Minimizing Water Damage

Accidental building water release incidents are some of the most common and expensive property damage claims. There are serveral main causes of liquid/water loss from pipes and tanks – mechanical damage or failure, corrosion, freezing and overflowing tanks. In addition to building and contents damage, critical business operations can be interrupted and employees' health may be affected. The development and implementation of a water release prevention program supports good maintenance practices and early problem detection and remediation to prevent a small problem from becoming a large one.

Steps on How to Minimize Water Damage

1. Identify and map potential water release sources and determine impact. Consider the temporary impact of freezing weather conditions or building renovations.

2. Use an assessment checklist, such as the Crum & Forster's *Water Damage Risk Assessment Checklist*, to monitor the condition of buildings and roofs, equipment, piping and valves.

3. Develop an emergency response plan which identifies all water shut off valves and areas or equipment controlled. The responder list should be current and include back up.

4. Establish clean-up and salvage procedures.

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Minimize Water Damage

Safety Alert

1. Understand your liquid release sources and impact

Even relatively modest leakage can cause significant damage or business interruption, particularly if critical or high valued equipment is impacted or if the source is not quickly identified and shut off. Delayed or improper clean-up efforts can also increase damage. Accidental water release events that involve sprinkler system impairment could leave your facility more susceptible to a severe fire loss. For areas where liquid release is a concern, consider designed protection, such as pitched floors or drainage systems, or monitoring (liquid detection) systems. Liquid detection systems are often inexpensive and easily installed.

Identify and map facility, equipment, process and piping systems that contain water or other liquids or could cause water intrusion. Sources to consider include:

- Domestic water systems, including hot water heaters
- Sprinkler systems
- Sewer systems
- Drainage systems
- HVAC systems
- Surface water runoff
- Leaking roofs
- Liquid piping systems
- Interior/exterior storage tanks

2. Facility, conditions and maintenance checklist

Routine and incident related inspections are critical to water damage minimization. Inspecting staff should be adequately trained. Documentation should be audited and the checklist updated as needed.

- Facilities, equipment, systems, piping and shut off valve condition – Routinely inspect to ensure that they are in good condition. Any signs of corrosion or water leakage should be investigated. Extensive corrosion can lead to equipment or piping failure with leakage being a potential indicator of failure. Older equipment and piping systems can be more likely to fail thus increased inspection, maintenance and testing may be required. Consider replacement of equipment or piping systems that are in distressed or poor condition.

- Water Removal Equipment – Inspect any equipment that is designed to remove water, such as sump pumps. Consider back up equipment and emergency power sources.

- Freeze Exposure – Freeze is a common cause of piping damage. Concealed spaces, including penthouses, attics, and crawl spaces should be inspected for any liquid piping subject to freezing. See the C&F "Minimizing Freeze Damage" Alert.

- Critical or High Valued Equipment Areas – Key equipment areas such as data centers, telecom rooms, and medical equipment rooms should be identified with review of water sources and intrusion potential. It is highly recommended that such equipment not be located below grade if the opportunity is available to keep above grade. Eliminate unnecessary liquid sources in or above these areas. If liquid sources can't be relocated, consider added controls such as pitching, drainage and water proofing or liquid detection systems.

- Monitoring – It can be difficult to quickly recognize a water release if systems and piping are behind walls, below floors, or in limited access areas. Water monitoring systems can be useful in areas considered most prone to water release such as restrooms, kitchens and mechanical equipment areas. Otherwise, all staff should immediately notify proper personnel in the event of a water release or signs of a potential water release. These often include staining of ceiling tiles, clogged drains, running toilets or sinks or unexpected surface wetting.

3. Develop emergency response planning and shut off valve list

A comprehensive emergency response plan supports quick incident response and water damage minimization or prevention. Staff should be trained in emergency response procedures. The procedures and response staff listing should be updated quarterly.

- Piping Diagrams and Valve List – Piping diagrams and valves location lists should be maintained and readily available to trained personnel to help quickly identify source of liquid and then isolate and stop the release. Valves should be easily accessible and well labeled. Consider signage for valves that are hidden or not easy to locate. Valves should also be routinely exercised to ensure operability.

- Contact and Vendor Phone List – A contact list, with adequate back up personnel, should be developed to ensure quick communication with key emergency response personnel. Consider including a pre-vetted sound professional restoration service in the emergency contact list.

- Training – Provide routine periodic training to ensure familiarity of systems, piping and valves. Response personnel with knowledge of systems should be available 24/7.

- Supplies and Materials – Materials and equipment to consider keeping on-site are:
  - Plastic sheeting and tarps
  - Appropriate height ladders in good condition
  - Spill kits or emergency repair/clean up carts
  - Mops and squeegees
  - Wet vacuums
  - Absorbent materials
  - Trash bags
  - Dehumidifiers and fans
  - Protective gear, if deemed necessary

- Response Plan – Immediate action items to consider upon identification of a liquid release event are as follows:
  - As long as it is needed and safe to do so, de-energize electrical equipment in impacted area.
  - Identify the cause of release and shut-off supply of the liquid from nearest safe location.

4. Establish clean-up and salvage procedures

Restoration and clean-up plan response can differ based on scope of water released, impacted areas and staffing. Consider these actions if they are safe to carry out.

- Relocate easily movable critical or valuable equipment outside of impacted area.
- Cover non-movable critical and valuable equipment if the leakage is above them.
- Begin water removal, drying and clean-up procedures.
- Separate damaged equipment and materials.
- Identify areas that could have trapped liquids.
- Determine if professional contracted restoration and dehumidification services are needed.

NOTE – Cause of incident and potential for similar events should be investigated, particularly in older systems. Proper testing should be done once repairs are completed. Some systems such as fire sprinkler piping may require pressure testing to ensure integrity.

Be aware of your site-specific exposure. Quick initial and post loss responses and clean-up are all critical. The longer water release or intrusion is uncontrolled, the greater the impact. Time is of the essence, both during release and after.

FIRE PROTECTION IMPAIRMENT – Any event that involves fire sprinkler piping or impacts fire protection systems should be treated as an emergency impairment. Implement sound impairment monitoring procedures with efforts to also restore protection as quickly as possible.