Valve Automation Program

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a Better California

Valve Automation Program

Agenda:

- Scoping (Prioritization)
- Incident Mitigation Management
- Current Gas Transmission Status
- Q & A

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Scoping:

- **Collect Data** – Operating Maps/Diagrams, Working Assessment Plan (WAP), Operating and Maintenance Instruction (OM&I), GT-GIS, and As-Built engineering drawings.
- **Review Data** – Determine existing/proposed isolation zones within the GT pipeline system. Understanding the operations unique to each system is necessary.
- **Integrate Data** – Select data (existing remote isolation points, Mile Posts, Class Location, High Consequence Area, Impacted Occupancy Count, Outside Diameter, and Maximum Allowable Operating Pressure) is then populated within the Incident Mitigation Management plan to determine pipeline isolation zones based on the existing pipeline system and estimated gas evacuation times.
- **Identify Priority and Risk Ranking** - Potential Valve Automation program scope is prioritized utilizing the Pipeline Isolation Decision Tree. The program can be further prioritized by utilizing the total Impacted Occupancy Count for the system that the isolation zone is protecting.

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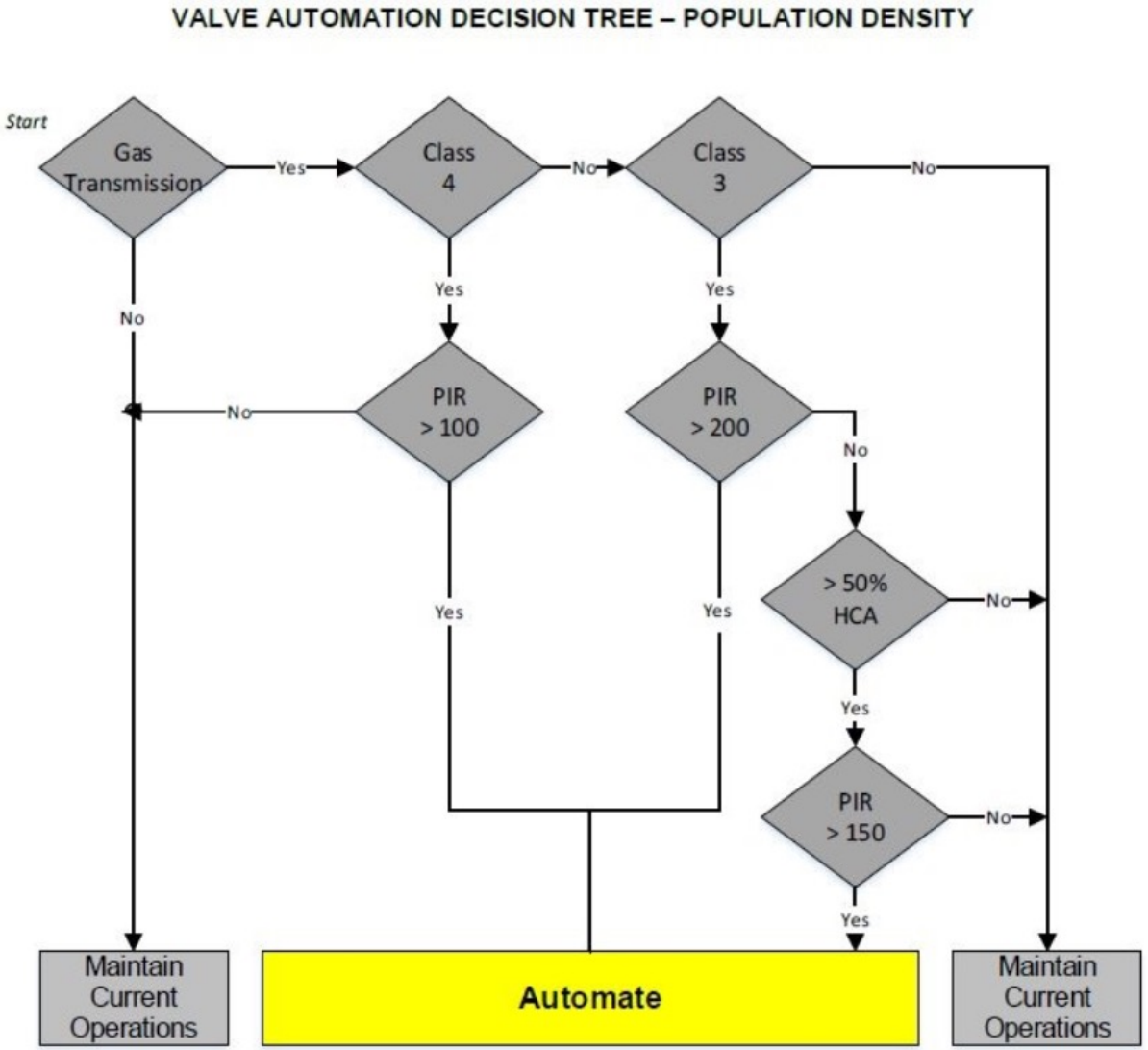
Scoping – PSEP Decision Tree:

Looked at spacing remote isolation points ~8 miles apart.

- **Stemming from § 192.179 (a) (2).**



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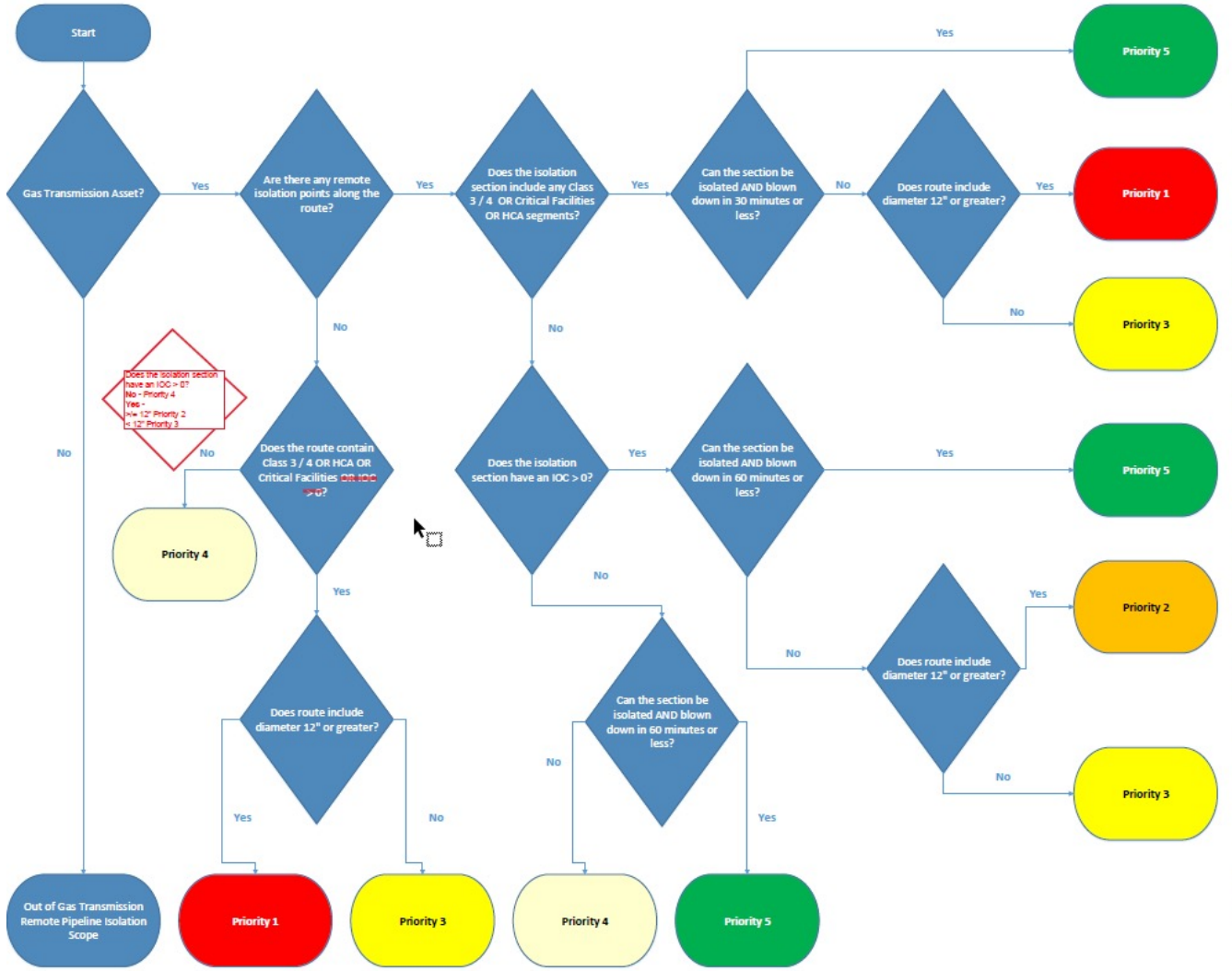
Scoping – Latest Decision Tree:

Utilizes estimated gas evacuation times to determine pipeline isolation zones and remote isolation points.



Priority 1: 12" or Greater in HCAs / Class 3/4 / Area with Critical Facilities

Short Term – A: Develop emergency action plan to manually isolate section within 60 minutes, and document plan within the IMM. B: Determine location(s) of future remote isolation points, and add projects to Valve Automation program plan.

Long Term – A: Install remote isolation capabilities at locations along the route that will result in a 30 minute isolation timeframe or less. B: Document remote isolation emergency action plan within the IMM.

Priority 2: 12" or Greater in Class 1/2 / IOC > 0

Short Term – A: Develop emergency action plan to manually isolate section within 60 minutes, and document plan within the IMM. B: Determine location(s) of future remote isolation points, and add projects to Valve Automation program plan.

Long Term – A: Install remote isolation capabilities at locations along the route that will result in a 60 minute isolation timeframe or less. B: Document remote isolation emergency action plan within the IMM.

Priority 3: Less Than 12"

Short Term – A: Develop emergency action plan to manually isolate section within 60 minutes, and document plan within the IMM. B: Determine location(s) of future remote isolation points, and add projects to Valve Automation program plan.

Long Term – A: Install remote isolation capabilities at locations along the route that will result in a 60 minute isolation timeframe or less in populated areas. B: Document remote isolation emergency action plan within the IMM.

Priority 4: IOC = 0

A: Develop emergency action plan to manually isolate section within 60 minutes, and document plan within the IMM.

Priority 5: Meets Objectives

A: Develop emergency action plan to isolate section within 60 minutes (or 30 minutes in HCAs or Class 3/4), and document plan within the IMM.

Assumptions:
1. Blowdown times calculated using Gas Standard A-31. (Inputs: Length of section, diameter, wall thickness, MAOP)
2. Assuming 100% rupture.

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Scoping – Valve Automation Prioritization:

- **Priority 1**: Pipeline being protected within isolation zone contains piping with outside diameter greater than or equal to 12.750” AND the isolation zone contains piping that is classified as Class 4, Class 3, or HCA. Targets gas evacuation times of 30 minutes or less.
- **Priority 2**: Pipeline being protected within isolation zone contains piping with outside diameter greater than or equal to 12.750” AND the isolation zone contains piping that has an Impacted Occupancy Count greater than 0. Targets gas evacuation times of 60 minutes or less.
- **Priority 3**: Pipeline being protected within isolation zone contains only piping with outside diameter less than 12.750” AND the isolation zone contains piping that has an Impacted Occupancy Count greater than 0. Targets gas evacuation times of 60 minutes or less.
- **Priority 4**: Pipeline being protected within isolation zone has an Impacted Occupancy Count equal to 0. Targets gas evacuation times of 60 minutes or less.

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Scoping – Response Time vs Gas Evacuation Time:

- **Response Time – Duration from notification of the incident to valves closed (gas source isolation).**
  - **Industry focus**

- **Gas Evacuation Time – Duration from valves closed to time where pipeline pressure has reached equilibrium.**
  - **Utilized to further focus the Valve Automation Program**

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Incident Mitigation Management:

In response to PHMSA's questions in the ANPRM regarding valve spacing and remotely or automatically controlled valves, INGAA developed and committed to implementing Incident Mitigation Management (IMM) plans, including the following specific commitments:

- ***INGAA members will have shortened response and isolation time to ≤1 hour for pipeline segments with diameters >12" in populated areas***
  - ***Applies to segments in HCAs, Class 3, and Class 4 locations***
- ***For segments with diameters ≤12", INGAA members will conduct a risk analysis to determine response time***
  - ***Applies to segments in HCAs, Class 3, and Class 4 locations***

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Incident Mitigation Management:

A plan for isolating gas transmission system during an incident

- **Includes definition of transmission valve isolation zones for use during an incident**
- **Includes description of the type of operation for each valve in the zone (e.g. manual, local actuation, remote control, automatic shutdown)**
- **Provides future guidance for our Valve Automation Program**

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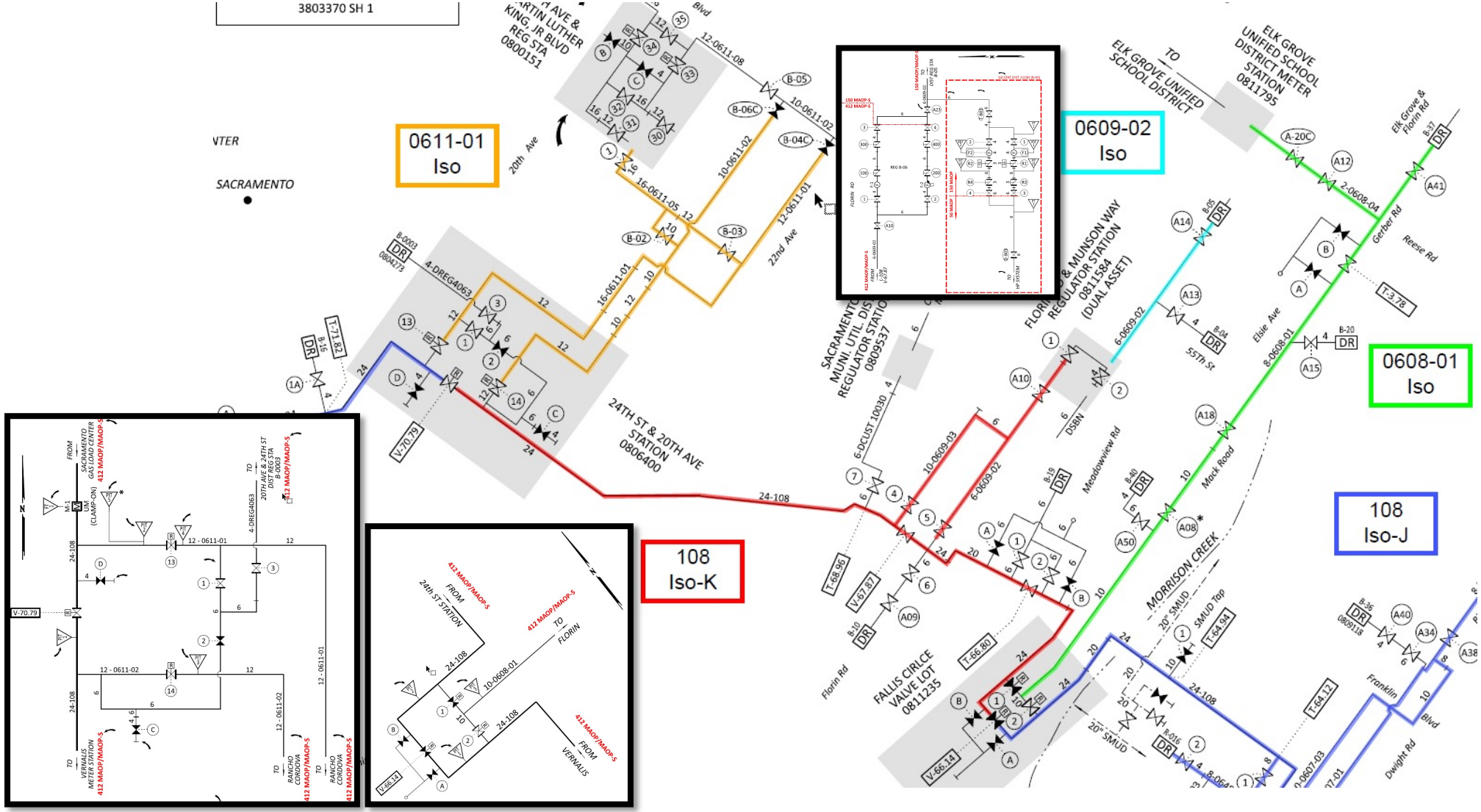
Example: Isolation Zone – 108 Iso-K



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Example: Isolation Zone – 108 Iso-K (cont.)

- **Isolation Zone is identified, and outlines operations required to eliminate sources of gas.**

Isolation Zone ID	Remote or Manu	Route	MP1	MP2	Begin Station	End Station
108 Iso-K	R	108	66.14	70.79	**Fallis Circle Valve Lot 0811235** Check Close V-66.14 & V-1	**24th St & 20th Ave Station 0806400** Remotely Close V-70.79 & V-14
108 Iso-K	R	0609-02	0.00	0.67	From L-108 MP 67.87	Ends in Pilot Regulation
108 Iso-K	R	0609-03	0.00	0.43	From L-108 MP 67.87	To 0609-02

- **High level risk information and estimated gas evacuation times, required for the decision tree, are recorded.**

Contains HCA	Contains Class 3/4	IOC > 0	Distance (miles)	OD (in)	WT (in)	MAOP-S (psig)	OD of Rupture Locatio	WT of Rupture Locatio	Estimated Blowdown Time (min) per A-31
Y	Y	Y	4.65	24	0.312	412	24	0.312	**3.15**
Y	Y	Y	0.6679			412	0	0	**#DIV/0!**
Y	Y	Y	0.43			412	0	0	**#DIV/0!**

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Current Status:

	PSEP	2015 GTS Rate Case		2019 GTS Rate Case				TOTAL
		2015-2017	2018	2019	2020	2021	2022	
Valve Automation (units)	217	74	46	23	21	18	18*	**399**

*Forecasted units (Valves Automated) for 2022

Currently, 58% of all transmission pipe mileage meets the 1-hour isolation

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Questions?