Hot Plate Safety

In the past year, a large lab group has had a series of issues with "runaway" hot plates. In the first instance, a hot plate in the off position began heating in an unoccupied laboratory resulting in a hood fire. They have also observed hot plates that were heating while in the off position and hot plates that heated uncontrollably while on a low setting. The hot plates that were in use included relatively new models and the issues appear to be caused by failed circuit boards. The malfunctioning hot plates were different brands, including older Corning models.

They presented some of the lessons learned from these events at a recent national meeting. Descriptions of some of these events and additional details can be found at the following links:
https://opexshare.doe.gov/lesson.cfm/2014/12/11/4670/Electronic-StirrerHot-Plate-Malfunction-Inside-Glove-Box
http://www.research.northwestern.edu/ors/forms/CSHEMA%20Hotplate%20Poster%202014.pdf
https://www.drs.illinois.edu/News/Warning-about-malfunctioning-hotplates

PREVENTION

- Keep hotplates unplugged when not in use.
- Use stirring-only hotplates where possible, especially when only stirring is required of flammable solvents.
- Remove broken hotplates and old (pre-1990) hotplates from service.
- Use hot plates with safety controls, including over-temperature shut off when running unattended processes.
- Use timers at the outlets on the face of the hoods and only power during the week day operating hours.
- All hotplates, immersion heaters (with over temp fuses), pumps, power supplies, etc. are unplugged at the end of the day by the operator.
- Lab shut down sign out process for the last two persons in the lab that includes checking that hotplates are unplugged.
- Use unattended forms for overnight testing. http://www.asa.stonybrook.edu/asa/asaforms/EHSD0310/$File/EHSD0310.pdf

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