WORKBOOK 6.2: THREAT SPECTRUM MATRIX

Purpose: To provide a threat spectrum matrix template for future use and an example of a completed threat spectrum matrix

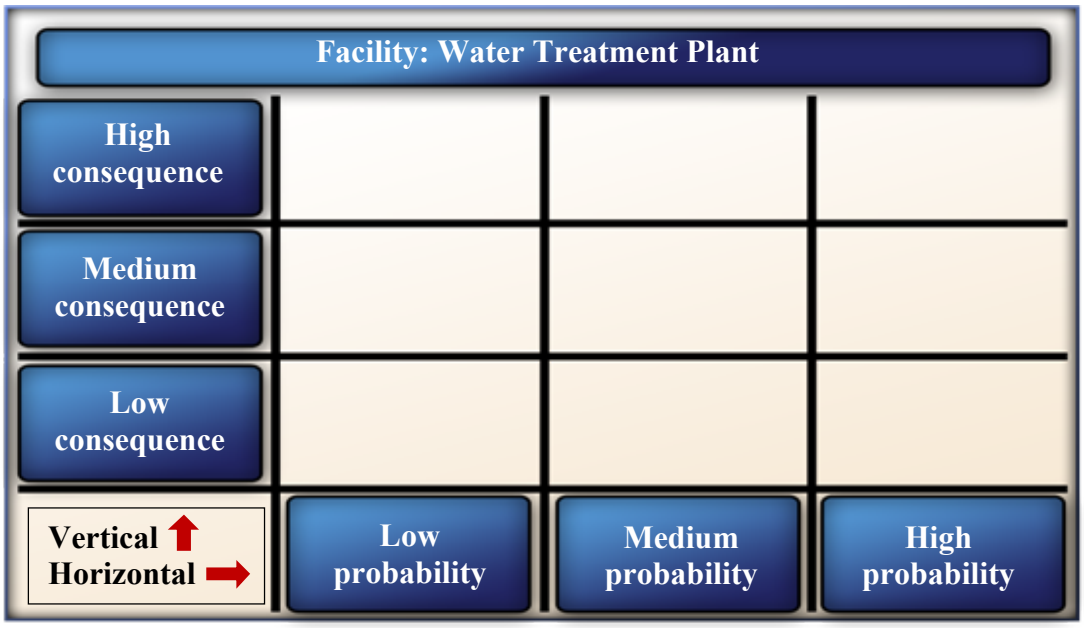
Introduction

The threat spectrum matrix is a template you can copy and use in the future to help identify and select the critical assets needing protection.

In *Figure 1: Threat Spectrum Matrix Format*:

- The consequence level scale is along the vertical axis of the matrix.
- The probability of occurrence scale is along the horizontal axis of the matrix.
- The qualitative consequence and probability level scales can be high, medium, or low — or whatever scale you decide is appropriate.

Figure 1: Threat Spectrum Matrix Format



Once you decide on the type of the qualitative scale to use:

- The scale for both the consequences of loss and the probability of occurrence must remain fixed.
- You must use the same type of scale consistently when comparing consequences of loss for all critical assets in a given facility.

Completing the Threat Spectrum Matrix

To complete the threat spectrum matrix, refer to the information gathered from your undesirable consequences of critical asset loss analysis (see *Table 4: Asset Protection Decision Matrix — Probability of Occurrence* in **Addendum 6.2: Undesirable Consequences of Critical Asset Loss Analysis**).

Recall from *Table 4: Asset Protection Decision Matrix — Probability of Occurrence* that loss of life (due to a terrorist bombing of the plant) received a **high** level of consequence of loss and a **high** probability of occurrence.

- If you enter both sets of data into the threat spectrum matrix, loss of life will appear in the cell where high consequence and high probability intersect.
- See *Figure 2: Completed Threat Spectrum Matrix*.

To complete the remaining portions of the matrix, repeat this same step for all information acquired during the undesirable consequences of critical asset loss analysis. In your experience, you will likely find that after completing a threat analysis, the ratings for most of the probability of occurrences will change. For demonstration purposes only, assume the same hypothetical probability levels shown in Table 4 of Addendum 6.2:

- Loss of life (terrorist bomb explosion): **high**
- Damage to national security (theft of diagram): **low**
- Interruption of critical facilities (bomb in control room): **high**
- Environmental damage (hazardous material): **medium**

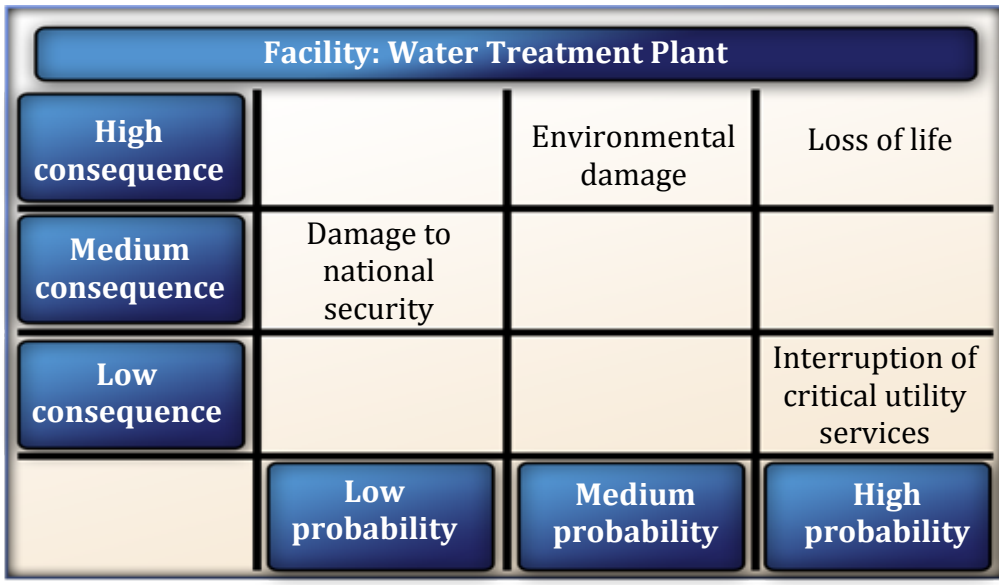
Using our hypothetical probability levels:

- The probability that a terrorist would release a hazardous chemical into water treatment machinery is determined as **medium** because this type of incident has not occurred at any facility in your country, although it has occurred in the region.
- However, the consequences of loss are considered **high**, since occurrence of such an event could result in significant environmental damage (as well as loss of life or serious adverse impact on the health and safety of employees and community members).

See *Table 3: Asset Protection Decision Matrix — Determine Levels of Undesirable Consequences* in **Addendum 6.2: Undesirable Consequences of Critical Asset Loss Analysis**.

- To record this undesirable consequence in the threat spectrum matrix, you would enter environmental damage in the cell where **high** consequence and **medium** probability intersect.
- Usually, any asset with high consequence and high probability levels is an asset that requires the highest priority for protection.
- Likewise, any asset assigned low consequence and low probability levels is an asset that only needs the lowest priority for protection when designing a physical protection system.
- Refer to *Figure 2: Completed Threat Spectrum Matrix* to see where interruption of critical utility services and damage to national security would appear in the matrix.

Figure 2: Completed Threat Spectrum Matrix



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