



RISK BULLETIN

Evaluating And Instituting Secondary Containment Measures

A major environmental exposure faced by many industrial and commercial facilities is a hazardous material leak or spill. Careful handling of containers and transfer equipment is an important exposure control technique. Yet even the most careful handling will not prevent releases associated with acts of God, less careful handling by parties beyond your control and just plain bad luck. Some form of secondary containment for these materials is prudent, and in many cases is mandated by regulatory agencies. Assessing the foreseeable economic consequences of potential spills will aid in the selection of cost-effective secondary containment measures for your facility.

DETERMINE YOUR PRIORITIES

Before deciding on a secondary containment program, it is important to examine each potential spill or release site on your property and its potential impact. Secondary containment should be designed to protect the environment, minimize the severity of operational disruptions and economic loss, and facilitate a quick return to normal operations. Questions to examine include:

- Is the disruption to site operations associated with a release of a particular material likely to result in an unacceptable impact on production?
- Do the hazard characteristics of a potentially spilled material pose unusual risk for employee injuries?
- In the event of a release, could the spilled material potentially create additional emergency situations?

For example, a burning flammable liquid will spread fire if unchecked.

- If spilled materials contaminate surface water, soil or groundwater – especially outside your property boundary – are costs for cleanup likely to escalate?

ESTABLISH YOUR MINIMUM REQUIREMENTS

Some situations/materials are subject to specific secondary containment requirements and standards. Sources of these specifications include:

- **Federal/State Regulations** – Generally, these establish minimum containment volumes for various applications, typically equaling the capacity of the largest single container plus freeboard for stormwater (such as the 25-year, 24-hour storm depth established by the US Weather Bureau).
- **Industry Standards** – A number of industry advisory groups have published standards and guidelines for secondary containment design that are widely accepted and referenced, such as the NFPA and API.
- **Local Ordinances/Building Codes** – County and/or municipal engineering requirements should be researched for applicable provisions.

Should your secondary containment program go beyond these minimum specifications? Commonly overlooked exposures include loading/unloading areas for bulk and containerized transfers; small, unregulated containers; public relations/sensitivities; and the cumulative effect of numerous small releases. Your company may benefit from setting requirements for your facility that are more stringent than regulations dictate.

KNOW YOUR OPTIONS

Options for secondary containment design range considerably in complexity and cost. Primary design choices are:

- **Stop a release at the source or convey it to a remote accumulation site.** Conveyance away from the release source is a good idea in flammable environments and generally allows quicker recovery to normal operations.
- **Height of erected barriers** – Dikes are best where access is not routinely needed; berms are adequate for drum storage, but may interfere with forklift operations; floors sloping to sumps allow generally unrestricted ingress/egress, but are susceptible to flooding.
- **Flexibility** – Your need may be permanent or temporary, fixed or mobile. Future expansion is also a consideration. The solution to your exposure may be as simple as purchasing spill pallets.
- **Facility/area-wide or container specific** – If a group of stored materials is compatible, use of common secondary containment will likely reduce costs.
- **Containment construction materials** – The appropriate choice will depend on availability, climatic issues and compatibility with potentially spilled materials. Commonly used materials include:
 - Earth, with a clay or plastic liner
 - Concrete/Masonry, coated with epoxy or chemical resistant finish
 - Asphalt, sealed to reduce permeability
 - Plastic or metal, with welded, caulked or gasketed joints
 - Combinations of the above

It is important to maintain the containment system. Commitment of the administrative and manpower resources necessary to conduct inspections, repairs, stormwater removal and cleanup of spilled materials

are essential to the success of the design.

INTEGRATE WITH YOUR PLANT LAYOUT

When developing your secondary containment system:

- Take advantage of topographic assets of your site. If there is sufficient slope and space, remote containment via a lined trench or piping to a tank or impoundment will reduce the barrier impact to operations areas.
- Be alert to pathways that may conduct released materials off-site, including during a rainstorm.
- Consider the possible impact if released materials spray/drip/splash/surge outside the containment. Provide added protection to critical areas.
- Respect the impact of interferences with both normal operations and emergency operations. Make sure access to critical controls by employees and emergency workers is not impeded.

THE XL ENVIRONMENTAL RISK CONTROL DIVISION CAN HELP

For more information on developing your secondary containment program, call our Risk Control Division at 800-327-1414.

The information contained in this Risk Bulletin may not be reproduced without permission of XL. This publication is intended for general information purposes only.

The information contained herein is intended for informational purposes only and does not constitute legal advice. For legal advice, seek the services of a competent attorney. Any descriptions of insurance provisions are general overviews only.

"XL Insurance" is the global brand used by XL Group plc's (NYSE: XL) insurance companies. Coverages underwritten by Greenwich Insurance Company, Indian Harbor Insurance Company, XL Insurance America, Inc., XL Specialty Insurance Company and XL Insurance Company Limited—Canadian Branch. Coverages not available in all jurisdictions.



XL Environmental
Risk Control Division
505 Eagleview Boulevard
Suite 100
PO Box 636
Exton, PA 19341-0636
Phone: 800-327-1414
Fax: 610-458-7285
www.xlenvironmental.com