SAFETY TALK
To our customers and agents,

When reviewing ideas for our newsletters, we try to provide information that is not only helpful, but is also timely. Ice and snow are just around the corner for many of us; concussions in the sports world continue to make the news; product recalls and alerts seem to crop up every week. These issues — and others — are worth reading about in the following articles in Safety Talk.

By taking preventative actions, you can reduce the likelihood of injuries and illnesses to your employees, customers and family members. We hope you will take the time to review this information and consider how implementing safety precautions can help you and your organization.

If you would like additional information on the services we have available, please talk with you agent or visit our website.

Here’s to a safe and healthy fall and winter!

Jim Matthews
CSP, CPCU, CFPS, AIC, ARM
Divisional Senior VP,
Specialty Loss Prevention
Portable electric space heaters can be a convenient source of supplemental heat for your office or warehouse in cold weather. Unfortunately, they can pose significant fire and electric shock hazards if not used properly. Fire and electrical hazards can be caused by space heaters without adequate safety features, space heaters placed near combustibles, or space heaters that are improperly plugged in.

Safety should always be a top consideration when using space heaters. Here are some tips for keeping your workplace safe and warm when it’s cold outside:

- Make sure your space heater has the label showing that it is listed by a recognized testing laboratory.
- Before using any space heater, read the manufacturer’s instructions and warning labels carefully.
- Inspect heaters for cracked or broken plugs or loose connections before each use. If frayed, worn or damaged, do not use the heater.
- Never leave a space heater unattended. Turn it off when you leave the room.
- Space heaters are only meant to provide supplemental heat and should never be used to dry clothing or thaw pipes.
- Proper placement of space heaters is critical. Heaters must be kept at least three feet away from anything that can burn, including papers, clothing and rugs.
- Locate space heaters out of high traffic areas and doorways where they may pose a tripping hazard.
- Plug space heaters directly into a wall outlet. Do not use an extension cord or power strip, which could overheat and result in a fire. Do not plug any other electrical devices into the same outlet as the heater.
- Place space heaters on level, flat surfaces. Never place heaters on cabinets, tables, furniture, or carpet, which can overheat and start a fire.

Always unplug and safely store the heater when it is not in use.

Never leave a space heater unattended. Turn it off when you leave the room.
Recent winter seasons have been severe and have taught many lessons regarding loss trends and steps that can be taken to reduce future weather related incidents to buildings.

Key loss sources have included the following:

- Heavy snow or ice accumulation on roofs, outdoor equipment and power lines;
- Low temperature causing freezing of fire sprinkler and domestic water systems;
- Blocked roof drainage leading to water back up and building intrusion;
- Temporary heaters causing fires;
- Heating system failures;
- Building envelope failure.

In order to prepare for winter weather, property owners can take the following precautionary steps and procedures:

**Pre-Winter Planning**

1. Prepare a comprehensive written, winter emergency plan that includes assigning key roles and duties.
2. Include information in the plan on identifying key vendors and contractors.
3. Perform Table Top Exercises with key personnel to walk through situations that could arise.
4. Make arrangements for snow removal from roads, roofs, gates and hydrants. Have written contracts in place and collect certificates of insurance from contractors.

**Protect the roof.**

1. **Evaluate roof snow load capacity.** Be prepared to remove excess snow build up.
2. **Inspect the roof.**
   - a. Determine areas of potential snow accumulation
   - b. Look for areas of potential water ponding
   - c. Determine if any addition of roof top equipment create areas that could trap snow or water
   - d. Investigate splitting, cracking, or deterioration of the roof covering and make necessary repairs prior to winter
3. **Inspect the roof structure.**
   - Look for:
     - a. Cracked or bent beams, joists or columns
     - b. Rusted or deteriorated beams, joists or columns
     - c. Rusted or deteriorated roof deck
     - d. Spalled concrete from roof deck, beams, joists or columns
Be wise and winterize!

Protect the sprinkler systems

**Wet Pipe Fire Sprinklers**

- Set and maintain thermostat temperature to above 40°F;
- Install low temperature supervision on all non-operating or unoccupied buildings or have security or personnel check buildings on an hourly basis 24/7;
- Protect pipes from freezing when they are located in unheated attics, concealed spaces or dead air spaces in walls;
- Ensure that the building shell is in good condition; close up any unnecessary openings including making sure windows are closed.
- Install low temperature alarms in areas where heat is suspect;
- Check coldest points of building to ensure temperature is at least 40° (eaves), above overhead doors.

**Dry Pipe Fire Sprinkler Systems**

- Are the valve enclosures adequately heated and insulated?
- Is the valve air pressure and the heat within the enclosures checked daily through the winter?
- Have all low point drains been examined for condensate and drained as necessary?
- Does the sprinkler system have a central station alarm for water flow, pressure loss within the dry pipe system and low temperature within the enclosure?
- Have all anti-freeze systems been tested for proper solution strength?

Protect the pipes

- Install an automatic water shutoff device that turns off water supply when a leak is detected.
- Inspect weather stripping around doors and windows.
- Have furnace, chimney, HVAC system and water heater inspected.
- Consider installing roof load sensors, water leak detectors and remote temperature sensing technologies.
- Use thermography to determine water damage sources or heat loss.
Controlling Static Electricity Around Propane

Most of us have felt a static spark, perhaps when exiting a car, turning off a light, or even pulling off a sweater. These may be annoying, but are seldom painful. Perhaps that is why some of us don’t associate a static spark with significant energy and, specifically, ignition energy. Science has taught us that the smallest static spark an average person can feel, see, or hear is measured at about 3,000 volts. It sounds lethal, but it isn’t.

The actual static discharge event lasts only 300 billionths of a second. It’s over before it can hurt the human body. The flash of light seen with the static spark is actually the superheated air that continues to glow after the electrons have stopped moving.

Even though the static spark is very fast, it gives off energy in the form of heat and light. At 3,000 volts, a static spark from your fingertips will deliver about .50 millijoules (mJ) of energy. This may not sound like much until we learn that propane mixed with air at 2.15 to 9.60% only requires about .25 to .30 mJ of energy for ignition. The smallest static spark we can see or feel has double the energy required to ignite propane!

Static electricity is all around us. It is not possible to eliminate it completely, but we can control its generation and provide safe discharge paths.

1. Know the area
Be aware of Static Discharge Control Areas; that is, any area where propane vapors may be released or pooled. Some areas may be designated as Static Discharge Control Areas; however, any transfer, storage, or processing location where the odor of propane is present should be considered a Static Discharge Control Area where appropriate static discharge prevention measures should be taken. Remember, the odor of propane is a warning.

2. Ground your personnel
Are all personnel in the Static Discharge Control Area properly grounded? People generate static charge by movement, and they can carry the charge a considerable distance before discharging. Static-safe footwear or temporary foot grounders allow the wearer to discharge safely to a static-safe floor or floor mat before the charge levels become great enough to spark. Other grounding methods are available, including conductive wrist bands with cords.

3. Ensure proper attire
Cotton and cotton blends will generate less static electricity than most synthetics and polyester materials. (Static-safe garments and fabric treatments are available.) Be aware of any garments or layers of garments that snap and crackle when put on or removed. Never put on or remove garments inside a Static Discharge Control Area.

4. Clean up
Remove all plastics, high-density polyethylene (HDPE) and other synthetic materials from Static Discharge Control Areas. Chargeable materials necessary for operation may be treated with topical anti-static coatings.

5. Follow the code
Is your equipment properly grounded? Any electrical equipment inside a Static Discharge Control Area must be installed in accordance with NFPA 58 and state electrical codes and regulations. Metal, non-electrical stationary equipment, such as rollers, should also be grounded.

6. Observe your processes
Most static electricity comes from the friction between materials. Processes that involve non-conductive materials will usually generate static electricity.

7. Limit access
Limit access to Static Discharge Control Areas to those people necessary to conduct normal business activities.

8. Listen
Take note of the observations of people working in Static Discharge Control Areas. They are the ones who witness static discharge events first hand and thus are the first to be aware of a static threat.

The smallest static spark we can see or feel has more than twice the energy required to ignite propane.
Federal Pacific Electric Company manufactured Stab-Lok circuit breakers from the 1950’s to the 1980’s. The breakers were produced for both commercial and residential applications. Issues with the breakers surfaced in 1980 with the FPE two-pole stab-lok circuit breaker that was found to jam while attempting to trip in an overcurrent scenario.

The primary issue with these type of breakers includes failing to trip at 135% and 200% of rated current (1). Additionally, the double pole breakers are found to mechanically jam. This means that a commercial or residential structure with these breaker panels has a probability of not functioning as needed when a circuit is “overloaded”. A comparison may be made to replacing a blown Edison type fuse with a slug or penny, effectively overriding the protection necessary for an electric circuit.

Testing of FPE stab-lok circuit breakers was conducted by multiple companies in the late 1970’s and early 1980’s. They included FPE (and its parent company, Reliance Electric), Southwest Research Incorporated, Underwriters Laboratories, Consumer Product Safety Commission and Wright-Malta Corp. (for the CPSC). Only the CPSC/Wright-Malta test results were made public.

Despite the CPSC findings that 85% of the double-pole breakers and 39% of the single-pole breakers failed one or more of the UL test criteria at 200% of rated current (2), a press release was issued in 1983 stating that the CPSC was “unable at this time to link these failures to the development of a hazardous situation”.

A New Jersey class action lawsuit found Federal Pacific Electric Company guilty of violating the New Jersey Consumer Fraud Act by cheating during its testing of circuit breakers in order to obtain Underwriters Laboratories approval. UL subsequently pulled its endorsement. The company manipulated the testing by installing a mechanical device that would trip the breakers during the testing process.

It has been suggested that there are as many as 28 million FPE stab-lok breakers (3) in use in the U.S. which means that in some conditions as many as one million of them may fail to provide proper fire protection.

The foremost expert on these breakers is a Mechanical and Materials Engineer named Jesse Aronstein, Ph.D. PE. Mr. Aronstein has served as an expert legal witness in a class action lawsuit against the now defunct company.
Mr. Aronstein completed and published the following test results performed on FPE stab lok breakers that he acquired over a period of years:

<table>
<thead>
<tr>
<th>Type of Breaker</th>
<th>Qty Tested</th>
<th>No Trip Failures at 135% of Rated Current</th>
<th>Jammed</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPE Single-Pole, 1/2 Width</td>
<td>268</td>
<td>55 (21%)</td>
<td>3 (1%)</td>
</tr>
<tr>
<td>FPE Single-Pole, Full Width</td>
<td>77</td>
<td>6 (8%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>FPE Single-Pole, GFI/Breaker**</td>
<td>5</td>
<td>3 (6%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>FPE Double Pole, 1/2 Width***</td>
<td>39</td>
<td>13 (33%)</td>
<td>7 (18%)</td>
</tr>
<tr>
<td>FPE Double Pole, Full Width***</td>
<td>81</td>
<td>29 (35%)</td>
<td>7 (18%)</td>
</tr>
</tbody>
</table>

** Circuit breaker function. Three of the combined GFI/Breaker units tested also failed when tested for GFI function
*** 2-pole breakers tested on individual pole overload

How To Identify an FPE Breaker
A Federal Pacific Electric panel will usually have its name or logo on the front cover. Inside, you will find the name Stab-Lok printed near the center of a residential panel. Both residential and commercial breakers will have the signature red strip across the breaker switch. However, stab lok type breakers were also manufactured under the following names:
- American
- Challenger
- Federal Pioneer
- Federal Noark
- Federal Pacific Reliance Electric
- Federal Pioneer Limited
The breakers manufactured by these entities may not have the signature red strip across the breakers switch but typically do have the name Stab-Lok printed on the panel box.

Corrective Action
The recommended method of repair is the complete replacement of the entire circuit breaker panel, not just the individual breakers.

As many as one million Federal Pacific ‘stab lok’ circuit breakers may fail to provide proper fire protection.
Young athletes deserve to play sports in a culture that celebrates their hard work, dedication, and teamwork, and in programs that seek to create a safe environment—especially when it comes to concussion. As a youth sports coach or parent, your actions can create a safe sport culture and can lower an athlete’s chance of getting a concussion or other serious injury.

Athletes thrive when they:
- Have fun playing their sport.
- Receive positive messages and praise from their coaches for concussion symptom reporting.
- Have parents who talk with them about concussion and model and expect safe play.
- Get written instructions from a health care provider on when to return to school and play.
- Support their teammates sitting out of play if they have concussion.
- Feel comfortable reporting symptoms of a possible concussion to coaches.1

Enforce the Rules

Enforce the rules of the sport for fair play, safety, and sportsmanship. Ensure athletes avoid unsafe actions such as:
- Striking another athlete in the head;
- Using their head or helmet to contact another athlete;
- Making illegal contacts or checking, tackling, or colliding with an unprotected opponent; and/or
- Trying to injure or put another athlete at risk for injury.

Tell athletes you expect good sportsmanship at all times, both on and off the playing field.

Talk about Concussion Reporting

Talk with athletes about the importance of reporting a concussion. Some athletes may not report a concussion because they don’t think a concussion is serious. They may also worry about:
- Losing their position on the team or during the game.
- Jeopardizing their future sports career.
- Looking weak.
- Letting their teammates down.
- What their coach or teammates might think of them.2,3,4

Get a Concussion Action Plan in Place...

Create an action plan that includes information on how to teach athletes ways to lower their chances of getting a concussion. If you think an athlete may have a concussion, you should:
1. Remove the athlete from play.
2. Keep an athlete with a possible concussion out of play on the same day of the injury and until cleared by a health care provider. Do not try to judge the severity of the injury yourself. Only a health care provider should assess an athlete for a possible concussion.
3. Record and share information about the injury, such as how it happened and the athlete’s symptoms, to help a health care provider assess the athlete.
4. Inform the athlete’s parent(s) or guardian(s) about the possible concussion and refer them to CDC’s website for concussion information.

5. Ask for written instructions from the athlete’s health care provider about the steps you should take to help the athlete safely return to play. Before returning to play an athlete should:
   - Be back to doing their regular school activities.
   - Not have any symptoms from the injury when doing normal activities.
   - Have the green-light from their health care provider to begin the return to play process.

...And Why This Is Important

**Athletes May Try to Hide Concussion Symptoms**
- As many as 7 in 10 young athletes with a possible concussion report playing with concussion symptoms.⁵
- Out of those, 4 in 10 said their coaches were unaware that they had a possible concussion.⁵
- As many as 25% of the concussions reported among high school athletes result from aggressive or illegal play.⁶

**Young Athletes Are More Likely to Play With a Concussion During a Big Game**
In almost all sports, concussion rates are higher during competitions than in practice.⁷
- Athletes may be less likely to tell their coach or athletic trainer about a possible concussion during a championship game or other important event.⁵

**Most Sports-Related Concussions Are Caused by Player-to-Player Contact**
- Over two-thirds (70%) of concussions among young athletes result from contact with another athlete.⁷
- This is followed by player-to-surface contact (17%), such as hitting the ground or other obstacle.⁷

**Headache Is Most Commonly Reported Concussion Symptom**
Almost all (94%) high school athletes with a concussion reported having a headache.⁷
- Other commonly reported symptoms include:⁷
  - Dizziness (76%)
  - Trouble concentrating (55%)
  - Confusion (45%)
  - Bothered by light (36%)
  - Nausea (31%)

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References