

## Safety Corner

### What are the Criteria for an “Acceptable” Risk Assessment?

The objective of a risk assessment for a system is to find out what can go wrong (the scenarios) so that their impact can be prioritized (typically, by their likelihood and consequence). Effective measures can then be implemented to control the risks; thus, rendering the system safer to operate. Because the “true” total risk of a system will never be known without accepting a certain level of uncertainties, philosophically, there is no such thing as a “perfect” risk assessment. To make a risk assessment acceptable or being a “good” risk assessment, care must be taken in every step to ensure the process is done according to criteria. The following list of criteria or factors that lead to a “good” risk assessment is by no mean exhaustive but forms the general characteristics that you would expect to find in a “good” risk assessment:

1. Comprehensive to include all reasonably foreseeable scenarios
2. Adherent to evidence
3. Logical and technically sound
4. Practical and reasonable
5. Open to evaluation through peer professional review
6. Based on explicit assumptions and premises
7. Compatible and specialised to the system being analysed
8. Conducive to learning as a living document
9. Attuned to risk communication to stakeholders
10. Innovative but does not reinvent the wheel

So, what are the characteristics of a “bad” risk assessment? These are the common symptoms:

1. Narrowly focused with unclear scope
2. Unsystematic and unclear scenario generation
3. Underestimate of the complexity of the system and data available
4. Overly subjective with no supporting evidence
5. Only generic data used without system-specific input
6. Difficult to understand with no open review
7. Incorrect application of tools and techniques
8. Inconclusive outcome
9. Too deterministic with no account for uncertainties
10. Overconfidence in applying expert judgment without any calibration

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