

Safety Corner

How to conduct a risk assessment for dangerous goods storage site?

Our prayers and thoughts go out for those injured and killed at the tragic accident in Tianjin and our sincerest condolences to their family, friends and the community.

The ultimate aim of conducting a risk assessment for dangerous goods storage site is to identify and reduce the associated uncertainties (in type, amount, location, characteristics, etc.), and to put in place appropriate, effective control measures that will reduce the risks from the dangerous goods to people, property and the environment to a level that is as low as reasonably practicable.

As a starting point, the team conducting the risk assessment should identify all dangerous goods and hazards relating to them at the site. The team should have working knowledge of the requirements for storage and handling of the dangerous goods stored on site. All relevant statutory requirements and standards shall be met.

For each dangerous good, the following information is required:

- the quantity stored and in use
- the characteristics and the extent of risk to people, making reference to Safety Data Sheet (SDS) or Material Safety Data Sheet (MSDS)
- the extent of risk to other substances and dangerous goods, plant and buildings
- environmental factors and site conditions contributing to the risk
- types of containment required, and controls required in case of fire, leak, contamination, etc.

The risk assessment team should assess the frequency and consequences of each hazard causing a dangerous good incident to people, property and the environment. A robust logic model is required in postulating and assessing accident scenarios associated with each dangerous good and hazard. If the expected consequence is unacceptable, the team should identify the risk control measures and explain the rationale behind the judgments made. In many situations, the probability assessment should be conservative because its uncertainties can directly affect the integrity of the results.

The risk assessment must then be reviewed periodically and when there is a change in the dangerous goods storage site.

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The Safety Corner is contributed by Ir Dr. Vincent Ho, who can be contacted at vsho@UCLA.edu