Activity: Identifying Threats

Goal of this Activity

In this activity, you will identify potential threats that your power sector may face and assign each a likelihood score.

Introduction

The output of this activity will be a list of five power system threats and a likelihood score for each. These threats will help to identify impacts and vulnerabilities in the next two steps of the process. Threat likelihood scores will later be combined with a vulnerability severity score to calculate risk.

> **Threats**—anything that can damage, destroy, or disrupt the power system. Threats can be natural, technological, or caused by human activity. Threats are not typically within the control of power system planners and operators. They can include wildfires, hurricanes, storm surges, cyberattacks, and more[1].

Exercise 1: Identifying Threats

Potential threats must be identified to understand the potential impacts to communities and, eventually, the potential mitigation efforts to consider. An all-threats approach offers a holistic way to incorporate the many needs of various stakeholders and utilize limited resources during resilience planning. An all-threats approach would account for the following:

- **Natural threats** resulting from acts of nature (e.g., severe weather, floods, earthquakes, hurricanes, solar flares, etc.) as well as wildlife interactions with the power system (e.g., squirrels, snakes, or birds causing short circuits on distribution lines).
- **Technological threats** resulting from accidents or failures of systems and structures (e.g., a bridge collapse or grid outage).
- **Human-caused threats** resulting from accidents (e.g., cutting an underground line) or the threats or intentional actions of an adversary (e.g., cyberattacks or acts of terror).

Additional threats may include longer-term system stresses caused by population change or changing economic conditions.

To guide this activity and identify threats, consider the following questions:

Discussion Questions

1. What natural threats may exist for your power sector and how frequently do they occur?
2. Which power sector infrastructure systems have been impacted by past threats or system stresses?
   - Natural threats?
   - Technological threats?
   - Human-caused threats?
3. Has critical power sector infrastructure ever gone off-line or experienced reduced operability?
   - What was the threat that caused this?
   - How many hours, days, or weeks was the infrastructure off-line or not operational?
4. In the future, which threats and shocks are likely to increase (at the city, national, or multinational scale)?
   - Natural threats?
   - Technological threats?
   - Human-caused threats?
5. What are the top five threats that should be considered for a power sector vulnerability assessment?
   - Record these in the table on the next page.

Likelihood Scores

After identifying your top five threats, score the likelihood that each threat may occur. Refer to the *Guide to Threats* section for more information, and use the qualitative scoring scale provided below:

Threat Likelihood Scores		Threshold Descriptions
Categorical	**Numerical**	
High	9	Almost certain to occur. Historic and frequent occurrences.
Medium-High	**7**	More likely to occur than not.
Medium	5	May occur.
Low-Medium	3	Slightly elevated level of occurrence. Possible, but more likely not to occur.
Low	1	Very low probability of occurrence. An event has the potential to occur but is still very rare.

Activity: Identifying Threats

In the table below, record the top five threats that should be considered for a power sector vulnerability assessment. This activity is for exercise purposes only (in a comprehensive resilience assessment, far more than five threats should be considered).

Threats	Likelihood Scores
1.	
2.	
3.	
4.	
5.	