

System Reliability through the Polar Vortex

Presented by **Emily Rawlings, PE**
System Reliability Manager



**ENTERPRISE[®]
ANALYTICS**
TRANSFORMING DATA INTO ACTION

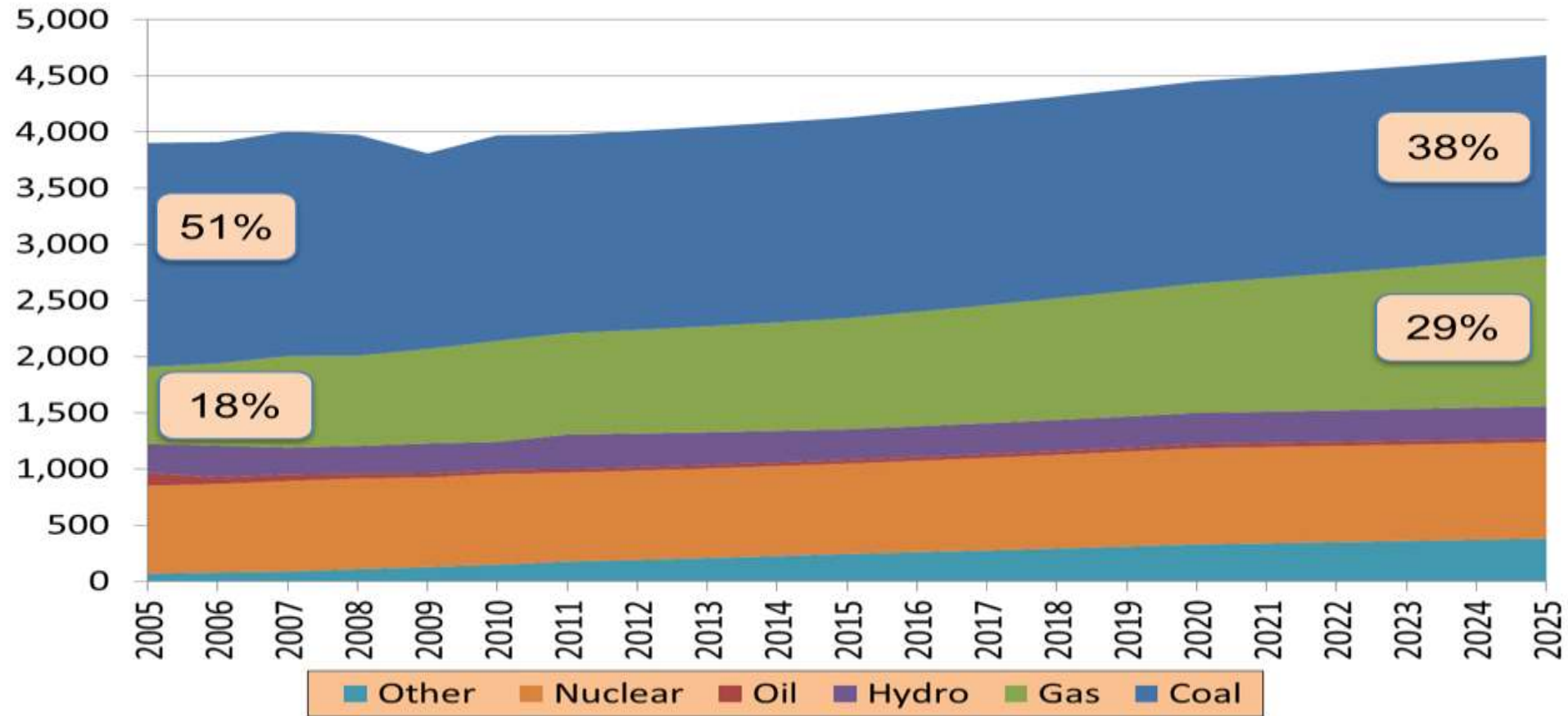
Agenda



- Industry and Company Synopsis
- Business Challenges
- Project and System Overview
- Tangible and Intangible Benefits
- Future Project Plans and Next Steps

US Power Generation by Fuel

(Billion KWH)



Columbia Pipeline Group

Pipeline

- More than 15,000 Miles
- Delivers approx 1.3 Tcf per Year


Compression

- 1.1 Million Horsepower
- 100+ Stations

Commitment to safety and reliability, collaborative relationships, inclusive work environments, strong governance and transparency, and stewardship



CURRENT PATTERN

 AccuWeather.com



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Business Challenges

- Major compression asset failures affecting reliability of system
- Reactive vs Proactive use of data
- Concerns around operational data integrity



ENTERPRISE[®] ANALYTICS

TRANSFORMING DATA INTO ACTION



Columbia Pipeline Group

System Reliability

SYSTEM RELIABILITY

ENTERPRISE ANALYTICS

FRACAS

DEFECT ELIMINATION

RCA

METRICS

GAS QUALITY



Enterprise Analytics

Transforming Data into Action

Gulf

Charleston

Ohio

Commonwealth

Pennsylvania

EA Compression Home

Lucas

Unit 1

Ambient Temp (Deg F) 47 DegF

Unit Status: Run

Heat Rate: 7726

BHP: 1301

Turbo Speed (RPM)
9132Unit Speed (RPM)
296

Gas Driver: GMVC-8

Gas Compressor: CSA-14

Fuel (MSCFH)
11Suction
Press (PSIG)
200Capacity (MMSCFD)
28Discharge
Press (PSIG)
459

KPI Status

Heat Rate

■ Within Tolerance

Fuel

■ Within Tolerance

Eng. Balance

■ Within Tolerance

Eng. Oil Cons.

■ Very High

Cmp. Oil Cons.

■ Very High

Disch Temp

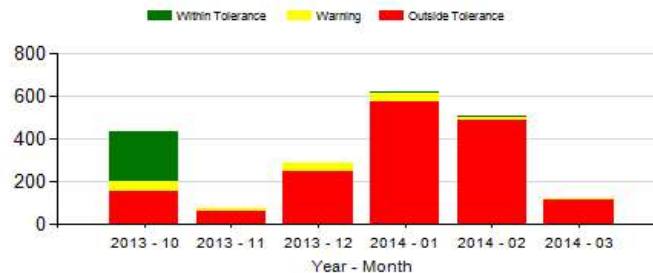
■ N/A

KPI Comp. Oil Cons. ▾

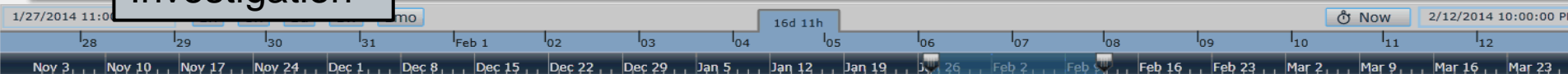
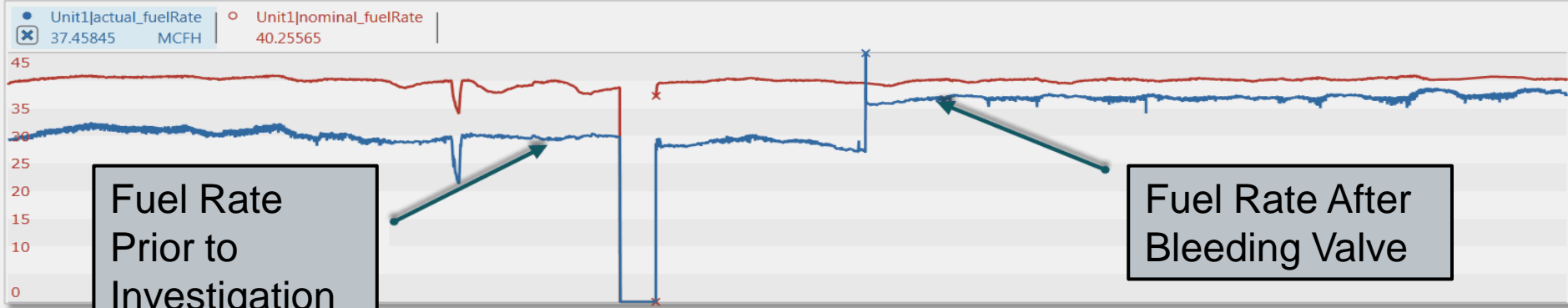
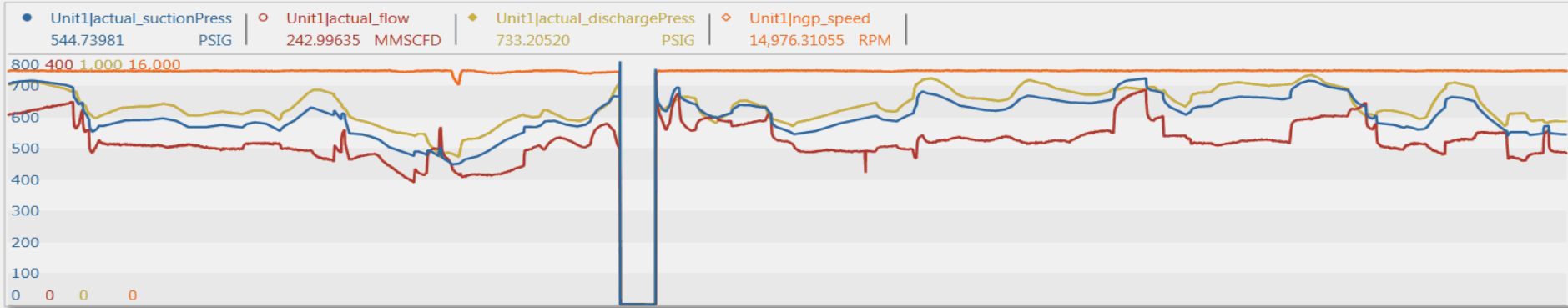
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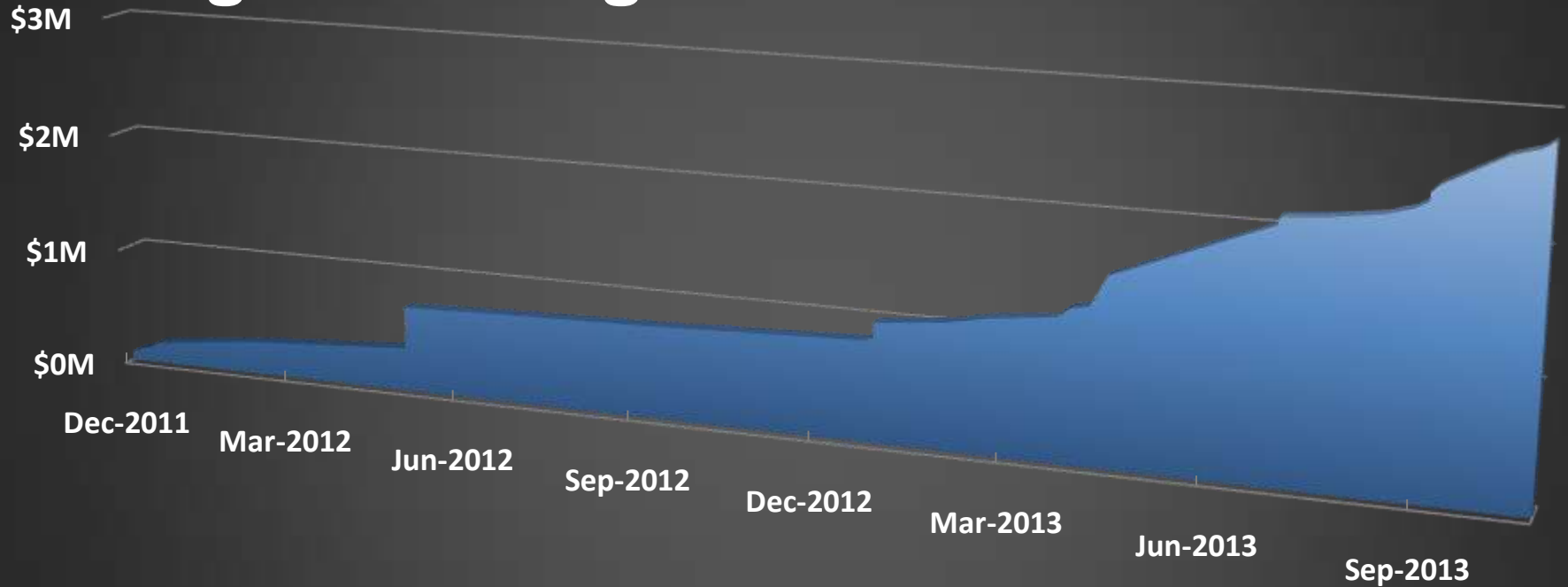
Monthly State - Run Hours
Lucas Unit 1 - Comp. Oil Cons.



Monthly State - Run Percentage
Lucas Unit 1 - Comp. Oil Cons.



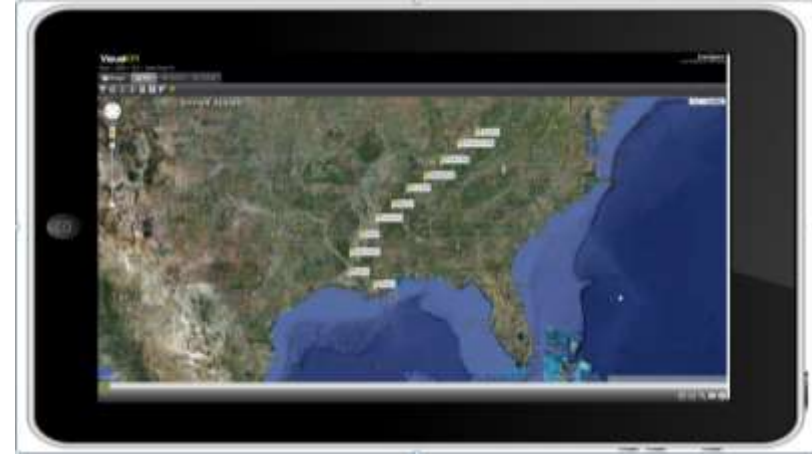
Tangible Savings From Event Prevention



Estimated Total : \$2.8M

Intangible Benefits

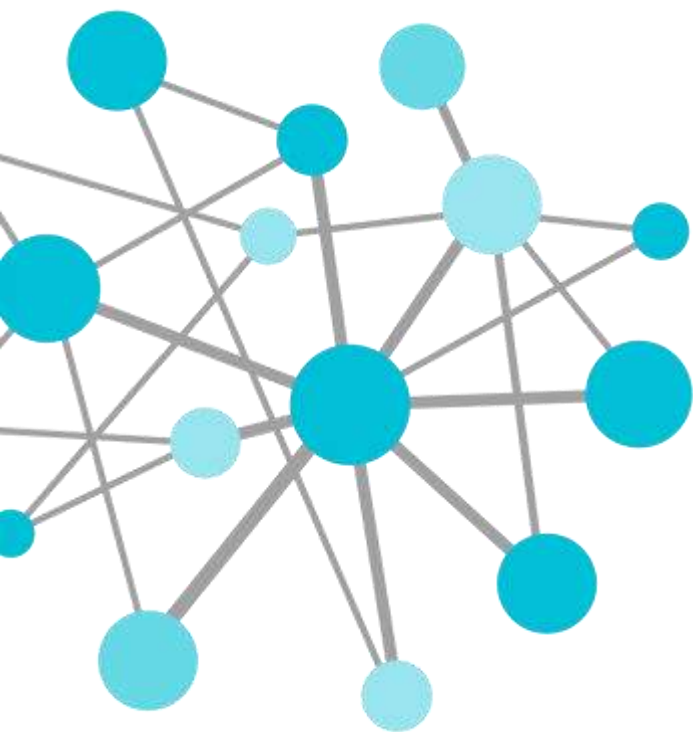
- Increased Customer Confidence
- Expanded Operational Visibility
- Improved Reliability and Availability of Assets



Future Project Plans and Next Steps

- Executive Level Dashboard
- Capital \$ Decisions
- Measurement System Pilot Dashboards

“I just wanted to thank everyone at CPG for helping us serve our customers reliably and safely through some of the most severe conditions we’ve experienced in years, maybe decades”
– Key Customer (1/9/2014)



THANK
YOU

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