19.6 Automatic Sprinkler System Procedure

Nipissing-Parry Sound Catholic District School Board

Latest Revision: Oct 2011

1.0 Purpose

.01 The purpose of this document is to inform schools of the requirements of the operation, inspection and testing of an automatic sprinkler system.

2.0 General

.01 An sprinkler system is a network of pipes located at ceiling level that is connected to a source of water, with regularly spaced nozzles (sprinklers), and designed to deliver water on to a fire. In most common configuration, the nozzles are held closed by a mechanism that is designed to release when heated to a predetermined temperature, allowing water to discharge.

.02 The type of system located in our schools is a wet-pipe system. The system consists of a piping filled with water under pressure. The sprinkler discharges water as soon as their thermal-sensing elements are heated to their rated temperature. The water continues to flow until the system is shut off.

.03 The following is a list of items that should be take into consideration on a daily basis:

a) Ensure all sprinkler heads are clear of obstructions.

b) Ensure sprinkler pipe is not used to support anything.

c) Ensure auxiliary drains are inspected during cold weather to prevent freezing.

d) Any repair and replacement alterations of the sprinkle system-components shall be performed by a professional certified sprinkler system consultant and in accordance with NFPA 13-1980 "Sprinkler Systems".

e) A permanent record of inspections, tests and maintenance must be kept.

f) When a sprinkler system is monitored by an outside alarm agency they must be notified prior to conducting tests.

3.0 Inspections

.01 To order to have a well maintained and a safe working system a weekly, quarterly and semi-annual inspection and testing are required.

3.1 Weekly Inspection

.01 A weekly inspection of the facility shall be performed to ensure all valves controlling water supply to sprinkler system are in the open position, all valves are accessible and verify they are not mechanically damaged. The weekly inspection shall be recorded on a "Sprinkler System Weekly School Inspection Form". Refer to Section 5.0.

3.2 Quarterly Inspection and Testing

.01 A quarterly inspection shall be performed, in which the alarm devices (water flow alarm) shall be tested and a drain test shall be performed on a portion of the system. The quarterly inspections shall be recorded on a "Sprinkler System Quarterly School Inspection Form". Refer to Section 6.0.

3.3 Semi-Annual Inspection and Testing

.01 The Board Office shall have a semi-annual inspection performed by an external professional certified sprinkler system consultant. The Custodian should attend the semi-annual inspections so that they may become familiar of potential problems. The Board Office and the Principal shall receive a copy of the semi-annual inspection.

.02 The following items shall be inspected/tested but not limited to:

a) Check all sprinkler heads for damage, corrosion, grease, dust and paint, free from obstruction to spray pattern and replace the sprinkler heads where necessary.

b) Check all visible pipes for mechanical damage, leaks and external corrosion.

c) Ensure exposed sprinkler hangers in good condition, not damages or loose.

d) Ensure there is adequate heat in areas with wet piping.

e) Confirm valve is open by turning hand wheel toward "open".

f) Close the valve completely; counting and recording the number of turns it takes to shut the valve. Re-open the valve completely. Verify the number of turns to close/open is appropriate.

g) Ensure Fire Department connections are properly marked.

h) Test "wet" sprinkler systems, using "inspectors test" (most hydraulically remote) connection.

i) Test sprinkler water pressure by fully opening main drain valve.

4.0 Shutting Down the System

.01 It's important to take efficient steps to minimize the duration of sprinkler system shutdown and implement temporary measures to help prevent a loss from occurring while protection is impaired. The following steps shall be followed during a sprinkler system shut down.

4.1 Before the Shutdown

.01 Plan to work on sprinkler system when the school is not operating.

.02 Have all the equipment prior to shutting down, i.e., excavating equipment, pipe plugs, repair parts, personnel, etc.

.03 Have temporary fire protection on hand: extra extinguishers, charged hose lines, temporary sprinkler protection, etc.

.04 Use the Factory Mutual Insurance Company (FM Global) "Red Tag Permit System Kit". Refer to Section 7.0. Notify the local FM Global office of the planned shutdown.

4.2 During the Shutdown

.01 Shut down hazardous processes.

.02 Prohibit smoking.

.03 Prohibit all hot work including cutting and welding

.04 Assign a fire watch to patrol the area where protection is down.

.05 Use the FM Global "Red Tag Permit System Kit".

4.3 After the Shutdown

.01 Place fire-protection equipment back in automatic service.

.02 If sprinkler protection was impaired, conduct a 2-in. (51-mm) drain test at the sprinkler riser to obtain a clear, unobstructed water flow.

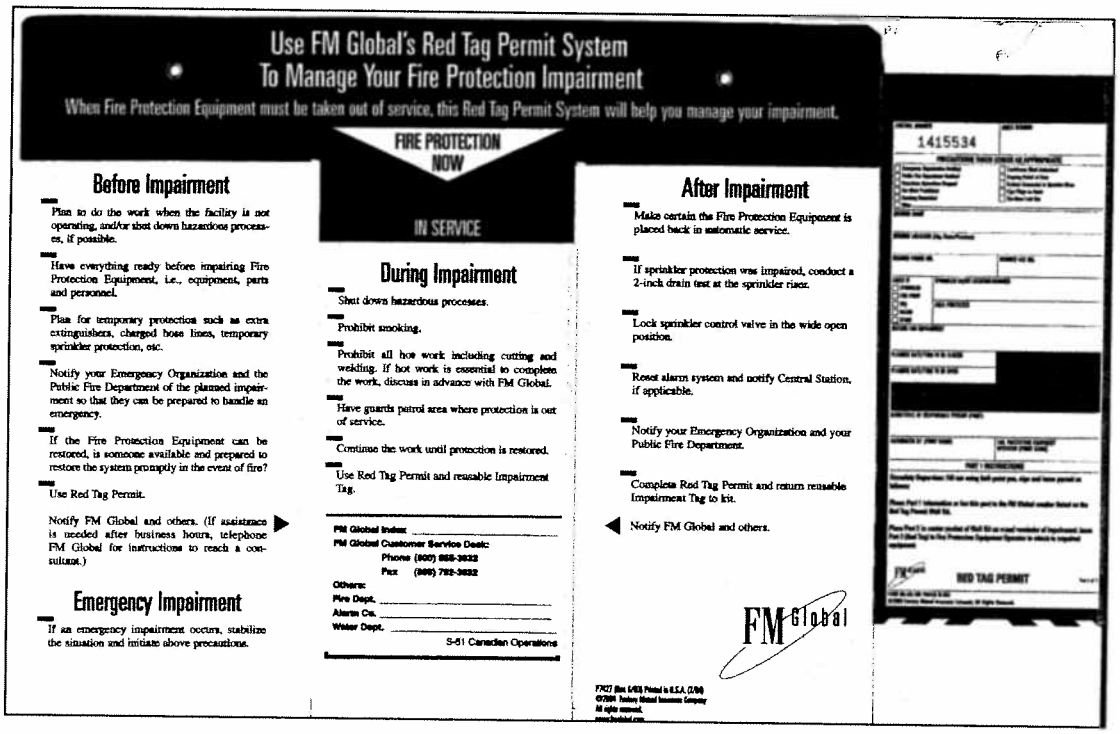
.03 Lock fire protection control valves in the open position.

.04 Reset the alarm system, and notify the monitoring station.

.05 Notify FM Global office that fire protection has been restored. Complete FM Global "Red Tag Permit System Kit".

7.0 Red Tag Permit System Wall Kit

.01 Authorize Red Tag Permit System Wall Kit provide by FM Global.



Use FM Global's Red Tag Permit System
To Manage Your Fire Protection Impairment

When Fire Protection Equipment must be taken out of service, this Red Tag Permit System will help you manage your impairment.

FIRE PROTECTION NOW

IN SERVICE

Before Impairment

- Plan to do the work when the facility is not operating, and/or shut down hazardous processes, if possible.
- Have everything ready before impairing Fire Protection Equipment, i.e., equipment, parts and personnel.
- Plan for temporary protection such as extra extinguishers, charged hose lines, temporary sprinkler protection, etc.
- Notify your Emergency Organization and the Public Fire Department of the planned impairment so that they can be prepared to handle an emergency.
- If the Fire Protection Equipment can be restored, is someone available and prepared to restore the system promptly in the event of fire?
- Use Red Tag Permit.
- Notify FM Global and others. (If assistance is needed after business hours, telephone FM Global for instructions to reach a consultant.) ▶

Emergency Impairment

- If an emergency impairment occurs, stabilize the situation and initiate above precautions.

During Impairment

- Shut down hazardous processes.
- Prohibit smoking.
- Prohibit all hot work including cutting and welding. If hot work is essential to complete the work, discuss in advance with FM Global.
- Have guards patrol area where protection is out of service.
- Continue the work until protection is restored.
- Use Red Tag Permit and reusable Impairment Tag.

FM Global Index: _____
FM Global Customer Service Desk:
Phone (800) 855-3533
Fax (800) 762-3532
Others:
Fire Dept. _____
Alarm Co. _____
Water Dept. _____

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After Impairment

- Make certain the Fire Protection Equipment is placed back in automatic service.
- If sprinkler protection was impaired, conduct a 2-inch drain test at the sprinkler riser.
- Lock sprinkler control valve in the wide open position.
- Reset alarm system and notify Central Station, if applicable.
- Notify your Emergency Organization and your Public Fire Department.
- Complete Red Tag Permit and return reusable Impairment Tag to kit.
- ◀ Notify FM Global and others.

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RED TAG PERMIT

Nipissing-Parry Sound Catholic District School Board

Sprinkler System Valve Weekly Inspection
Form 6.1

School: ____________________

Sprinkler System Valve Inspection - ____________________

Date: ____________________ **Completed By:** ____________________

	Action Required? Yes	Action Required? No	Action Taken? Yes	Action Taken? No	What Action was Taken
Are all the valves in the open position?	☐	☐	☐	☐	________
Are the valves accessible?	☐	☐	☐	☐	________
Are the valves mechanically damaged?	☐	☐	☐	☐	________
Are spare heads available?	☐	☐	☐	☐	________

What are the water pressures? ____________________

Other Comments: ____________________

Sprinkler System Valve Inspection - ____________________

Date: ____________________ **Completed By:** ____________________

	Action Required? Yes	Action Required? No	Action Taken? Yes	Action Taken? No	What Action was Taken
Are all the valves in the open position?	☐	☐	☐	☐	________
Are the valves accessible?	☐	☐	☐	☐	________
Are the valves mechanically damaged?	☐	☐	☐	☐	________
Are spare heads available?	☐	☐	☐	☐	________

What are the water pressures? ____________________

Other Comments: ____________________

Sprinkler System Valve Inspection - ____________________

Date: ____________________ **Completed By:** ____________________

	Action Required? Yes	Action Required? No	Action Taken? Yes	Action Taken? No	What Action was Taken
Are all the valves in the open position?	☐	☐	☐	☐	________
Are the valves accessible?	☐	☐	☐	☐	________
Are the valves mechanically damaged?	☐	☐	☐	☐	________
Are spare heads available?	☐	☐	☐	☐	________

What are the water pressures? ____________________

Other Comments: ____________________

Nipissing-Parry Sound Catholic District School Board

6.2 Sprinkler System Quarterly Inspection Form

School: _____

Date: _____ **Completed By:** _____

	Action Required? Yes	Action Required? No	Action Taken? Yes	Action Taken? No	What Action was Taken
Fire Department Connection					
Are the connections visible?	☐	☐	☐	☐	
Are the connections accessible?	☐	☐	☐	☐	
Are the couplings and swivels damaged?	☐	☐	☐	☐	
Do the couplings and swivels rotate smoothly?	☐	☐	☐	☐	
Are the plugs or caps in place?	☐	☐	☐	☐	
Are the plugs or caps damaged?	☐	☐	☐	☐	
Are the gaskets in place?	☐	☐	☐	☐	
Are the gaskets in good condition?	☐	☐	☐	☐	
Are the identification signs in place?	☐	☐	☐	☐	
Are any valves leaking?	☐	☐	☐	☐	
Sprinkler System Drain Test					
Location: _____					
Was water flow observed?	☐	☐	☐	☐	
Is the Inspectors test connection open?	☐	☐	☐	☐	
Was the bypass connection opened?	☐	☐	☐	☐	
Was the alarm actuated and flow observed?	☐	☐	☐	☐	

Date: _____ **Completed By:** _____

	Action Required? Yes	Action Required? No	Action Taken? Yes	Action Taken? No	What Action was Taken
Fire Department Connection					
Are the connections visible?	☐	☐	☐	☐	
Are the connections accessible?	☐	☐	☐	☐	
Are the couplings and swivels damaged?	☐	☐	☐	☐	
Do the couplings and swivels rotate smoothly?	☐	☐	☐	☐	
Are the plugs or caps in place?	☐	☐	☐	☐	
Are the plugs or caps damaged?	☐	☐	☐	☐	
Are the gaskets in place?	☐	☐	☐	☐	
Are the gaskets in good condition?	☐	☐	☐	☐	
Are the identification signs in place?	☐	☐	☐	☐	
Are any valves leaking?	☐	☐	☐	☐	
Sprinkler System Drain Test					
Location: _____					
Was water flow observed?	☐	☐	☐	☐	
Is the Inspectors test connection open?	☐	☐	☐	☐	
Was the bypass connection opened?	☐	☐	☐	☐	
Was the alarm actuated and flow observed?	☐	☐	☐	☐	

7.0 Red Tag Permit System Wall Kit

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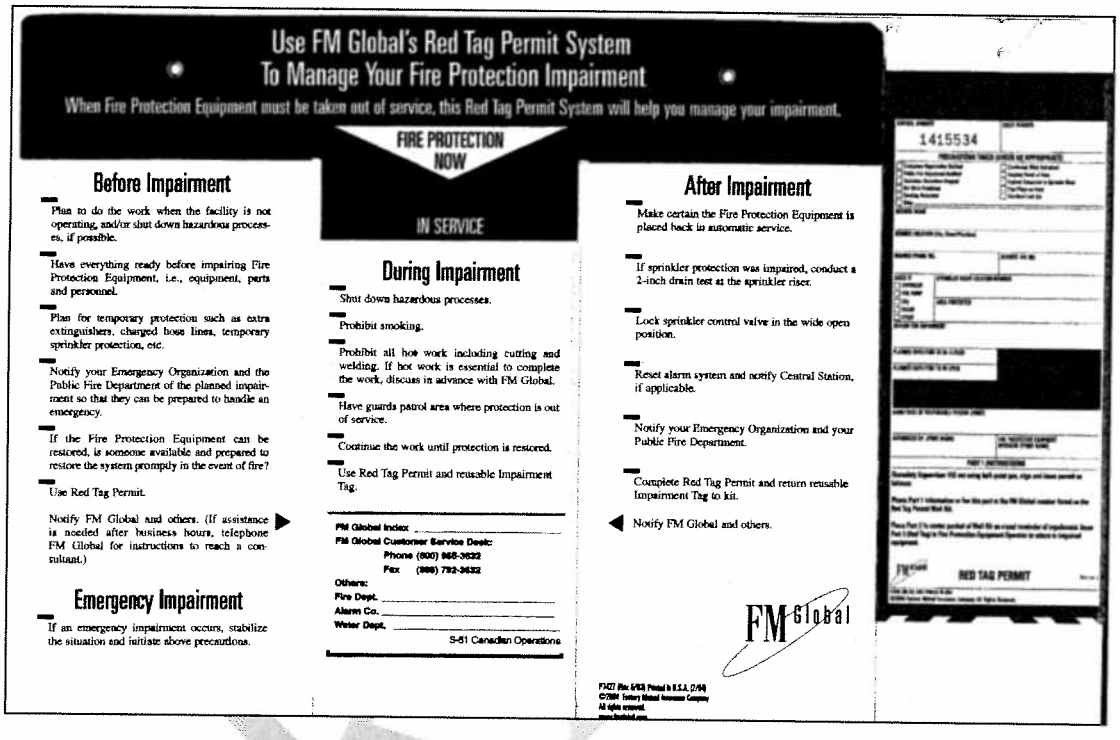

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FM Global Index _____
FM Global Customer Service Desk:
Phone (800) 848-3632
Fax (888) 792-3632
Others:
Fire Dept. _____
Alarm Co. _____
Water Dept. _____

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After Impairment

- Make certain the Fire Protection Equipment is placed back in automatic service.
- If sprinkler protection was impaired, conduct a 2-inch drain test at the sprinkler riser.
- Lock sprinkler control valve in the wide open position.
- Reset alarm system and notify Central Station, if applicable.
- Notify your Emergency Organization and your Public Fire Department.
- Complete Red Tag Permit and return reusable Impairment Tag to kit.
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