

# A Hands-On Maintenance Guide for

BY FEMA

As mentioned in our last article (*Firewatch!*, March 2004), a UL test standard has been overlooked by much of the fire protection industry: UL 299, *Dry Chemical Fire Extinguishers*, Seventh Edition, published in July 1982, and effective on January 27, 1984. The following is a brief recap of this standard's history.

After much testing with live fires and novice operators in the late 1970s, UL 299 was revised to require any extinguisher weighing more than 12 lb (gross weight) and having a 2-A rating and/or 20-B rating or higher to use a hose. Having a hose on an extinguisher makes it very difficult to hold the extinguisher in any other position than upright, and makes it easy to properly direct the dis-

charge of agent. Before the new standard, 5 lb, 6 lb, 10 lb, and even 20 lb extinguishers were being manufactured without a hose assembly, using only a fixed nozzle.

In addition, testing helped to develop new operating instructions that used pictograms, which proved to be more easily understood. The new operating instructions and use codes became mandatory with the 1984 edition of UL 299 and the adoption of this standard by the fire codes.

The reality is that thousands of extinguishers manufactured prior to January 27, 1984, are still being used and serviced today. It would be cost-effective and make good fire protection sense to replace these stored-pressure (non-

cartridge operated) units with more effective, modern extinguishers.

So why replace outdated extinguishers?

#### If the old unit is not replaced...

- The extinguisher will be more than twenty years old and will not have a factory warranty.
- The extinguisher will have gone through at least three six-year maintenance cycles and at least one hydrotest.
- The manufacturer may no longer be in business, placing the sole responsibility on the servicing organization.
- UL-listed parts and agent are probably not available, thus voiding

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# Replacing Outdated Fire Extinguishers

the UL listing and violating NFPA standards as well as state, local, and even federal codes.

- As proven by novice fire testing, the extinguisher will be more difficult to use.

## If the old unit is replaced with a new one...

- Simple, clear pictograms on extinguishers made after 1984 are easier to understand, even without command of the English language.
- The profit margin made on service may not be as high as assumed because of labor and transportation costs that are not fixed.
- The end user ends up with a new unit, meeting the latest in design and

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- testing, with a new factory warranty.
- The unit will be more effective when a novice operator better understands the pictograms and will more likely

hold the unit in an upright position.

We've created a special reference guide to be used by technicians inspecting, servicing, and maintaining fire extinguishers out in the field—see page 22. For additional copies of this guide or for more information on this topic, please contact FEMA, the Life Safety Group, at (216) 241-7333. ♦

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**BEFORE RECHARGING, REPAIRING, CONDUCTING A SIX YEAR MAINTENANCE OR HYDROTESTING AN EXTINGUISHER, ASK THE FOLLOWING QUESTIONS:**

**1** Is the extinguisher a soda-acid, cartridge operated water, 2 part chemical foam, has a brass or copper shell with soft solder or rivets, is a carbon tetrachloride extinguisher, a solid cartridge type AFFF extinguisher or a CO2 with a metal horn?

**NO**

Continue to question 2

**YES**

Replace it. (NFPA 10 has required the removal of these extinguishers from service see NFPA 10 1.5.4 – 2002 edition.)

**2** Does the extinguisher have to be inverted to operate?

**NO**

Continue to question 3

**YES**

Replace it. Inverting type extinguishers have not been made since the late 1960's. The operator will probably not know how to use it properly.

**3** Is the manufacturer of the extinguisher still in existence?

**NO**

Replace it (the liability for the extinguisher's performance rests solely on you and your customer. The probability that the extinguisher has been able to maintain its UL Listing – using only OEM parts and agent – is slim to none, therefore, the extinguisher is likely no longer UL Listed).

**YES**

Continue to question 4

**4** Is the extinguisher a stored pressure hand portable dry chemical made before 1984?

**NO**

Continue to question 5

**YES**

Replace extinguishers with "old style" operating labels (non graphic), or, any fixed nozzle extinguisher with a gross weight of 12 lbs or more, a 2A or 20 B or higher rating. The newer extinguishers are safer to use and have more user-friendly operating instructions.

**5** Does the extinguisher have any dents, gouges or burn marks?

**NO**

Continue to question 6

**YES**

Replace it. (NFPA 10, starting with the 1998 edition, has very strict visual inspection requirements regarding dents, gouges and burn marks, if the extinguisher does not pass the visual inspection it is to be removed from service see NFPA 10 7.1.4 2002 edition.)

**6** Is the extinguisher listed for a Class K hazard protecting a commercial cooking hazard?

**NO**

Replace it. (NFPA 10 requires any existing dry chemical extinguisher that does not have a Class K listing, which is protecting Class K hazards is to be replaced when it is due for either a 6 year maintenance or a hydrotest –see NFPA 10 4.3.2.3 – 2002 edition.) No other types are allowed.

**YES**

Continue to question 7

**7** Does the extinguisher require repairs or replacement parts that will exceed 50% of the replacement cost for the unit?

**NO**

Continue to question 8

**YES**

Replace it. You will probably serve yourself and your customer better by replacing the unit under these circumstances. You avoid liability exposure for servicing the extinguisher, the customer will have a new unit for a slightly higher cost than the projected cost of service or repair and a new factory warranty will be in place.

**8** Will the service fees alone (recharge, six year maintenance or six year maintenance with a hydro test) exceed 50% of the cost to replace the unit?

**NO**

Continue to question 9

**YES**

Replace it. In addition to the reasons stated in #7, which benefits the customer, when you consider your costs for labor, making two trips to the customer's facility, leaving a loaner, the tracking and invoicing involved, you may not be making as much money on servicing the extinguisher as you have assumed.

**9** Is the extinguisher appropriate for the hazard? (the right size or agent)

**NO**

Replace it with the appropriate size and type of extinguisher.

**YES**

Service the Unit

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