

PROTECTION OF KITCHEN COOKING EQUIPMENT

Introduction

In order to ensure that they operate properly when needed and don't trip unnecessarily, both federal certification requirements and state licensure requirements require that healthcare facilities properly inspect, test and maintain the exhaust hoods, filters and fire-extinguishing equipment protecting their kitchen cooking equipment [see NFPA 101(00), Sections 18/19.3.2.6 and 9.2.3; MSFC(07), Sections 609 and 904.11]. Unless otherwise indicated, this guide will focus on federal certification requirements.

Most healthcare facilities use automatic dry- or wet-chemical fire-extinguishing systems for protection of their kitchen cooking systems. Unless otherwise indicated, therefore, this guide will focus on those types of systems.

Applicable standards

NFPA 101(00), Sec. 9.2.3 requires that commercial cooking equipment be in accordance with NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*. NFPA 101(00), Sec. 2.1.1 references the 1998 edition of the standard. NFPA 96(98), in turn, references four other NFPA standards applicable to automatic fire-extinguishing systems installed to protect kitchen hood systems and cooking equipment [see NFPA 96(98), Sections 7-2.2.1 and 12-1]:

- NFPA 12(98), *Standard on Carbon Dioxide Extinguishing Systems*
- NFPA 13(96), *Standard for the Installation of Sprinkler Systems*
- NFPA 17(98), *Standard for Dry Chemical Extinguishing Systems*
- NFPA 17A(98), *Standard for Wet Chemical Extinguishing Systems*

System listing

Both NFPA 96(98), Sec. 7-2.2 and MSFC(07), Sec. 904.11 require that automatic dry- or wet-chemical fire-extinguishing systems be listed in accordance with standard UL 300. The continued use of existing listed systems not meeting UL 300 is allowed, however, **until any one of the following occurs**:

- The system is discharged,
- Parts need to be replaced on the system, or
- The system supply cylinders are due for hydrostatic testing.

Exhaust system

The entire exhaust system (hood, grease removal devices, fans and ducts) for kitchen cooking equipment needs to be thoroughly inspected at least every 6 months to ensure that it's free of grease accumulations [see NFPA 96(98), Sec. 8-3.1 and Table 8-3.1]. This inspection must be conducted by a company or person properly trained and qualified to perform such a service. The authority having jurisdiction (AHJ) may require a certificate or other proof of such training.

If this inspection reveals deposits from grease-laden vapors, the entire exhaust system must be cleaned to bare metal by a properly trained, qualified and certified company or person(s) acceptable to the AHJ [see NFPA 96(98), Sec. 8-3.1.1]. It should be noted that:

1. Cleaning to bare metal does not mean removing the paint from painted surfaces.
2. After the exhaust system is cleaned to bare metal, it cannot be coated with powder or other substances.
3. Flammable solvents or other flammable cleaning aids are not allowed to be used for cleaning.

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4. At the start of the cleaning process, electrical switches that could be activated accidentally must be locked out (remember your lock out-tag out procedures).
5. Components of the automatic fire-extinguishing system protecting the kitchen cooking equipment cannot be rendered inoperable during the cleaning process unless they are being serviced by a properly trained and qualified person.
 - Special care needs to be taken to ensure that cleaning chemicals are not applied on fusible links or other detection devices of the automatic fire-extinguishing system.
6. When the cleaning process is completed:
 - All electrical switches and system components must be returned to an operable state,
 - All access panels and cover plates must be replaced, and
 - Dampers and diffusers must be positioned for proper airflow.

Kitchen hood fire-extinguishing system

The standards applicable to automatic dry- or wet-chemical fire-extinguishing systems protecting kitchen cooking equipment [see NFPA 17(98), Sec. 9-2.1/NFPA 17A(98), Sec. 5-2.1] require that such systems be inspected monthly to ensure that:

- The extinguishing system is in proper operation
- Manual actuators are unobstructed
- Tamper indicators and seals are intact
- The maintenance tag or certificate is in place
- There is no obvious physical damage
- Pressure gauges, if provided, are in operable range

In addition, an inspection and servicing of the kitchen hood fire-extinguishing system by properly trained and qualified persons is required at least every 6 months [see NFPA 96(98), Sec. 8-2; MSFC(07), Sec. 904.11.6.4].

- This service must include a check of all actuation components, including remote manual pull stations, mechanical or electrical devices, detectors, actuators and fire-actuated dampers to ensure that they are in operable condition [see NFPA 96(98), Sec. 8-2.1].
- A visual inspection of fire alarm interconnect switches is also required [see NFPA 72(99), Table 7-3.1].

Fusible links and automatic sprinkler heads are required to be replaced at least annually, but may have to be replaced more frequently if a visual inspection shows that to be necessary [see NFPA 96(98), Sec. 8-2.2].

- By exception, bulb-type sprinklers or spray nozzles do **not** need to be replaced if an annual examination shows no buildup of grease or other material on the sprinkler or spray nozzles.

Fire alarm interconnect switches are required to be tested annually by mechanically or electrically operating the switch to verify receipt of a signal at the fire alarm control panel [see NFPA 72(99), Tables 7-3.2 and 7-2.2]. This testing should be performed as part of the annual test conducted of the building fire alarm system.

The equipment manufacturer may have additional maintenance requirements that should be followed in order to ensure proper operation of the system and maintain applicable warranties. The standards applicable to automatic dry- or wet-chemical fire-extinguishing systems also contain inspection requirements that must be followed, including:

1. In accordance with NFPA 17(98), Sections 9-3.1 and 9-5, cylinders for dry chemical kitchen hood extinguishing systems must be:
 - Examined every 6 years to check for caking
 - Hydrostatically tested every 12 years
2. In accordance with NFPA 17A(98), Sec. 5-5, cylinders for wet chemical kitchen hood extinguishing systems must be hydrostatically tested every 12 years

DOCUMENT your inspections and service

Exhaust system:

Both NFPA 96 and the Minnesota State Fire Code require that exhaust system cleanings be recorded [see NFPA 96(98), Sec. 8-3.1.2; MSFC(07), Sec. 904.11.6.4]. These records must include the extent, time and date of cleaning. When a vent cleaning contractor is used, the contractor must be able to provide you with a certificate showing the date of any inspections or cleanings performed. In addition, the contractor is required to display a tag within the kitchen indicating the date of the cleaning and the name of the servicing company and identifying any areas that were not cleaned on the date of the service.

Fire-extinguishing system inspection/service:

1. A sample monthly inspection log has been developed for your use. The log can be used “as is” or serve as a guide that you can use to create your own log. A completed log is also provided to serve as an example of how the log is expected to be filled out.

[Click Here for Sample Kitchen Hood Fire-Extinguishing Log](#)

2. The person or company performing the 6-month service on your facility’s kitchen hood fire-extinguishing system needs to provide you with a certificate of inspection. Some local jurisdictions may require that copies of these certificates be forwarded to them. The authority for such a requirement comes from MSFC(07), Sec. 904.11.6.4 and NFPA 96(98), Sec. 8-2.3. To give you some idea of what such a certificate might look like, a sample is provided.

[Click Here for Sample Commercial Kitchen Hood Fire System Report](#)

It’s important that at least two people in your facility know where your documentation is kept to increase the likelihood that it can be readily provided if requested during an inspection. It is recommended that this documentation be maintained for at least three years.