Control Room Management for Local Gas Distribution Companies

Presented to:
The Washington State Citizens Committee on Pipeline Safety

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Objectives

• Overview of Avista’s gas distribution system

• Overview of CRM rule and definitions

• Overview of Avista’s control room
Avista’s Gas Service

- Combined Gas & Electric Distribution Company
- 320,000 gas customers
- 12,500 miles of gas pipeline
  - 8,500 miles PE aged 1968-current
  - 4,000 miles steel, aged 1931-current
- No cast iron
- 112 miles of transmission
  - 73 miles in WA
  - 39 miles in OR
  - 15 miles acquired in 2013 in OR
Gas Transmission Route - from northwest Spokane in Spokane County to Kettle Falls in Stevens County
Control Room Management (CRM) Rule

Minimum Pipeline Safety Regulations 49CFR 192.631

PURPOSE: To address human factors and other aspects of control room management for pipelines where controllers use supervisory control and data acquisition (SCADA) systems.

2 Documents comprise Avista’s CRM program
- CRM Manual
- Alarm Management Plan
Definitions

- **Controller** is a qualified individual who remotely monitors and controls the safety-related operations of a pipeline facility via a SCADA system from a control room and who has operational authority and accountability for the remote operational functions of the pipeline facility.

- **Control Room** is an operations center staffed by personnel charged with the responsibility for remotely monitoring and controlling a pipeline facility.

- **Alarm** is an audible or visible indicator to a Controller that equipment or processes are outside operator-defined safety-related parameters.

- **Alert** is a notification that does not require immediate action and is not safety related.
Avista CRM Program

CRM Manual

• Roles and Responsibilities
  • Monitor, recognize, investigate, communicate, initiate, document

• Controller information
  • Point-to-point verification, shift changes

• Fatigue Management
  • <14 hours shifts, 8 hours of sleep, max 63 hour schedule

• Change Management

• Operating Experience

• Training
Avista CRM Program

Avista Alarm Management Plan

- Alarms vs. alerts
- 801 alarm points at 175 locations
  - Gate stations, large usage customers, regulator stations
  - 104 in WA state
  - Monitor only; No remote control!
Avista CRM Program

- Examples of Alarm Types
  - High & Low Pressures
  - High & Low Temperatures
  - Odorizer
  - Loss of Communication

- Examples of Alert Types
  - Battery
  - Tamper Detect
  - High Flow
  - Low Flow

- In addition to evoking emergency response, alarm data also used to validate source data in planning modeling
Facilities Color By: Pressure (psig)
- 0.00 – 15.00
- 15.00 – 30.00
- 30.00 – 45.00
- 45.00 – 60.00
- > 60.00

10 Degrees Average Daily Temperature
2011 Gas Desk Work Volume

• Nearly 18,000 gas events per year
  * 10,420 trouble calls
  * 750 alarms
  * 770 alerts
  * 5,845 electric and gas service calls after hours

• CRM rule in full effect:
  Every shift change, alarm response, training, lessons learned on federally reportable events, and more must be documented
Avista’s Control Room

- Combined gas and electric distribution dispatch center
- Dispatchers rotate as Gas Controller
- Gas work volume generally not storm sensitive like electric work volume
- Gas desk does after-hours electric service work
- First audit expected in 2013
Questions?