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Risk Assessments and Loss Control Activities

APPA Business and Financial Conference
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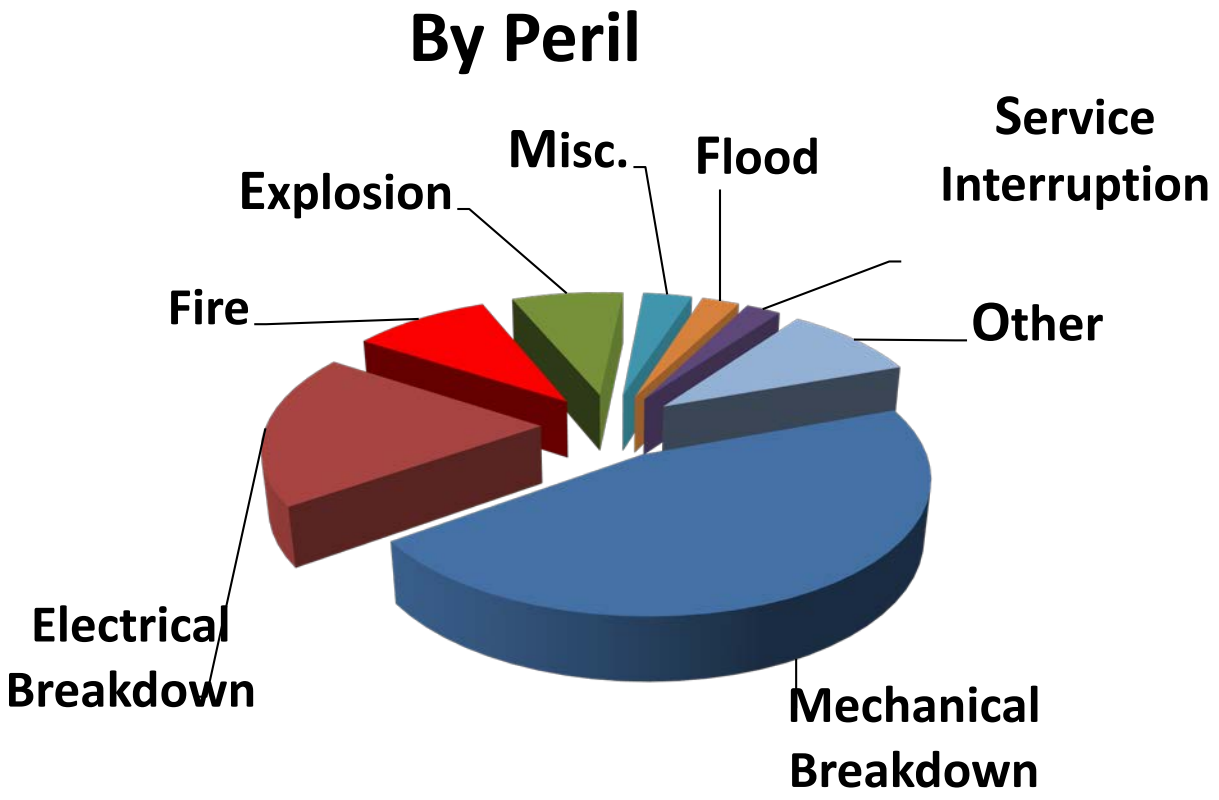
Risk Analysis and Loss Prevention

A Game Changer

Jennifer K Housel, Senior Account Manager

PowerGen Losses (10 years)



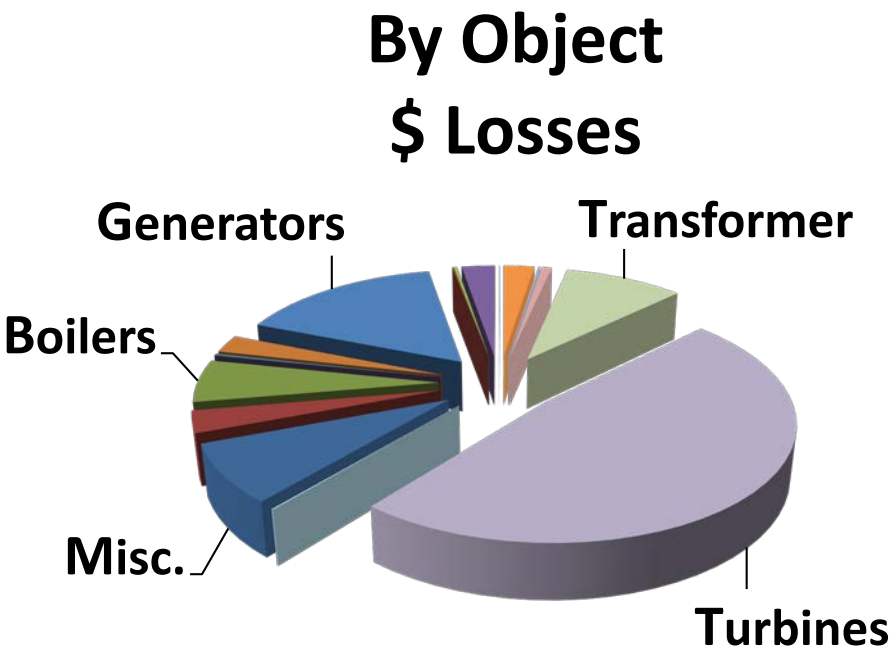
Pop Quiz

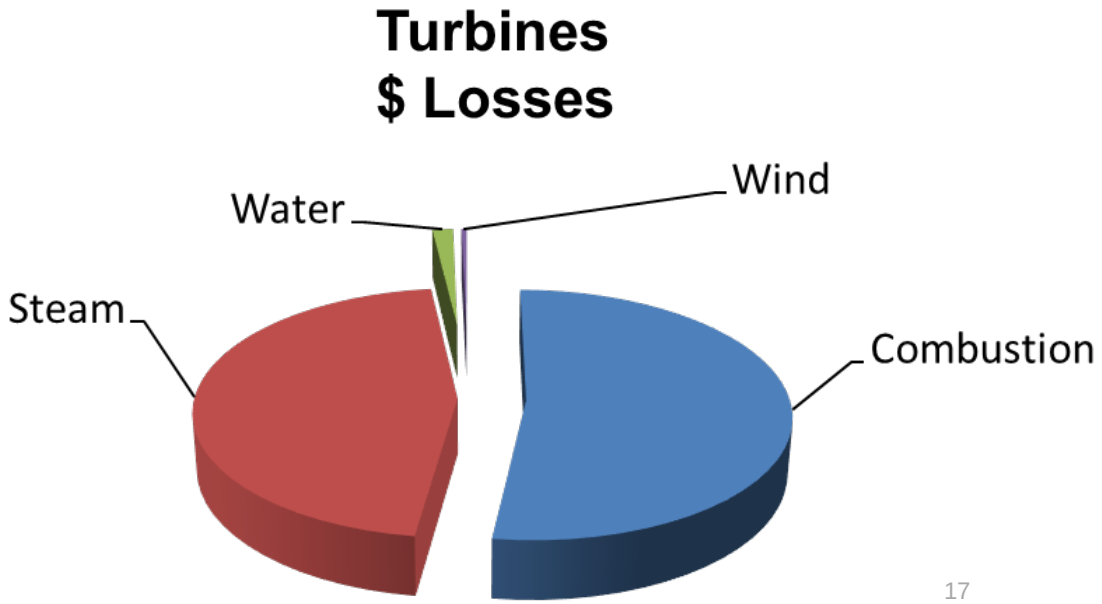
Over the last five years, what piece of equipment represents the highest amount of loss dollars?

A	B
Generators	Transformers

C	D
Turbines	Switchgear

PowerGen Losses (10 years)





Equipment Hazards are Key Loss Drivers





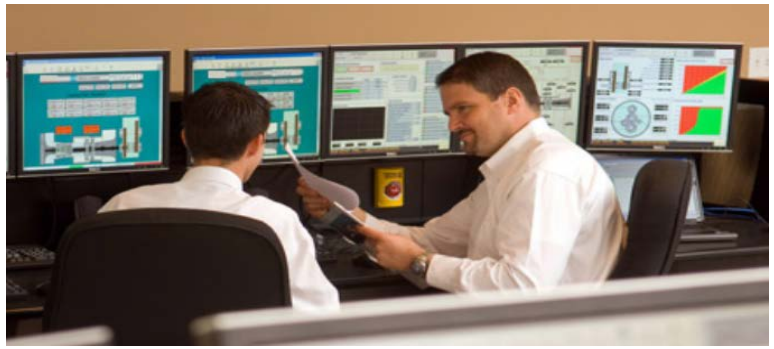

B&M Focus

- Systems Approach
- Loss scenarios
- Big 3
  - Safety Devices
  - Maintenance
  - Operators

Industry Concerns and Solutions

- Aging Equipment
- Operating Conditions
- Maintenance
- Operator Performance

- Advanced Inspection & Testing
- Monitoring & Diagnostics
- Process Safety
- Training



LOSS **ALERTS**

Loss Alerts helps you learn from loss. CONNECT WITH US

Domestic Water Leaks Can Interrupt Facility Operations

Prevent domestic water leaks in your facility.

Read more

RESOURCES

Steam Turbine Generator - Loss of Lubrication Oil

Loss of lubrication and seal oil for steam turbine and hydrogen-cooled generator unit results in mechanical damage and a hydrogen fire.

LOSS **ALERTS**

Loss Alerts helps you learn from loss. CONNECT WITH US

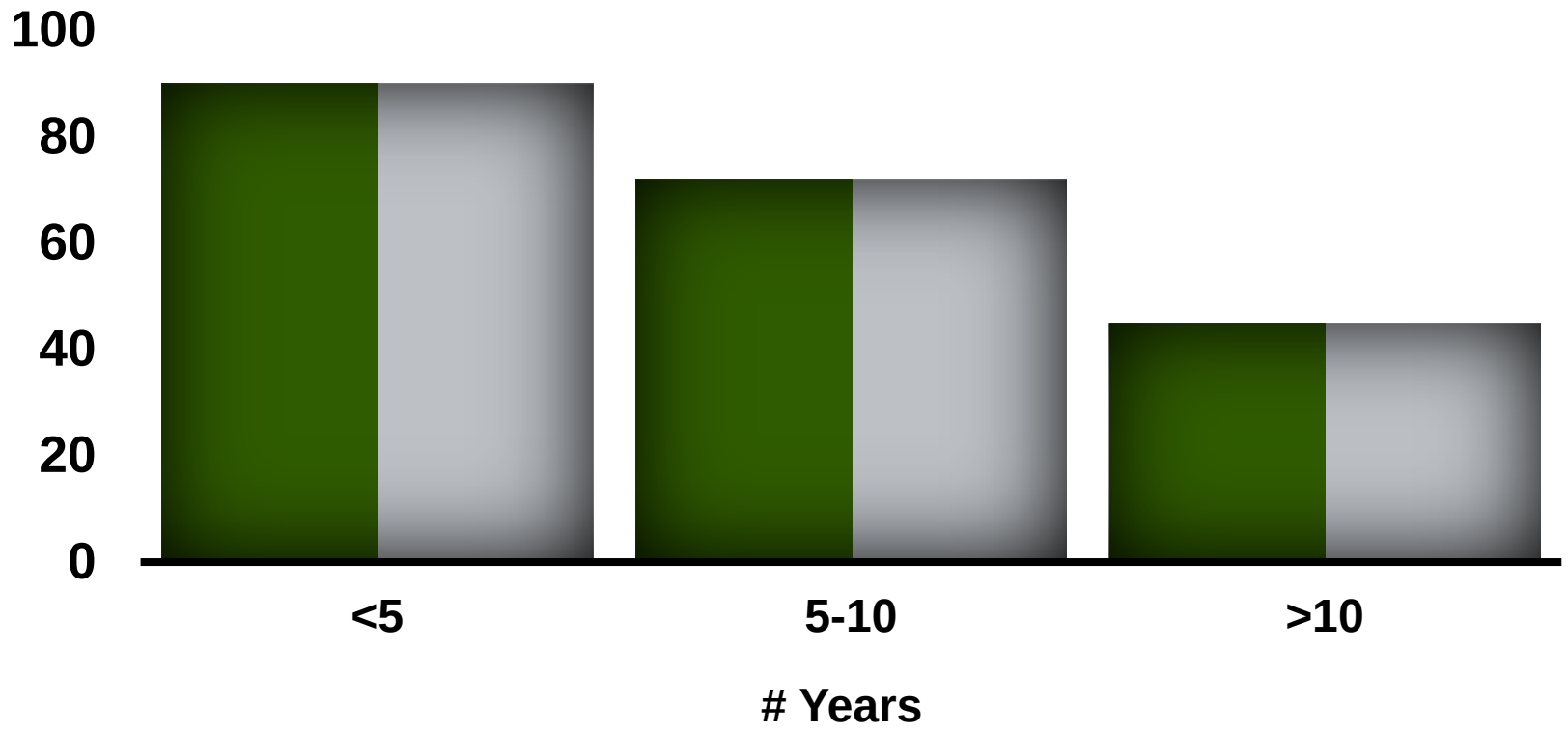
Hail Damages Office Building Roof

Hailstorms produced 1.7-inch (4.3 cm) diameter hail that impacted the roof of this office complex.

Foreign Objects Can Severely Damage Gas Turbines

While fairly infrequent, foreign object damage events in gas turbines are costly.

Count of Losses by FM Global Tenure



Power Generation Client Feedback

- Give Me Advice That I Can Trust
- Share Loss Information
- Help Me Understand My Risks and Invest Loss Prevention Dollars Wisely
- Provide Flexible Field Engineering Services
- Provide Training resources for both Operations and Maintenance
- Help me manage my Cyber Risk

Questions to ask yourself

- Is my Senior Management engaged and supportive of Risk Analysis and Risk Improvement?
  - Do we have a budget for risk improvement?
  - Is risk improvement part of our culture?
- Have I chosen to partner with a loss prevention company that specializes in Power Generation?
  - Do they have specific training regarding the hazards with power generation?
  - Do they speak our language?
  - Do they back up recommendations with either loss experience or research?
  - Are they engaged with industry groups (i.e. ASME, EPRI, Power Gen International, IEEE, etc.)?

Suggested Process

- Have your chosen loss prevention professional complete an evaluation of your key sites
- Identify important locations critical to business operations to focus on improving
- Gain an understanding of the hazard and how the improvement will lower your risk
- Review improvement recommendations with local operations staff/obtain feedback
- Focus on the loss drivers

Utility Operations and Loss Prevention

Scot Macomber, CGE
Vice President
Loss Control Utility Operations

September 2018

Indicators

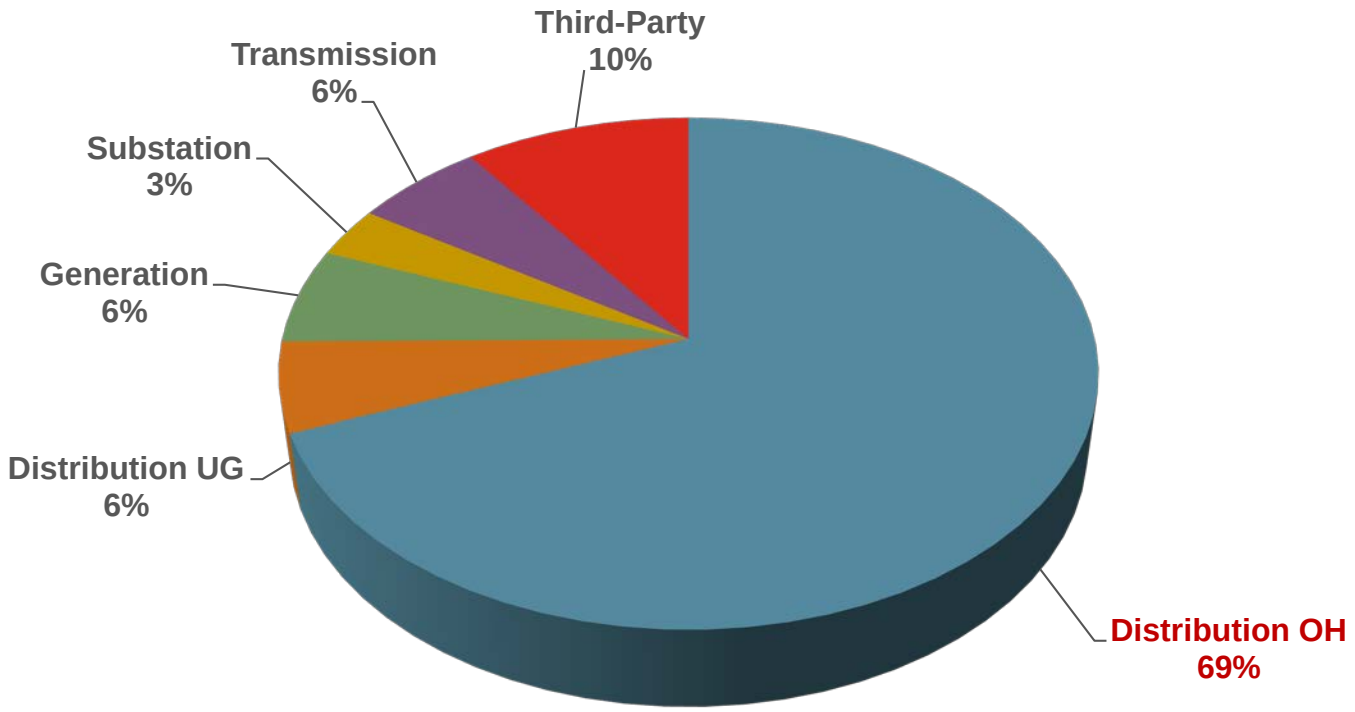
- Leading (prevention of incident)
  - Risk Assessments
    - Electric, natural gas, water and call centers
    - Field observations
    - “Near misses”
  - Loss Control products and services

Indicators

- Lagging (after incident occurred)
  - OSHA incident rate (versus “near miss”)
  - DART rate
  - Reported claims
  - Headlines

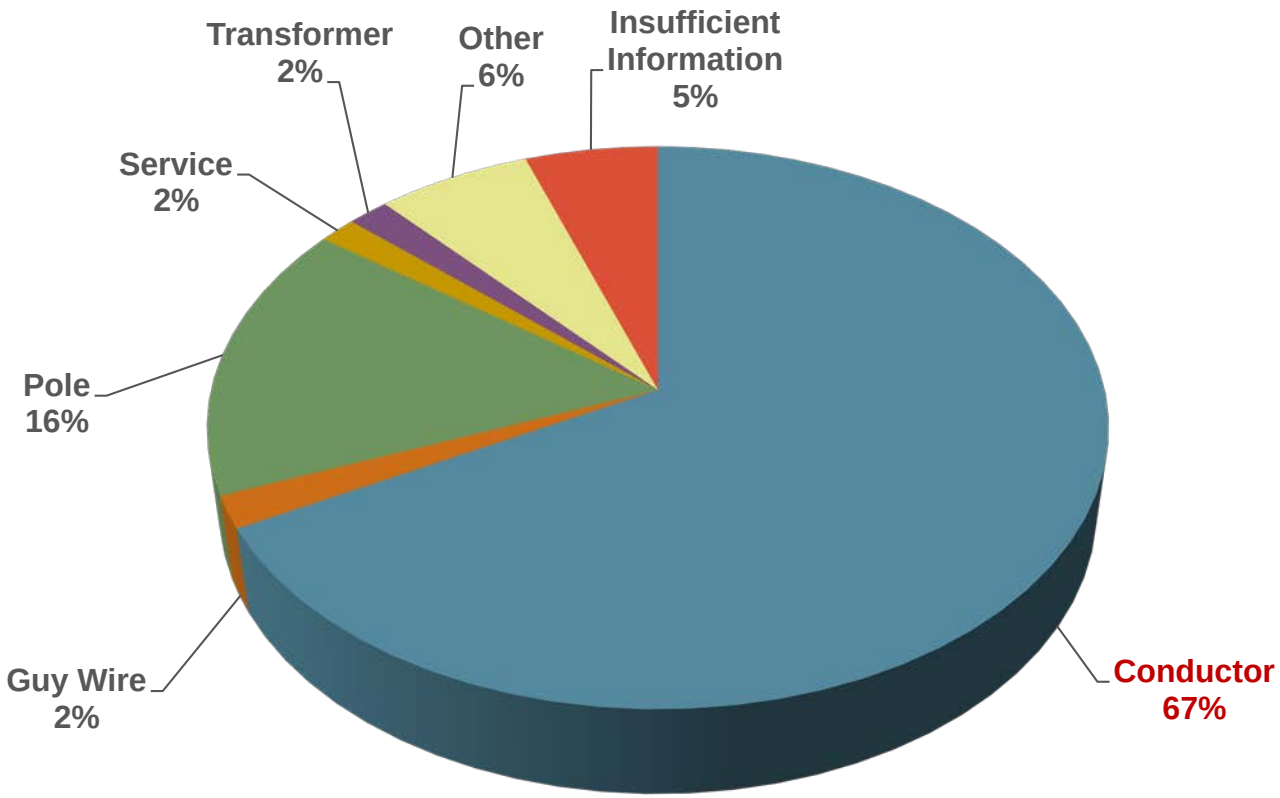
Reported Electric Claims – 2008-2017

Systems



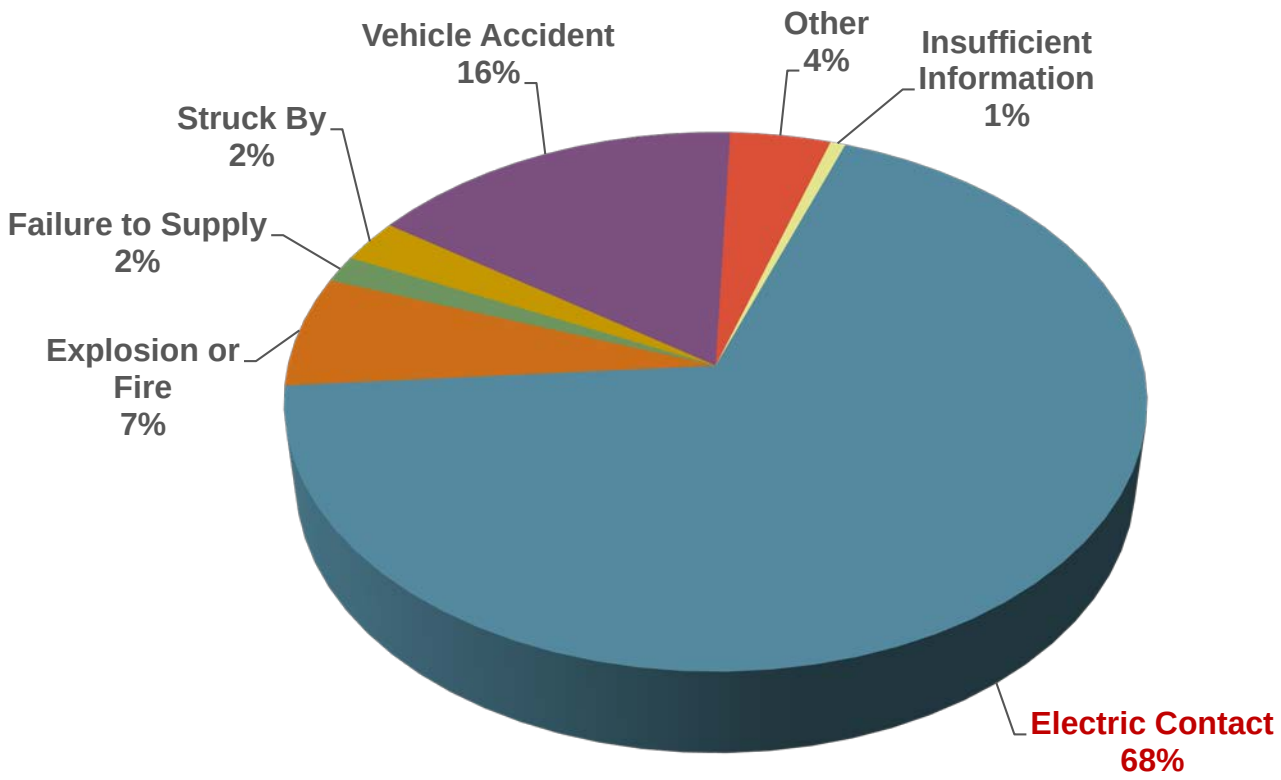
Reported Electric Claims – 2008-2017

Distribution Overhead By Subsystem



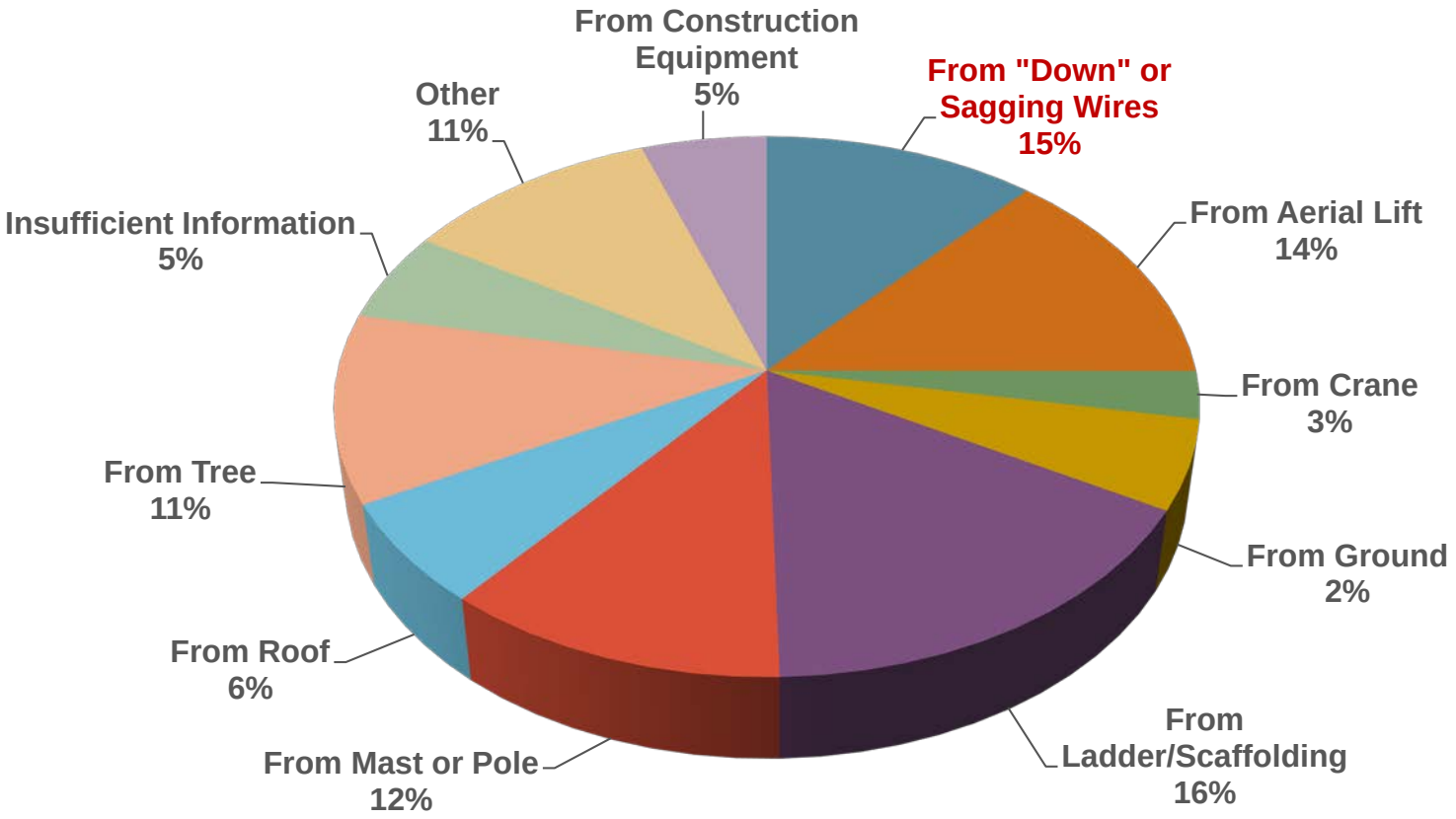
Reported Electric Claims – 2008-2017

Distribution Overhead By Loss Type



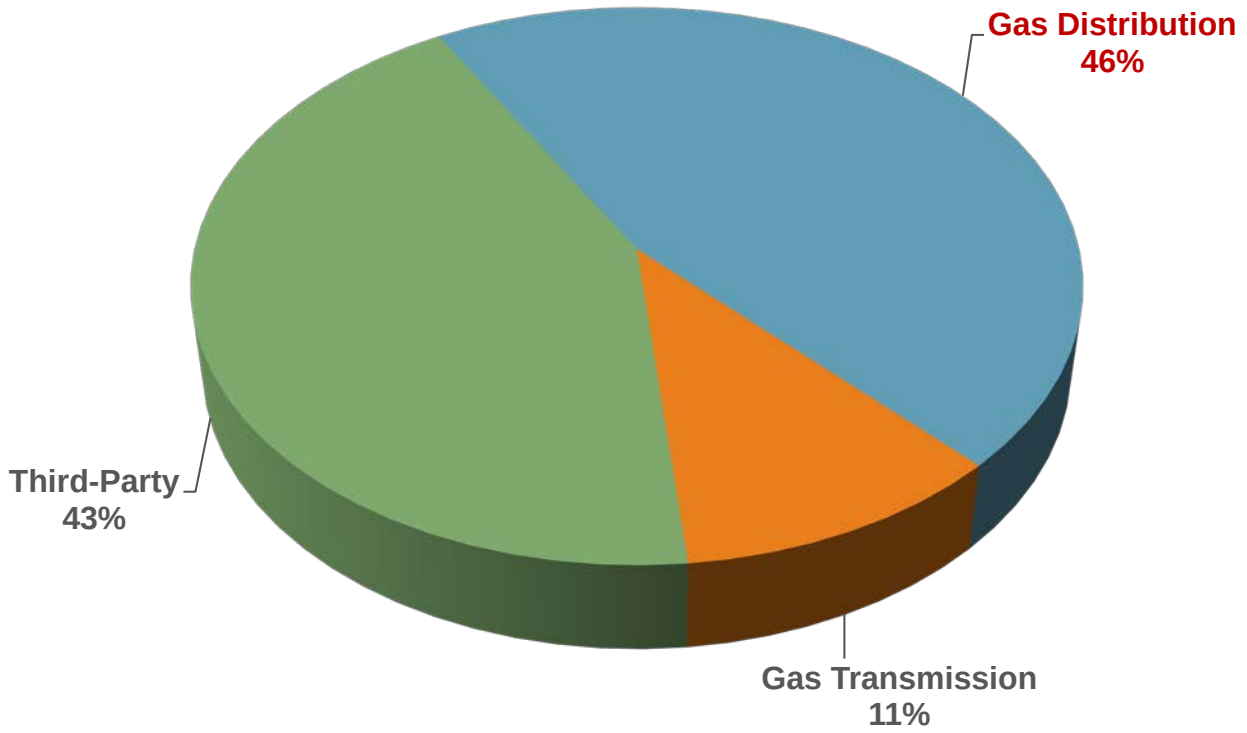
Reported Electric Claims – 2008-2017

Distribution Overhead – Electric Contact



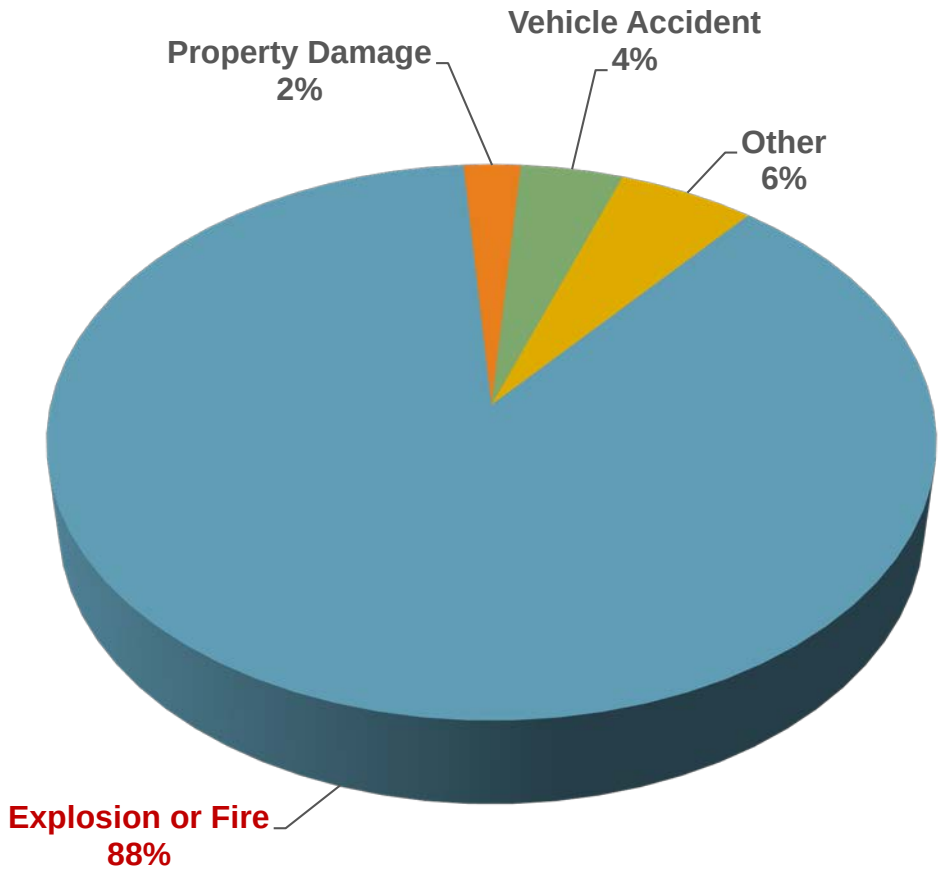
Reported Natural Gas Claims – 2008-2017

Systems



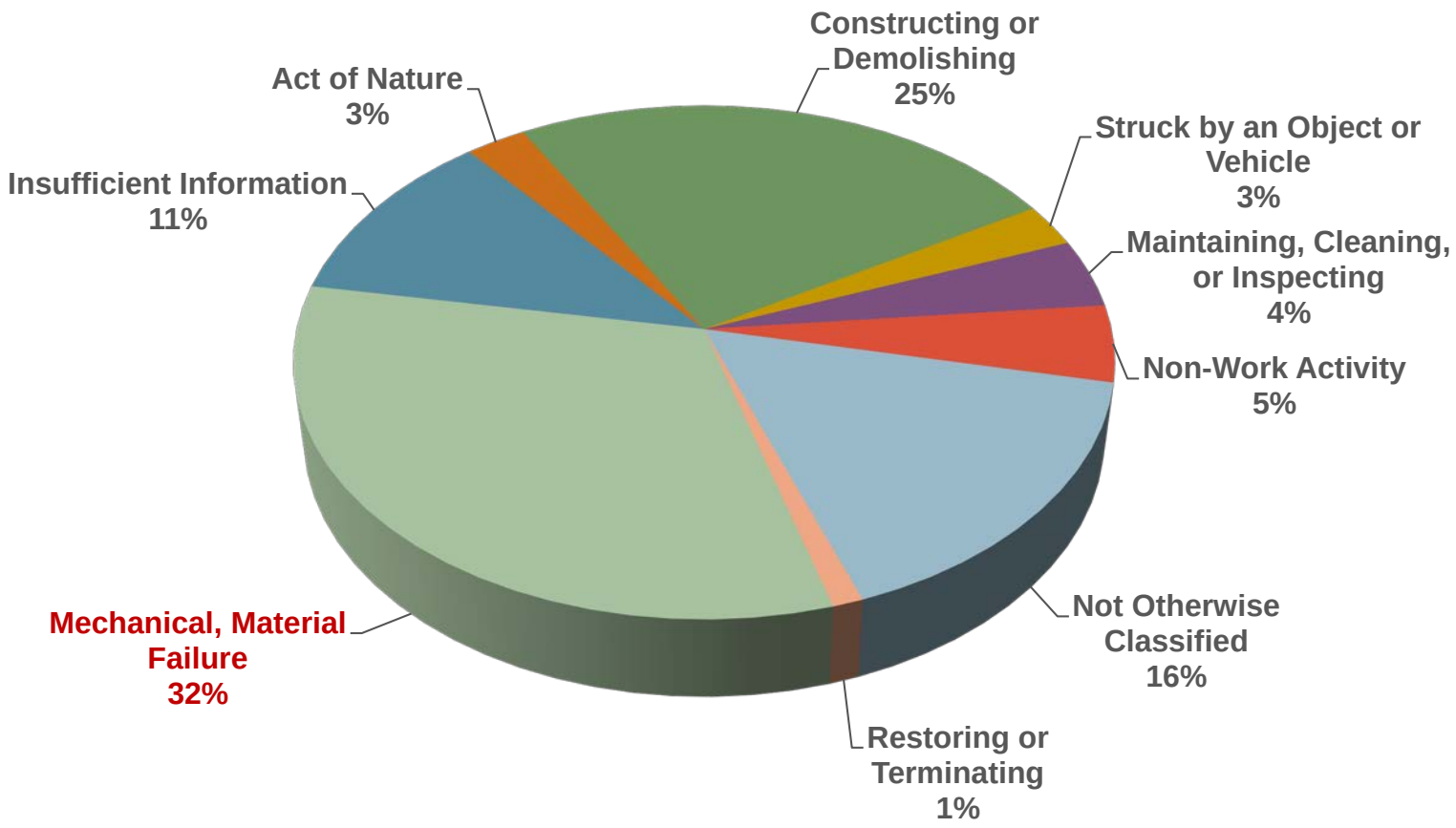
Reported Natural Gas Claims – 2008-2017

Natural Gas Distribution By Loss Types



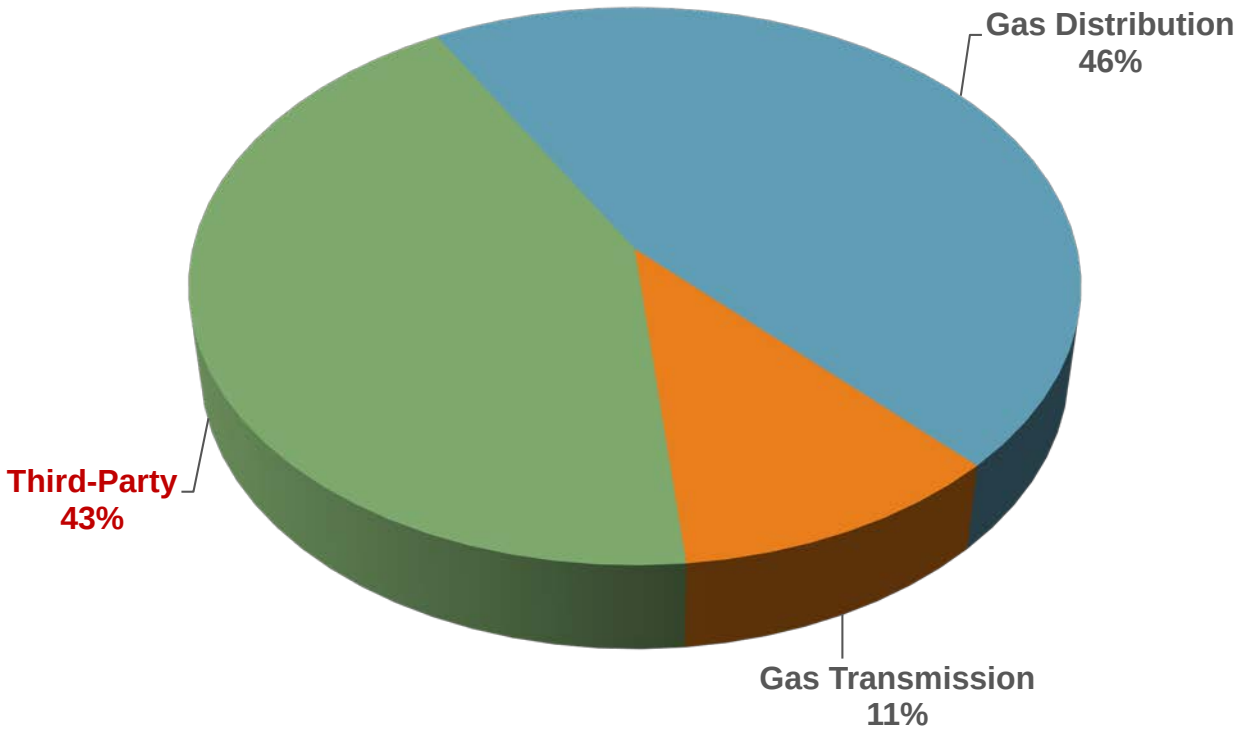
Reported Natural Gas Claims – 2008-2017

Distribution – Explosion or Fire



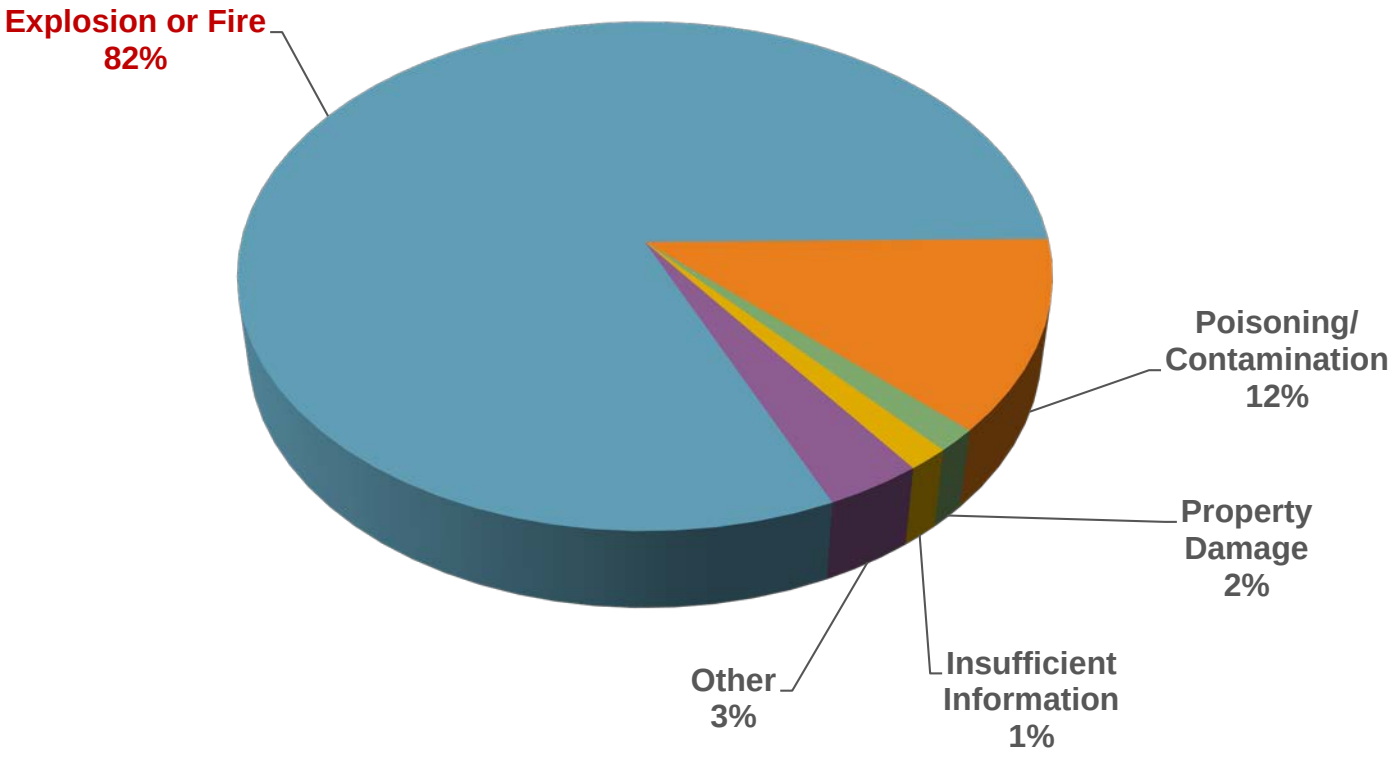
Reported Natural Gas Claims – 2008-2017

Systems



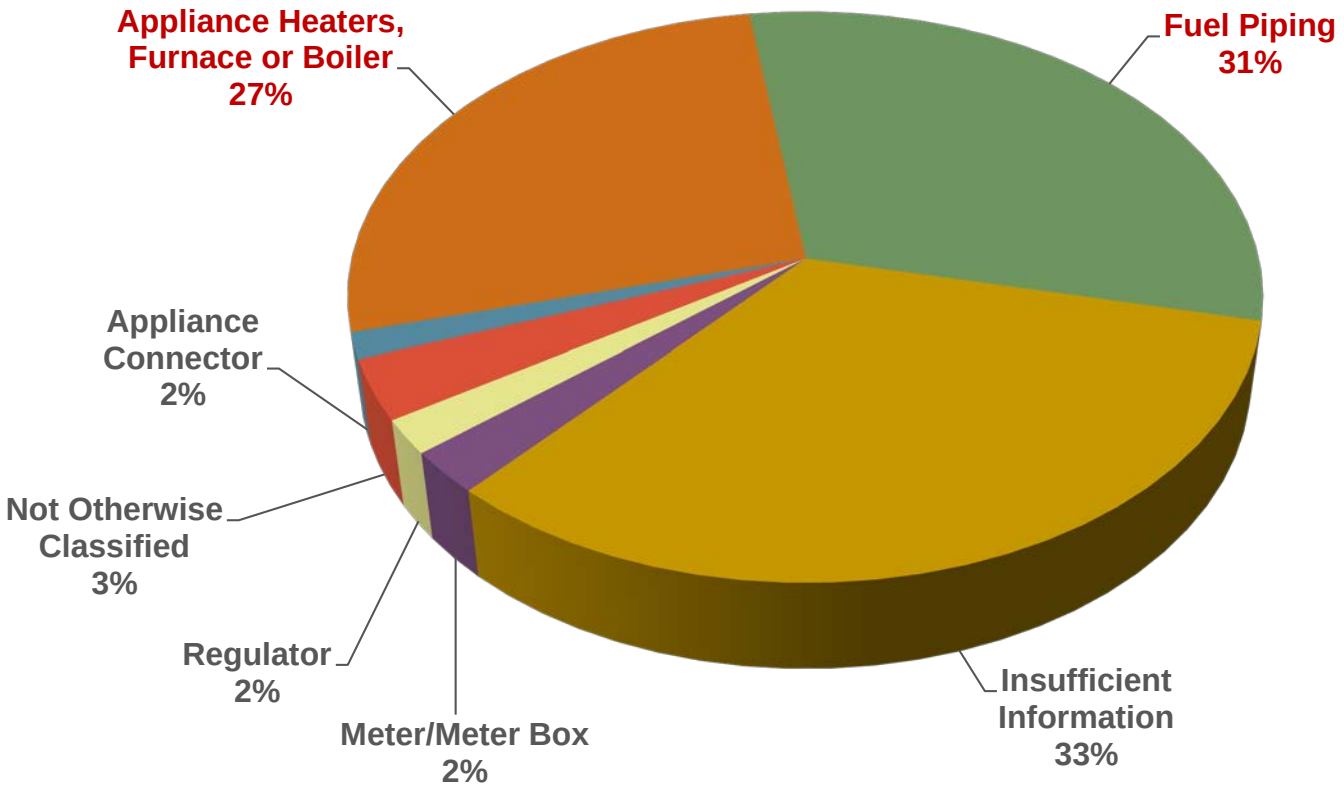
Reported Natural Gas Claims – 2008-2017

Third Party Loss Types



Reported Natural Gas Claims – 2008-2017

Third Party – Subsystems



Utility Operations

Risk Assessment Process

- Risk Manager coordinates meetings for operating, engineering and safety personnel

- Entrance (Opening) and Exit (Closing) Meetings
  - Senior Vice Presidents, Vice Presidents, General Managers of Operating Divisions
  - Directors, Supervisors and Staff Personnel
  - Details of findings and observations discussed

Utility Operations

Risk Assessment Process

- Intent: review a member's operating and maintenance procedures and practices, and the condition of their system with respect to public safety

- Two and one half days spent with the member
  - Includes four to six hours of field evaluation
    - Snapshot of transmission and distribution systems
  - Accompanied by operations, engineering and safety personnel
  - Discussion of loss history incorporated

Utility Operations

Risk Assessment Topics - Electric

Substation Design, Construction and Inspections	Joint Pole Use Practices/Ownership Operations
Transmission Design, Construction and Inspections	Public Safety Awareness Programs
Distribution Design, Construction and Inspections	Environmental Programs
Vegetation Management/Tree Trimming	Contractor Safety Review & Evaluation
Pole Inspection	Dams
Call Handling Practices and Procedures	Occupational Safety
Downed Wire Dispatch Procedures	

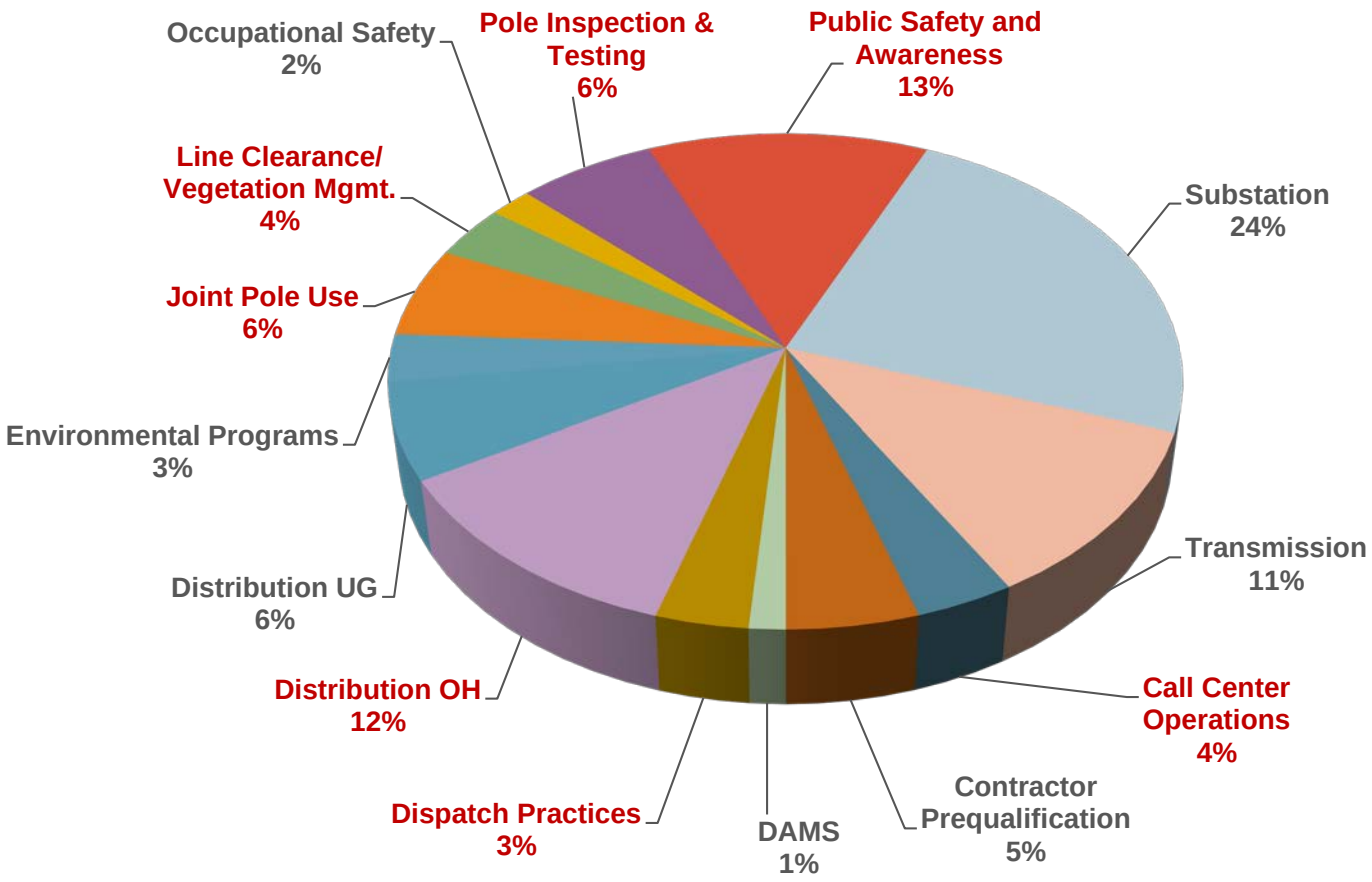
Utility Operations

Risk Assessment Topics – Natural Gas

Damage Prevention	Call Center Operations – Emergency Calls
Pressure Control	Distribution Integrity Management
Odorization	Operating, Maintenance, and Emergency Plans
System Inspections	Contractor Pre-Qualification Review and Evaluation
Customer Premises Practices	Occupational Safety
Customer and Public Safety Awareness	Pipeline Integrity Management
Underground Natural Gas Storage Facilities	

Electric Utility Risk Assessments

Percentage of Suggestions by Topic Element – 2013 to 2017

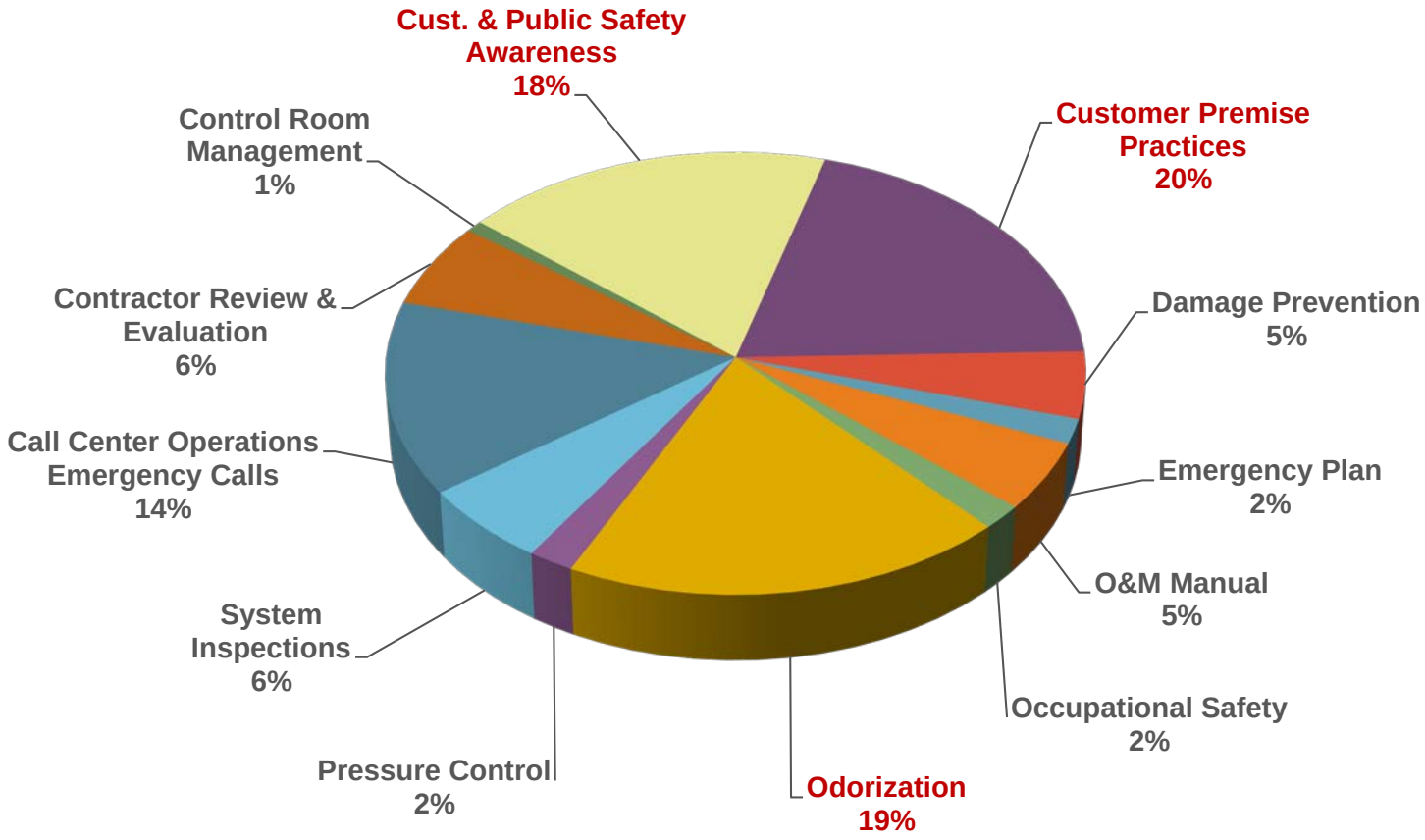


Observations – Electric

- Substations
  - Signage, grounding, inspection criteria and operating practices
    - Outdated, missing, not thorough, lacking documentation
- Distribution system
  - Inspection program
    - Not addressing all equipment
- Public safety and awareness
  - Messages targeting public, first responders, contractors and schoolchildren

Natural Gas Utility Risk Assessments

Percentage of Suggestions by Topic Element – 2013 to 2017

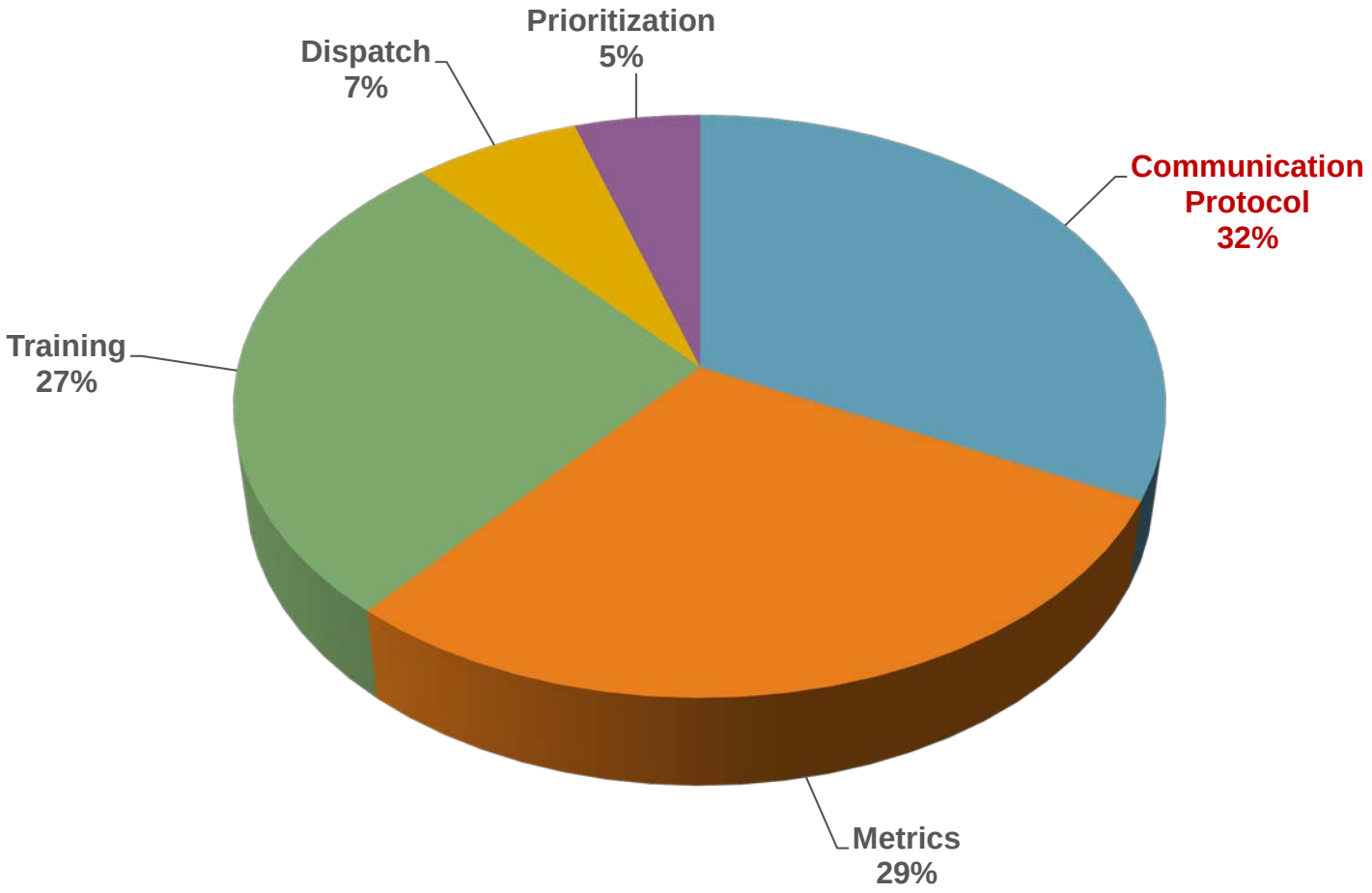


Observations – Natural Gas

- Customer premise practices
  - Hazardous condition procedures
- Odorization programs
  - Documentation
- Public safety and awareness
  - Messages targeting public, schoolchildren, emergency responders and contractors

Call Center Risk Assessments – 2014 to 2017

Percentage of Suggestions by Topic Element



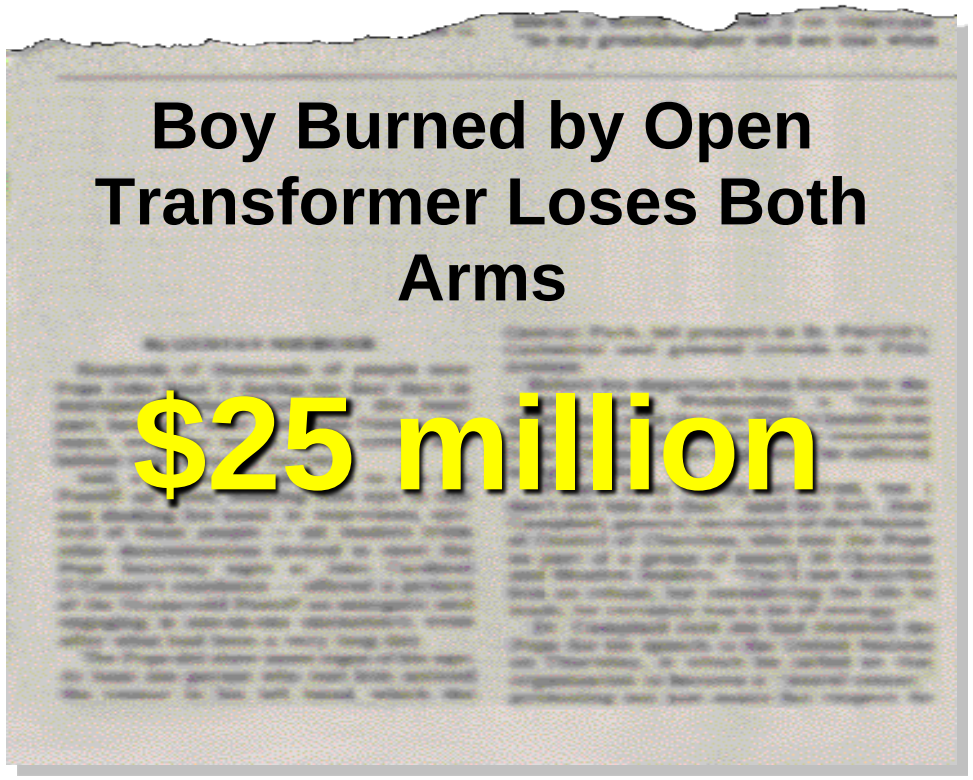
Observations – Call Center
Communication Protocol

- Prioritization for types of calls
  - Downed or low-hanging wire
  - Reports on an inside gas odor
- Dispatch communication
  - Electronic ticket and/or phone call
- Verbal Communication
  - Clear, concise, sense of urgency
    - External and internal

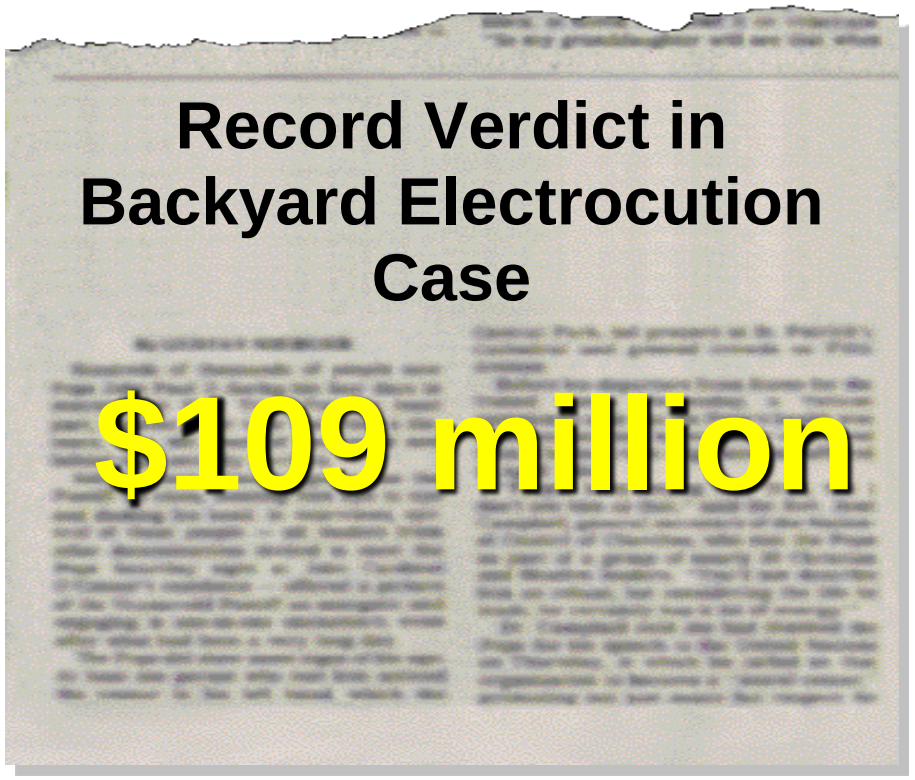
Headlines Tell The Story

- Catastrophic Incidents
  - Loss of life, serious injury or extensive property damage
  - Cost utilities millions of dollars in claims and expense
  - Negative publicity and lasting unfavorable perception

Headlines Tell The Story
(continued)



Headlines Tell The Story
(continued)



Headlines Tell The Story
(continued)

Headlines Tell The Story
(continued)

What We've Learned

- Follow procedures
  - Engineering and design
  - Call center
  - Dispatch
  - First responders and field crews

Suggestions – Loss Mitigation
Utility Operations

- Distribution System - Electric
  - Recap: 69% of reported claims affect the distribution overhead system
  - Recap: 48% of suggestions pertain to distribution overhead system

- Distribution System and Third Party – Natural Gas
  - Recap: 46% and 43% of reported claims, respectively
  - Recap: 80% of suggestions pertain to these two systems

- Message:
  - Inspect the System
  - Maintain the System
  - Warn the Public

Loss Mitigation
Safety Message

- Warn the Public regarding electric and natural gas hazards:
  - Call Center communications
  - Dispatch operators communications
  - Public Safety Awareness messages
    - Schoolchildren, first responders, contractors and the public

The Value of Risk Assessments and Loss Control

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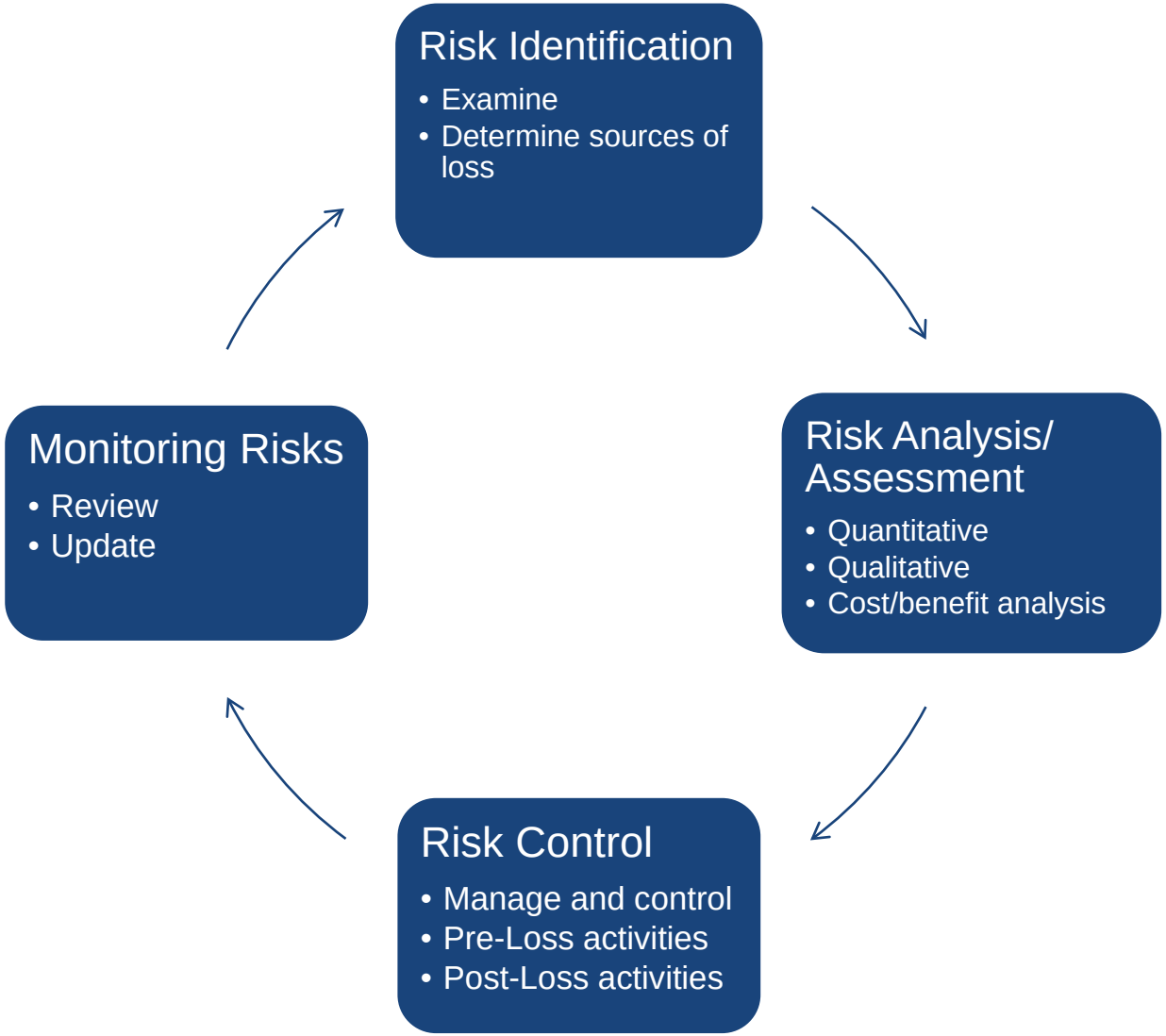
Risk Assessment and Loss Control Activities

- Both part of risk management process
- Risk assessment encompass both identification and risk analysis
- Loss control involves implementing risk mitigation techniques
  - Avoid
  - Reduce
  - Prevent
  - Duplicate
- Both are part of a comprehensive risk management strategy and program

Risk Management Process



Value of Risk Assessments

- Industry experts perform assessments
- Quick guide of largest exposures for new risk managers
- Benchmarks your utility against others in the industry
  - What do you do well?
  - What areas need improvements?
- Non-threatening review of operations
- Collaborative discussions
- Continual improvement process

Using Output to Transition to Loss Control Efforts

- Output from risk assessments provide input for next step in the risk management process (Risk control)
- Assists in the development of a plan of action
  - o Pre-loss
  - o Post-loss
- Action items are logged, progress tracked, and improvements noted
- Use output as a checklist for ongoing meetings with operations personnel; good method to monitor and review risks periodically

Risk Manager's Role in Assessments and Loss Control Efforts

- Embrace the process
  - Get involved in planning, site visit, and ongoing follow-up
  - Help educate operations personnel on value and expectations
- Take advantage of the expertise, free loss control services, and encourage a culture of loss control
- Risk assessments and loss control are important tools to minimize losses and control premiums