

MANAGING RISKS IN VACANT AND IDLE BUILDINGS

In 1999, a pair of firefighters entered a burning, vacant cold storage warehouse in Worcester, MA to look for a homeless couple reportedly living there. A short time later, the firefighters radioed they were lost in heavy smoke and were running out of air. Four more firefighters rushed in to rescue them. All six became trapped and died within minutes. As it turned out, the fire was started by a burning candle used by the couple, who left the premises after the fire began. This piece of firefighter lore serves as a tragic reminder of the risks inherent in vacant and idle buildings.

Lately, the risks have risen, as the economic downturn has forced many organizations to cut back or shut down operations and abandon buildings. Several key factors make idle or vacant facilities especially vulnerable.

- An unoccupied facility is an easy target for arson, vandalism, trespassing and burglary.
- Idle or vacant facilities are often ignored and building maintenance slips.
- Utilities and other building services are sometimes cut off without careful consideration of the consequences.

THE PERILS

FIRE

The most prominent and costly peril facing an idle or vacant facility is fire. Between 2003 and 2006, the U.S. Fire Administration (USFA) estimated an average of 31,000 structure fires occurred in vacant buildings resulting in an average of 51 deaths, 4,500 firefighter injuries and \$642 million in direct property damage each year. A National Fire Protection Association (NFPA)¹ study found that approximately 43% of reported vacant building fires were intentionally set. Vacant facilities are appealing arson targets



because, unless caught, arsonists tend to try repeatedly to burn buildings, and vacant facilities are usually easier to enter unchallenged. An additional hazard arises when vacant buildings are used for storage of combustible materials. The risk of fire with a significant loss of life and/or property, is great.

Vacant buildings also pose a fire threat to nearby buildings and structures. When vacant facilities lack a monitored alarm service and/or on-site guards, fires can spread before they are reported. In 1994, embers from a burning vacant warehouse in Illinois ignited a



plant a mile away causing major damage. Because the local firefighters were busy at the vacant warehouse, the plant employees had to use portable fire extinguishers until firefighters from another community arrived. Even if a vacant building is adequately insured and the building owner is reimbursed for property damage from the fire, the owner risks tarnishing its reputation and community standing due to the damage the fire may have done to the community, especially if loss of life is involved. Liability questions may arise as well.

VANDALISM AND THEFT

The next most prominent threats to idle or vacant facilities are vandalism and theft. Vandalism is the willful marking upon, defacing and damaging of property. Whether a purposeful crime or a prank, vandalism can result in significant cost, especially if the vandals cause a more serious problem such as a fire. In addition, a vandalized property can cost the building owner significant amounts of money to restore the building to selling condition if the property is placed on the market.

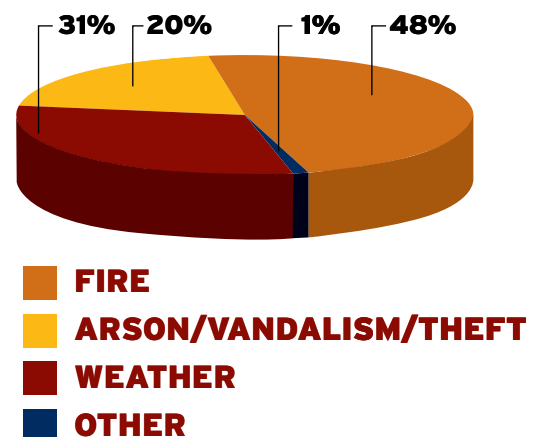
Approximately 90% of theft in idle and vacant facilities involves copper electrical or plumbing materials.² The theft of these materials has been trending upwards for the last three years. In one insurance company's analysis, there were 22 such losses in 2006 totaling over \$2.1M.³ By 2008, the total amount of copper theft losses was up to \$9M, mostly from vacant retail locations.⁴

In the vacant plant of a Pittsburgh-area company, a copper thief cut into a live wire and fell to his death. The company was eventually found responsible for the death of the thief for not properly securing the vacant property.⁵

BAD WEATHER

The same severe weather that can damage an operating plant can do the same, and often worse, to an idle or vacant plant. A vacant plant, for example, whose utilities have been cut off, is more susceptible to frozen pipe breakage than a heated, occupied plant. Sometimes when a sprinkler pipe breaks due to freezing and then temperatures rise again, water may flow undetected for days or weeks because waterflow alarms are either out of service or have been disconnected.

Regular inspections and/or building maintenance are sometimes reduced or eliminated in unused structures, creating dangerous situations with catastrophes waiting to happen. Lack of roof inspection, for example, could lead to collapse during a heavy rainfall or snowstorm because of clogged drains and/or excessive loading. Lack of regular maintenance could lead to progressive deterioration of the building itself making repairs more expensive or even impossible.



PROTECTION STRATEGIES

MAINTAIN FIRE PROTECTION SYSTEMS

The most effective protection a facility can have against fire – regardless of how it starts – is automatic sprinklers. It is critical that sprinkler systems be maintained in good working condition long after the plant has been shut down. If maintaining a minimum temperature of 40 degrees F in all areas of the building is a problem, then steps should be taken to ensure that sprinkler pipes (or any other water pipes for that matter) are properly insulated against freezing.

Sprinkler systems are useless without an adequate water supply. All valves should be locked in the open position and inspected and tested per NFPA 25. For water supplies that rely on fire pumps, ensure that the fuel or power to these pumps is maintained and that the pump itself is properly maintained and tested per NFPA 25.

Alarm systems covering sprinkler system waterflow alarms, automatic fire detection, valve tamper alarms and fire pump alarms must remain in service and monitored by an approved central station alarm company. Once again, the alarms should be maintained and tested per NFPA 72.

Other things you can do to prevent a major fire loss include eliminating unnecessary combustibles in the building as well as ignition sources. Also, if there are any fire doors in the building, they should be closed to limit fire and smoke spread.

Outside the building, remove any storage or combustible waste materials in the yard. Removing all the weeds and brush around the building not only helps prevent fire spread but also gives a neat appearance to the property. This could deter vagrants and trespassers, since they will see that someone is looking out for the property. Lawns and bushes should be kept mowed and groomed as well.

PROVIDE PLANT SECURITY

To protect against vandalism and theft, plant security is more important than ever in vacant and idle plants because you can no longer rely on the eyes and ears of employees as in an occupied plant. Intrusion detection alarms consisting of contacts for vulnerable windows and doors should be installed. Motion detectors effectively monitor large areas. As with the fire alarms, intrusion alarms should also be monitored by an approved central station alarm company. An acceptable alternative to monitored alarms is 24/7 guard service that includes conducting recorded rounds. If only complete alarm service is provided (fire and burglary) with no on-site guard, the vacant building should be inspected at least once a week.

In addition to alarms and/or guard service, the perimeter of the building as well as the yard should be properly secured. Ground level and below-grade windows should be secured. All exterior doors should be fitted with deadbolts. When doors and windows have been secured, the roof can be used to gain access. Make sure that roof hatch and vents are locked and provided with corrosion-resistant screens.





Provide ample outside lighting in the yard especially near entry points to the building. Installing several visible CCTV cameras also deters would-be vandals or trespassers. If feasible, consider a perimeter fence if one doesn't already exist and make sure that gates and other entry points are chained and locked.

BE PREPARED FOR BAD WEATHER

As with an operating plant, the best protection against severe weather for a vacant facility is pre-emergency preparation and planning. Conduct regular roof inspections to ensure that drains and scuppers are not clogged. Look for any unusual roof conditions as well, such as sagging or ponding. Both could be signs of serious problems that will only get worse.

After a winter storm, inspect the roof for snow accumulation. One of the leading causes of idle and vacant plant losses in severe weather is roof collapse. It is advisable to have a monitored temperature alarm installed to alert someone when building temperatures fall below 40 degrees F.

If the vacant building is located in a high wind hurricane area, windows with glass should be boarded up during the hurricane season to prevent the glass from breaking and water entering the building. Any broken windows and/or doors should be immediately repaired to prevent further damage and to properly secure the building from unauthorized entrance. A complete inspection of the building should be conducted after every major hurricane to check for any damages.

BEFORE SHUTTING DOWN

Whether the plant is to be shut down and vacated or idled with production machinery remaining in place, developing and executing a well thought out plan is crucial in avoiding a major loss while the plant is idle or vacant.

In anticipation of plant closings and mass layoffs, companies should be aware of potential security issues during such times. Some employees may be disgruntled enough to try to cause harm to the property before he or she is laid off. It is a good idea to increase security during this crucial time until the plant is completely shut down or vacated. As various departments clear out, access to these vacated areas should be limited. Management needs to exercise tight control of keys and access cards. Key card access for unauthorized or terminated employees should be de-programmed immediately. Keys, parking and building passes must be collected from employees immediately upon termination. Closely supervise the removal of equipment. If torches or any other equipment must be utilized, proper hot work procedures must be enforced including the use of hot work permits.

Intellectual property should be carefully guarded against theft or sabotage. Restrict access to company computers and invalidate passwords as soon as the employee is terminated. It may also be appropriate to institute a policy that gives security the right to inspect suspicious packages and post this policy where it can be seen by employees.

If the plant is to be idled with most of the machinery in place, appropriate steps should be taken to properly secure and protect the machinery to ensure that they



will be in good condition when it comes time to place it back in operation. Shut down the power to machineries by turning off circuit breakers as early as possible when they are no longer needed. If necessary, consult with the equipment manufacturer for guidance on long-term shutdown of valuable and/or sensitive machines. Drain any tanks containing liquids and take appropriate actions to prevent tank corrosion and/or deterioration. Remove any flammable, combustible and any other hazardous liquids and gases from the plant.

THE WEEKLY IDLE PLANT VISIT

Assuming the idle or vacant facility has adequate alarms (fire and burglary), a minimum of one weekly recorded visit should be conducted if no on-site guard service is provided.

The following is a checklist of what should be included in the weekly report (as applicable):

BUILDING AND YARD SECURITY

- All the doors and windows are in good condition and locked
- All the roof hatches and vents are properly secured
- Burglar alarms are in service
- Alarm company regularly tests alarms and confirms receipt of signals
- CCTV cameras are in service
- If necessary, boards for windows are provided (hurricane season)
- Yard lighting is adequate and in good working order
- All the gates are chained and locked
- Perimeter fence is adequate with no sign of breaches
- Local fire and police departments have been notified of the status of the building

FIRE PROTECTION SYSTEMS

- All automatic sprinkler systems are in service
- Water supply is in service (public or fire pump and tank)
- Automatic sprinklers system pressure gauge(s) indicate adequate pressure
- All fire protection valves are locked in the open position
- All fire alarms (waterflow, valve tamper, smoke detectors, heat detectors and fire pump alarms) are in service
- Alarm company regularly test alarms and confirms receipt of signals; fire pump(s) are in service and started weekly
- Fire pump is in automatic mode
- Fire pump fuel tank is full
- Suction tank has adequate water
- If applicable, fire pump room and suction tank are adequately heated
- Fire protection systems are inspected and tested per NFPA 25
- Hydrants are in good condition and are accessible
- Fire doors are closed

HOUSEKEEPING AND MAINTENANCE

- The inside of the building is free of trash and combustibles
- All areas of the buildings have been inspected for any signs of vandalism and/or intrusions
- All areas of the roof were inspected including the roof drains and scuppers
- All non-essential power has been disconnected
- Building heat is in service as needed.
- Temperature alarm is in service, regularly tested and confirmed receipt of alert signals
- Yard is free of combustibles or trash
- Lawn and bushes adequately trimmed

CONTACTS

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You may also visit **our website** at willis.com.

The objective of our publication is to provide a general overview and discussion of issues relevant to loss control. The comments and suggestions presented should not be taken as substitute for advice about any specific situation.

¹ Mary Ahrens, "Vacant Building Fires," NFPA Fire Analysis and Research, 4/09, iv.

² Charlie Bauroth and Tanya Gilbreath, "When Vacancy Is unwelcome: Vacant Buildings offer open invitation to vandals and mother nature," Axon Group, Gale, Cengage Learning, 2009.

³ Ibid.

⁴ Ibid.

⁵ Jonathan Kantz, "Locking Out Idled Threats," *Industry Week Magazine*, 2009