor tuning
- Equipment Malfunction: Sticking valves
- Process Conditions: Liquid flashing
- Environmental: Day&Night, Weather

Rate changes, feed or product switches

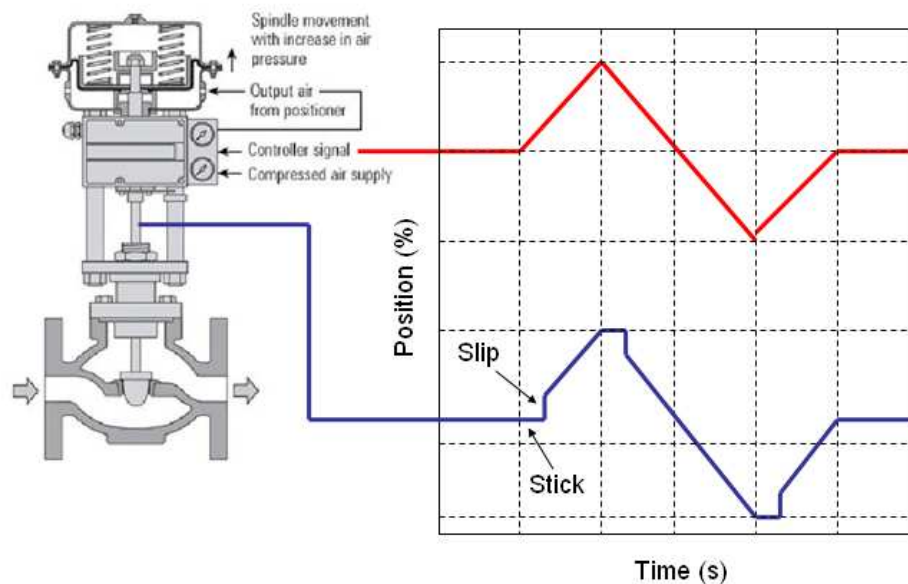
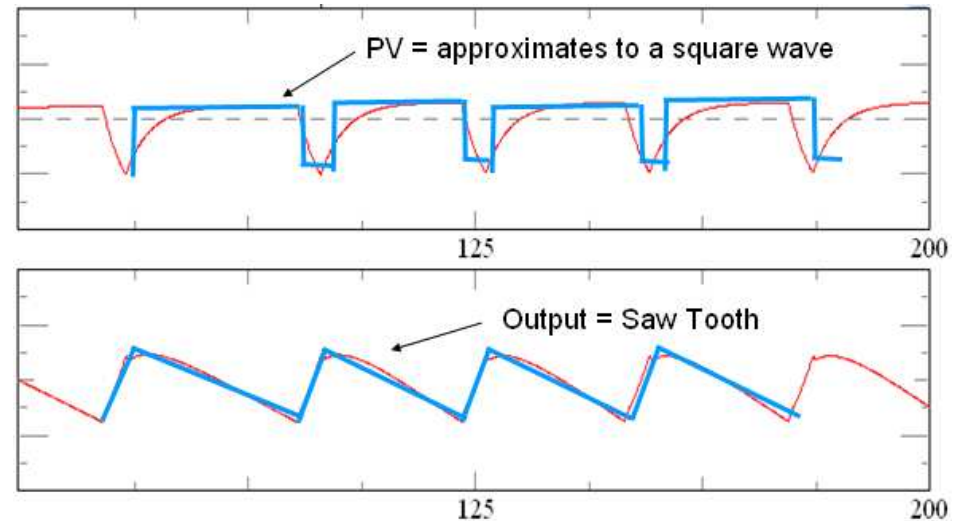
Typically these disturbances require some change in operating conditions. That transition should not cause oscillatory behavior.

Manual Operation

Open control loops, making valve position moves based on experience. Often these are not the most sensitive or accurate settings. Being the source of disturbances for other loops as well.

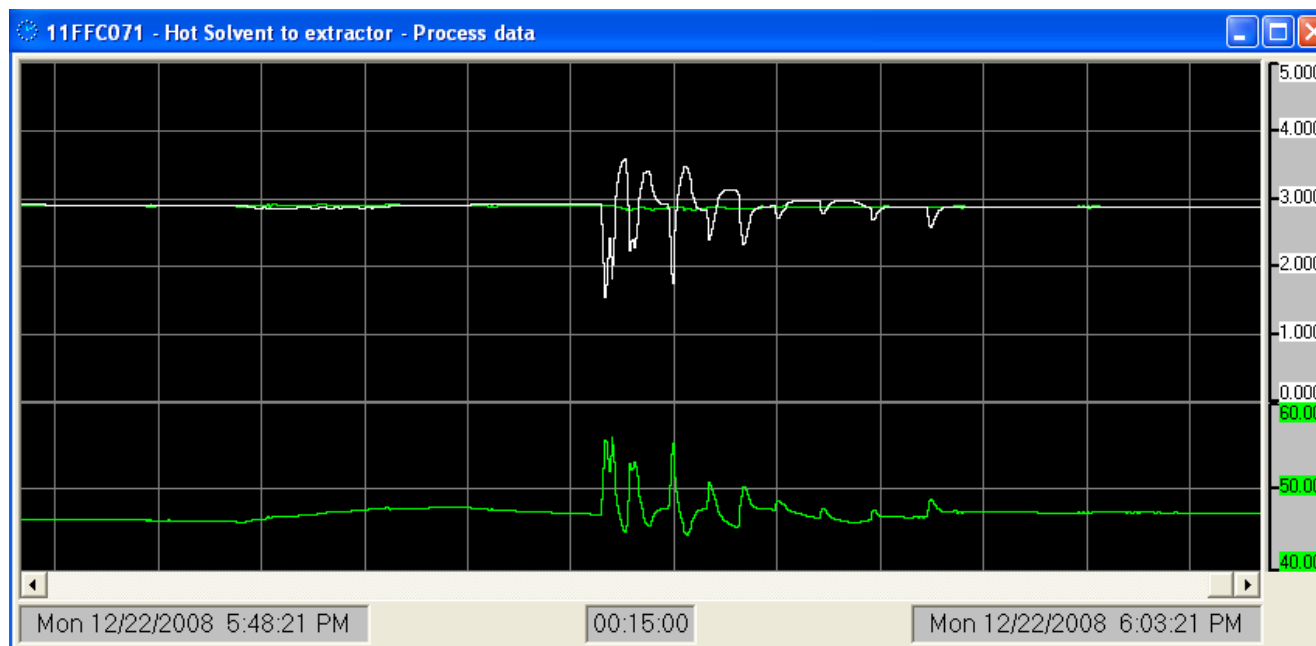
Valve Hardware

Valve sticking, extra energy needed to move the valve due to friction.
“Stiction”



Liquid flashing

Due to changing process conditions (composition),
or disturbances in pressure loops.

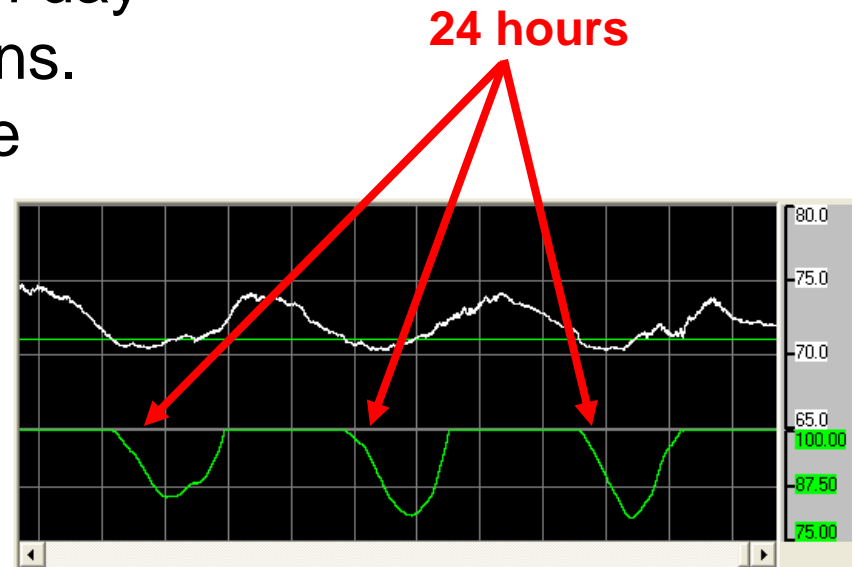


•Day to Night

Cycles can be established with day to night temperature fluctuations. Controls need to prevent these swings from affecting critical process parameters.

•Weather

•Fan condensers receive considerable disruption due to rain showers. Other equipment with high exposure to the elements can be affected similarly.



- Find out if you have significant disturbances.
- Locate the root cause.
- Make an improvement.
- Measure the results.

- **Self Induced:** Tune control loops, close control loops, re-configure/design controls
- **Equipment Malfunction:** Repair sticking valves, replace failing transmitters
- **Process Conditions:** re-locate measurements, change the measurement type
- **Environmental:** Tuning & configuration



About ExperTune

- Process industry leader for more than 20 years
- 1,000's of installations
- Award winning software
- Performance Supervision & Loop Optimization
- World-wide sales & support network
- Headquartered in Hartland, Wisconsin USA



Q & A

