A. Summary

Hot plates are commonly used in laboratories to heat glassware or its contents to 100° C or above. Safety precautions must be taken when using hot plates, as well as other heating devices such as heating mantles and water baths. Read all manufacturer directions before using heating devices, and maintain current training for all employees. Pay close attention to all recall notices for the device and take appropriate action.

B. Recommended Safety Procedures

Fire Prevention Services wants all laboratory personnel to help in addressing the potential risks of hot plates, mantles, and water baths. There have been reports of several incidents of hot plates or water baths dangerously overheating even while the switch is turned “off”.

Fire Prevention Services recommends unplugging hot plates, heating mantles, or water baths when not in use.

The following recommendations are provided to reduce the chances of a similar failure and fire in laboratory operations:

- Periodically test the function of the “off” switch on each hot plate, heating mantle, or water bath to verify that it works and the heating device quickly cools. Any unit that fails this test should be taken out of service immediately and reported to Fire Prevention Services for further evaluation.
- Avoid intentional unattended use of hot plates, heating mantles, or water baths when possible.
- If you must have an unattended heating operation, think out your safety plan. It may require a feedback system that will detect overheating and cut power to the heating device before a fire erupts.

For additional information, please see Lesson Learned from Lawrence Berkeley National Lab, and Hot Plate Study from UC Santa Cruz.