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Bulletin 17-12

Fire Safety Plan

The purpose of this bulletin is to assist building owners and managers to prepare effective and useful Fire Safety Plans. Fire Safety Plans contain measures to:

- Control fire hazards in a building
- Ensure a safe and orderly evacuation of a building in case of fire
- Effective utilization of fire protection systems and equipment in buildings

Fire Safety Plans are prepared in the best interests of building owners and occupants and dependent upon the use and occupancy and any unique features. A building owner or agent has a responsibility to implement the provisions of a Fire Safety Plan and should include specific information on the building and its contents.

Purpose

General Information Contained in Fire Safety Plan

National Fire Code Requirements

- 1) A copy of the fire emergency procedures and other duties for supervisory staff, as laid down in the Fire Safety Plan, shall be given to all supervisory staff.
- 2) The Fire Safety Plan shall be kept in the building for reference by Saskatoon Fire and Protective Services, supervisory staff and other personnel.
- 3) The District Fire Inspector may, upon request and if required, provide advice, clarification and guidance for the preparation of a fire safety plan.
- 4) The Fire Safety Plan shall be reviewed at intervals not greater than 12 months to ensure it takes into account changes in the use and other characteristics of the building.
- 5) The Fire Safety Plan should deal only with matters which pertain specifically to the particular building.
- 6) A Fire Safety Plan must be implemented in:
 - a) every building containing an assembly or a care or detention occupancy,
 - b) every building required by the National Building Code to have a fire alarm system,
 - c) demolition and construction sites regulated under the National Fire Code,
 - d) indoor and outdoor storage areas regulated under the National Fire Code,
 - e) areas where flammable liquids or combustible liquids are stored or handled, including refineries and process plants,
 - f) areas where hazardous processes or operations occur.

- 7) The Fire Safety Plan shall include:
- a) The emergency procedures to be used in case of fire including
 - (i) sounding the fire alarm,
 - (ii) notifying the Saskatoon Fire and Protective Services,
 - (iii) instructing occupants on procedures to be followed when the fire alarm sounds,
 - (iv) evacuating occupants, including special provisions for persons requiring assistance,
 - (v) confining, controlling and extinguishing the fire,
 - b) the appointment and organization of designated supervisory staff to carry out fire safety duties,
 - c) the training of supervisory staff and other occupants in their responsibilities for fire safety,
 - d) documents, including diagrams, showing the type, location and operation of the building fire emergency systems,
 - e) the holding of fire drills,
 - f) the control of fire hazards in the building,
 - g) the inspection and maintenance of building facilities provided for the safety of occupants, and
 - h) additional requirements for High-Rise Buildings as indicated under Part 9.

A copy of the Fire Safety Plan shall be provided to all supervisory staff.

The Fire Safety Plan shall be kept in the building for review by all supervisory staff and Fire and Protective Services personnel.

The Fire Safety Plan shall be reviewed by the owner or agent at intervals not greater than 12 months to ensure that it reflects any changes to the building, staffing, operations and processes. Upon request, Fire and Protective Services may review the Fire Safety Plan and provide guidance and clarification for the preparation and updating.

During a formal fire inspection, a Fire Safety Plan is subject to review by Fire and Protective Services to ensure that all required provisions of The National Fire Code of Canada have been met.

PREPARATION PROCEDURES

Part 1 - Title Page

1. The first page or cover page of the fire plan will be titled **Fire Safety Plan** and will include:
 - (i) the business or building name (if applicable) and address of the building,
 - (ii) the person or agency who prepared the plan,
2. The back side of the title page should include a Table of Contents.
3. It is recommended that all pages be standard 8½ " X 11" size and numbered.

Part 2 - Building Description and Use

1. Physically describe your building, i.e.: square footage of main floor area, number of stories, basement, and so forth.
2. Identify the type of occupancy, i.e.: residential, hotel, office complex, etc. for an Industrial building be sure to specify if it is a bulk plant, warehouse, mill, manufacturing plant, processing plant, repair or storage garage and so forth. Industrial buildings will

also have to specify the specific use, i.e.: spray painting operations, processing of raw wood products, storage etc.

Part 3 - Identifying Fire Protection Systems and Equipment

The following list gives a brief description of a number of fire protection and life safety systems which may be present in your building(s). Review this list with a Fire Inspector and check off those systems which apply to your building. Make a list of the fire protection systems and life safety equipment that pertain to your building.

Fire Department Access (Fire Lanes, Access Panels and Windows, etc.)

Fire Department access allows fire fighters and their equipment to gain access to the building. Vehicles parked in a fire lane, excessive vegetation, snow and other forms of obstructions to access routes, fire hydrants and Fire Department connections are not permitted by the National Fire Code. Maintaining Fire Department access is an ongoing matter. In addition, access into a building may require special consideration. This may include access with a key from a lock box, or other preplanning.

Emergency Power

In some buildings emergency power is required to ensure the continued operation of fire and life safety equipment and systems in case of loss of normal electric power. Your Fire Safety Plan should indicate the type of equipment (i.e. fire alarm system, emergency lighting, elevators, etc.) the emergency generator serves. Describe the type (gasoline, diesel, propane, natural gas) of generator and the storage tank location if applicable. Indicate the location of the emergency generator on the appropriate floor plan.

Emergency Lighting

Emergency lighting ensures that exits, corridors and principal routes providing access to exits are illuminated in the event of a loss of power. Your Fire Safety Plan should indicate the areas in which self-contained emergency lighting equipment is located.

Exits

An exit is that part of egress that leads from the floor area it serves to a public thoroughfare or to an approved open space. Walls, floors, doors or other means provide a protected path which is necessary for occupants to proceed with reasonable safety to a place of refuge. Vertical stair shafts accessed from above or below grade are protected from the remainder of the building provided the doors leading to the shaft are kept closed.

Fire Alarm System

The purpose of a fire alarm system is to alert all occupants of the building that a fire emergency may exist. Operation of this system will alert occupants to proceed with evacuation measures required by the Fire Safety Plan. Where a fire alarm system has been installed with no provisions to transmit a signal to the Saskatoon Fire and Protective Services, a sign shall be posted at each manually actuated fire alarm pull station requesting that the Saskatoon Fire and Protective Services be notified and the sign shall include the telephone number of that department, ie(9-1-1)

All fire alarm systems shall be maintained in full operating condition at all times. There are two main types of fire alarm systems, single stage systems and two stage systems.

- a) A single stage system sounds a general alarm throughout the facility. This may require total evacuation of the building. The fire alarm system may be activated by a manual pull station, heat detector, smoke detector or a sprinkler flow switch.

- b) Activation of a Two Stage fire alarm system will cause an initial intermittent *alert* signal to sound. During this stage the *alert* signal allows staff up to 5 minutes to investigate the cause of the alarm and take appropriate action. This signal is a pre-signal to the general alarm signal. Upon expiry of the 5 minute intermittent *alert* signal, a secondary general *alarm* signal will sound. This *alarm signal* gives a clear indication that complete evacuation of the building is required. Your Fire Safety Plan must indicate if you have a single stage or two stage fire alarm system, whether or not you have a voice communication system and also the location of the system's annunciator or fire alarm control panel.

A voice communication system is used primarily to provide information and instructions for occupants during an emergency. Additional information concerning voice communication systems is available from fire inspectors.

Portable Fire Extinguishers

Portable fire extinguishers are intended as a first aid measure to cope with fires of limited size. The basic types of fires are Classes A, B and C. Portable fire extinguishers are rated for the corresponding classes of fire they are effective on.

Heating, Ventilation & Air Conditioning

Except for one and two family homes, there are annual inspection and maintenance requirements for heating, cooling and air movement systems.

High Buildings

High buildings have additional requirements for the central alarm and control facility, elevators, venting and smoke control. All elevators should be returned to and kept at street level in fire emergency situations. Subsection 3.2.6. of the National Building Code specifies detailed size, capacity and operational regulations for fire fighters elevators. For information on Fire Fighters Elevators and Partial Service Fire Fighters Elevators refer to **Part 9: Additional Requirements for High Rise Buildings.**

Smoke control measures consist of special construction and equipment to limit the movement of smoke in a building. Additional information concerning smoke control measures, fire/smoke dampers and air balancing testing is available from fire inspectors.

Smoke Alarms

A smoke alarm is a self-contained device designed to activate an alarm upon detection of fire and/or smoke. They may be battery operated or hard-wired.(A/C).

Special Extinguishing Systems

Special extinguishing systems are used in locations where automatic sprinklers may not be the best solution to fire problems. The locations include areas that contain flammable and combustible liquids, food preparation equipment, and highly sensitive computer or electronic equipment. Special extinguishing systems include dry chemical, wet chemical, halogenated agents, carbon dioxide and foam systems.

Fire Pumps

Fire pumps are used to ensure that adequate water pressures and flows required for firefighting by means of automatic sprinklers, standpipes and hose systems are available. Your Fire Safety Plan should indicate the different types of fire protection equipment (i.e. sprinkler system, standpipe system etc.) that the fire pump serves. The location of the fire pump should be indicated on the appropriate floor plan.

□ **Water Supply**

The total water supply required for firefighting purposes may be supplied from various sources such as a municipal water supply, i.e. fire hydrants, storage tanks (elevated or underground), lakes, rivers, wells, swimming pools or a combination of sources, and should be obtainable within practical distances. Water supplies must be accessible to firefighting equipment.

□ **Standpipe and Hose Systems**

A standpipe system is an arrangement of piping, valves and hose outlets installed in a building or structure in such a manner that water can be discharged through a hose and nozzle for extinguishment of fire. The system is connected to a water supply which permits an adequate supply of water to the hose outlets. A Fire Safety Plan must indicate if there is hose in the building, standpipes or both. It should also indicate the location of the main control valve.

□ **Automatic Sprinkler Systems**

An automatic sprinkler system is a series of underground and overhead piping designed in accordance with fire protection engineering standards. The system is connected to a water supply such as a storage tank or municipal water supply. The system includes a controlling valve, a series of sprinkler heads and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area. The most common types of systems are wet-pipe systems and dry-pipe systems. The plan must identify the type of system(s) in the building and the areas served by them. The location of sprinkler system control valves should be indicated on the appropriate floor plan.

Part 4 - Preparing Floor Plans

Prepare or acquire two sets of floor plans of the building(s). Floor plans should show each level of the building, unless different levels have the same layout.

- a) Complete the first set of plans indicating the emergency evacuation routes from each floor level. Also indicate the exits, the fire escape routes, alternate escape routes and the "meeting places" outside the building upon evacuation.
- b) Complete the second set of floor plans indicating all fire protection systems, life safety equipment and utility controls or areas of special hazards in your building(s). Special hazards would include areas with chemicals, high fuel loads, compressed gasses, high voltage areas, Halon extinguishing systems, CO2 systems and so forth.
- c) Fire protection systems and life safety equipment, as well as building features should be identified by symbols on the floor plans. Be sure to include a description of each symbol used. The National Fire Protection Association (NFPA) provides guidance with respect to symbols and their use. Refer to NFPA 170, "Standard for Fire Safety and Emergency Symbols". Building features that should be identified include, but are not necessarily limited to, the following:

Above Ground Tank	Generator	Fire Extinguishers
Electrical Shutoff	Opening in Wall	Fire Prot. System Valve
Fire Alarm Pull Station	Standpipe	Sprinkler valves and other
Fire Department	Special Extinguishing Sys.	water shut off valves)
Connection	Below Ground Tank	Fire Hydrant
Fire Door in Wall	Emergency Unit Lighting	Fence Gates
Fire Fighter's Elevator	Fire Alarm Control Panel	Hose Cabinet
Fire Pump	Fire Department Access	
Gas Shutoff	Fire Department Lock box	

- d) Floor plans must be easy to read and clearly identified.

Part 5 - Identify and List the Human Resources

Prepare a list or audit of Human Resources. This list should have two parts. The first part should include such people as the building owner, building manager, building engineer, security personnel, custodial or maintenance staff, supervisory staff or anyone else who may assist in the emergency evacuation of the building. The second part of the list should include all persons or agencies responsible for the inspection, testing and maintenance of fire protection systems and life safety equipment in your building(s).

Part 6 - Identifying Responsibilities

Responsibilities of Owner

- 1) To ensure the building and facilities comply with the provisions of the National Fire Code.
- 2) To prepare a Fire Safety Plan in accordance with the requirements of the National Fire Code
- 3) To provide alternate measures for the safety of occupants during a shutdown of fire protection equipment.
- 4) To post and maintain a copy of the fire emergency evacuation procedures on each floor area.
- 5) To send notification to the Saskatoon Fire and Protective Services - Fire Prevention and Investigation Division regarding any changes in the Fire Safety Plan.

Responsibilities of Supervisory Staff

The size of an organization and the number of personnel required to carry out the requirements of the Fire Safety Plan will depend on the size of the building, specific hazards, and the fire safety equipment provided. This may require designation of supervisory staff who must be instructed in the fire emergency procedures before they are given any responsibility for fire safety.

Any keys or special devices needed to operate the fire alarm system or provide access to any fire protection systems or life safety equipment shall be readily available to on-duty supervisory staff.

The Fire Safety Plan must also specify the names and phone numbers of your key holders in case access to the building is required after business hours.

Supervisory staff shall:

- 1) be trained in the fire emergency procedures described in the Fire Safety Plan before they are given any responsibility for fire safety,
- 2) be in charge of the approved Fire Safety Plan and the specific responsibilities of the personnel. The plan should specify the responsibilities given to individuals,
- 3) designate and train sufficient assistants to act in positions whenever and wherever an absence may occur,
- 4) educate and train all building personnel and occupants in the use of the existing fire safety equipment, and in the actions to be taken according to the approved Fire Safety Plan,
- 5) ensure that the provisions of the approved Fire Safety Plan are adhered to, updated and maintained at minimum, annually. Any fire safety procedures which apply to them shall be distributed to the occupants.

- 6) ensure that procedures are put in place in the event that a fire protection system is temporarily shut down, i.e. "fire watch" person, notify fire dispatch, etc. In the event of any shutdown of fire protection equipment or part thereof, the Saskatoon Fire and Protective Services and the building occupants must be notified and instructions must be posted as to alternate provisions or actions to be taken in case of an emergency. These provisions and actions must be acceptable to the Saskatoon Fire and Protective Services.

An attempt to minimize the impact of the malfunctioning equipment must be indicated (e.g. whole portions of a sprinkler, fire alarm or standpipe system is placed out of service, service to remaining portions must be maintained) and where necessary, the use of watchmen, bull horns, walkie-talkies, etc. should be employed to notify concerned parties of emergency procedures. Directions for specific situations may be sought from the Saskatoon Fire and Protective Services - Fire Prevention and Investigation Division. In all cases **when a fire alarm system is out of service, hourly fire watch patrols must be implemented immediately**. Fire watch patrols may also be required in the event of a shut-down of other fire protection systems. Notify the Saskatoon Fire and Protective Services – Central Dispatch Division at 975-3030. The Saskatoon Fire and Protective Services must be called when a fire protection system goes "out of service" as well as when a fire protection system has been repaired and restored "back in service".

Responsibilities of Building Occupants

- 1) To be familiar with:
 - a) the evacuation procedures as outlined in the Fire Safety Plan or as posted in the building,
 - b) the location of fire alarm system manual pull stations and exits,
 - c) the location of fire hose, portable fire extinguishers and other fire protection equipment,
 - d) the correct municipal address of the building.
- 2) To avoid fire hazards in the building by:
 - a) not permitting the accumulation of combustible materials in and around buildings,
 - b) being aware of dangerous ignition sources, i.e.: combustibles left on stove elements, worn extension cords, oily rags, overheating equipment, careless smoking, careless cooking etc.
 - c) reporting burnt out bulbs in exit signs,
 - d) reporting fire or exit doors which are inoperable or wedged open,
 - e) ensuring that exit routes, stairwells, etc. are not used for storage or otherwise obstructed,
 - f) reporting to management, any fire hose and portable extinguishers or any other fire protection or life safety equipment which are not in good repair and ready for use,
 - g) ensuring that fire lanes are kept clear and accessible for Saskatoon Fire and Protective Services use.

Part 7 - Designating Responsibility

Designate appropriate staff to:

- 1) Notify the Saskatoon Fire and Protective Services of the emergency condition i.e.: ensure the fire alarm system has been activated and call 9-1-1 even if the fire alarm system is monitored. When a building's fire alarm system is monitored and an alarm has been activated, an outside contracting agency, typically called a central station, receives the alarm and initiates an emergency response by calling the Saskatoon Fire and Protective Services and representatives of the building.
- 2) Sound the fire alarm. These procedures should also include training of authorized personnel for silencing fire alarm and alert signals under specified conditions. If special keys or devices are required to operate the alarm system, they should be readily available to supervisory staff on duty. Such persons should have a working knowledge of the fire alarm system and how it is reset. The procedure laid down for the occupants to follow at the sound of an alarm will vary slightly, depending on the type of fire alarm system with which the building is equipped, i.e.: single stage or two stage system,
- 3) Instruct occupants on the procedures to be followed when the fire alarm system's audible/visual signaling devices sound/flash and supervise the evacuation of the building occupants. This may be accomplished by training and designating Fire Wardens or other key personnel to perform duties in fire prevention and emergency evacuation. In such a case, your Fire Safety Plan would include a list of the individuals who have been designated as Fire Wardens (or their alternates) along with their respective responsibilities. You may have to designate Fire Wardens and other fire safety responsibilities to different individuals who work during different times of the day.
- 4) Check areas of the building which may be of concern during an evacuation procedure. This would include areas such as washrooms, storerooms, laundry rooms and so forth.
- 5) Assist or provide special provisions for the evacuation of disabled persons. A Fire Safety Plan should specifically state the provisions and procedures to follow. Some occupants of a building may require special assistance during evacuation because cognitive or physical limitations make them unable to proceed independently to a place of safety. Fire safety for these persons will depend to a large extent on preplanning and on their awareness of the fire protection measures incorporated into the building. In some buildings, it may be appropriate to advise such occupants of these provisions by posted notices, handouts or other suitable means. In certain residential occupancies, such as hotels or motels, staff should be aware of rooms occupied by persons requiring special assistance during evacuation and should inform the responding Saskatoon Fire and Protective Services.
- 6) Meet the Saskatoon Fire and Protective Services to provide access and information to fire fighters.
- 7) Ensure that the fire alarm system is *not silenced* until the cause of the alarm is verified and *not reset* until the Saskatoon Fire and Protective Services has responded and the cause of the alarm has been investigated and determined.
- 8) Confine, control and extinguish the fire. For example, in the event that a small fire cannot be extinguished with the use of a portable fire extinguisher or the smoke presents a hazard to the operator, then the door to the area should be closed to confine and contain the fire. Leave the fire area, activate the fire alarm system by pulling the nearest manual pull station, ensure Saskatoon Fire and Protective Services has been notified and wait outside for the firefighters to arrive on the scene.

- 9) Conduct fire drills. The purpose of fire drills is to ensure that the occupants and staff are totally familiar with emergency evacuation procedures, resulting in orderly evacuation with efficient use of exit facilities. Ideally, fire drills should begin with practices on each floor or area. The Voice Communication System should be used where available. Following each drill, all persons of delegated responsibility should attend a debriefing to report on their actions and the reactions of the occupants. Fire drills shall be held at intervals not greater than 12 months for the supervisory staff except as indicated otherwise in this document. A fire safety plan is of little value if it is not reviewed periodically so that all supervisory staff remains familiar with their responsibilities. A fire drill, then, is at least a review of the Fire Safety Plan by supervisory staff. The extent to which non-supervisory staff participates in a fire drill should be worked out in cooperation with the Saskatoon Fire and Protective Services. The decision as to whether all occupants should leave the building during a fire drill should be based on the nature of the occupancy. It may be necessary to hold additional fire drills outside normal working hours for the benefit of employees on afternoon or night shifts who should be as familiar with fire drill procedures as those who work during the day. If full scale fire drills are not possible during non-regular working hours, arrangements should be made so that night-shift supervisory staff can participate in fire drills conducted during the daytime. See Fire Drills Bulletin 16-12 for additional details.
- 10) Oversee and arrange for the inspection, testing and maintenance procedures of fire protection equipment and other building systems. Provide records (where required) of all testing procedures for examination by the Saskatoon Fire and Protective Services.

Part 8 - Instructions to Occupants on Fire Procedures

- 1) Instructions to occupants on fire procedures will vary according to the nature of the occupancy, the hazards involved, the occupant load, the type of fire protection equipment, and so forth.
- 2) Instructions to occupants on fire procedures must be specific to your building. This may be determined in co-operation with the Saskatoon Fire and Protective Services.
- 3) At least one copy of the "fire emergency procedures" shall be *prominently posted* on each floor area.
- 4) An example of instructions to occupants of fire procedures follows:

In the Event of Discovering a Fire Occupants Will:

- Leave the fire area and take a key.
- Close and latch all doors behind you.
- Activate the fire alarm using a pull station to notify all building occupants.
- Telephone the Saskatoon Fire and Protective Services, dial **9-1-1** (never assume this has been done!) Know and give the correct address and location of the fire.
- Use exit stairwells to leave the building immediately.
- Do **NOT** use elevators. They may fail to operate if power to the building is lost.
- Do not return until it is declared safe to do so by the Saskatoon Fire and Protective Services.
- **If you are in a suite and a fire alarm is heard:**
 - Before opening the door, feel the door knob for heat. If it's not hot, brace yourself against the door and open it slightly. If you feel air pressure or a hot draft, close the door quickly. If you find no fire or smoke in the corridor, take the room key, close the door behind you and leave by the nearest exit stairwell.

- If you encounter smoke in the corridor or stairwell, consider taking the corridor to the other side of the building where another stairwell may be clear, or return to your suite.
- **If you cannot leave your suite or have returned to it because of fire or heavy smoke, remain in your suite and:**
 - Close the door.
 - Unlock the door for possible entry by fire fighters.
 - Dial **9-1-1** and tell the Saskatoon Fire and Protective Services where you are; If possible, signal to firefighters by waving a sheet or towel out a window to attract their attention.
 - Seal all cracks where smoke can get in by using wet towels or sheets. Seal mail slots, transoms and central air conditioning outlets if necessary. (A roll of wide, strong masking tape or duct tape is useful.)
 - Crouch low to the floor if smoke enters the room. More Oxygen is available near the floor and it is cooler.
 - If possible, move to a balcony or most protected room and partially open the window for air (close the window if smoke comes in.)
 - Wait to be rescued. Remain calm. Do not panic or jump.
 - Listen for instructions or information which may be given by authorized personnel over loudspeakers.

A sample sign which could be posted in buildings equipped with a **single stage fire alarm system** and **no elevators** is:

IN CASE OF FIRE
UPON DISCOVERY OF FIRE
<ul style="list-style-type: none">• Leave the Fire area immediately• Close and latch all doors behind you• Activate the fire alarm pull station to notify building occupants• Leave the building immediately via the nearest exit• Telephone the Saskatoon Fire and Protective Services - DIAL 9-1-1
UPON HEARING FIRE ALARM
<ul style="list-style-type: none">• LEAVE the BUILDING immediately via nearest exit• Take your keys• CLOSE and latch DOORS behind you – do not lock
IF YOU ENCOUNTER HEAVY SMOKE
<ul style="list-style-type: none">• STAY in your suite IF you are UNABLE TO EXIT• DIAL 9-1-1 and await further instructions
REMAIN CALM
WARNING
Tampering with any fire protection systems and equipment is a criminal offence subject to a heavy fine, imprisonment or both. ISSUED BY THE FIRE CHIEF

A sample sign which could be posted in buildings equipped with a **single stage fire alarm system *with* elevators** is:

<p style="text-align: center;">IN CASE OF FIRE</p>
<p style="text-align: center;">UPON DISCOVERY OF FIRE</p>
<ul style="list-style-type: none">• Leave the Fire area immediately• Close and latch all doors behind you• Activate the fire alarm pull station to notify building occupants• Leave the building immediately via the nearest exit or stairwell exit• Telephone the Saskatoon Fire and Protective Services – DIAL 9-1-1
<p style="text-align: center;">DO NOT USE ELEVATORS</p>
<p style="text-align: center;">UPON HEARING FIRE ALARM</p>
<ul style="list-style-type: none">• LEAVE the BUILDING immediately via nearest exit or stairwell exit• Take your keys• CLOSE and latch DOORS behind you – do not lock
<p style="text-align: center;">IF YOU ENCOUNTER HEAVY SMOKE</p>
<ul style="list-style-type: none">• Return to or stay in your suite or office if you are unable to leave by an alternate exit• DIAL 9-1-1 and await further instructions
<p style="text-align: center;">REMAIN CALM</p>
<p style="text-align: center;">WARNING</p>
<p style="text-align: center;">Tampering with any fire protection systems and equipment is a criminal offence subject to a heavy fine, imprisonment or both. ISSUED BY THE FIRE CHIEF</p>

A sample sign which could be posted in buildings equipped with a **two-stage fire alarm system** is:

IN CASE OF FIRE
UPON DISCOVERY OF FIRE
<ul style="list-style-type: none">• Leave the Fire area immediately• Close and latch all doors behind you• Activate the fire alarm pull station to notify building occupants• Leave the building immediately via the nearest exit or stairwell exit• Telephone the Saskatoon Fire and Protective Services – DIAL 9-1-1
DO NOT USE ELEVATORS
UPON HEARING FIRE ALARM
INTERMITTENT SIGNAL- <ul style="list-style-type: none">• Stand by and prepare to leave the building
IF CONTINUOUS SIGNAL- <ul style="list-style-type: none">• LEAVE the BUILDING immediately via nearest exit or stairwell exit• Take your keys• CLOSE and latch DOORS behind you – do not lock
IF YOU ENCOUNTER HEAVY SMOKE
<ul style="list-style-type: none">• Return to or stay in your suite or office if you are unable to leave by an alternate exit.• DIAL 9-1-1 and await further instructions
REMAIN CALM
WARNING
Tampering with any fire protection systems and equipment is a criminal offence subject to a heavy fine, imprisonment or both. ISSUED BY THE FIRE CHIEF

Red lettering on a white background is an effective colour combination for these signs

Part 9 - Additional Requirements for High Rise Buildings

(Within the scope of the National Building Code)

This applies to a building:

- A) of Group A, D, E or F major occupancy classification that is more than
 - (i) 36m high, measured between grade and the floor level of the top storey, or
 - (ii) 18 m high, measured between grade and the floor level of the top storey, and in which the cumulative or total occupant load on or above any storey above grade, other than the first storey, divided by 1.8 times the width in metres of all exit stairs at that storey, exceeds 300,
- B) containing a Group B major occupancy in which the floor level of the highest storey of that major occupancy is more than 18 m above grade,
- C) containing a floor area or part of a floor area located above the third storey designed or intended as a Group B, Division 2 occupancy, and
- D) containing a Group C major occupancy whose floor level is more than 18 m above grade. Modern high rise buildings contain specialized equipment which is provided by the National Building Code to ensure safety to both occupants and fire fighters in the event of an emergency situation. In addition to fire equipment and life safety systems outlined in previous sections of this document, high rise buildings may contain firefighter's elevators, smoke control systems or smoke removal systems.

Part 7 of the National Fire Code outlines testing and maintenance requirements when such equipment is installed. It is necessary to establish what equipment is installed and consequently what testing and maintenance procedures are required to ensure code compliance.

In addition to maintenance procedures, the fire safety plan must include specific firefighting procedures for high rise buildings. These procedures must be prepared jointly by the Saskatoon Fire and Protective Services and building owner/manager.

The following information is provided to ensure basic code compliance. This information will also assist the owner in understanding how specialized equipment was designed to operate and consequently proper maintenance and testing can be established.

Prior to developing procedures for your building, an audit of specialized equipment must be done.

THE FIRE SAFETY PLAN FOR HIGH BUILDINGS SHALL INCLUDE:

- 1) **Keys** - Keys for elevators, fire alarm and voice communications systems, locked stair doors, hose cabinets, ventilation systems, etc., must be provided for responding fire fighters. These keys must be located in a readily accessible location, preferably a Lock Box acceptable to Saskatoon Fire and Protective Services. It is recommended that building owners/managers contact the Saskatoon Fire and Protective Services regarding placement of required keys.
- 2) the training of supervisory staff in the use of the voice communication system,

- 3) the procedures for the use of elevators. **Fire Fighters Elevator** has a symbol indicated by a red fire fighter's helmet on a contrasting background and shall be used exclusively to identify fire fighter's elevators that comply with the National Building Code. This identification shall be located on the elevator entrance frame or adjacent to it at the emergency recall level and also inside the car adjacent to the in-car emergency switch. The identification on the entrance frame, or adjacent to it, shall be a minimum of 50mm in height and the identification in the car shall be a minimum of 10 mm in height. Keys for the operation of firefighters' elevators must be provided in lock boxes located in the elevator lobby *and* at the central alarm and control facility.
- 4) A copy of the Fire Safety Plan shall be kept at the central alarm and control facility.
- 5) Fire drills shall be held at intervals not greater than 2 months.

Part 10 - Additional Requirements for Industrial Buildings

Dangerous Goods

- Where dangerous goods are stored or handled, the fire safety plan must include the names, addresses and telephone numbers of persons to be contacted in case of fire during non-operating hours.
- Specify methods to control a fire emergency and to safely and efficiently recover radioactive materials.
- Provide names, addresses and telephone numbers of primary and alternate sources of expert radiation safety advice and assistance as well as the locations of sources of radiation survey instruments.
- Individual storage areas used for the indoor storage of dangerous goods must be clearly identified by posting placards conforming to the *Transportation of Dangerous Goods Regulations*.

Indoor Storage (General Requirements)

- Identify product classifications for each part of a building where different product classifications are stored.
- Identify the method of storage including:
 - Aisle widths for rack storage
 - Maximum permitted storage heights (must be posted with signs).
 - Maximum permitted size of *individual storage areas* (must be posted with signs).
- In buildings with sprinkler systems, identify the sprinkler system design criteria, inside and outside hose allowances, and results of the benchmark sprinkler system main drain and water flow tests.
- When stored products include Group A plastics, rubber products, Level 2 or 3 aerosols, or dangerous goods, a record of their location shall be available in a location that is readily accessible to emergency responders.
Identify the location and classification of products stored, namely:
 - Class III & IV commodities, group A, B, and C plastics,
 - Rubber tires,
 - Forest products, including lumber, timber and wood pallets,
 - Forest by-products,
 - Manufactured buildings,
 - Wrecked vehicles in salvage yards, and
 - Dangerous goods in packages or containers.

- Identify the method of storage, including the clear spaces required and the maximum permitted size of individual storage areas.
- Identify the location of fire alarm systems and firefighting equipment.
- Identify the manner in which fire hazards are controlled in and around the outdoor storage area.
- Fire emergency procedures must be prominently posted at the outdoor storage site.

Rooms for Storage Tanks

- Placards identifying stored flammable/combustible liquids and the capacities of the storage tanks must be posted in a conspicuous location outside the room. That information must be included in the Fire Safety Plan.

Hot Works

- Hot Works are activities that involve open flames or the production of heat or sparks, including, without being limited to, cutting, welding, soldering, brazing, grinding, adhesive bonding, thermal spraying and thawing pipes. A Fire Safety Plan must include "hot works" safety measures for the prevention of fires as described in the National Fire Code.

Laboratories

- Laboratories must conform to the Fire Safety Plan requirements for Dangerous goods and Indoor Storage as identified above.
- Fire drills must be held at intervals not greater than 3 months.
- Personnel must be trained in the safe handling and use of dangerous goods and at least one person must be:
 - In responsible charge during operating hours,
 - Available to respond to a day-time or night-time emergency,
 - Trained in the correct procedures for the handling, storing and offering for transport, dangerous goods in accordance with all applicable regulations.
- A laboratory must be clearly designated as an area containing dangerous goods.
- Measures must be taken to prevent access by unauthorized persons.

Part 11 - Identifying Inspection, Testing and Maintenance Requirements for Fire Protection Systems and Equipment

To assist you in fulfilling your obligations, included is a list of the portions of the National Fire Code and Fire and Protective Services bylaw 7990 which requires checks, inspections and/or tests be made of equipment and facilities from time to time. It is suggested that you read over this list and perform or have performed the necessary checks, inspections and/or tests for the items which may apply to your property.

This list has been prepared for purposes of convenience only. For accurate reference, the National Fire Code should be consulted.

Definitions for key words are as follows:

CHECK - Means visual observation to ensure the device or system is in place and is not obviously damaged or obstructed.

INSPECT - Means physical examination to determine that the device or system will apparently perform in accordance with its intended function.

TEST - Means operation of device or system to determine that it will perform in accordance with its intended operation or function.

It is stated in the National Fire Code that records of all tests and corrective measures are required to be retained for a period of two years after they are made. It is recommended that records be kept of all inspection, test and maintenance procedures.

Review the inspection, testing and maintenance requirements with a Fire Inspector to determine what applies to your building or occupancy. Now using this information, prepare an inspection, testing and maintenance schedule for your building facilities. Referring back to your list of Human Resources you can assign or stipulate the person or agency responsible for each requirement on your inspection, testing and maintenance schedule. **It is the building owner's responsibility to ensure that fire protection equipment and life safety systems are inspected, tested and maintained in accordance with the requirements of the National Fire Code. The attached schedules have been provided for the building owner's convenience ONLY and are not required to be completed or submitted to the Saskatoon Fire and Protective Services.**

APPENDIX A

INSPECTION TESTING & MAINTENANCE SCHEDULE

GENERAL REQUIREMENTS

- The Saskatoon Fire and Protective Services shall be notified in writing and in advance of any changes in: 1) building size 2) building use 3) storage of commodities or processes as outlined in Parts 3, 4, and 5 of the National Fire Code.
- The Saskatoon Fire and Protective Services shall be notified of tests, repairs or alterations made to water supply systems or equipment.

Fire Department Access:

- Ensure streets, yards and private roadways that are provided for Fire Department access is kept clear at all times.
- Ensure signs prohibiting parking in Fire Department access routes (Fire Lanes) are in place and are legible.
- Ensure access to Fire Department connections for sprinklers and standpipe systems are from obstructions at all times.

Water Supply Systems:

- Inspect all valves controlling water supplies to fire protection systems to ensure they are wide open and sealed or locked in the open position, or are equipped with supervisory switches.

Laundry Equipment:

- Clean lint traps in laundry equipment after each use.

Water-based Fire Protection Systems:

- Water-based fire protection systems shall be inspected, tested and maintained in conformance with

NFPA 25, "Inspection, Testing and Maintenance of Water-based Fire Protection Systems."

Water-based fire protection systems include:

- i. Sprinkler systems
- ii. Standpipes
- iii. Hose systems
- iv. Private hydrants
- v. Water spray fixed systems
- vi. Foam-water sprinkler systems
- vii. Foam-water spray systems
- viii. Fire pumps
- ix. Storage tanks

EMERGENCY GENERATOR

Monthly

Completely test emergency generator. Test shall simulate failure of normal hydro-electric power supply.

Operate generator under at least 30% of rated load capacity for 60 minutes.

Operate transfer switches under load. Inspect for proper operation, including ventilation systems, pumps, coolers and shutters. Monthly test to be logged and data recorded.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Annually

Operate the generator under full load for 2 hours (full load equals nameplate kilo watt rating of generator). Test to be conducted by qualified technician and report to be retained on site. Annual test to be logged and data recorded.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

EMERGENCY LIGHTING (UNIT EQUIPMENT)

Monthly

Inspect unit equipment including pilot lights, terminal connections, clamps and batteries.

Test unit equipment.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Annually

Test unit equipment to ensure emergency lighting for duration required to design criteria under simulated power failure conditions.

After completion of annual test, check the charging conditions for voltage and current. The charging recovery period shall be tested to ensure proper function.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

EXITS

As Required

Maintain means of egress, including corridors and stairways free of obstructions and in good repair. Maintain lighting for exits and exit signs when building is occupied.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

Monthly

Operate and inspect all doors in fire separations to ensure proper operation. Inspection to include fusible links, hardware and hold open and releasing devices when provided. Inspect all doors in fire separations to ensure they are closed.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

FIRE ALARM SYSTEM

Daily

Check status of fire alarm a/c power indicator light and trouble indicator light.

Monthly

Test fire alarm system-including supervised and non-supervised systems (a non-supervised system is a fire alarm system without trouble monitoring capability). Testing is to be done on rotational basis if zoned. Test voice communication system to and from floor areas and central alarm and control facility. Inspect standby batteries. Confirm signals to Central Reporting Agency (if provided.) This test is to be conducted in conjunction with the fire alarm test and in direct communication with the appropriate agency.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Annually

Inspect and service all components of the fire alarm system. Inspect and service all components of the voice communication systems. Inspect and service Central Reporting Agency's transmitting devices. Inspect and test all auxiliary devices connected to a fire alarm system. This may include fans, dampers, door holders, fire shutters, etc. Annual inspections shall be properly documented. Documentation, as per ULC-S536 shall be retained on site for Saskatoon Fire and Protective Services examination if requested.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

PORTABLE FIRE EXTINGUISHERS

Required

Recharge extinguishers after use, as indicated by inspection or when performing maintenance. Each extinguisher shall have a tag showing maintenance, date, etc.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

Monthly

Inspect all portable fire extinguishers.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Annually

Service and tag all portable fire extinguishers.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

5 Years

Hydrostatically test carbon dioxide and water type extinguishers.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

6 Years

Empty and service stored pressure type extinguishers.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

12 Years

Hydrostatically test dry chemical and vaporizing liquid type extinguishers.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

HEATING, VENTILATION, AIR CONDITIONING, DUCTING AND CHIMNEYS

As Required

Inspect hoods, filters and ducts subject to accumulations of combustible deposits and clean or replace as necessary.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

Annually

Inspect all fire dampers and fire stop flaps. Inspect fuel fired heating systems including appliances, chimneys and flue pipes.
Operate disconnect switches for mechanical air conditioning and ventilation systems.
Clean and inspect incinerator spark arresters.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

HIGH BUILDINGS

As Required

Check for availability of keys for fire fighters' elevators, fire alarm system and other keys required in fire alarm control facility and lock box at elevator lobby. Check position of emergency recall key switch (auto position) for emergency recall on elevators. Check for correct position of emergency power key switch on elevators.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

3 Months

High Rise Buildings (Central Alarm and Control Facility)

- A) Test operation of switches for control of air moving fans.
- B) Test operation of all hold open devices (release on fire alarm signal.)
- C) Test operation of all electric door releases (release of locking device on fire alarm signal.)
- D) Test operation of all pressurization fans (elevators, stairways, vestibules, etc., start on fire alarm signal.)
- E) Test operation of all smoke removal fans, dampers, etc. (start/stop, open/close on fire alarm signal.)

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

High Rise Buildings (Elevators)

- A) Test operation of recall key switch outside elevator shaft.
- B) Test operation of in-car fire fighters' elevator key switch.
- C) All tests shall be in conformance with the National Fire Code.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

High Rise Buildings (Venting to Aid Fire Fighting)

- A) Test operation of closures into smoke shafts from each floor area.
- B) Test operation of closures opening to outdoors at top of smoke shaft.
- C) Test operation of controls for air handling systems used for venting floor areas.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

Annually

Inspect fire dampers and smoke dampers to ensure they are in place and not obviously damaged, rusted or blocked.

Verify operation of each fire damper and smoke damper and check and lubricate any parts as required.

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

2 Years

High Rise Buildings (Smoke Control Systems)

Test pressurized vestibules by pressure sensor to ensure movement of air is from vestibules to floor areas.

Test exit door pressures to ensure that force required to open doors does not exceed 133N (30 lb).

Test pressurized elevator shafts, by pressure sensor, to ensure movement of air is from elevator shaft to floor areas.

Test pressurized stair shafts, by pressure sensor, to ensure movement is from stair shaft to floor areas.

Inspect and test smoke control measures in accordance with Section 7.3 of the National Fire Code.

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

SPECIAL EXTINGUISHING SYSTEMS

6 Months

Inspection, testing and maintenance procedures shall be conducted for the following systems:

- a) Commercial Cooking Equipment (NFPA 96.)
- b) Halon 1301 Fire Extinguishing Systems (NFPA 12A.)
- c) Water Spray Fixed Systems for Fire Protection (NFPA 15.)
- d) Deluge Foam-Water Sprinkler Systems and Foam-Water Spray Systems (NFPA 16.)
- e) Dry Chemical Extinguishing Systems (NFPA 17.)
- f) Wet Chemical Extinguishing Systems (NFPA 17A.)
- g) Wetting Agents (NFPA 18.)

Date	Date	Date	Date	Date	Date	Date	Date	Date	Date

Annually

Inspection, testing and maintenance procedures shall be conducted for the following systems:

- a) Low Expansion Foam and Combined Agent Systems (NFPA 11.)
- b) Medium and High Expansion Foam Systems (NFPA 11A.)
- c) Carbon Dioxide Extinguishing Systems (NFPA 12.)
- d) Halon 1211 Fire Extinguishing Systems (NFPA 12B.).

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year

STANDPIPE AND HOSE SYSTEMS

SUMMARY OF INSPECTION, TESTING AND MAINTENANCE REQUIREMENTS

ITEM	ACTIVITY	FREQUENCY
Control valves	Inspection	Weekly/monthly
Pressure regulating devices	Inspection	Quarterly
Piping	Inspection	Quarterly
Hose connections	Inspection	Quarterly
Cabinet	Inspection	Annually
Hose	Inspection	Annually
Hose storage device	Inspection	Annually
Alarm device	Test	Quarterly
Hose nozzle	Test	Annually
Hose storage device	Test	Annually
Hose	Test	5 years/3years
Pressure control valve	Test	5 years
Pressure reducing valve	Test	5 years
Hydrostatic test	Test	5 years
Flow test	Test	5 years
Main drain test	Test	Annually
Hose connections	Maintenance	Annually
Valves (all types)	Maintenance	Annually/as needed

FIRE PUMPS

SUMMARY OF INSPECTION, TESTING AND MAINTENANCE REQUIREMENTS

ITEM	ACTIVITY	FREQUENCY
Pump house, heating ventilating louvers	Inspection	Weekly
Fire pump system	Inspection	Weekly
Pump operation	----	----
No-flow condition	Test	Weekly
Flow condition	Test	Annually
Hydraulic	Maintenance	Annually
Mechanical transmission	Maintenance	Annually
Electrical system	Maintenance	Varies
Controller, various components	Maintenance	Varies
Motor	Maintenance	Annually
Diesel engine system, various components	Maintenance	Varies

SPRINKLER SYSTEMS

SUMMARY OF INSPECTION, TESTING AND MAINTENANCE REQUIREMENTS

ITEM	ACTIVITY	FREQUENCY
Gauges (dry/pre-action/deluge)	Inspection	Weekly/Monthly
Control valves	Inspection	Weekly/Monthly
Alarm devices	Inspection	Quarterly
Gauges (wet systems)	Inspection	Monthly
Hydraulic name plate	Inspection	Quarterly
Buildings	Inspection	Annually (prior to freezing weather)
Hanger/seismic bracing	Inspection	Annually
Pipe and fittings	Inspection	Annually
Sprinklers	Inspection	Annually
Spare sprinklers	Inspection	Annually
Fire department connections	Inspection	Quarterly
Valves (all types)	Inspection	----
Alarm devices	Test	Quarterly/Semi-annually
Main drain	Test	Annually
Antifreeze solution	Test	Annually
Gauges	Test	5 years
Sprinklers – extra high temp.	Test	5 years
Sprinklers – fast response	Test	At 20 years and every 10 years thereafter
Sprinklers	Test	At 50 years and every 10 years thereafter
Valves (all types)	Maintenance	Annually or as needed
Obstruction investigation	Maintenance	5 years or as needed
Low point drains (dry system)	Maintenance	Annually prior to freezing and as needed

