



July 20 - 23, 2026
SAN ANTONIO, TEXAS

Kennel the Robot Dogs and Turn off the AI Models

Old School Ways to Fix an Inspection Budget



American
Petroleum
Institute

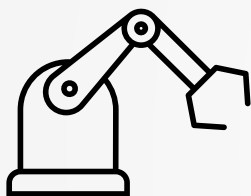
Speaker Bio

Jeff Goldstein, P.E.

- Principal Engineer, Bighorn Integrity
- Denver, CO
- 15 years of O&G industry experience
 - Mechanical Integrity Program and Inspection Management
 - Inspection Program Optimization
 - Corrosion Engineering



Agenda



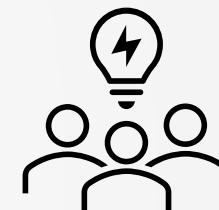
Shiny Object
Syndrome



The Data
Problem



The Resource
Problem



Solutions

Meet Dan



Shiny Object Syndrome

Current Industry Trends:

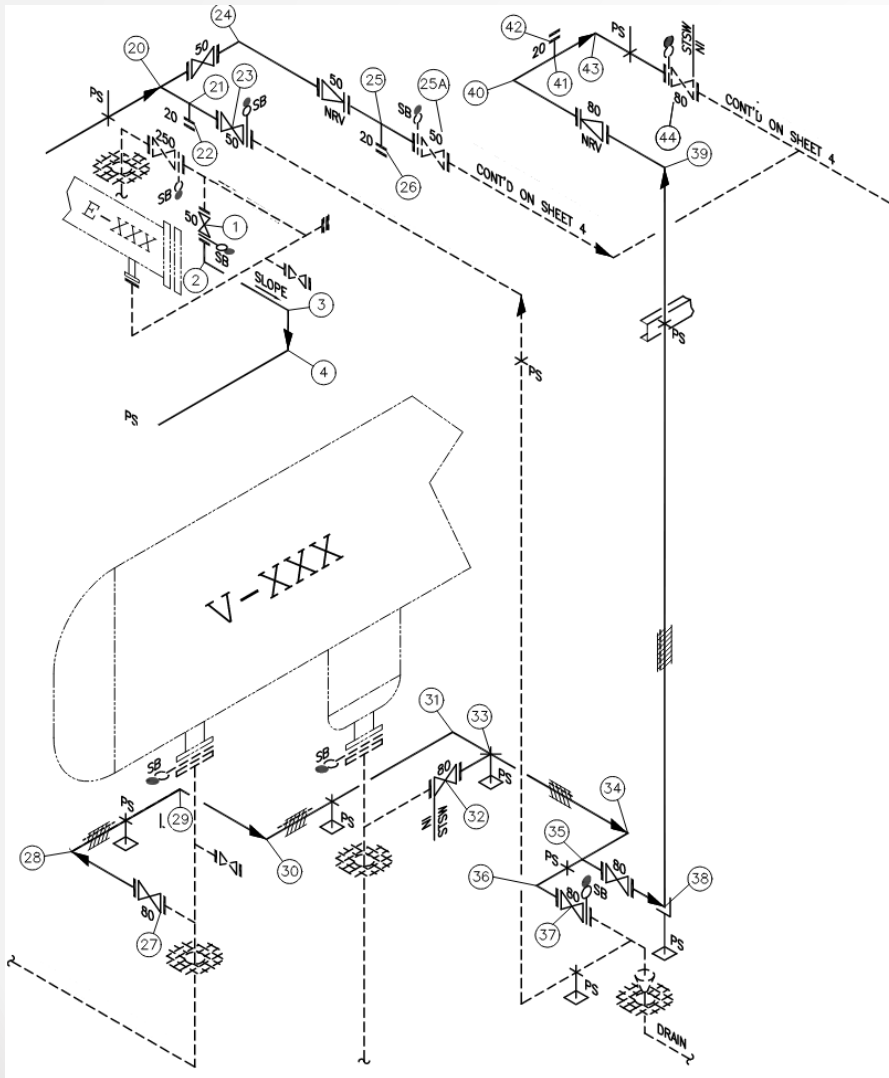
- Advanced Robotics & Drones
- Predictive Analytics / AI
- Advanced RBI Models



Reality:

- These tools are valuable multipliers.
- BUT, Multiplying a flawed foundation only scales inefficiency.

Refocus on the Real Cost Drivers



1. Data Mismanagement

- 'Garbage In, Garbage Out' inputs.

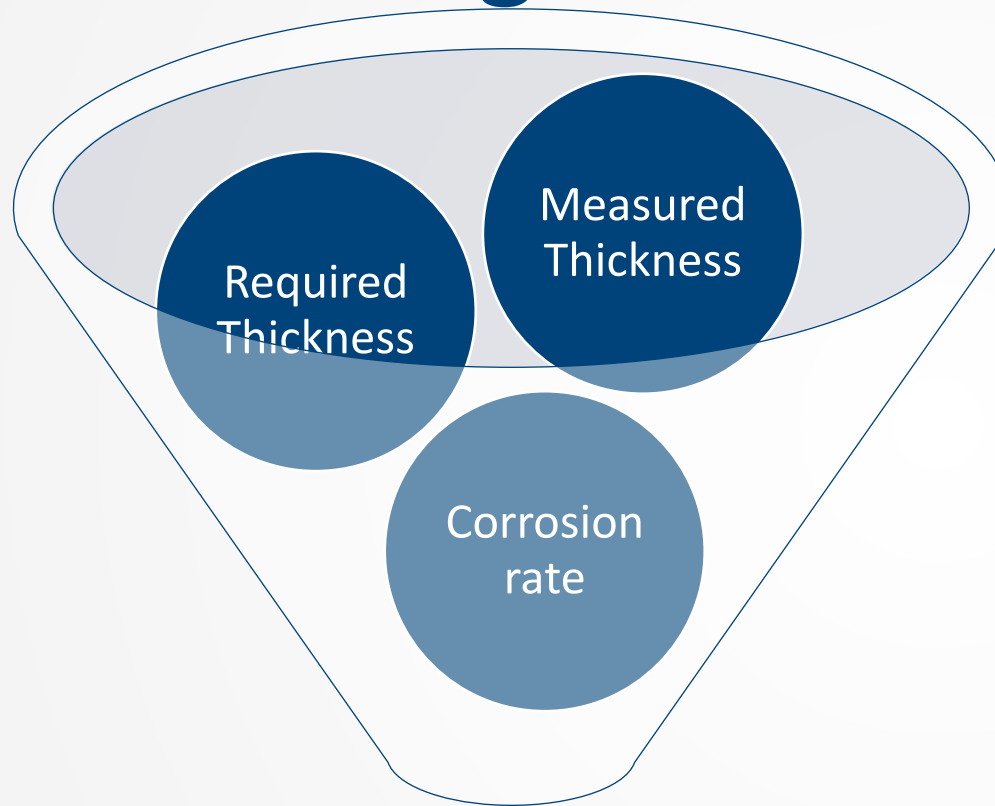
Result: Unnecessary inspections and false risk profiles.

2. Resource Mismanagement

- Inefficient Execution of Field Work

Result: High cost for inefficient data collection.

Data Mismanagement



Consequence:

- Inspections timed too early or too late.
- Artificial inflation of facility risk.

$$\frac{1}{2} \times \frac{t_{actual} - t_{required}}{corrosion\ rate}$$

Data Mismanagement



Measured
Thickness

- × NDE Precision
- × Data recording
- × Data entry

Required
Thickness

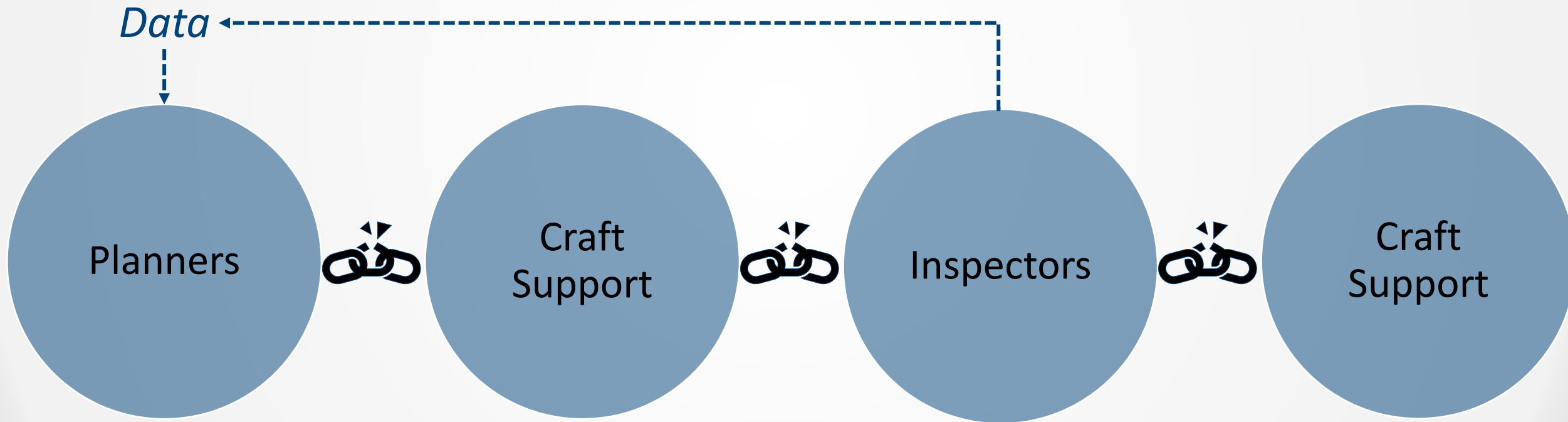
- × Alert Values
- × IDMS Config.
- × T-min inputs

Corrosion
rate

- × User overrides
- × Default Values
- × “Growth”

Resource Mismanagement

The Disconnect:



Symtoms of Resource Mismanagement

Hmmm... the CCD tells me to inspect the top of the pipe

Scaffolding

- Required but not present
- Built long before NDE is done
- Torn down before job is done
- Rope access and drones not used

Insulation

- Not removed before inspection
- Not reinstalled after inspection
- Scaffolding used for minor repairs
- UT ports missing

NDE

- Only 1-2 NDE readings per permit
- Paper forms + manual data entry
- No knowledge of previous readings
- Unknown access requirements



Solution – Part 1

Fix the Data!

- Systematically identify and correct existing data:
 - Bad Data
 - End of Life Concerns
 - Undocumented replacements
- Validate incoming data:
 - Data loggers
 - QA/QC process
 - AI/Machine learning



Solution – Part 2

Improve resource coordination!

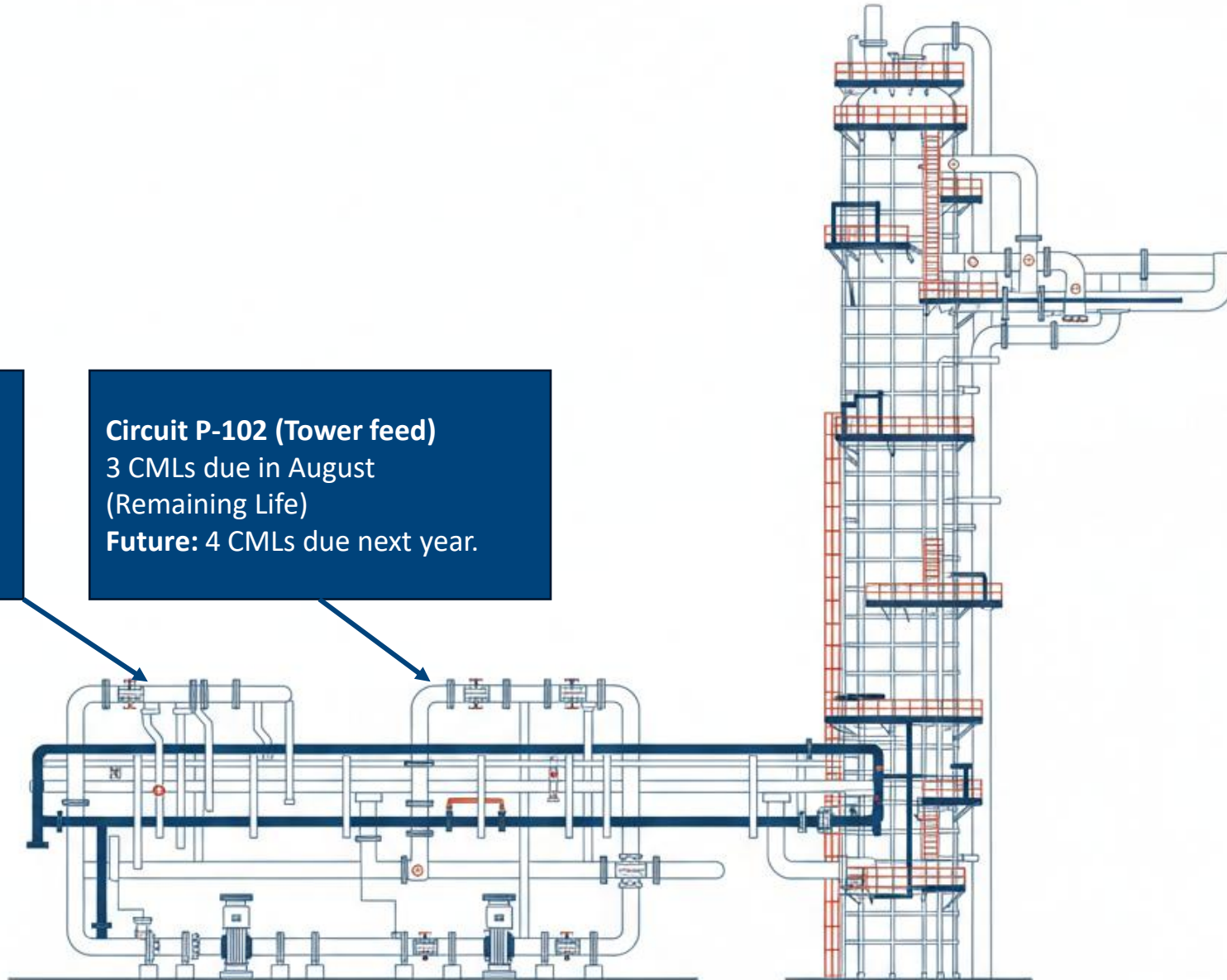
- Optimize your inspection plans
 - Are all CMLs adding value?
 - Are valuable CMLs being effectively executed by NDE crews?
 - Optimize for access/location, not due date
 - Address break-ins, permit time, and other efficiency losses
- Treat Inspection as a construction activity, just one part of a critical path.
 - “Just in time” insulation and scaffolding



Case Study

Circuit P-101 (Tower feed)
2 CMLs due in February
(Remaining Life)
Future: 6 CMLs due next year.

Circuit P-102 (Tower feed)
3 CMLs due in August
(Remaining Life)
Future: 4 CMLs due next year.



Case Study

Circuit P-101 (Tower feed)

2 CMLs due in February
(Remaining Life)

Future: 6 CMLs due next year.

Circuit P-102 (Tower feed)

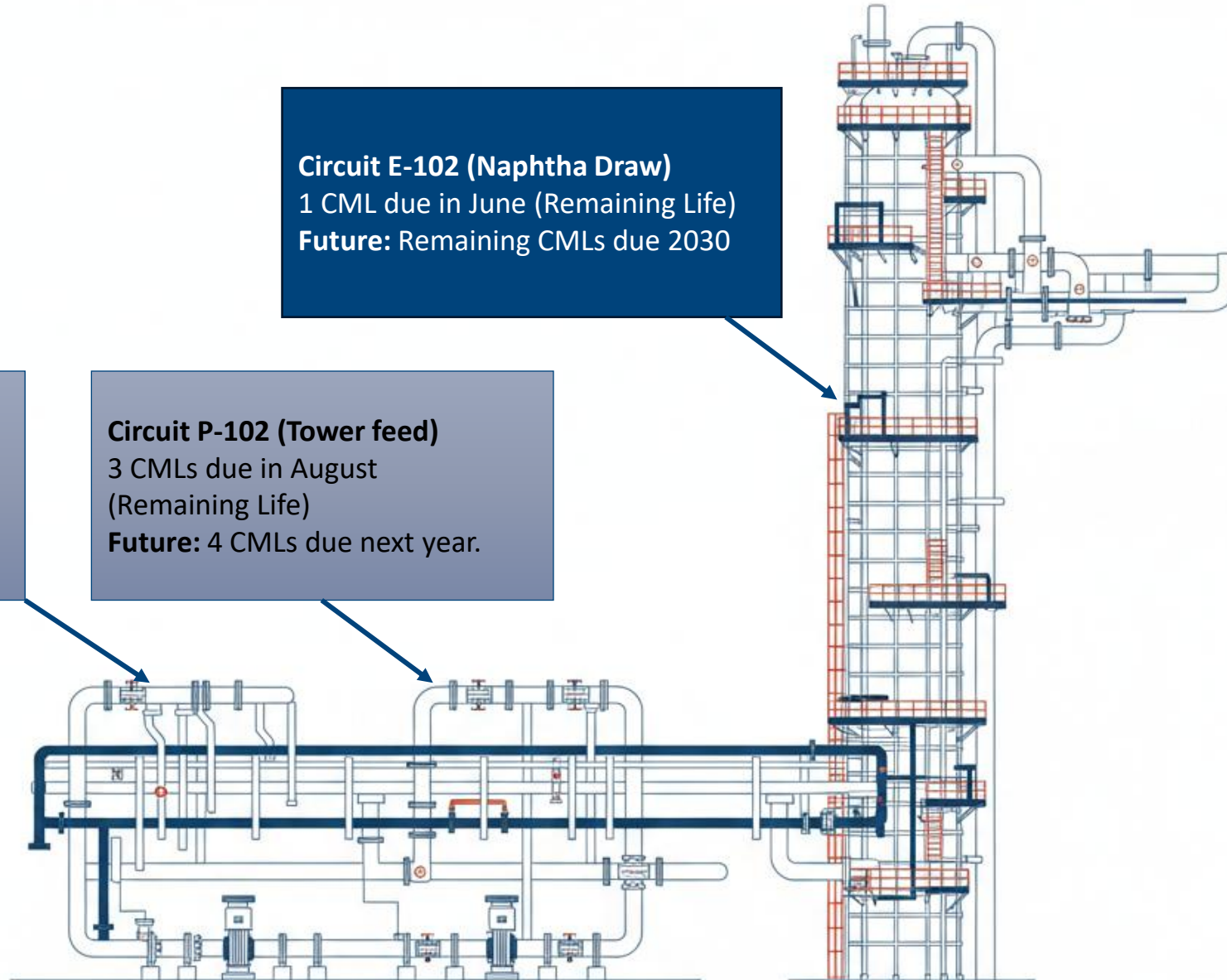
3 CMLs due in August
(Remaining Life)

Future: 4 CMLs due next year.

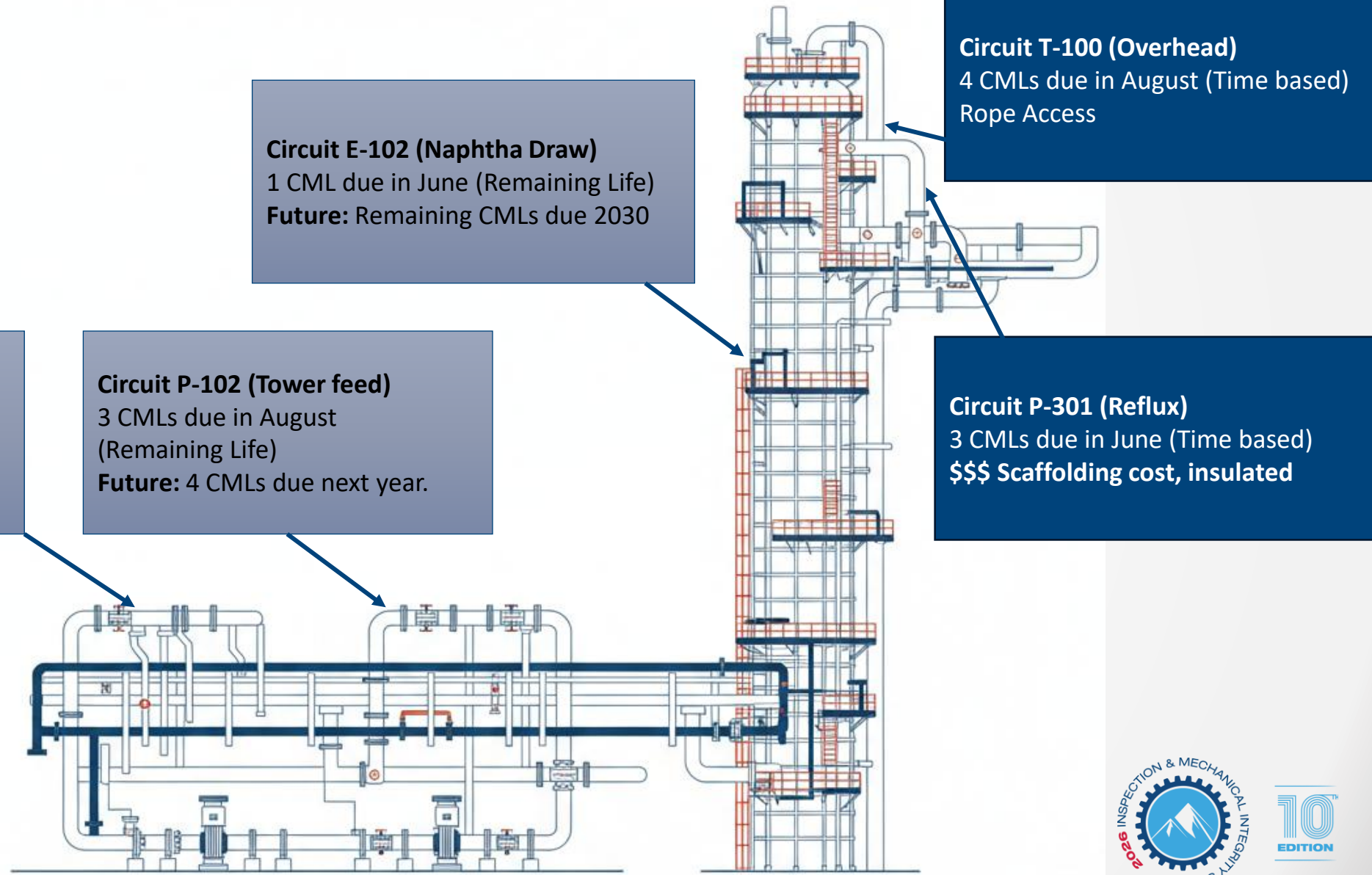
Circuit E-102 (Naphtha Draw)

1 CML due in June (Remaining Life)

Future: Remaining CMLs due 2030



Case Study



Case Study

Standard planning

7 permits

2 separate scaffold builds

1 unnecessary inspection

Optimized planning

3 permits

1 combined scaffolding (or rope access!)

0 unnecessary inspections



High
Low
Sad

Cost
Efficiency
Dan

Low
High
Happy



Recap

1. Validate: Stop inspecting based on bad data.
2. Coordinate: Bridge the gap between resource planning and NDE.
3. Optimize: Refocus on location and access, not just due date



Q&A

Thank you!

Jeff Goldstein, P.E.

Principal Engineer

www.thinkbighorn.com

