

# **Sprinkler Successes in Selected Properties**

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National Fire Protection Association**

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## INTRODUCTION

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This collection of previously published incidents was compiled from NFPA's studies of large-loss fires and the "Firewatch" column from *NFPA Journal*. Sprinklers are highly effective, reliable weapons in the fight to save lives and property from fire. Sprinklers operated in 93% of the reported structure fires in which sprinklers were present in the fire area and the fire was large enough to activate them. In most occupancy groups, the death rate per fire in sprinklered properties is least 57% lower compared to properties with out automatic extinguishing systems, while the average loss per fire in sprinklered properties is 34-68% lower.<sup>1</sup>

The incidents that follow are divided by occupancy group. These examples show how sprinklers operate in real fires. They also show that in some situations, particularly explosions, sprinklers prevented a fire from spreading or controlled it, but substantial losses still occurred.

It is important to remember that these descriptions show provide information about what can happen, not what is typical.

For more on NFPA's home Fire sprinkler Initiative, go to <http://www.firesprinklerinitiative.org>

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<sup>1</sup> John R. Hall, Jr. *U.S. Experience with Sprinklers and Other Automatic Fire Extinguishing Equipment*, Quincy, MA: National Fire Protection Association, 2013.

## ONE-AND TWO-FAMILY HOMES

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### **Sprinkler extinguishes dwelling garage fire, Arizona**

A single sprinkler extinguished a fire that investigators believe started when a child's plastic table ignited in the first-floor garage of a single-family home.

The one-story, wood-frame house had smoke alarms and an NFPA 13D wet-pipe sprinkler system that provided coverage in all the living areas and the garage.

The fire department received that alarm at 11:52 a.m., and firefighters responded to find smoke coming from the garage. The fire had already been extinguished by one sprinkler head. They checked the attic for fire extension and found none.

The child's 19-year-old sister told investigators that she heard the sprinkler flow alarm go off, looked in the garage, and saw that it was full of black smoke. She then saw that the toy table had melted and moved it outside into the yard.

The house, valued at \$150,000, and its contents, valued at \$50,000, sustained losses estimated at \$100.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, September/October 26.

### **Sprinkler douses fire started by child playing with lighter, Florida**

Firefighters responding to a public assist call for a water leak at a single-family home were notified enroute that the alarm company was reporting an operating water flow alarm at the house.

The attached, two-story, wood-frame townhouse had concrete block walls, a stucco exterior, and a wood-truss roof covered by plywood and composite shingles. The property was protected by a sprinkler system.

After controlling the sprinkler water flow, the officer noted two areas of burning and called investigators, who determined that a child had ignited paper at the living room door leading to the garage with a lighter. The boy said that he tried to use the contents of a plastic sports drink bottle, thinking it was water, to extinguish the flames, but the fire came back at him, burning his hand. Apparently, the boy's mother had been painting and put acetone in the plastic container.

The flash fire, which spread to an interior door and the adjacent wall, created enough heat to activate the sprinkler and sound an external water flow alarm, allowing the family to evacuate safely.

Water did \$500 in structural damage to the house, which was valued at \$82,000. Its contents, valued at \$10,000, sustained an estimated loss of \$1,000.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, July/August, 23-24.

### **Hot ashes in trash can ignite, California**

A single sprinkler activated to control a fire that began when ashes in a plastic trash can ignited other combustibles in the can, which was stored in a residential garage. The neighbors heard the alarm and called 911.

The single story, wood-frame detached garage, which was 20 feet (6 meters) long and 30 feet (9 meters) wide, had a concrete floor and a basement. The home fire sprinkler system was a wet-pipe NFPA 13D system that provided coverage for about 600 square feet (55 square meters).

The 911 call came in at 12:13 p.m., and firefighters arrived eight minutes later to find the alarm still operating, smoke showing, and water coming from under the garage door. Once inside, they discovered that the sprinkler had nearly extinguished the fire.

The owner told investigators that friends who were staying over had inadvertently disposed of the ashes in the trash. The area around the trash can and on side of a vehicle parked in the garage suffered some heat damage. Damage to the structure and its contents was estimated at \$2,000 and \$3,000, respectively. The fire department report noted that, "no doubt the sprinkler played a key role in limiting what would have been a much more extensive fire."

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 24.

## APARTMENTS

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### **Sprinkler extinguishes unattended cooking fire, Minnesota**

A single sprinkler extinguished an apartment fire that started when the occupant left a pan of oil heating unattended on the stove.

The apartment was in a 12-unit, wood-frame building that covered an area of approximately 25,000 square feet (2,323 square meters). Each apartment was protected by local smoke alarms connected to a building fire alarm system, as well as a monitored wet-pipe sprinkler system. A dry-pipe system had been installed in the attic.

The alarm monitoring company notified the fire department of the water flow alarm at 6:05 p.m., and firefighters arrived at the scene seven minutes later to find light smoke inside the building. Once inside the apartment of origin, they discovered that sprinklers had already extinguished the fire.

The apartment's occupant told investigators that he had put a pan of oil on the stove and turned the burner on high before he went to watch a video in another room. When he noticed that the pan was on fire, he moved the pan to the sink and tried to douse the flames with salt. As he did so, the sprinkler activated and extinguished the blaze.

Fire damage was limited to the kitchen cabinets, although there was smoke damage throughout the apartment. The building, which was valued at \$1 million, sustained \$10,000 in damage. The contents of the apartment of origin, valued at \$10,000, sustained an estimated \$5,000 in damage. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, September/October 25-26.

### **Sprinklers extinguish fire caused by smoking, British Columbia**

Two sprinklers extinguished a fire that began when a woman fell asleep in her apartment while smoking in bed after taking prescribed medication and consuming alcohol.

The three-story, 26-unit, wood-frame apartment building, which measured 128 feet (39 meters) by 50 feet (15 meters), had a roof covered by tar and gravel. A wet-pipe sprinkler system monitored by an alarm monitoring company provided coverage in the living areas, and each apartment was equipped with local battery-operated smoke alarms. The occupant was unsure whether any smoke alarms in her unit sounded.

Firefighters received calls from the fire alarm monitoring company at 9:14 p.m. By the time they arrived, however, the sprinklers had already extinguished the blaze. Fire alarms in the building were sounding when firefighters arrived.

When investigators spoke to the apartment's occupant, she reported that she had been drinking alcohol after taking her prescribed medication. She fell asleep while smoking in bed and watching television, saying that she last remembered a show that had been broadcast three to four hours before she awoke to the smell of smoke. As she left her

apartment, she reported that the sprinklers activated and she heard the smoke detectors in the common hallway operating.

The investigators determined that the fire started when a lit cigarette ignited the bedcovers and that alcohol consumption and medication were contributing factors.

The building, valued at \$1.5 million, sustained damages estimated at \$8,000. The woman suffered minor smoke inhalation injuries.

A fire department spokesman noted that, "since 1996, this (was) the fourth time there has been a fire extinguished by the sprinkler system in this building, greatly reducing the property loss, and... the potential loss of life".

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, September/October 24-25.

### **Sprinkler prevents fire from spreading up trash chute, Pennsylvania**

A single sprinkler prevented a fire from spreading from a dumpster at the bottom of a trash chute into a seven-story apartment building, although smoke filled the building's top three floors.

The 114-unit, steel-frame apartment building, which was 169 feet (51 meters) long and 119 feet (36 meters) wide, was of masonry construction and had a metal roof with a built-up roof surface. The property was protected by a wet-pipe sprinkler system and a fire detection system, which alerted the occupants.

An occupant called 911 at 6:10 p.m. to report the fire, and firefighters arrived four minutes later to find water coming from a lower-level trash room. They found that the sprinkler had confined the fire to a dumpster, which they removed from the building to complete extinguishment. They then repositioned it under the trash chute.

Investigators were unable to determine the exact ignition source.

No damage was done to the building, which was valued at \$2.1 million, or its contents, valued at just over \$1 million. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, July/August, 21.

### **Sprinkler saves townhouse, Massachusetts**

A single sprinkler extinguished a fire in a townhouse-style condominium that began when smoking materials ignited a blanket that had been draped over a living room couch.

The two-story, four-unit, wood-frame condominium building, which was 100 feet (30 meters) long by 50 feet (15 meters) wide, had hardwired smoke detectors providing a local alarm on each level. A wet-pipe residential sprinkler system was installed in living areas. The water flow was not monitored, but it did provide internal and external horn/strobe notification.

A passerby heard the horn/strobe operating and called 911 at 9:11 a.m. Told that a sprinkler had activated and that the fire appeared to be under control, responding firefighters forced the front door and completed extinguishment. Searches for victims were negative, as the unit of origin and all the other condos in the building were unoccupied at the time.

Investigators found that a match or a pipe started the fire at the end of a couch in the first-floor living room of a unit. A Christmas tree was nearby.

In a press release about the fire, an official noted that, "Opponents to residential sprinklers often say that newer buildings don't have fires or that smoke alarms are adequate fire protection. This building was built in the 1980s, and the fire would have progressed significantly and quickly without sprinklers, impacting the people in the other condos and their homes and possessions and pets."

"As fast as we were able to get there," said the local fire chief, "the fire sprinkler was faster and had the fire under control, frankly before we even left the station. It is absolutely amazing that the Christmas tree was never involved in this fire and that everyone got out safely. What is even more amazing is that everyone can sleep here tonight." The chief also said that the fire demonstrated the need for residential fire sprinklers in every new home.

The building, valued at \$1 million, and its contents, valued at \$160,000, sustained a combined loss of \$27,000.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, March/April, 19-20.

### **Sprinkler controls sofa fire, Florida**

A 50-year-old woman who used a wheelchair suffered severe burns when smoking materials ignited a sofa in her apartment in a low-income, high-rise building.

The 13-story- apartment building, which had concrete block walls and concrete floors, had monitored fire alarm system that included smoke detectors and a waterflow alarm. A wet-pipe sprinkler system, standpipes, and hose cabinets with cotton-jacketed hose had also been installed. The 150-unit building provided housing for older adults.

The fire department received the alarm from the central station company at 8 a.m. When responding firefighters arrived at the apartment of origin, they found that a single sprinkler had controlled the blaze. They quickly extinguished the remains of the fire that were still burning behind the couch and on the wood paneling on the wall.

Investigators determined that the woman discarded a cigarette, which ignited the sofa. Flames spread from the sofa to the wood paneling on the walls, but the sprinkler kept it from going any further.

The building, valued at \$3,676,000, sustained an estimated \$1,000 worth of damage. Damage to the apartment's contents, valued at \$2,000, was estimated at \$250.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 27-28.

### **Sprinkler extinguishes unattended cooking fire, Georgia**

A man living in a 52-unit apartment building left a pan of grease heating on the stove when he went to the bathroom. When he returned, he discovered that the grease had ignited but that a single sprinkler had extinguished the fire.

The three-story, wood-frame apartment building, which was 192 feet (58 meters) long and 50 feet (15 meters) wide, had vinyl siding on the exterior walls and an asphalt-shingled roof. A fire alarm system providing full coverage was monitored by a central station alarm company, as was a full-coverage wet-pipe sprinkler system.

The fire department received the alarm at 6:56 p.m., and firefighters arrived in four minutes to find that the building had already been evacuated in response to the local alarm. Reports of fire on the third floor sent fire crews upstairs, where they found light to moderate smoke. When they entered the apartment of origin, they noted that a sprinkler had already put the fire out.

The report did not contain estimates of value or damage for the structure or its contents. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch" *NFPA Journal*, July/August, 22.

### **Sprinkler extinguishes high-rise apartment fire, Minnesota**

A single sprinkler extinguished an apartment fire that started after the tenant left the apartment and forgot to turn off a stovetop burner. Combustibles near the burner ignited, and the fire spread to a cabinet and a cardboard box before a sprinkler activated, tripping the fire alarm.

The 20-story apartment building, each floor of which covered 30,000 square feet (2,787 square meters), was equipped with a fire alarm system and a sprinkler system, each of which worked as designed.

The fire department responded to a report of alarms sounding at 7:48 a.m. and arrived to find a fire burning in an apartment on the eleventh floor. When they entered the unit, they found the single sprinkler operating in the kitchen.

Damage to the building, which was valued at \$4.1 million, was estimated at \$1,000. Damage estimates for its contents were not reported. No one was injured.

Kenneth J. Tremblay, 2012, "Firewatch" *NFPA Journal*, May/June, 30.

## RESIDENTIAL BOARD AND CARE

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### **Nursing home visitor dies while making methamphetamine, Ohio**

A 31-year-old man was killed while making methamphetamine in a nursing home when a glass jar containing light petroleum distillate broke, spilling burning liquid onto the victim and onto combustible materials in the room he was visiting. The resulting fire triggered the nursing home's sprinkler and fire alarm system. Two sprinklers confined the fire to the room of origin.

The two-story, skilled nursing facility covered an area of 11,300 square feet (1,050 square meters) per floor. An older section had masonry brick and block walls with wood-frame roof and interior partitions. A newer wood-frame addition was drywalled. The property was protected by a wet-pipe sprinkler system and a fire alarm system.

The victim and one other visitor in a second-floor resident's room in the older section of the building were making methamphetamine using a one-cup process. The victim was sitting in a folding lawn chair while he heated the glass jar containing the petroleum distillate when the vapors from the container ignited, breaking the jar and creating a fireball, which caused his death. The other two occupants of the room evacuated.

The alarm company called the fire department to report a fire alarm activation at 8:36 p.m. When fire crews arrived three minutes later, several people told them that there was a fire on the second floor. The fire officer ordered additional equipment to the scene, including several ambulances, before entering the nursing home. Staff members were helping patients leave the area as firefighters entered.

After systematically searching the second floor, fire crews discovered that two sprinklers had activated and prevented the fire from spreading beyond the room of origin.

Investigators found evidence consistent with the illegal manufacture of methamphetamine, including several over-the-counter items available at any drug or hardware store, and determined that the point of origin was the glass container being heated by the victim. Tests of the remaining contents revealed the jar contained camp stove fuel and lighter fluid.

In addition to the victim, three nursing home residents, including the one in the room of origin, suffered from smoke inhalation. The second visitor was also believed to have been injured, but he left the scene. Two staffers were also treated at the hospital.

The building, which had an assessed value of \$734,000, sustained roughly \$50,000 in damage.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, September/October 20-21.

### **Sprinklers foil suicide attempt, Florida**

A 49-year-old woman staying at a substance abuse treatment center slashed her wrists and started a fire in her bedroom in an attempt to take her own life. However, the fire activated a sprinkler, which controlled the fire until firefighters arrived to extinguish it.

The treatment center was located in a three-story building that had concrete block walls and poured concrete floors. An NFPA 13 automatic fire sprinkler system provided full coverage, and hardwired smoke detectors had been installed both in and outside every bedroom in the facility.

Firefighters responded to the water- flow alarm from the central station alarm company at 8:45 p.m. and used a single 1¾-inch hose line to extinguish the blaze.

Investigators determined that the woman used a cigarette to start the fire in a pile of bedding she dumped on the floor next to her bed. As the fire grew, it spread to the mattress, pillow, and other bedding before the sidewall sprinkler activated. Upon hearing the alarm, occupants entered the room and dragged the woman outside to a landing, where she was treated before she was taken to the hospital. She survived her self-inflicted injuries. The fire department noted that “the sprinkler system activated properly...greatly lessening the damage to the building and contents and possibly saving the victim’s life.”

The building, valued at \$333,000, sustained damage estimated at \$10,000. Its contents, valued at \$1,332,000, sustained \$30,000 in damage.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, January/February, 21-22.

### **Sprinklers stop fire in residential board and care facility, Arizona**

A caregiver and all the occupants of a residential board and care facility escaped injury when two sprinklers extinguished a fire that began when the staffer left a pan of grease heating unattended on the stove.

The single-story, wood-frame facility occupied a converted single-family home. It had a wet-pipe sprinkler system, installed in accordance with NFPA 13R, that provided coverage in all living areas and was monitored by a central station alarm company. Smoke alarms were present in the great room and resident sleeping rooms, but they did not operate because they were not near the kitchen.

The facility housed nine people who suffered from Alzheimer's disease. At the time of the fire, they were being cared for by a single staff member, who put the pan on the electric stove and went to watch television. The heat from the stove ignited the grease, and flames spread to the cabinets and walls before the sprinklers in the kitchen extinguished the fire.

The fire department received a water flow alarm at 2:45 a.m. and responded to find that the sprinklers had already extinguished the fire. Firefighters tried to control the flow of water from the two operating sprinklers, but they were concealed so that the traditional method of

placing a wooden block in the sprinkler to limit flow was not possible. The water department was contacted and turned off the water so firefighters could plug the sprinklers.

The caregiver admitted that he had started heating some grease and then gone to another room to watch television. During the interview, investigators thought he appeared to be impaired by alcohol, which may have contributed to the start of the fire. They referred the matter to law enforcement for further evaluation.

None of the residents was injured. One was picked up by family, and the other eight were transferred to similar facilities under the same ownership.

The home, valued at \$250,000, and its contents, valued at \$175,000, sustained a combined loss of \$30,000.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 18.

## NURSING HOME

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### **Cigarette starts fire in nursing home, Illinois**

A sprinkler controlled a fire in a bedroom of a nursing home that investigators believe started when the occupant dropped a cigarette on the bedding. The occupant admitted to smoking only in the designated smoking area, but investigators believe the evidence suggests otherwise.

The 75-room, 142-bed nursing home was one story high and covered an area of approximately 31,390 square feet (2,916 square meters). It was constructed of wood framing with wooden walls covered in a brick veneer and wood truss roof covered with asphalt shingles. It was equipped with a wet- and dry-pipe sprinkler system and a fire detection system, both monitored by a municipal wireless system.

Firefighters received the call at 5:30 p.m. and arrived two minutes later to find smoke in one wing. The incident commander upgraded the response, bringing in additional resources. When firefighters entered the building, they found that the sprinkler had activated after a maintenance person used a portable fire extinguisher on the flames in the room.

Investigators determined that the fire started when a discarded cigarette ignited bedding, a plastic mattress pad, and the mattress. The room's occupant was in the smoking lounge at the time the fire started.

The facility, which was valued at \$2 million, sustained \$10,000 in damage and its contents, which were valued at \$750,000, sustained damage estimated at \$5,000. One woman suffered from smoke inhalation.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 18-19.

## HOSPITAL

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### **Sprinkler controls hospital fire, Texas**

A single sprinkler controlled a fire that began in a hospital linen closet when a malfunctioning heating unit ignited the linen.

The 10-story, steel-frame building, which measured 200 feet (60 meters) by 500 feet (152 meters), had concrete walls and floors and a flat roof covered by a built-up roof surface. It was protected by a wet-pipe sprinkler system and a fire alarm system, both of which operated as designed.

The sixth-floor linen closet, which had previously been used as a shower room, contained a three-shelf metal cart with plastic sides. An older heating unit overhead had been inadvertently turned on, and investigators, who discovered that a piece of the heating element was missing, concluded that it had broken off and fallen into the cart. The linen in the cart subsequently ignited and burned until the single sprinkler in the closet activated and controlled it.

Firefighters alerted to the fire by the waterflow alarm arrived and found the fire smoldering in the closet. They removed the cart and put the fire out, then controlled the flow of water from the sprinklers, which had already deposited 5 to 6 inches (12 to 15 centimeters) on the fire floor. Using a nearby stairwell, the firefighters pushed the water down to the lowest level and kept it from spreading onto the other floors.

None of the 11 patients on the floor was affected by the fire, which was confined to the linen closet. The building sustained \$1,000 in damage, while the contents of the closet sustained an estimated \$20,000 loss.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 29-30.

## SENIOR HOUSING

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### **Sprinkler extinguishes apartment fire, Michigan**

A 90-unit apartment building used as senior housing sustained only minor damage before a sprinkler extinguished a small fire caused by an oscillating fan.

The three-story building, which was 140 feet (43 meters) long and 200 feet (61 meters) wide, had wooden walls and a wooden roof covered with asphalt shingles. A combination wet- and dry-pipe sprinkler system protected the entire property, including the attic. In addition, the building was equipped with a fire alarm system with a monitored water flow alarm.

Firefighters responding to a water flow alarm arrived to find a sprinkler operating in a third-floor apartment. It had already extinguished the blaze, which began when an electric oscillating fan in the corner of a bedroom overheated and ignited its plastic housing, producing enough heat to activate the sprinkler, which was 6 feet (2 meters) away. The sprinkler and a closed bedroom door limited the spread of smoke and heat.

The building and its contents, valued at \$5.1 million, sustained structural damage estimated at \$20,000 and damage to its contents estimated at \$10,000.

Kenneth J. Tremblay, 2012, "Firewatch" *NFPA Journal*, May/June, 29-30.

## ASSEMBLY

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### **Sprinkler douses courthouse fire, Oklahoma**

Firefighters responding to a fire alarm at a courthouse, which was protected by a fire detection system and a wet-pipe sprinkler system, found that a sprinkler had already extinguished the blaze, which started when a battery charger for a floor-buffing unit malfunctioned.

Firefighters received the automatic alarm at 9:14 p.m., and the call was upgraded to a commercial alarm response while they were en route. The first-in engine company, which arrived too minutes after the alarm, stretched a hose line into the building. A second engine company provided a backup hose line, while a third engine company evacuated the building. A ladder truck set up for ventilation, and an additional engine hooked up to the fire department connection while the hazmat team was assigned as a rapid intervention team.

Damage to the building and its contents, valued at \$54 million, was limited to \$15,000.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, March/April, 25.

### **Oily rags ignite in restaurant trash can, Iowa**

Firefighters responding to an automatic alarm found that a fire burning in a trash can at a restaurant had already been extinguished by a single sprinkler.

The restaurant occupied the first floor of the four-story building, which had 24 apartments on the three floors above it. A lower level contained a parking garage. Automatic fire detection and suppression systems had been installed throughout the building and were monitored by a central station alarm company.

The fire department received the alarm at 9:14 a.m., and firefighters arriving less than three minutes later saw no smoke or flames coming from the building. However, they noticed water coming from the parking garage ceiling and entered the rear storage area of a restaurant, where they found the sprinkler had already put the fire out.

Investigators determined that the oily rags that filled the trash can had spontaneously ignited, burning freely until the overhead sprinkler fused.

The structure, valued at \$750,000, sustained \$5,000 in damage.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 23.

### **Suppression systems control restaurant grease fire, Pennsylvania**

A kitchen extinguishing system and a sprinkler that activated during a fire in an Asian restaurant limited fire damage.

The single-story restaurant building, which was 20 feet (6 meters) wide and 40 feet (12 meters) long, was protected by a wet-pipe sprinkler system and a kitchen hood suppression system, both of which were connected to a monitored fire alarm system.

Investigators determined that the fire started in grease deposits that had formed in the bottom of smoke box cooking equipment and spread to a deep fat fryer, causing the hood extinguishing system to activate.

Additional heat fused a nearby sprinkler, which held the fire in check until the fire department arrived to extinguish the blaze. The kitchen's hood system extinguished the fire in the deep fryer.

Kenneth J. Tremblay, 2012, "Firewatch" *NFPA Journal*, May/June, 38-39.

### **Suppression system controls kitchen hood fire, Utah**

A fire suppression system controlled a fire that started in the hood duct of a restaurant kitchen, but the fire fed off the grease that had built up in the duct and continued to burn until firefighters extinguished it. The building was occupied when the fire broke out, but everyone had evacuated safely by the time firefighters arrived.

Someone called 911 to report the blaze at 4:20 p.m., and firefighters arrived four minutes later to find smoke coming from the roof. The restaurant owner told the incident commander that the hood had caught fire after they started the grill. It looked as though the hood suppression system had put the fire out, but firefighters on the roof reported that they could still see the fire burning in the ductwork some 8 feet (2 meters) below them. When they were unable to get water on the flames from their position, they recommended an interior attack.

Interior crews advanced a hose line into the kitchen and opened the ceiling around the duct work. Once the duct was exposed, they saw that the grease and creosote that had built up on the sides of it were still burning. Fortunately, the duct maintained its integrity, preventing the fire and heat from escaping into hidden areas before it was extinguished.

Investigators noted that the hood suppression system heads did not discharge properly.

Damage to the property and its contents was estimated at \$5,000. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch" *NFPA Journal*, May/June, 39.

## EDUCATIONAL

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### **Fire in backpack triggers bomb squad response, Arizona**

Firefighters responding to a fire in a backpack that had been left in a fourth-floor office at a college building called the bomb squad when they saw wires leading from the backpack to an electrical outlet.

The six-story building, which contained classrooms, labs, and offices, was protected by a wet-pipe sprinkler system.

Firefighters responded to the fire alarm at 11:24 a.m. to find a single sprinkler operating over the fire. While crews extinguished the blaze, a lab employee told the incident commander that the backpack was his and that he had left his laptop in it while he charged his new battery. Once building maintenance staff controlled the sprinkler flow, bomb technicians investigated and confirmed the employee's account.

Investigators determined that the laptop overheated and ignited the backpack and its contents, as well as the chair on which it sat.

The building, valued at more than \$5 million, sustained approximately \$5,000 in damage. No one was injured.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, November/December 25.

### **Sprinkler douses school fire, Utah**

A sprinkler extinguished a fire set by an elementary school student in a classroom recycling bin.

The two-story elementary school's fire alarm system, which included smoke detectors and water flow alarm, was monitored by a central station alarm company, and a wet-pipe sprinkler system provided full coverage.

The student, who had just been reprimanded, was briefly left alone in a classroom. As he left the room he dropped a lighted match into the recycling bin, igniting the contents. Heat and flames spread to coats and backpacks hung above it, and smoke traveled from the classroom to the hallway, activating a smoke detector that sounded an internal alarm and notified the fire department at 2:10 p.m.

Firefighters arrived to find smoke on the second floor and were investigating its source when the sprinkler activated and extinguished the fire. Investigators and the school staff spoke to the student, who confessed to starting the fire.

Neither the value of the building and its contents nor the amount of damage was reported.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, March/April, 23.

### **Sprinkler extinguishes incendiary fire at school, New Jersey**

A sprinkler controlled a fire that was intentionally set in a second-floor boy's bathroom at a high school, limiting damage to the room. The roof and floor of the two-story, steel-frame school were constructed of open web steel bar joists. The metal deck roof had a rolled rubber and asphalt surface. A fire detection system provided full coverage, and a wet-pipe sprinkler system protected the science wing, which was where the fire started.

Firefighters received the alarm at 2:30 p.m. and found that a sprinkler had already extinguished the blaze. The building's fire walls and doors and the fire-rated ceiling prevented the fire from spreading.

Investigators determined that an unknown student used either a match or a lighter to set fire to a plastic toilet paper holder and that the resulting fire spread along the bathroom wall to the ceiling. There was a delay in extinguishment because the sprinkler nearest the fire had been installed with its shipping cap still in place. However, a second sprinkler near the door to the corridor activated and extinguished the blaze.

The school, which was valued at \$10 million dollars, sustained \$50,000 in damage. Its contents, valued at \$5 million, sustained a loss of \$25,000. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 22-23.

### **Sprinkler extinguishes university building fire, Ohio**

A fire of undetermined origin that started in a cardboard box filled with glass tubes at a university laboratory was extinguished by the building's suppression system, limiting damage to \$5,000.

The three-story laboratory had stone walls and a flat metal roof with a built-up roof surface. It was equipped with a combination smoke and heat detection system connected to a monitored fire alarm panel and a wet-pipe sprinkler system with a monitored water flow.

The fire department received the alarm at 12:12 a.m., and firefighters arrived 10 minutes later to find that a sprinkler had already extinguished the blaze in the third-floor room. The cause of the fire was investigated, but it could not be determined.

No one was injured.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 23.

## STORE AND OTHER MERCANTILE

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### **Sprinklers control intentionally set fires in discount store, Texas**

A 33-year-old man was accused of using a water gun filled with lighter fluid to start seven separate fires in a discount store after telling store employees to leave the building before he "blew the place up."

The store, which was located in a single-story strip mall with other retailers on either side, had concrete and brick walls and a metal roof with a built-up surface. It was protected by a NFPA 13-compliant, monitored wet-pipe sprinkler system and an NFPA 72-compliant fire alarm system.

The fire department was notified of the water flow alarm at 1:32 p.m., and fighters arrived two minutes later to find smoke coming from the building and the suspect in police custody. When they entered the store, they found a few fires still burning, but six sprinklers had already brought the rest of them under control.

Investigators found that the man had set seven fires in the retail display area and two in a rear receiving area by spraying the lighter fluid and igniting it.

The building, valued at \$180,000, was destroyed by fire, smoke, and water. No one was injured.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, November/December 24-25.

### **Overloaded wiring starts fire in store, Arizona**

An appliance store in a strip mall sustained fire and smoke damage when an overloaded extension cord used to power a portable electric space heater that was left on after the store had closed ignited nearby combustibles. However, a sprinkler controlled the fire until firefighters arrived to extinguish it, significantly limiting fire damage.

The wood-frame store was located in a single-story mall and covered an area of 2,100 square feet (195 square meters). A wet-pipe sprinkler system was monitored by a central station alarm company.

Firefighters responding to the 1:18 a.m. alarm arrived five minutes later to find neither smoke nor flames coming from the mall's main property, so began to check the other stores for problems. When they reached the appliance store and saw light smoke, the incident commander ordered a full first-alarm assignment.

Crews forced the store's front door and advanced a 1 3/4-inch hose line to extinguish the fire, which was being held in check by a sprinkler in an office area in the showroom. Excessive stock and housekeeping issues impeded firefighters' access to the store's interior. Because they could not reach the rear door, they cut a roof ventilation hole to remove smoke so the building could be searched.

Investigators determined that the fire started in an area beneath a desk where a number of electrical cords were found. A space heater, left on high when the business closed for the night, had been plugged into an 18-gauge extension cord that, along with several other items, was plugged into a power strip. A circuit breaker had also tripped. The investigators determined that the overloaded extension cord ignited wood and paper nearby.

The building, valued at \$2.6 million, and its contents, valued at \$1 million, sustained a combined loss of \$30,000. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, March/April, 19.

### **Sprinkler controls incendiary fire in department store, California**

A single dry-pipe sprinkler operated and controlled a fire at a large department store, limiting damage to the building, which was occupied by shoppers at the time.

The single-story department store covered an area of approximately 10,000 square feet (929 square meters). It was equipped with a monitored fire detection and suppression system.

The alarm company reported a water flow alarm to the fire department at 4:36 a.m. When firefighters arrived four minutes later, they found smoke coming from the store's garden center.

Fire crews forced open a door in the chain link fence along the perimeter and advanced a hose line into the area, where they encountered cold smoke and a single operating sprinkler. They quickly extinguished the blaze, which had burned shelving racks containing flower pots and packaged potting soil, and activated the in-store ventilation system to clear the area of smoke.

Investigators later determined that the fire was incendiary.

The loss was estimated at \$1,000.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 22.

### **Sprinklers prevent major loss at vacant property, Utah**

A single sprinkler extinguished a fire started unintentionally by a homeless person who was using a loading dock at a vacant retail store as a living space.

The building, which had once housed an electronics store, had concrete block walls covered by brick veneer and a steel- and wood-framed roof. A wet-pipe sprinkler system protected the building, and a dry-pipe sprinkler covered the loading dock.

By the time firefighters responded to a 911 call from a passerby, the sprinkler had already brought the fire under control.

Upon investigation, they found that a transient had set up camp under the loading dock's stairs. Evidently, the mattress he was using ignited, and the fire spread to truck bumper pads installed around the loading dock door. Heat collecting under the canopy fused the

dry-pipe sprinkler, which extinguished the fire in the bumper pads and confined the remainder to the area below the stairs

The building, valued at \$500,000, sustained \$500 in damage. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 18-19.

### **Hot slag starts fire in retail store, Minnesota**

A large retail store undergoing renovation lost \$500,000 worth of its contents when hot slag from a welding operation on the roof dripped into the building and ignited combustibles below.

The single-story structure was 200 feet (61 meters) long and 300 feet (91 meters) wide. A wet-pipe sprinkler system had been installed.

The fire department received the call about the water flow alarm at 8:14 a.m. and responded with two engines, a ladder, a rescue vehicle, a truck, and a tanker. When they arrived four minutes later, they used a thermal imaging camera to find the fire, which two sprinklers had confined to several boxes stored on the top shelf of a rack in a rear storage area.

Investigators discovered that the construction crew on the roof had earlier spotted a fire on the roof and extinguished it with snow. They were unaware that hot slag had entered the building below the area they were working on and started a fire until two sprinklers activated and the water flow alarm sounded.

Damage to the building was minimal, but damage to its contents was estimated at \$500,000. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 21-22.

### **Sprinkler controls fire in thrift store, Oregon**

An employee who was opening a thrift store for the day discovered a fire in a chair in the first-floor women's lavatory. While removing the chair, he noticed flames and smoke in the second-floor employee break room. Fortunately, a single sprinkler had already operated and confined most of the fire to the room of origin.

The two-story, wood-frame building housed a retail store and a warehouse that was 85 feet (25 meters) long and 170 feet (51 meters) wide. The walls were made of concrete, the floor and roof framing were made of wood, and the roof was covered with a built-up roof surface. There was no fire alarm system, but the building was protected by a full-coverage dry-pipe sprinkler system with only a water-flow alarm.

The employee who discovered the fire called 911 at 7:40 a.m. to report it, and firefighters arrived five minutes later to find that the sprinkler had nearly extinguished the blaze. Investigators determined that the housing of a portable electric floor fan motor ignited after

the motor over heated and that flame spread to a plastic trash barrel filled with combustibles and to the combustible wood flooring above the bathroom before the sprinkler activated. The fire breached the floor, allowing the fire to spread to the chair on the first floor.

The building, which was valued at \$950,000, and its contents, valued at \$250,000, sustained losses estimated at \$4,000 and \$1,000, respectively. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 30.

### **Sprinklers control fire in large food store, Illinois**

The sprinkler system of a large food store activated and confined a fire to its area of origin, significantly limiting the amount of damage it did to the building.

The two-story, steel-frame building, which was 278 feet (84 meters) long and 192 feet (58 meters) wide, had metal roof trusses covered by a metal deck and a built-up roof surface. The exterior walls around the area of origin were made of metal studs covered with plywood and a lightweight metal, while the interior metal-stud walls were covered with drywall. A wet-pipe sprinkler system protected the property, and its waterflow was monitored by a fire alarm system.

The alarm company notified the fire department that the waterflow alarm had activated at 11:51 p.m. Someone also called from the store to report the fire. When firefighters arrived, they found one or two sprinklers controlling the blaze in a second-floor compressor room.

Investigators could not determine the exact cause of the unintentional fire, but they believe that it started in the concealed wall space. It then broke out of the wall and spread into the compressor room where the sprinklers controlled it.

Damage to the building and contents were limited, but the fire department report did not include any estimates of the building's value or the amount of the loss. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 31.

### **Sprinklers prevent major loss at vacant property, Utah**

A single sprinkler extinguished a fire started unintentionally by a homeless person who was using a loading dock at a vacant retail store as a living space.

The building, which had once housed an electronics store, had concrete block walls covered by brick veneer and a steel- and wood-framed roof. A wet-pipe sprinkler system protected the building, and a dry-pipe sprinkler covered the loading dock.

By the time firefighters responded to a 911 call from a passerby, the sprinkler had already brought the fire under control.

Upon investigation, they found that a transient had set up camp under the loading dock's stairs. Evidently, the mattress he was using ignited, and the fire spread to truck bumper pads installed around the loading dock door. Heat collecting under the canopy fused the dry-pipe sprinkler, which extinguished the fire in the bumper pads and confined the remainder to the area below the stairs

The building, valued at \$500,000, sustained \$500 in damage. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 18-19.

## STORAGE

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### **Lighting ignites clothing in warehouse, Nebraska**

Sprinklers controlled a fire in a warehouse of a large clothing distribution and screen-printing company, limiting structural damage. However, the damage to its contents was estimated at \$1 million.

The single-story warehouse contained manufacturing and storage areas that covered approximately 35,000 square feet (3,252 square meters). A fire alarm system and a dry-pipe sprinkler system protected the property.

The fire department responded to the automatic fire alarm at 6:22 p.m. Nothing was visible when firefighters first approached, but they found smoke coming from the left side of the building during size-up. Shortly afterward, the sprinkler system's water motor gong sounded, alerting them that the sprinklers had begun to operate. Companies were directed to support the sprinkler system using the fire department connection.

The ladder company divided into two teams, one of which raised the aerial ladder to the roof and forced open two skylights to ventilate smoke. The other used a circular saw to open an overhead door on the side of the building from which the smoke was coming and entered with an engine crew. Inside, they faced thick smoke. Using a thermal imaging camera, the ladder company led the engine company to the fire in boxes of clothing stored in a three-level storage rack system. The fire was being held in check by sprinklers at the top of the rack system.

Investigators determined that the boxes had been placed against a halogen emergency light. The owner of the business reported earlier that the warehouse's emergency lighting would flicker on and off. The fire was deemed unintentional.

The building, which was valued at \$1.2 million, sustained \$10,000 in damage. Damage to its contents, also valued at \$1.2 million, was estimated at \$1 million. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 20-21.

### **Sprinkler controls fire in stored recreational vehicle, Oregon**

Firefighters responding to a 12:45 a.m. alarm at a vehicle paint shop and storage facility found that six sprinklers had activated and controlled the fire, limiting flame damage to a 28-foot (8-meter), fifth-wheel travel trailer parked inside.

The single-story, steel-frame building, which was 200 feet (61 meters) long and 50 feet (15 meters) wide, had metal walls and a metal roof. A central station alarm company monitored the structure's dry-pipe sprinkler system water flow alarm.

After firefighters extinguished the blaze, the business's owner told investigators that he had plugged an extension cord into a "shore power" cord that was tightly coiled in the recreational vehicle's storage compartment. He had run the cord from the trailer to an electrical outlet in the building. It was being used to operate a portable electric heater inside the vehicle, which was set on low.

The owner told the investigators that he had smelled something "hot" before he closed the building for the night, but he did not investigate the source.

Investigators noted that the lowest burn level was inside the shore power compartment and that the fire had vented around the refrigerator located above it. When they examined the cord, they found heat indicators on the cord blades. They determined that resistant heating ignited the cord, and the fire spread into the vehicle but not the structure.

Property damage was later estimated at \$4,000.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 22.

### **Sprinklers control fire in paper warehouse, Michigan**

At least 20 sprinklers operated to control a fire in a paper mill warehouse until firefighters arrived to extinguish it.

The walls and roof of the single-story, steel-frame building, which covered 415 square feet (38 square meters), consisted of corrugated metal panels. It was protected by a dry-pipe sprinkler system.

Firefighters responding to a 911 call at 7:07 a.m. arrived at the mill three minutes later to find at least 20 sprinklers controlling a fire in stored paper rolls at one end of the mill's warehouse. Mill employees had to use fork lift trucks to remove material in order to give the firefighters access to hot spots.

Investigators determined that the heat source was a large light fixture with a high-pressure, sodium-type bulb. However, they could not identify the specific ignition scenario.

The building, which was valued at \$2.8 million, sustained an estimated loss of \$150,000. Its contents, which were valued at \$480,000, sustained an estimated \$200,000 in damage. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 23.

## INDUSTRIAL AND MANUFACTURING

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### **Sprinkler controls fire in manufacturing plant, Minnesota**

A single sprinkler controlled a fire that started in the process area of an eyeglass manufacturing company until firefighters arrived to extinguish it.

The single-story building, which covered 25,888 square feet (2,405 square meters), had metal walls and a metal roof with a built-up surface. The plant, which was closed for the night, had sprinklers and an automatic fire detection system that were monitored by a central station alarm company.

A water flow alarm alerted the fire department at 8:36 p.m., and firefighters responded in three minutes. When they entered the building using keys from a key safe, they found smoke and immediately asked that a full assignment be sent to the scene. As an additional engine, ladder company, and battalion chief responded, the first-due engine crew investigated the water flow alarm and found a sprinkler operating in an area where lenses were tinted. They quickly completed extinguishment, while the additional engine company checked the area for fire extension and the ladder company ventilated the building.

Investigators found that the fire started on a lab table when an electrical problem caused an electric heating device used to tint lenses to fail. The fire reached temperatures of 1,200 F (649C) before the sprinkler activated and limited the fire spread.

The building, valued at \$341,000, sustained \$5,000 in damage, and its contents sustained damage estimated at \$2,500. There were no injuries, and the facility was open the next day.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, November/December 24.

### **Sparks ignite combustible dust, Oregon**

Two sprinklers controlled a fire in a baghouse of the dust collector and filtration system at a wood product manufacturing plant, limiting damage to the structure.

The single-story, steel-frame building, which measured 300 feet (91 meters) by 300 feet (91 meters), had metal walls and metal web-bar joist roof covered by a metal deck. Although part of the building had a fire detection system designed to detect heat and sparks, the fire occurred in an area in which no detection had been installed. The property was also protected by a dry-pipe sprinkler system. Both the fire alarm and the water flow alarm were monitored by a central station alarm company.

The fire department received the alarm at 8:34 a.m., and firefighters arrived nine minutes later to find smoke coming from a baghouse in which large volumes of dust created in the facility were filtered from the air before the air was released back into the environment. They also saw flames through the baghouse's explosion doors, which were open.

Investigators discovered that the fire started in the baghouse dust collection operation but could not determine the cause of the blaze. A witness described the fire as "rolling across the ceiling" as it spread into the adjacent building through the fresh air return system. Although sprinklers controlled the fire in the building, heat damaged the roof.

The fire did approximately \$30,000 in damage. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, November/December 23-24.

### **Sprinkler extinguishes fire started by oily rags, California**

A commercial building that was closed for the night was spared significant damage when a sprinkler extinguished a fire that started when oily rags stored in a 55-gallon (208 liter) metal barrel chemically reacted with the air and spontaneously ignited.

The single-story, wood-frame building was divided by a firewall into two separate occupancies, one of which contained a business that turned reclaimed restaurant grease into biofuel. This occupancy included a warehouse covering an area of 5,000 square feet (465 square meters). The property was protected by a monitored wet-pipe sprinkler system.

Firefighters were notified of a water flow alarm at 7:44 p.m. and arrived five minutes later. They were admitted to the building by the owner of the adjacent business. Upon entry, they saw light smoke and discovered that one sprinkler had already extinguished a fire in the storage and processing section of the biofuel warehouse.

Burn patterns led to a 55-gallon (208-liter) drum in which oily rags were stored. Investigators concluded that the rags had ignited spontaneously and that the heat activated the sprinkler overhead.

The building, valued at \$500,000, sustained \$20,000 worth of damage. Its contents, valued at \$100,000, sustained a \$10,000 loss.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, September/October 27-28.

### **Sprinklers douse oily rag fire in clothing manufacturing plant, Alabama**

An automatic fire sprinkler system extinguished a fire in a clothing manufacturing and processing plant that started when a cart full of rags and towels that had been soaked in oil spontaneously ignited.

The two-story, steel-frame building, which was 100 feet (30 meters) long and 54 feet (16 meters) wide, had metal walls and a metal roof. The property, which was protected by a monitored wet-pipe sprinkler system and smoke detectors, was closed for the weekend when the fire occurred.

The water flow alarm activated, notifying the fire department at 11:49 a.m. By the time firefighters responded, however, the fire in the center of the first floor had already been

extinguished. Investigators determined that after the fire began to burn freely, it spread to apparel and clothes that were hanging from the second-floor. The resulting heat activated three to four sprinklers.

The building, which was valued at \$8.9 million, and its contents, valued at \$2 million, sustained damage estimated at \$100,000 and \$8,000, respectively. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, July/August, 25.

### **Chemical reaction starts fire, California**

A sprinkler extinguished a fire in a multi-tenant building that contained a woodworking shop, a guitar manufacturer, and auto body shop, and several other small businesses, significantly limiting the amount of property damage.

The two-story, steel frame building had metal exterior walls and a metal roof deck and roof. Interior wood-frame walls were covered by gypsum board and divided into five manufacturing spaces and one storage area. An NFPA 13 wet-pipe sprinkler system protected the property, and portable fire extinguishers were available, although they were not used.

The fire started when one of the occupants who was working after hours mixed auto-catalyzed resin in a paper cup and set it down, before leaving the area. When he returned, he saw that the cup was on fire and called 911 just minutes before the fire department received a water flow alarm for the building at 8:10 p.m. When they arrived, responding firefighters found that the single sprinkler, located directly above the fire, had already extinguished it.

The building, valued at \$2 million, was not damaged. Its contents, valued at \$1.5 million, sustained an estimated loss of \$10,700.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, March/April, 25.

### **Sprinkler limits damage in manufacturing plant fire, Iowa**

A single sprinkler activated and controlled a fire at a food product manufacturing plant until firefighters arrived to extinguish it. The fire detection system alerted all seven occupants of the building, who safely evacuated.

The three-story building, which contained equipment used to manufacture food ingredients had a fire alarm and wet-pipe sprinkler system.

The fire department received a report of smoke in the building at 10:17 p.m. When firefighters arrived seven minutes later, employees directed them to an entrance and told them the fire was on the third floor. Once inside the building, they found a sprinkler confining the blaze to the inside of a mill sifter and used water from their hose line to complete extinguishment.

Investigators determined that the fire started in the grinding mill filter system, where dust particles are captured in polyester filter bags, but they could not determine what started it.

Damage to the building's contents was limited to \$1,000, and there was no damage to the building itself.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, January/February, 26.

### **Sprinkler controls fire in manufacturing plant, Maine**

A sprinkler controlled a fire that started in a food additive manufacturing company when alcohol leaking from a pump ignited.

The three-story, steel-frame plant had metal walls and a metal roof. The building was equipped with an automatic sprinkler system and fire alarm system, a waterflow alarm system, and manual pull stations.

The fire occurred on the first floor in an area containing circulator pumps lined up along an open trench covered by fiberglass grate covers. A leaking pump allowed alcohol to spill onto electrical equipment and collect in the trench until the equipment ignited the alcohol, causing a sprinkler to operate.

An employee noticed the fire, activated a manual pull station, and called 911 at 6 a.m. Firefighters use a 1 3/4-inch hose line to extinguish the remaining fire.

Although the estimated loss was not reported, damage was limited to the circulator pump and two fiberglass floor grates. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, January/February, 26.

### **Fire in plastic processing plant controlled by sprinkler, Minnesota**

A single sprinkler extinguished a fire in a plastic extruding machine at a manufacturing plant before the fire department responded to the 12:55 alarm.

The single-story commercial building, which measured 300 feet (91 meters) by 300 (91 meters), had concrete walls and a metal deck roof. The property was protected by a monitored wet-pipe sprinkler system and smoke detectors.

Employees saw smoke and discovered that a machine that heated and extruded plastic beads was on fire. Fortunately, a single sprinkler over the machine fused and extinguished the blaze. When one of the workers noticed plastic dripping from the machine vents, he sprayed an extinguisher into them. A second extinguisher was also used.

The machine, located on the main floor in the processing area, had overheated in the past but never to that extent, according to employees.

Fire damage was limited to the machine itself. Loss estimates were not reported, and there were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, January/February 20.

### **Sprinklers prevent major loss at vacant property, Utah**

A single sprinkler extinguished a fire started unintentionally by a homeless person who was using a loading dock at a vacant retail store as a living space.

The building, which had once housed an electronics store, had concrete block walls covered by brick veneer and a steel- and wood-framed roof. A wet-pipe sprinkler system protected the building, and a dry-pipe sprinkler covered the loading dock.

By the time firefighters responded to a 911 call from a passerby, the sprinkler had already brought the fire under control.

Upon investigation, they found that a transient had set up camp under the loading dock's stairs. Evidently, the mattress he was using ignited, and the fire spread to truck bumper pads installed around the loading dock door. Heat collecting under the canopy fused the dry-pipe sprinkler, which extinguished the fire in the bumper pads and confined the remainder to the area below the stairs

The building, valued at \$500,000, sustained \$500 in damage. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 18-19.

### **Smoldering sawdust ignites in processing facility, Wisconsin**

A pile of sawdust in a plant that manufactured sawdust, shavings, and pellets for commercial application smoldered for hours after the business closed for the night before eventually bursting into flame.

The single-story, steel-frame building, which had metal siding and a metal roof, was L-shaped. The long portion of the building was approximately 345 feet long (105 meters) and 82 feet (25 meters) wide. The shorter section, which included offices, was 108 feet (33 meters) long and 154 feet (47 meters) wide. Both were protected by a dry-pipe sprinkler system, although the exterior water flow alarm was not monitored.

A passerby saw smoke coming from the building and called 911 at 5:29 a.m. Firefighters arrived seven minutes later to find the smoke coming from the front portion of the structure and one of the loading docks. When they entered the building, they found a pile of sawdust 20 feet (6 meters) by 20 feet (6 meters) and 6 feet (2 meters) high burning on the loading dock. The pile had been in the process of being loaded into a tractor-trailer truck, which was also on fire.

As two sprinklers held the flames in check, firefighters moved the trailer away from the building and extinguished its contents. They then used heavy equipment to move the sawdust pile around and extinguish the fire.

Investigators determined that the fire started unintentionally in the sawdust pile, although they could not determine the exact ignition scenario. Once the smoldering heat reached the top of the pile, it burned freely until the sprinklers operated.

Loss estimates were not reported, but the building sustained smoke damage, and its floor was scorched.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, March/April, 20.

## OTHER OCCUPANCIES

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### **Rags soaked in oil-based stain start fire, Montana**

A sprinkler extinguished a fire in a multi-tenant commercial building that started when rags used to apply an oil-based stain were put in a plastic trash barrel, where they spontaneously ignited.

The fire occurred in a portion of the building that housed a door manufacturer's retail show room, staining room, and wood shop. The fire department reported neither the construction of the building nor its size. A wet-pipe sprinkler system provided partial coverage, but the local water flow alarm was not monitored by a fire alarm system.

At 9:23 p.m., an employee returned to the building to apply another coat of stain to a door and noticed water coming from the shop's side entrance. After opening the door, she found the interior filled with smoke and called the fire department. Firefighters, who arrived four minutes after receiving the alarm, found the remains of the fire in the staining room.

Investigators determined that the oily rags had ignited spontaneously and that the resulting fire melted the plastic barrel into which they had been placed. When the fire spread to an adjacent table, the heat activated a single sprinkler, which extinguished the blaze.

Investigators also found that the water motor gong outside the building was not operational.

The building and its contents, which were valued at \$1.5 million, sustained damage estimated at \$500. There were no injuries.

Kenneth J. Tremblay, 2013, "Firewatch", *NFPA Journal*, July/August, 24-25.