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Portable Space Heater Danger

Portable office heaters become quite popular during the cold winter months. Unfortunately, this method of producing heat comes with a variety of safety concerns.

Recently an LLNL employee experienced first-hand the interaction of a portable heater and a plastic WOW paper container. While preparing for an office move, the plastic WOW container was inadvertently placed in close proximity to an operational heater. When the employee and co-workers in the office noticed an unusual odor, they discovered the melting WOW container and quickly moved it away from the heater.

The photo below illustrates the damage caused by the portable heater. Luckily employees were in the area to avert a potential fire.



1. WOW container seared by portable heater

Analysis

- Portable electric space heaters do not have an open flame, however the heating elements may be hot enough to ignite nearby combustibles such as draperies, paper, plastics, clothing, furniture, and flammable liquids.
- Other high current appliances such as toasters and coffee pots can present the same ignition hazard.
- Portable heaters put out a lot of heat while consuming large amounts of electricity, which translates into high current loads.

Recommended Action

1. Keep portable heaters at least 36" away from combustible materials. Check surrounding objects periodically to see if they feel hot to the touch.
2. Do not leave an operational heater unattended. Turn off and unplug portable heaters when not in use. Portable electric heaters are designed for use only as temporary supplemental heating and only while attended.
3. Do not leave space heaters energized while sleeping at home, or resting while on break at work.
4. Keep portable heaters and cords out of traffic areas or exit systems. Blocked exits are a main cause of fire deaths.
5. Plug portable heaters directly into a wall outlet; do not plug a space heater into a multi-outlet box or extension cord. The high current flow can cause the components to deteriorate, leading to a breakdown of solder joints, eventual failure of the multi-outlet box, and excessive heating that can cause a fire.

Where to Get Help or More Information

- Your ES&H Team Industrial Safety Engineer and Fire Protection Engineer.
- The following LLNL Lessons Learned:

"Plug Heaters into the Right Electrical Outlets,"
http://www.llnl.gov/es_and_h/lessons/plug_heaters_e.html

"Workers Burned When Fumes Ignite,"
http://www-r.llnl.gov/es_and_h/lessons/work_burn.html

"Multi-outlet Electrical Boxes—Some Limits on Use,"
http://www.llnl.gov/es_and_h/lessons/multioutlet_e.html

To search for other LLNL Lessons Learned, go to the "ES&H Program at LLNL" web page at [esh](#). Click on "Lessons Learned," near the middle of the page. Select the Lessons Learned topic of interest, or click on "Search" at the bottom of the page and enter the desired search term.

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