


[301: Risk Management]

Energy and Utilities
APPA Institute for Facilities Management

Steve Kraal
Jeff Zumwalt




1

1

[Overview]

- Provide an overview of basic risk management concepts
- Review how risk management applies to various components of Utilities and Energy Management



2

2


[General Concepts]

Risk

- The hazard or chance of loss - Impact and Probability

Risk Management

- Identify risks
- Categorize and rank risks
- Mitigate risks



3

3

Risk Assessment

Types of Risk - PEAR

- People
- Environment
- Assets
- Reputation



4

Risk Assessment

Impact Factors:

- Permanence or Restorability
- Financial
- Reputation
- Cascading

5

Risk Assessment

Probability Factors:

- Geographic/Location
- Experience
- Knowledge/Skill Level
- Condition of Equipment

6

Risk Assessment – Your Role

- Understand how your institution perceives and manages risk
- Integrate your approach to align with institution
- Collaborate



7

7

Risk Assessment

Two Common Approaches:

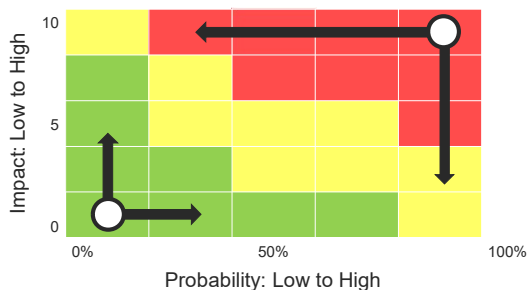
- Basic Risk Matrix
 - relatively easy
 - can be “internally” developed
- Enterprise Risk Management (ERM)
 - more complex
 - Audit/Compliance Office



8

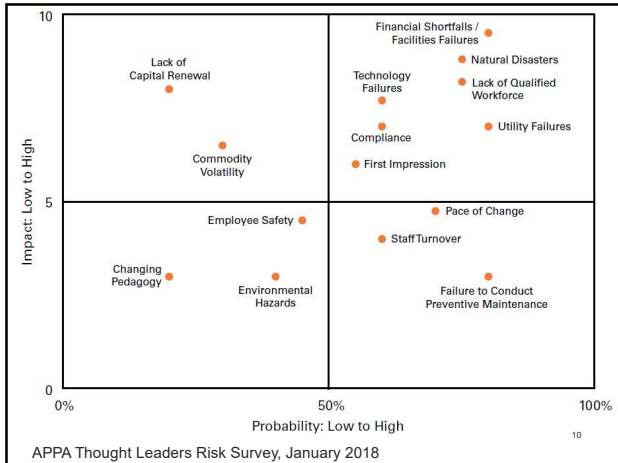
8

Risk Matrix



9

9



10

Enterprise Risk Management

Primary Categories

- ◆ Health and Safety
- ◆ Reputation
- ◆ Operational
- ◆ Strategic
- ◆ Compliance
- ◆ Finance

APPA 11

11

Risk Mitigation

- **Reduction** – reduce impact or probability
Replace susceptible equipment
- **Control** – minimize damage
Plan for backup housing
- **Transfer** – assign responsibility to others
Get insurance
- **Acceptance** – live with the risk
For “low impact/low probability”
- **Avoidance** – stop doing the risky activity

APPA 12

12

Understanding Your Context

- National
- Regional
- State
- Local
- Campus



13

13

American Society of Civil Engineers (ASCE)

National Report Card in 17 categories = C-

Drinking Water	D	Schools	D+
Storm Water	D	Transit	D-
Waste Water	D+	Dams	D
Solid Waste	B-	Energy	C-
Roads	D	Bridges	C

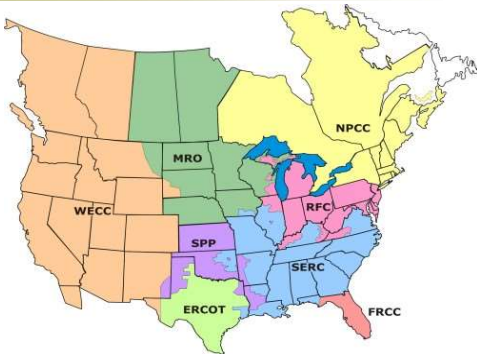
<https://infrastructurereportcard.org/>



14

14

NERC Regions



15

Risk Management – Desired Outcomes

- **Reliable** – rarely fails
- **Redundant** – backup options
- **Resilient** – recover quickly/seamlessly
- **Efficient** – minimize waste

 16

16

Roles and Responsibilities

The Institution

- What comprises risk
- Acceptable levels of risk
- Resources provided for mitigation

Facilities Management


- Identify and communicate facility risks
- Outline solutions and costs
- Insure effective implementation

 17

17

Discussion

- Have you experienced a catastrophic failure in your career?
- What happened and what steps did you take to prevent recurrence?

 18

18

Risk Management Session 2

Group Exercise after the break



19

19

Managing Risk

1. Identify your most critical processes
2. Determine failure modes
3. Use risk matrix to prioritize
4. Develop solutions for high risks
5. Mitigate high risks - if possible
6. Communicate high risks that can't be mitigated



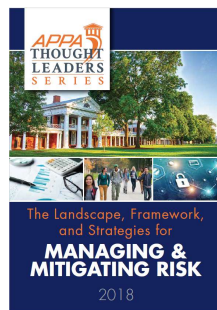
20

20

Questions, Comments, Observations?

- Sign-in Sheet & Evaluations
- Related Electives
 - 363 – Disaster Prep and Business Continuity
 - 373 – Energy Conservation
 - 325 – Electrical Systems - Planning, Reliability, and Safety

<https://www.appa.org/Research/CFaR/tls.cfm>



21
