Accufacts Inc.
4/27/22 Valve Presentation

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To Committee on Criteria for Installing Automatic and Remote-Controlled Shutoff Valves on Existing Gas and Hazardous Liquid Transmission Pipelines

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Some Comments Based on Questions Raised by Committee

My comments derived from information readily in the public domain

Focus on Existing Pipelines in HCAs

- Liquid Transmission - ~ 95,000 miles
- Gas Transmission – ~21,000 miles

Much misinformation about valve effectiveness being tossed about

- Welcome to the misinformation age coming at you 24/7!

Accufacts Guided by Process Safety Management (PSM) Approach

PSM developed for chemical and refinery processes in 1980s

- OSHA regs for process, specifically exempts pipelines
  - OSHA evaluation triggered by potential tonnage release

PSM approach worked well on restart of Olympic pipeline in Bellingham, WA following rupture tragedy of June 10, 1999

- OPL (new operator BP) installed special retrofitted ASVs/RCVs, and some EFRD's, as a condition of negotiated pipeline restart & city franchise renewal
  - EFRD's usually mean check valves
- Became a template for TIMP and DIMP federal regulations on other pipelines
  - After two decades observing very mixed success in TIMP regs

Hazardous Hydrocarbon Transmission Pipelines Unique

Such pipeline infrastructure can place considerable hydrocarbon tonnage into sensitive areas

- Driven by pipe diameter/type of hydrocarbon/terrain/failure type

Some pipeline operators misrepresenting valve closure time effectiveness

QRA approach in U.S. not defined nor codified in US pipeline safety regulations for many good reasons

Transmission Mainline Valve Effectiveness

PHMSA database should demonstrate prudent valve placement and ACV/RCVs/EFRD's will save lives from pipeline ruptures

- Ways to design to prevent inadvertent closure
- Always provide for manual override of ACV/RCVs
- No big deal to properly retrofit to many existing pipelines
- Must be designed to prevent surge overpressure for liquid pipelines
  - SCADA can play a role, but is not a "failsafe" for ACV/RCV operation

Valves only really effective in rupture events

- Pipe rupture not defined in pipeline regulations
  - Rupture release opening affects the pipe system pressure curve
- Seeing more girth weld and HAZs "full bore" failures
  - Usually caused by massive "breakaway" landslide/water movement abnormal loading on usually not properly assessed welds

Critical Conclusions

Many in industry overstating manual valve closure effectiveness

Control room operators play a critical role in pipeline rupture emergencies

- Pipeline emergency procedures must require control room operator to verify valve closures
- Some misguided pipeline emergency procedures delay or reopen critical valves closed under misunderstanding of reducing rupture release volume

Experienced First Responders will never operate pipeline valves

- Federal minimum pipeline safety regulations require “maintain liaison” for good reasons

In Summary

There is a way to write effective regulation concerning valving in HCAS

- Should meet simple minimum prescriptive regulations
- Be clear and enforceable

Recognize not all pipelines need ASV/RCV/EFRD's in HCAs

- Focus on pipeline diameter and material being moved
- Terrain/population
- Special priority/consideration/requirements for HVL and CO_2 pipelines

Science should be able to permit quick regulatory agreement

- Industry standard approaches not appropriate for such critical safety regulation
- Politics/lobbying can get in the way of timely implementation

Questions?