

S-MAP IOUs Uniformity Report

S-MAP Workshop 4

December 4, 2015



Agenda

- Introduction
- Utilities' Risk Management Framework
- Areas of Commonality
- Areas of Uniqueness
- Areas for Future Consideration
- Conclusion

Introduction

- The Commission wants the S-MAP to consider common standards.
- IOUs' Objectives:
 - Expand learning and understanding.
 - Identify areas to apply a uniform approach.
 - Identify areas requiring unique approaches.
- IOUs' Approach:
 - Survey IOUs on areas of commonality and uniqueness.
 - Two intense utility workshops.
 - Analysis and comparison of proposed standards.
 - The Uniformity Report.

Overview Comments

Became clear early on:

- Overall risk frameworks are essentially the same.
- Despite differences* each framework addresses:
 - ✓ Safety and other risks.
 - ✓ Risk types (e.g. wildfire, cyber, gas explosion).
 - ✓ Actions taken to mitigate the risk types.
- But: There are differences in how the frameworks are implemented.
- Regardless of the differences, the same objectives are achieved.

* Size (customers, meters, revenue), commodities, topography, weather, organizational structure

Common Risk Categories / Outcome

Throughout the GRC process, each company described how it uses its risk management framework, practices and approaches to address types of risk (Risk Categories/Outcome). The common Risk Categories include:

- Wildfire
- Gas explosion
- Work site accident/employee, public, and contractor safety
- Accident involving contact with electrified asset
- Blackout/major customer outage
- Data breach (e.g. cybersecurity)

Summary of Findings

| Areas of Commonality ¹ | Areas of Uniqueness | Areas for Future Consideration ² |
|--|---|---|
| ISO 31000 and 55000 | 7x7 Risk Scoring Algorithm | Risk Tolerance |
| Cycl's 10-step process | Tools and Methods to Score Specific Risk Categories | Risk Reduction Benefit per Dollar Invested |
| 7x7 risk evaluation tool | | Risk Taxonomy |
| 7x7 Levels Descriptors | | |
| Impact Categories | | |
| Likelihood Criteria | | |
| Safety Impact Criteria | | |
| Absolute VS Continuous scoring in the risk evaluation tool | | |

1 Risk Lexicon was identified as an area of commonality prior to the initial workshop
 2 Areas for future consideration are not a commitment to reach commonality but rather to continue to work on these topics and learn from each other.

Areas of Commonality: Highlights

Likelihood Criteria

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------|-------------------------|------------------------|-----------------------|----------------------|---------------------|--------------------|
| Remote | Rare | Infrequent | Occasional | Frequent | Regular | Common |
| Once every 100+ years | Once every 30-100 years | Once every 10-30 years | Once every 3-10 years | Once every 1-3 years | 1-10 times per year | >10 times per year |

Safety Impact Criteria

| | | |
|----------|---------------------|--|
| 7 | Catastrophic | Fatalities: Many fatalities and life threatening injuries to the public or employees. |
| 6 | Severe | Fatalities: Few fatalities and life threatening injuries to the public or employees. |
| 5 | Extensive | Permanent/Serious Injuries or Illnesses: Many serious injuries or illnesses to the public or employees. |
| 4 | Major | Permanent/Serious Injuries or Illnesses: Few serious injuries or illnesses to the public or employees. |
| 3 | Moderate | Minor Injuries or illnesses: Minor injuries or illnesses to many public members or employees. |
| 2 | Minor | Minor Injuries or illnesses: Minor injuries or illnesses to few public members or employees. |
| 1 | Negligible | No injury or illness or up to an un-reported negligible injury. |



Pacific Gas and Electric Company



Sempra Energy utilities



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Areas of Uniqueness – Risk Scoring Algorithm

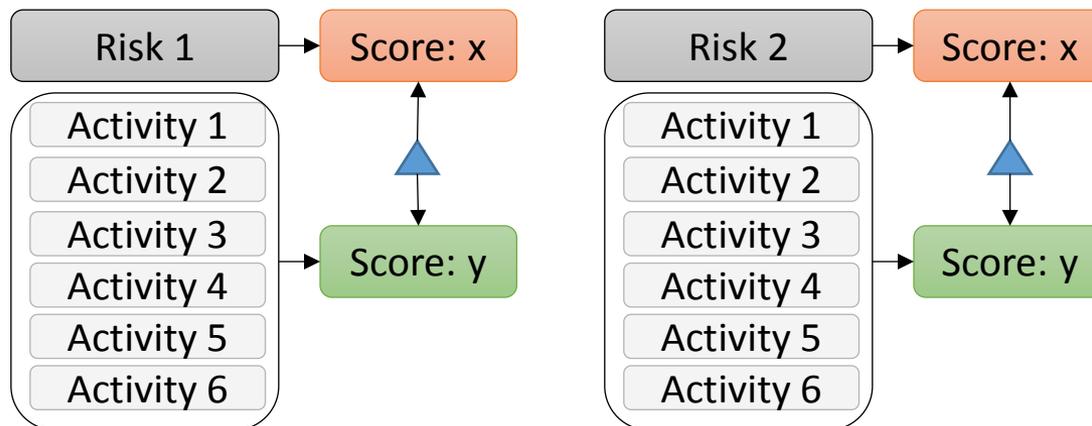
- November 6th Workshop focused on Risk Scoring Algorithms.
- Post November 6th, each utility analyzed the implications of changing their risk algorithm to one used by another utility.
- Conclusion:
 - ✓ The algorithms all use the same elements of frequency and impact and produce similar results.
 - ✓ But like reliability performance metrics (SAIDI, CAIDI, etc.) and Energy Supply algorithms, there were benefits for each company retaining its algorithm.
 - ✓ The IOUs' current risk scores using slightly different algorithms are calibrated and thus aligned with each utility's priorities and objectives.
 - ✓ Methods for scoring of specific risk categories such as wildfires are unique to each utility because of differences in topography, weather, system infrastructure, etc. (e.g. not all utilities are exposed to Santa Ana winds.)

Areas for Future Consideration – Risk Tolerance

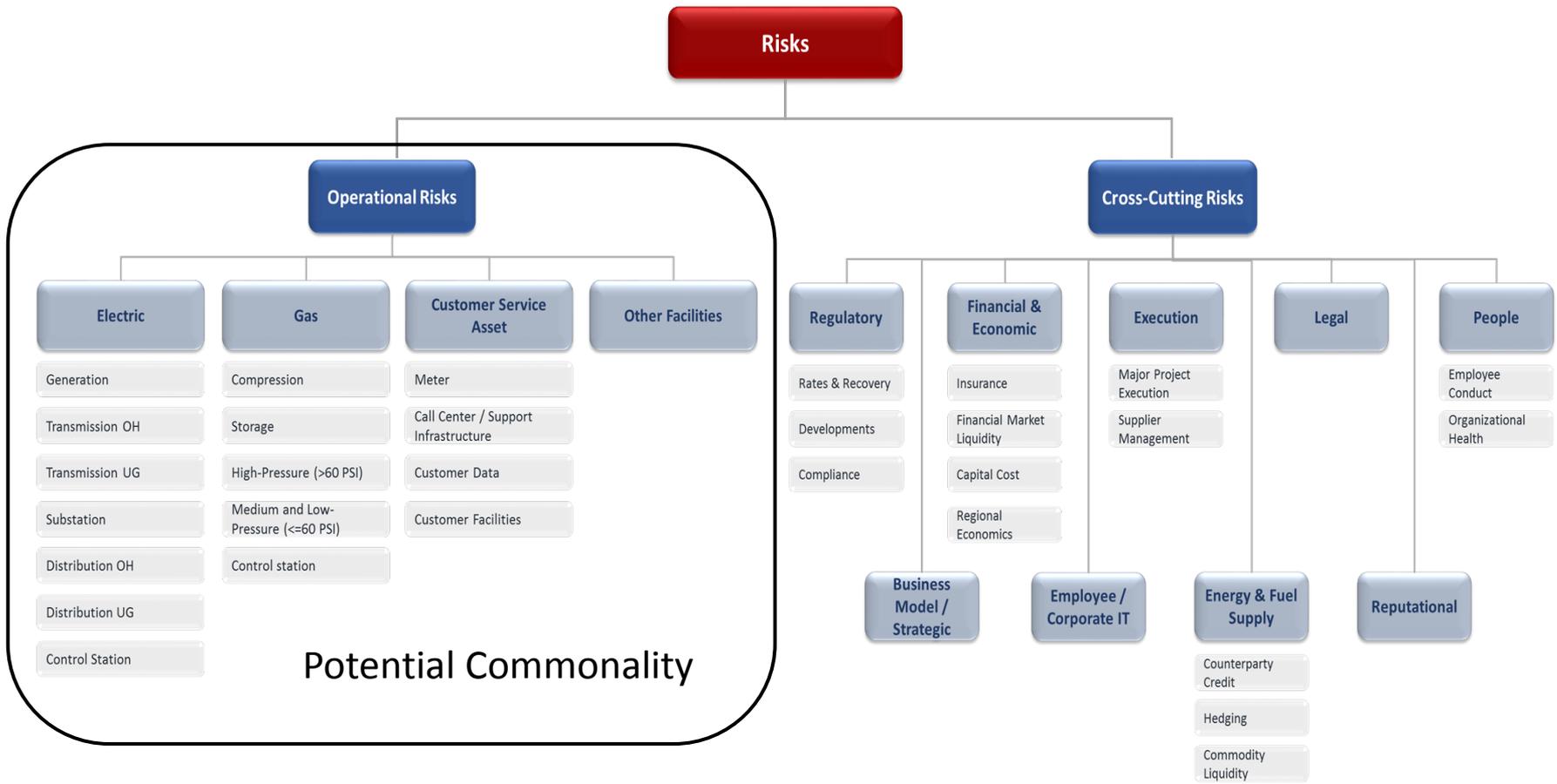
- The utilities discussed the need for a risk tolerance framework that allows various parties to develop their perspectives on risk tolerance.
- The utilities believe that the potential exists for some common approaches but any risk tolerance determination will have to allow for demographic and system differences.

Areas for Future Consideration – Risk Reduction Benefit Per Dollar Invested

- Today, none of the implemented funding methods is currently capable of generating a risk reduction benefit per dollar invested.
- Even though significant challenges (data, systems, culture) exist with further discussions, a common and transparent approach for evaluating risk mitigation effectiveness can be established utilizing the existing 7x7 matrix.



Areas for Future Consideration – Risk Taxonomy



Commitment

- The utilities found the uniformity discussions valuable and have agreed to continue to hold sessions in order to explore and share innovations and to be able to continue to develop common standards and guidelines that support movement towards implementing leading practices.

Questions