general classifications. A drawback to the use of tables of exempt amounts is the fact that the method cannot handle the interaction of multiple materials. Two materials may be exempt because neither pose a risk to the public by themselves but may form a deadly combination if combined in a release. Therefore, an alternate and superior method of evaluating the risk to the public of a release of a material is by a hazard assessment as part of an overall Risk Management Plan (RMP).

Buildings and other structures containing toxic, highly toxic, or explosive substances may be classified as Risk Category II structures if it can be demonstrated that the risk to the public from a release of these materials is minimal. Companies that operate industrial facilities typically perform Hazard and Operability (HAZOP) studies, conduct quantitative risk assessments, and develop risk management and emergency response plans. Federal regulations and local laws mandate many of these studies and plans (EPA 1999a). Additionally, many industrial facilities are located in areas remote from the public and have restricted access, which further reduces the risk to the public.

The intent of Section 1.5.2 is for the RMP and the facility's design features that are critical to the effective implementation of the RMP to be maintained for the life of the facility. The RMP and its associated critical design features must be reviewed on a regular basis to ensure that the actual condition of the facility is consistent with the plan. The RMP also should be reviewed whenever consideration is given to the alteration of facility features that are critical to the effective implementation of the RMP.

The RMP generally deals with mitigating the risk to the general public. Risk to individuals outside the facility storing toxic, highly toxic, or explosive substances is emphasized because plant personnel are not placed at as high a risk as the general public because of the plant personnel's training in the handling of the toxic, highly toxic, or explosive substances and because of the safety procedures implemented inside the facilities. When these elements (trained personnel and safety procedures) are not present in a facility, then the RMP must mitigate the risk to the plant personnel in the same manner as it mitigates the risk to the general public.

As the result of the prevention program portion of an RMP, buildings and other structures normally falling into Risk Category III may be classified into Risk Category II if means (e.g., secondary containment) are provided to contain the toxic, highly toxic, or explosive substances in the case of a release. To qualify, secondary containment systems must be designed, installed, and operated to prevent migration of harmful quantities of toxic, highly toxic, or explosive substances out of the system to the air, soil, ground water, or surface water at any time during the use of the structure. This requirement is not to be construed as requiring a secondary containment system to prevent a release of any toxic, highly toxic, or explosive substance into the air. By recognizing that secondary containment shall not allow releases of "harmful" quantities of contaminants, this standard acknowledges that there are substances that might contaminate ground water but do not produce a sufficient concentration of toxic, highly toxic, or explosive substances during a vapor release to constitute a health or safety risk to the public. Because it represents the "last line of defense," secondary containment does not qualify for the reduced classification.

If the beneficial effect of secondary containment can be negated by external forces, such as the overtopping of dike walls by flood waters or the loss of liquid containment of an earthen dike because of excessive ground displacement during a seismic event, then the buildings or other structures in question may not be classified into Risk Category II. If the secondary containment is to contain a flammable substance, then implementation of a program of emergency response and preparedness combined with an appropriate fire suppression system would be a prudent action associated with a Risk Category II classification. In many jurisdictions, such actions are required by local fire codes.

Also as the result of the prevention program portion of an RMP, buildings and other structures containing toxic, highly toxic, or explosive substances also could be classified as Risk Category II for hurricane wind loads when mandatory procedures are used to reduce the risk of release of toxic, highly toxic, or explosive substances during and immediately after these predictable extreme loadings. Examples of such procedures include draining hazardous fluids from a tank when a hurricane is predicted or, conversely, filling a tank with fluid to increase its buckling and overturning resistance. As appropriate to minimize the risk of damage to structures containing toxic, highly toxic, or explosive substances, mandatory procedures necessary for the Risk Category II classification should include preventative measures, such as the removal of objects that might become airborne missiles in the vicinity of the structure.

In previous editions of ASCE 7, the definitions of "hazardous" and "extremely hazardous" materials