063. FIXED FIRE SUPPRESSION EQUIPMENT

01. Scope: (7-1-97)

02. Definitions: For definitions of other terms used in this section, see sub-section 010 of this standard. (7-1-97)

03. General Requirements: (7-1-97)

04. Water Systems: (7-1-97)

a. Automatic sprinkler systems shall meet design requirements of the National Fire Protection Association's Standard, current appropriate addition, for the Installation of Sprinkler Systems. All systems shall be installed and maintained by a state licensed contractor in conformity with the Regulation G.2 of the State Fire Marshal's Office and the requirements of sub-sections 063.04.a through 063.04.h of this section. (7-1-97)

b. Every automatic sprinkler system shall have at least one (1) automatic water supply of adequate pressure, capacity, and reliability. (7-1-97)

c. One (1) or more fire department connections shall be provided except on buildings located in remote areas. An approved check valve shall be installed in each fire department connection, located as near as practicable to the point where it joins the system. There shall be no shutoff valve in the fire department connection. The piping between the check valve and the outside hose coupling shall be equipped with an approved automatic drip. (7-1-97)
d. Hose connections shall be of approved type. Hose coupling threads shall conform to those
used by the local fire department. National Standard Fire Hose Coupling Screw Threads shall be
used whenever they will fit the local fire department hose. Hose connections shall be equipped
with caps, properly secured and arranged for easy removal by fire departments. Hose
connections shall be located and arranged so that hose lines can be readily and conveniently
attached to the inlets without interference from any nearby objects including buildings, fences,
posts, or other fire department connections. Hose connections shall be designated by a sign
having raised letters at least one (1) inch in size, cast on plate, or fitting reading for service
designated: "AUTO SPKR". (7-1-97)

e. Water flow alarms shall be provided on all sprinkler installations so that any flow of water
equal to or greater than the smallest orifice size installed on the system shall result in an audible
alarm on the premises within five (5) minutes. An alarm unit shall include an approved
mechanical alarm, horn, or siren, or an approved weatherproof electric gong, bell, horn, or siren
on the outside of the building or approved electric gongs, bells, horns, or sirens inside the
building, or a combination of such devices. Sprinkler activated alarms shall be monitored by
persons at constantly attended locations: when there are twenty (20) or more sprinkler heads in
nurseries accommodating more than five (5) persons for the full time care of children under the
age of six (6) years, hospitals, sanitariums, nursing homes with non-ambulatory patients and
similar buildings each accommodating more than five (5) persons, and health care centers for
ambulatory patients receiving out patient medical care which may render the patient incapable of
unassisted self-preservation when each tenant space accommodates more than five (5) patients,
or when there are one hundred (100) or more sprinkler heads in other occupancies. (7-1-97)

f. The alarm apparatus for a wet pipe system shall consist of an approved listed alarm check
valve or other listed water flow detecting alarm device with the necessary attachments required
to give an alarm. The alarm apparatus for a dry pipe system shall consist of listed alarm
attachments to the dry-pipe valve. When a dry pipe valve is located on the system side of an
alarm valve, the actuating device of the alarms for the dry pipe valve may be connected to the
alarms on the wet pipe system. The alarm apparatus for pre-action and deluge systems shall
consist of a listed alarm attachments, actuated by the detection system independently of flow of
water in the system. (7-1-97)

g. Drains from alarm devices shall be so arranged that there will be no danger of freezing, and so
that there will be no overflowing at the alarm apparatus, at domestic connections or elsewhere
with the sprinkler drains wide open and under pressure. (7-1-97)

h. A water sprinkler system installed under this standard shall be properly maintained for
efficient service. The employer is responsible for the condition of the sprinkler system and must
use due diligence in keeping the system in good operating condition. Maintenance on sprinkler
systems shall be performed annually by a trained person who has undergone the training
necessary to reliably perform the required maintenance procedures, has available testing
equipment. Fire sprinkler maintenance shall be accomplished in accordance with current
appropriate NFPA, Idaho State Fire Marshal Regulation G.2, and appropriate manufactures
service manuals. A stock of spare sprinkler heads, of each type used, shall be maintained on the
premises, never less than six. Also, a special sprinkler head wrench shall be available. Sprinkler
heads that are so located as to be subject to mechanical damage shall be protected with a listed guard. Sprinkler heads shall not be painted and any sprinkler heads that have been painted shall be replaced. Items not pertaining to the operation, maintenance, protection, or installation of sprinkler heads or piping shall not be attached to, suspended from, or stored on sprinkler piping or sprinkler heads. A clearance of at least 18-inches shall be maintained between sprinkler head deflectors and the top of storage or fixtures to reduce the possibility of obstruction to the distribution of water. (7-1-97)

05. Dry Chemical Systems: (7-1-97)

a. When dry chemical extinguishing systems are provided they shall meet the design requirements of the National Fire Protection Association's "Standard for Dry Chemical Extinguishing Systems" NFPA 17 and the requirements of sub-sections 063.05.a through 063.05.e of this section. (7-1-97)

b. Where there is a possibility that personnel may be exposed to a dry chemical discharge, suitable safeguards shall be provided to insure prompt evacuation of such locations, and also to provide means for prompt rescue of any trapped personnel. Safety items shall include, but not limited to, personnel training, warning signs, discharge alarms, pre-discharge alarms, and respiratory protection as required. (7-1-97)

c. Alarms and/or indicators are used to indicate the operation of the system, hazard to personnel, or failure of any supervised device or equipment. The devices shall be audible and visual. The type, number, and location of the devices shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system should be charged. Alarms indicating failure of supervised devices or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. (7-1-97)

d. Between the regular semiannual inspection or tests, the system shall be inspected visually or otherwise by competent personnel on a monthly schedule. As a minimum, an inspection/quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; the maintenance tag or certificate is in place; there is no obvious physical damage or other condition that may prevent proper operation; and the pressure gage(s), if provided, are in the operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to include the date and initials of the person performing the inspection/quick check. Persons making inspections/quick checks shall keep records for those extinguishing systems that were found to require corrective action. (7-1-97)

e. At least semiannually, maintenance shall be conducted in accordance with NFPA 17 and the manufacture's maintenance manual. Maintenance on dry chemical extinguishing systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures and having available suitable testing equipment. (7-1-97)
06. Carbon Dioxide Extinguishing Systems: (7-1-97)

a. When carbon dioxide extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard on Carbon Dioxide Extinguishing Systems" NFPA No. 12 and the requirements of sub-sections 063.06.a through 063.06.e of this section (7-1-97)

b. In any use of carbon dioxide where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a carbon dioxide discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. (7-1-97)

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. (7-1-97)

d. At least annually, all carbon dioxide systems shall be thoroughly inspected and tested for proper operation by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures and having available suitable testing equipment. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection /quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provider, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. At least semiannually, all high pressure cylinders shall be weighed. If at any time, a container shows a loss in net content of more than ten (10) percent, it shall be refilled or replaced. If, at any time, a low pressure container shows a loss of more than ten (10) percent, it shall be refilled, unless the minimum gas requirements are still provided. (7-1-97)

e. Carbon dioxide systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 12. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on carbon dioxide
systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12, and appropriate manufactures service manuals. (7-1-97)

07. Halon 1301 Systems: (7-1-97)

a. When Halon 1301 extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard for Halon 1301 Extinguishing Systems" NFPA No. 12A and the requirements of sub-sections 063.06.a through 063.06.e of this section. (7-1-97)

b. In any use of Halon 1301 where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a Halon discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. (7-1-97)

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. (7-1-97)

d. At least semiannually, all Halon 1301 systems shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection /quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provided, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. (7-1-97)

e. At least semiannually, maintenance shall be conducted. Halon 1301 systems shall be maintained in full operating condition at all times in accordance with the manufacture's
maintenance manual and NFPA 12A. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Halon 1301 systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12, and appropriate manufactures service manuals. (7-1-97)

08. Halon 1211 Systems: (7-1-97)

a. When Halon 1211 extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard for Halon 1211 Extinguishing Systems" NFPA No. 12B and the requirements of sub-sections 063.06.a through 063.06.e of this section. (7-1-97)

b. In any use of Halon 1211 where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a Halon discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. (7-1-97)

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. (7-1-97)

d. At least semiannually, all Halon 1211 systems shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection /quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provided, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. (7-1-97)
e. At least semiannually, maintenance shall be conducted. Halon 1211 systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 12B. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Halon 1211 systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12B, and appropriate manufactures service manuals. (7-1-97)

09. Wet Chemical Systems: (7-1-97)

a. When Wet Chemical extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's Standard for "Wet Chemical Fire Extinguishing Systems", NFPA 17A, and the requirements of sub-sections 063.09.a. through 063.09.f of this section. (7-1-97)

b. Hazards and equipment that can be protected using wet chemical extinguishing systems include; restaurant, commercial, and institutional hoods; plenums, ducts, and associated cooking appliances. (7-1-97)

c. Wet chemical solutions are relatively harmless and normally have no lasting effects on skin, respiratory system, or clothing. They may produce mild, temporary irritation but the symptoms usually will disappear when contact is eliminated. Irritation of the eyes should be treated by flushing the eyes continuously for fifteen (15) minutes or longer with water. Any condition of prolonged irritation shall be referred to a physician for treatment. (7-1-97)

d. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. (7-1-97)

e. At least semiannually, all Wet Chemical systems including alarms, shutdowns, and other associated equipment shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection /quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; nozzle blow off caps are intact and undamaged; and the pressure gage(s), if provided, are
If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. (7-1-97)

f. At least semiannually, maintenance shall be conducted. Wet Chemical systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 17A. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Wet Chemical systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 17A, and appropriate manufactures service manuals. (7-1-97)