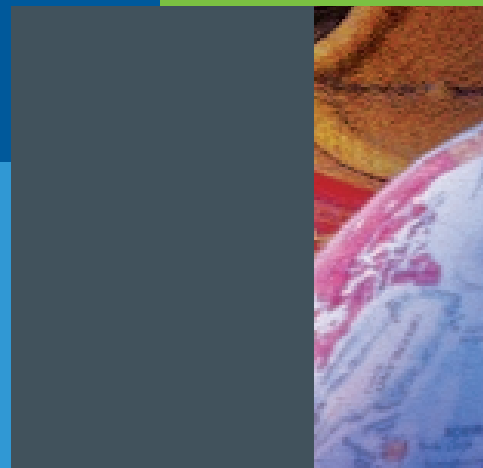
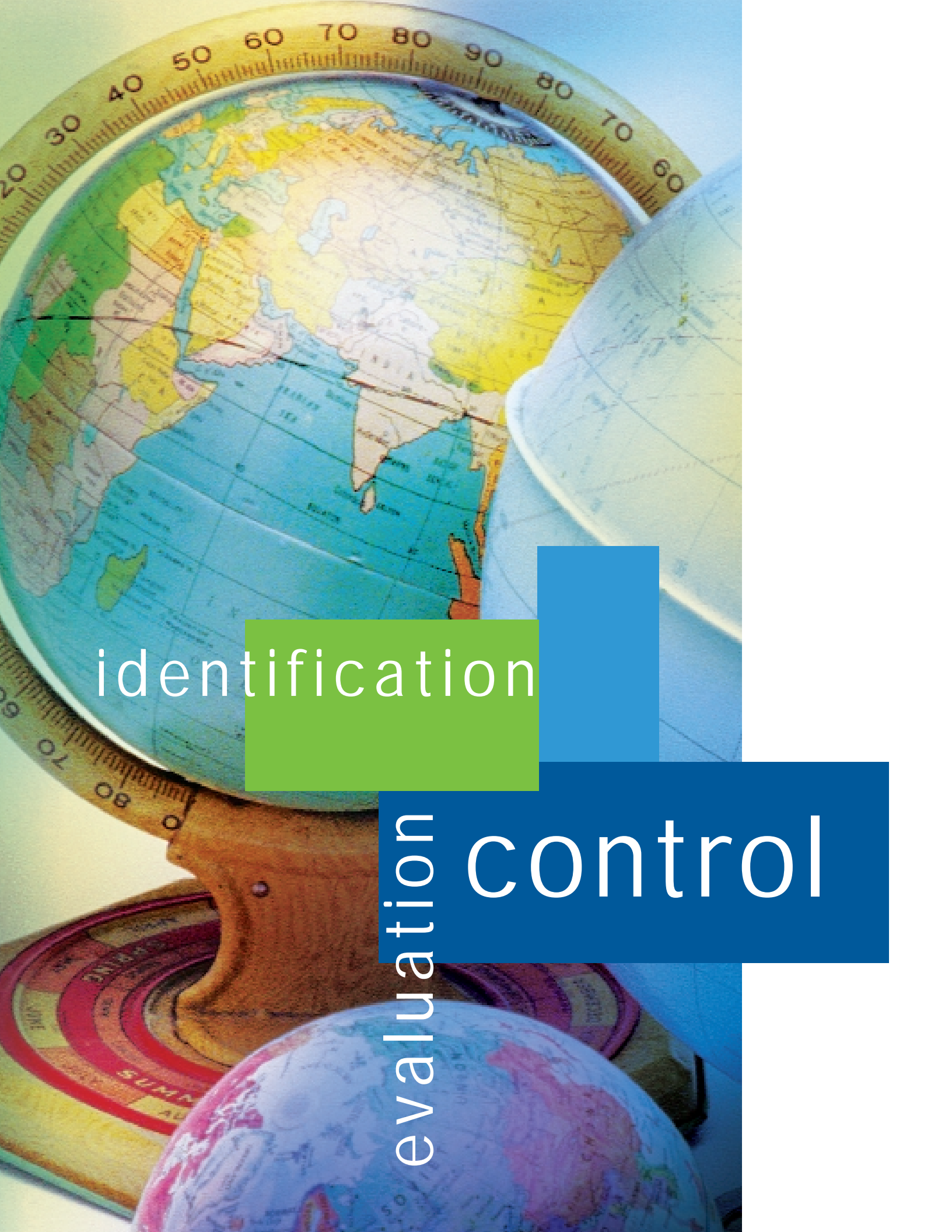




*Managing Your*  
Loss Prevention  
Program





identification

evaluation

control

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*This booklet contains general information only and is not intended as a substitute for advice from a safety expert or legal counsel. Loss Control Engineering Services support the function of insurance underwriting through risk assessment and improvement. Although disaster planning has common elements applicable regardless of cause, some of the causes discussed herein may not be insured against and therefore would not be addressed by a loss control survey. Please review the policy to determine coverage.*

# Introduction

Conservation of our natural resources and the environment becomes a greater concern on a daily basis. At the same time, we must not overlook our conservation of property and loss of productivity from destruction by fire or other hazards. No doubt, insurance alleviates some of the costs of such disasters, but intangibles such as lost production time, customers, goodwill and trained employees are costs that are not generally insured.

It's important that management establish a program for the identification, evaluation and control of hazards in order to eliminate, or at least mitigate, loss and damage.

The precise form of any Management Loss Control Program will vary to meet the company's particular circumstances,

but it should take the form of a written procedure which includes the applicable safeguards. Responsibility for each of these items should be delegated to specific employees to ensure proper implementation.

All companies should have a fire and safety executive. Major firms should employ a full-time safety officer who should be given total managerial support. Where the premises are so small that this is impractical, a member of the management team should be made responsible for the creation and operation of suitable loss prevention programs.

This booklet's purpose is to stress the need for prevention programs, the importance of written procedures and adequate practice.

# Pre-Emergency Planning

The core of the Management Loss Prevention Program is Pre-Emergency Planning. The pre-emergency plan involves identification and evaluation of fire and other risks before an incident, the creation and training of an Emergency Response Team to deal with the emergency and a contingency plan to deal with the aftermath of the catastrophe.

The first step of pre-emergency planning involves the identification and evaluation of fire and other risks in a thorough way. An attempt should be made to foresee the kind of peril(s) to be expected under adverse conditions and then determine the manual and automatic equipment needed for protection. The loss of every aspect necessary for operations should be evaluated. Examples of areas to be considered are: power supplies, cooling towers, boilers, manufacturing and quality control machinery, warehouses, and computers. Preventative maintenance and employee training which are discussed later, are also elements in mitigating a potential loss.

Once an area of operation is evaluated and adequate protection provided, it should not cause the area under consideration to be taken out of the plan. No matter how well a building is laid out or how good its protection systems have been engineered, there is always the possibility that an error will undermine - or even cancel out these factors.

Phase II in pre-emergency planning is the formalization of an Emergency Response Team to deal quickly with any potential peril. Details on the Emergency Response Team are discussed in the next section, however, the following items should form the basis of the written procedure:

1. Co-ordination and co-operation with all levels of Management in order to actively support the team.
2. Co-operation with the local Fire Department which should be encouraged to familiarize themselves with the premises and assist in the training of the team.
3. Initial and periodic training must take place regularly and advantage taken of the various courses available. Members should practice as a team and training should include an understanding of the nature of fire and the capabilities and functions of the fixed extinguishing systems installed within the premises.
4. Periodic re-evaluation of the equipment needed, size and structure of the response team. A brief outline of equipment available is given under Basic Fire Protection but circumstances and needs change, so both equipment and personnel requirements should be regularly reviewed.

## Pre-Emergency Planning (Continued)

Phase III of planning occurs after a resulting fire or other peril. In the aftermath of an emergency, there is almost always a period of reduced or ceased production, with a consequent loss of profit. For some companies, this loss can be catastrophic possibly leading to the cessation of business. Larger companies have more scope for losses which could affect overall profit figures but small companies are more vulnerable to the effects of damage to single pieces of equipment or buildings.

One way in which these consequential losses can be reduced is to pre-plan for them to prepare a contingency plan designed to return the company to a full profitable operation. It will help to minimize the loss of profits by achieving a permanent recovery from the damaging incident in the shortest possible time. Recovery of every aspect necessary for operations should be considered. (A sample checklist is provided on the next page.)

The preparation of a pre-emergency plan is a time consuming exercise. There are no short cuts and senior

personnel must be involved. The planning team should be comprised of senior personnel with authority to act on their own initiative or via the group leader, who would normally be the Managing Director. All integral areas of the business should be represented. A typical team might comprise of:

Managing Director

Financial Director

Chief Engineer

Purchasing Manager

Sales Manager

Personnel Manager

Safety Manager

Insurance Manager

In addition, specialist personnel may be used as deemed necessary (e.g., electrical engineer, emergency response team leader, etc.).

## Contingency Plan (Sample Check List)

1. Department
2. Manager
3. Home address and telephone number
4. Deputy Manager
5. Home address and telephone number
6. Products, operations of the department
7. Essential raw materials: (include materials/parts received from other departments, list suppliers and standard delivery estimates).
8. Process equipment: (list essential items, include the manufacturers' names, if known and estimated delivery times).
9. Location of spare equipment: (list similar equipment kept elsewhere within the group or company, if known).
10. Location of essential department records: (include location of duplicates, if known).
11. Temporary accommodation: (note minimum area necessary to temporarily restart production. Make reference to any unsuitable locations and give reasons).
12. Services needed in order to meet production needs on a temporary basis.
13. Essential personnel: (list names, job qualification or title plus capable deputies and give estimate on how long to replace, if necessary).
14. Outside help: (could all or part of departmental work be performed outside the company? Note any special problems, e.g., secret formulae or specialist machinery in use).
15. List any special features which you consider may be helpful in restarting operations in the shortest possible time: (e.g., outside personnel, spare plant or second hand equipment).
16. Give details of any special contribution your department makes to the running of the business.

# Emergency Response Team

An insurance company did a recent study of fire loss and examined almost 3,400 fires over a ten-year span. It was found that the average loss for a facility without an Emergency Response Team (ERT) or an inadequate team was \$1.35 million. Conversely, the average loss for a facility with an effective ERT was \$190,000. A \$1.16 million average savings is justification enough for the training, equipment and wages to assemble a basic ERT.

The type and size of the Team depends upon the characteristics of the premises. The Emergency Response Team is largely a fire handling organization since fire is the emergency most frequently encountered. The team may also be usefully deployed in the event of storm, flood, spillage or other emergency. Consideration should be given to this aspect when forming a suitable team and procuring equipment.

All premises, large or small, should have sufficient equipment and staff to fight a fire pending the arrival of the Fire Department. The equipment and personnel needed should be related to the particular circumstances of fire risk at a facility.

Written instructions should delegate personnel in the event of fire. Action to be taken should cover the following tasks:

1. Activation of manual fire alarms.
2. Calling the Fire Department without delay.
3. Fighting the fire pending the arrival of the Fire Department.
4. Calling key personnel familiar with the hazard and the buildings.
5. Evacuation of the buildings.

6. Attendance at sprinkler pump houses and sprinkler valves to ensure correct operations.
7. Removal of parked vehicles or vehicles being loaded.
8. Access for fire fighting equipment and vehicles.
9. Security of the site during the fire.
10. Actions that could be taken during the fire and after extinguishments to minimize smoke and water damage.

Action under (10) above could include closing fire doors, covering property with tarpaulins, removing some goods, shutting down processes, closing down air conditioning systems, stopping conveyors, turning off flammable liquid pumping systems, etc. Such action requires prior consideration, a pre-planned procedure and delegation to suitable personnel.

Much thought is often given to equipment but less to the skill and availability of the people who will use it. Hydrants, hoses and even extinguishers are of little value when the people expected to use them are unfamiliar with their existence or use, are on holiday, or working another shift.

Co-ordination and control over the provision and maintenance of fire equipment, training and fire fighting operations are essential and this responsibility should be delegated to a specific person - preferably the person who has responsibility for basic fire protection.

A sample form indicating a basic Emergency Response Team is provided.



# Employee Training

Training has an important bearing on the safety of company property and on the safety of the employees.

Training in both work and safety aspects should form part of the company's overall loss prevention program. Overall responsibility should be delegated to the personnel or training manager to whom departmental heads will report. Every employee should understand what is required of them and be thoroughly conversant with the work to be done and their duties. There should be an introductory course and a suitable period of close supervision before they are permitted to work on their own. Management control should continue thereafter and further training should be provided as necessary.

Fire safety training should be included in the overall training given to all employees, including security. Clear, precise instructions should be given regarding the action to be taken in the event of fire including those concerned

with activating alarms, calling the fire department, fighting the fire in its early stages of evacuating the premises.

Personnel should be made aware of the location of fire fighting protection equipment and alarms, escape routes and what they should do before leaving their place of work in the event of a fire, such as shutting down their machines, closing fire doors, windows, etc. When a fire breaks out, employees should be instructed to sound the alarm and advise the location and extent of the fire before any other action is taken.

Training should include written, clear procedures for employees who assume special duties. Periodic retraining exercises and drills are essential for their benefit.

Even if a company has a specialized fire-fighting team, all employees should know how to use a fire extinguisher and be aware of the different types of extinguishers available. Annual demonstrations should be arranged.



# Preventative Maintenance

Buildings and machinery should be kept in good condition. That means safe, free from defect and ready to function when needed. Periodic maintenance is essential. The frequency and extent of preventative maintenance will vary according to organizational attitudes, needs, and resources and should be kept under constant review.

Preventative maintenance cannot be avoided and the following should form part of a pre-planned maintenance program:

1. Building cladding and roofing, gutters, tanks, pipelines, tank dikes and other stationary structures and equipment should be inspected at least annually and repaired, cleaned and painted as often as necessary.
2. Fire and safety equipment such as fire extinguishers, fire hoses, hydrants, sprinkler systems, fire alarms, fixed extinguishing systems, breathing apparatuses, stretchers, and first aid equipment should be

inspected on a regular basis as prescribed by manufacturers' recommendations or in the Self-Inspection section of this booklet. Similar remarks apply to more specialized safety equipment such as pressure relief venting, flame arrestors, etc.

3. Boilers, pressure vessels, cranes and other equipment which must be examined by law at pre-determined intervals.
4. Services such as: switchgear, electrical wiring, cooling towers, compressors, pumps and boilers are particularly important since their failure can cause prolonged interruption to production.

The needs of each company will vary considerably, but the regular inspection of equipment seems to be even more crucial in these times when replacement parts are often difficult to obtain on short notice.

# Basic Fire Protection

Basic Fire Protection is the evaluation of hazards and the provision of suitable fire protection equipment.

The equipment needed will vary from one company to another as do the risks of fire and explosion, the likely extent of the physical damage and the consequences of business interruption. The best approach is to attempt to foresee the kind of fire under adverse conditions and determine the manual and automatic equipment needed to combat such a fire.

Factors to be taken into account are: the nature of business, the combustibility of the contents, construction and height of the buildings, hazards, extent of fire spread, response of the public fire department and the probable outcome if swift action is not taken.

The more common forms of the fire protection available are mentioned below. It is, of course, important that a written procedure exists for the periodic evaluation, inspection and maintenance of all equipment.

**Fire Extinguishers** - needed in sufficient numbers and suitable types at clearly marked and accessible positions.

**Internal Hose Stations** - needed in main production areas and particularly in storage areas where extinguishers are of limited use.

**Automatic Sprinklers** - to provide automatic always-on-duty fire control. The need depends on the hazards and consequences of business interruption. Special spray systems are particularly

useful for protecting flammable liquid storage tanks, liquefied gas tanks and oil filled transformers. These are probably the only method of preventing a large, uncontrolled fire in high bay warehousing.

**Private Hydrants** - from the public water main supply or on-site system where the former is inadequate for use by the fire department or the company fire team. The need and numbers depend on the values at risk and the probable consequence of delay in fighting the fire.

**Fire Doors and Walls** - to prevent the spread of fire and limit the extent of damage and consequential loss. Production and storage areas and special hazards should be separated in this manner.

**Foam Installations** - for diked or enclosed flammable liquids storage or process hazards.

**Halon or Carbon Dioxide** - flooding or spot protection for hazardous operations and to computers, transformers, switchgear and specialized production machinery.

**Automatic Detection Equipment and Manual Alarm Systems** - to sound an alarm and activate extinguishing systems.

**Explosion Detection and Suppression Systems** - for equipment where suitable venting cannot be arranged.



# Self Inspection

The care and maintenance of fire protection systems is vital to their performance in emergencies. Without a thorough self inspection program, even the best of systems stand a chance of failing. Regular inspections of the premises by a responsible employee, familiar with the usual conditions on site, should form part of the Management Loss Prevention Program.

The inspection should be a walk through all areas of the buildings and yards to check for unusual conditions. It's important that the same person does this each week and a simple report is completed for perusal by management who should supervise their activities.

The inspection is not intended to be a maintenance check although testing of some items such as fire doors, sprinkler alarms, manual alarms, etc. should be incorporated.

An example of a suitable report form is included and a similar form to meet particular circumstances could be devised. This sample form covers essential items such as fire equipment, housekeeping, heating, lighting and electrical wiring, and the storage and use of flammable liquids and gases. Other matters of special concern and importance may be included.

# Impairments to Fire Protection Systems

It's a condition of most fire insurance policies that fire protection systems are operative and in good condition at all times. It is vital that ACE INA Insurance be notified if it's necessary to shut off, or if failure has occurred to, part or all of a fire protection detection system such as a sprinkler installation, gaseous extinguishing system, hydrant main, fire pump, etc.

Our experienced loss control personnel may be able to suggest ways to minimize the risk to your business during the impairment.

If the impairment is the result of an emergency, ACE INA Insurance should be notified immediately by fax 416.368.6336. If an impairment is planned (i.e., extending a sprinkler installation), then at least 3 days notice should be given. Please include: scheduled commencement/completion dates and times, and a note of precautions which will be taken while the fire protection system is impaired. Once the work has been completed and full protection is tested and restored, ACE INA Insurance should be notified. A sample fax form has been included.

To avoid confusion, one person per location, with deputies, should be responsible for control and notification of impairments. When contractors are to perform work requiring an impairment, they should first obtain permission from the designated person in charge. Contractors should never be allowed to impair your fire protection systems without permission.

The impairment of even a small part of a fire protection system can leave a business very vulnerable to fire loss. There are, however, some steps which can be taken to curb the danger:

1. For planned impairments, allow only one at a time.
2. Cease hazardous operations in the affected area. These include production-hazards, the use of flammable liquids and hot work (cutting, welding, etc.).
3. Remove combustible materials from the affected area, whenever possible.

## Impairments (continued)

4. Inform the public fire department, plant fire team and all personnel in the affected area that the fire protection system is impaired. If relevant, notify the central station alarm service.
5. Check that fire extinguishers and hand hose stations in the affected area are available. Connect hose to outside hydrants ready for immediate use by the plant fire team, if necessary.
6. Ban smoking throughout the affected area.
7. Take emergency measures to limit the area of impairment as much as possible. For example, make temporary connections into impaired sprinkler systems from hydrants or adjacent sprinkler systems. If only a small part of a sprinkler system is being worked on, disconnect the relevant part, plug the remainder and restore protection to the rest of the system pending completion of the work and connection.
8. Ensure that the impairment lasts for as short a time as possible. All materials, equipment and labour should be on hand, ready to complete the work quickly. If it's necessary to leave the work, endeavour to recommission the system during idle periods.
9. Maintain continuous watch service during the period of impairment.
10. After completion of work, restore the fire protection system and test it. Ensure that all valves which should be left open are FULLY open. Perform a 2-inch drain test and an alarm test on sprinkler installations, noting the residual pressure with the drain valve fully open. It should be similar to pressures recorded during previous drain tests.

# Smoking Regulations

Smoking is one of the three leading causes of fires. Cigarettes normally start fires in solid materials by initiating a glow supporting progressive flameless combustible (smouldering). Materials such as cardboard, paper and dust layers have the ability to smoulder slowly for hours - even days. Most flammable gases and vapours and combustible dusts can be ignited by burning tobacco. Too often, fires are discovered at night, having been caused by carelessly discarded smoking materials during the day.

Where should smoking be prohibited? Some locations are obvious from a health or environmental point-of-view, but the following are dangerous:

- Where flammable liquids, gases, combustible dusts and fibres are present.
- In areas/workshops where readily combustible materials are used or produced or where the waste product is easily ignitable.
- Storage areas, packing and shipping/receiving department and in areas where there may be accumulations of waste.
- Areas which are visited infrequently, i.e., archives.

Rules regulating smoking should be worked out with employees' cooperation and the reasons must be fully explained by management. Rules must be enforced and receive the backing of all senior management. Notices inside the area and on all approach routes should be displayed.

Where smoking is permitted, there must be safety designed, non-combustible receptacles for cigarette butts and matches. They should be emptied safely (not into plastic garbage bags) and frequently. Smokers should be reminded not to use waste paper baskets as ashtrays and, as a precaution, all waste bins should be made of metal.

It may be practical to prohibit smoking in production or warehousing areas, for example, and then provide special smoking areas, i.e., smoking rooms or booths. These should be partitioned off with glass and metal, contain non-combustible furniture, be provided with an adequate number of safe ashtrays and a fire extinguisher. A reminder to extinguish cigarettes upon leaving should be clearly displayed near the exit.

It's often argued that to prohibit smoking will encourage surreptitious smoking. If a fair smoking policy is explained to all employees, including new recruits, then illicit smoking should not exist.

# Hot Working

Each year, cutting and welding operations cause more than 10,000 fires in North America. These may be more aptly titled “Hot Work” operations, as they extend to soldering, paint stripping, roof repair, grinding and similar operations, all of which may present a fire hazard due to use of open flame and/or production of sparks. A good “Hot Work” discipline should be established to reduce the risk to a minimum.

Control of hot work is best achieved by means of a “permit” system, but alternative methods of work should be considered such as removal of a component to a safe place for welding and cutting.

Control of hot work should be ideally delegated to a company fire or safety officer. Failing this, a departmental manager may be considered as they will be fully aware of the hazards in their department, and may be educated on hot work hazards. It’s equally important that persons involved in hot work operations are aware they must obtain a permit prior to commencement. This also applies to contractors, who should be advised of this requirement at the quotation stage.

Permits should be issued prior to commencement of work and should not extend beyond one shift. It’s preferable for the permit to take the form of a stiff

cardboard card or tag using a wording similar to that shown on the included form - although the precautions listed need not be considered exhaustive as special risks may be present which require additional or different precautions.

Equipment should be in good repair - this also applies to contractors’ equipment which should be thoroughly checked. It should appear in good condition and be fitted with safety equipment, i.e., flashback arrestors, non-return valves, etc., in accordance with recognized standards. Gas cylinders should be secured in the upright position in storage and in use.

The need for a fire watch throughout the period of work is self evident - welders used to glare and concentrating on the job at hand cannot be expected to see where sparks are going. As sparks can create fires which do not show immediately, the fire watch should continue for at least one hour after the operation has ceased as per National Fire Code. After this period, the person who issued the permit should satisfy themselves that there are no incipient fires before “clearing” the permit and ending the fire watch.

Permits should be filed for ACE INA Insurance representatives and to show compliance with the requirements in the event of a fire.

# Plant Security

Suitable security measures should be adopted to safeguard the company's property from loss or damage by fire, theft, etc.

The nature and extent of the measures undertaken will vary with the company's experience of intruders, the nature of the contents and values at risk, the site location, process hazards and other circumstances, and should take the form of a written procedure with responsibility for review and supervision delegated to a specific person.

The Security Program should include a procedure for the locking of all buildings outside of business hours, for the inspection of the perimeter and the periodic maintenance of any burglar alarm installation. If a full or part time security guard service is used, their duties should go beyond measures designed only to detect and prevent entry of intruders by including, within the program, a site security patrol with pre-planned objectives. These additional duties should include the reporting of unusual or abnormal conditions, supervision of repair and alteration work by employees and contractors, observation of the company's safety regulations, checking of doors, windows and fences, closing of fire doors, calling and directing the Fire Department, etc.

Guard patrols should take place during all idle times and outside normal business hours, whether or not overtime or shift work is taking place.

The premises, both inside and out, should be visited and checked immediately after business hours and at regular (preferable hourly) intervals. Extra attention should be given to hazardous parts of the premises, areas where overtime, shift work or cleaning operations have taken place and places where repairs or alterations are being undertaken, particularly if cutting or welding operations have taken place. Patrols should be supervised through a recording system and check points located to ensure a complete inspection of the premises is undertaken.

For small premises it may be difficult to justify an in-house security patrol and in such circumstances consideration should be given to random inspections by reliable outside security companies during idle times.

However, it may be preferable to rely on a higher standard of physical security by way of quality locks and automatic fire and burglar alarms connected to a central station.

# Winter Precautions

Freezing weather conditions are a fact of life in Canada. Cold weather creates two basic problems. The weight of snow could cause roof collapse and the cold could cause freezing of water within equipment, particularly sprinkler systems.

Heavy snowfalls and drifting are responsible for the majority of roof collapses. Almost three-quarters of the collapses occur when snow blows from an upper roof to a lower roof. Both new and old buildings are subject to collapse, in fact most snow load collapses have involved boards-on-joist or steel deck roofs of modern construction. Warming trends do not always mean that the collapse potential disappears, roof collapse can be caused by the ponding of melted snow. A drop in temperature (particularly at night) causes the water to freeze and ice dams to form on roof edges or drains preventing proper drainage.

Freeze-ups can also cause extensive damage. Generally any piece of equipment which contains water is vulnerable to damage when the temperature drops. The most frequently reported damage caused by cold weather is to sprinkler systems. Not only is a building subject to the direct damage from the frozen sprinkler system, but during the impairment to the system a very real and devastating fire hazard exists. Other low temperature casualties include: compressors, pumps, monitoring and control instrumentation, cooling towers and boilers. Other materials can also freeze or congeal at low temperatures, including the heavier fuel oils and lubricants. Some areas that should be carefully monitored are:

## Roofs:

- Assess your roof's snow load capacity
- Remove snow from roofs, as needed
- Monitor snow drifting on multi-level roofs
- Keep drains clear of ice and snow

## Fire Protection Equipment:

- Inspect and maintain outdoor valves and fire hydrants
- Keep valves and hydrants clear of snow, and well-marked for easy location
- Ensure fire pump and water tank heating systems are in proper condition

## Buildings:

- An indoor temperature of at least 4°C (40°F) should be maintained
- Check for sources of drafts, i.e., broken windows, doors, vents, etc.
- Use portable heaters safely

## Equipment:

- Drain all seasonal equipment and piping
- Cut back cooling tower fan speeds
- Check the integrity of steam or electrical heat race lines
- Utilize lubricants that can withstand cold weather



# Forms

Protection Impairment

Plant Emergency Organization

Weekly Checklist

Monthly Checklist

Annual Checklist

Cutting and Welding Permits

# Protection Impairment

Please fax this promptly to:

ACE INA Insurance  
 Attention: Loss Control Engineering Services  
 Fax: 416.368.6336  
 Phone: 416.368.2911

Name of Sender: (Print) \_\_\_\_\_

Unit: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: (    ) \_\_\_\_\_ Fax: (    ) \_\_\_\_\_

Valve No. or Location: \_\_\_\_\_

Reasons for closure: \_\_\_\_\_

	TIME	DATE
*Closed at:		
To be reopened at:		
*Actual reopening:		

	YES	NO	N/A
2" drain test conducted?			
Precautions taken:			
Smoking prohibited?			
Extra extinguishers and hose ready?			
Working without interruption?			
Shut down hazardous operations?			
Work done during idle periods?			
Assign extra guard to patrol area?			

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\*A fax is required when valves are closed and an additional fax is needed to confirm that protection is restored.

# Emergency Response Team

The assignments noted below do not cover the entire Emergency Organization, but are the most important part of it and they must be covered at all times. At the first sign of fire or emergency, these persons must perform as noted below without delay and without waiting for further instructions.

**A. Person in Charge or Fire Chief**

Responds to scene - directs physical fire fighting - checks on activities of the persons noted below. Reports situation to Public Fire Chief on his arrival and coordinates with him. Makes certain that protection is restored promptly after fire.

**B. Control Valve Supervisor**

Reports directly to valve(s) controlling sprinklers in the fire area. The valve should be shut only on order from the Person in Charge or Public Fire Chief. This person will continually supervise the affected system, making sure protection is restored before leaving.

**C. Person to Notify Fire Department**

Specifically assigned to call the Fire Department (even if alarms are provided).

**D. Person to Start Fire Pump**

Assigned to make sure the fire pump is running during a fire. Sprinkler efficiency is increased considerably by higher pressure.

**E. Fire Extinguisher and Firehose Personnel**

Assigned to use fire extinguishers and fire hoses at the incipient stages of the fire. This can prevent a small fire from becoming a large one.

**F. Fire Squad**

People trained to salvage procedure during and after any emergency.

## Emergency Organization Chart

		First Shift	Second Shift	Third Shift
Person in Charge or Fire Chief	Regular			
	Alternate			
Control Valve Supervisor	Regular			
	Alternate			
Person to Notify Fire Department	Regular			
	Alternate			
Person to Start Fire Pump	Regular			
	Alternate			
Fire Extinguisher and Firehose Personnel	Regular			
	Alternate			
Fire Squad	Regular			
	Alternate			

# Weekly Checklist

All inside and outside fire protection control valves should be listed below. The following valves should be included on this checklist:

- Those controlling individual sprinkler systems or parts of systems
- In-plant public water connections
- Discharge valves on gravity tanks, pressure tanks and reservoirs
- Suction and discharge valves on fire pumps and divisional valves on yard systems

Valve #	Location	Area Controlled	Open	Shut	Locked

• Were any valves operated since the last inspection? Yes  No

• Was the ACE INA Insurance Protection Impairment fax form used? Yes  No

YES NO N/A

<b>Sprinkler Systems:</b>			
Any heads disconnected or needed (i.e., heads painted, corroded or covered with deposits, etc.)?			
Any stock material within 18" (.5 metre) of the sprinkler heads?			
Heat adequate to prevent freezing of wet pipe systems (i.e., broken windows, etc.)?			
Are dry pipe valves adequately heated?			
What is the water pressure at yard level (psi/pa)?			
What is the air pressure of the dry pipe valves (psi/pa)?			
<b>Fire Pump:</b>			
Was fire pump started (run for 5 min. for electric, 30 min. for diesel)?			
Automatic control tested?			
Fuel tank full?			
Priming tank full?			
Pump room properly heated and ventilated (diesel pump room should be at least 70°F / 20°C)?			
<b>Tank or Reservoir:</b>			
Full (check by visual inspection or by overflowing)?			
Heating system in proper operation (min. temp. at cold water return 40°F / 4°C)?			

Signature \_\_\_\_\_ Date \_\_\_\_\_

# Monthly Checklist

		YES	NO	N/A
<b>Fire Doors</b>	Not obstructed?			
	All self-closing devices working?			
<b>Boilers</b>	Weekly and daily safety checks made and test cards completed?			
<b>Smoking</b>	Are smoking rules observed?			
<b>Gas Supply</b>	Key available to shut off gas supply?			
<b>Flammable Liquids</b>	Excessive quantities in working areas?			
	Any damage/loose grounding or bonding?			
	Any accumulation of empty cans, soiled rags or waste?			
	Any waste or water in tank dikes?			
<b>Gas Cylinders</b>	Any idle cylinders in the building?			
	Any cylinders not secured?			
	Any fittings or hoses damaged?			
	Proper separation of fuel and oxidizers?			
<b>Extinguishers</b>	Charged?			
	Any missing?			
	Accessible?			
<b>Inside Hoses</b>	In good condition?			
	Accessible?			
<b>Yard Hydrants / Outside Valves</b>	Clear?			
	Are hoses and nozzles in good condition?			
	Satisfactory test of all post indicating valves and curb box valves by closing the valve 2 or 3 revolutions and then reopening?			
<b>Sprinklers</b>	Satisfactory test of alarms via Inspectors' Test Connection and 2" drain (quarterly test)?			
	Confirmed with Central Station and/or alarm panel that signals were received?			
<b>Housekeeping</b>	Any accumulation of rubbish in buildings or yard?			
	Any area untidy or congested?			
	Any combustibles adjacent to switchgear, heaters or battery charging?			
<b>Maintenance</b>	Any temporary wiring or damaged electrical fittings?			
	Any heater fuel leaks?			
<b>General Comments</b>	Any other items requiring comment?			
<b>Recommendations</b>	Any recommendations or suggestions?			

Signature \_\_\_\_\_ Date \_\_\_\_\_

# Annual Checklist

		YES	NO	N/A
<b>Sprinklers</b>	Trip test of all pipe/deluge/preaction system?			
	Have antifreeze system solutions been tested?			
	Have the fire department connections (Siamese) been checked for wear, rust or obstruction?			
<b>Extinguishers</b>	Maintenance check of all units?			
<b>Inside Hoses</b>	Have all hoses valves been inspected for tightness to ensure there is no water leakage?			
	Are all gaskets in good condition?			
<b>Yard Hydrants</b>	Have all fire hydrants been serviced?			
<b>Alarm Systems</b>	Has the fire alarm system been serviced?			
	Has voice communication to and from floor areas to the central alarm system been tested?			

Signature \_\_\_\_\_ Date \_\_\_\_\_

# Danger

## Prevent Fires

Do not cut or weld until the following cutting and weld precautions have been taken and this card signed.

Check each item.

1. No cutting or welding will be permitted:
  - A. While sprinklers are out of service.
  - B. In the presence of flammable vapors and liquids, lint, dust, or unpurged tanks and equipment previously containing such materials.
  - C. In areas or on equipment other than those properly prepared for cutting and welding.
  - D. With cutting and welding equipment which is not in good repair.
  - E. By other than a qualified individual.
2. The area must be personally examined and approved by an authorized individual that the following necessary safeguards have been arranged for prior to issuing this permit:
  - A. Floors and surroundings must be swept clean and wet down.
  - B. All combustibles must be relocated 40 ft. from the operation or the remainder must be protected with non-combustible curtains, metal guards or flameproofed covers (not ordinary tarpaulins).
  - C. Any floor or wall opening within 40 ft. of the cutting and welding operations must be covered over tightly.
  - D. A responsible individual must be assigned to watch for dangerous sparks in the area as well as in floors above and below and in adjacent areas.
  - E. Ample fire protection equipment - hand hose, extinguishers, water pails, etc. must be provided and a responsible individual trained in their use must be available.
  - F. Warning notices must be posted adjacent to and, where necessary, below the work area.
3.  The cutting and welding area, including floors above and below, should be patrolled during any lunch or rest period, on the completion of work, and for at least 1 hour after the work is completed.
4.  The area must be personally examined by an authorized individual 60 minutes after the completion of the work.

# Important

## Cutting and Welding Permit

Precautions on opposite side must be followed without fail.

Date of work: \_\_\_\_\_

Area of work: \_\_\_\_\_  
\_\_\_\_\_

Work to be done: \_\_\_\_\_

Time started: \_\_\_\_\_ Completed: \_\_\_\_\_

The area where the above work is to be done has been personally examined for the safe cutting and welding practices appearing on the reverse side of this card and have been checked as indicated. Permission therefore is granted for this work.

Signed \_\_\_\_\_

Date \_\_\_\_\_

This permit expires: \_\_\_\_\_ a.m. / p.m.

The work has been done and the work area and adjacent areas inspected for fire 60 minutes after completion and were found to be fire safe.

Signed \_\_\_\_\_

Date \_\_\_\_\_

If fire occurs, phone no. \_\_\_\_\_

or use alarm box located at \_\_\_\_\_

---

File for ACE INA Insurance representative's review.

**ACE INA Insurance**  
The Exchange Tower  
130 King Street West, 12th Floor  
Toronto, Ontario M5X 1A6  
416.368.2911 Main  
416.368.6336 Fax

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Area of work: \_\_\_\_\_

Work to be done: \_\_\_\_\_

Time started: \_\_\_\_\_ Completed: \_\_\_\_\_

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