Decision No. 93-104

CANADA LABOUR CODE{PRIVATE }
PART II
OCCUPATIONAL SAFETY AND HEALTH

Review under section 146 of the Canada Labour Code, Part II
of a direction issued by a safety officer

Applicant:	A.E.C.L. Research Whiteshell Laboratories Pinawa, Manitoba Represented by: Mr. G.M.(Gib) Drynan Manager
Interested Party:	Mr. Jack B. Hilderbrand Fire Fighter Whiteshell Laboratories Pinawa, Manitoba
Mis en Cause:	Mr. Luc Sarrazin Safety Officer Labour Canada
Before:	Mr. Serge Cadieux Regional Safety Officer Labour Canada

In this case, evidence was initially presented by way of written submissions. An oral hearing was held on September 15, 1993 in BeausJjour, Manitoba. The hearing was followed by a guided visit of specific buildings of A.E.C.L. Research, Whiteshell Laboratories in Pinawa, Manitoba. A.E.C.L. Research, as well as Mr. Hilderbrand, were given additional time to present written submissions respecting the evidence adduced at the hearing.

Background

In the summary report prepared for this case the safety officer explained that "On November 1, 1990 a complaint was received by an employee of A.E.C.L. stating that the fire alarm systems at the complex was (sic) not meeting the requirements of the National Building Code, mainly that there were no audible signals heard in the building upon activation of a manual pull station." Discussions and exchange of correspondence with A.E.C.L. Research officials, with Mr. Hilderbrand and with other Labour Canada officials took place over a period of two and a half (2 1/2) years but failed to result in a mutually satisfactory resolution of the problem.

In a letter dated January 26, 1993 safety officer Luc Sarrazin informed A.E.C.L. Research of his intention to apply the Canada Labour Code, Part II respecting the requirements for fire alarm systems. The safety officer wrote, in part,

> "...the Fire Alarm System at A.E.C.L. shall be upgraded to meet the National Building Code (NBC) 1990 (sic). This would include providing a fully operational 1 or 2 stage Fire Alarm System. Operation of any device of the Fire Alarm System shall cause the activation of the audible alarms."

The issue came to a head on April 26, 1993 when, following previous inspections of the premises, the safety officer gave a direction to A.E.C.L. Research. The direction, which is the subject of the present review, reads as follows:

IN THE MATTER OF THE CANADA LABOUR CODE

PART II - OCCUPATIONAL SAFETY AND HEALTH

Direction to the employer under subsection 145(1)

On April 20, 21 and 26, 1993, the undersigned Safety Officer, having conducted an inspection in the workplaces operated by A.E.C.L., Whiteshell Laboratories, being an employer subject to the Canada Labour Code, Part II, at the following locations:

Building:
100 - WR-1 Reactor
300 - Research and Development
400 - Engineering and Administration
401 - Services an Control
402 - Health and Safety
405 - Scientific Information Centre
406 - Cafeteria and Auditorium
408 - Stores, Workshops and Garage
411 - Laundry and Decontamination
412 - Active Area Workshop
911 - Power House and Central Heating Plant
413 - PCB Storage
504 - Temporary Labs and Offices
518 - Building 300 Trailer Extension
519 - Building 300 Trailer Extension
415 - Heated Storage
303 - Containment Test Facility
304 - Hydrogen Test Laboratory
505 - Maintenance Storage #2
526 - Borehole Instrumentation Test Facility
524 - Meteorology Trailer #1
520 - Mobile Decontamination Trailer

The said workplaces being sometimes known as the A.E.C.L. Whiteshell Laboratories, and being of the opinion that the following provisions of the Canada Labour Code, Part II are being contravened.

1. Paragraph 124, 125 (a), 125 (o) and 125 (s) of the Canada Labour Code, Part II, Paragraph 2.1 Building Safety of the Canada Occupational Safety and Health Regulations incorporating the National Building Code 1985, Article 3.2.4.4 and Article 17.3 of the Canada Occupational Safety and Health regulation incorporating the National Fire Code Part 6.

   The audible signal devices provided were not audible in the buildings when manual pull stations were activated. These are considered essential to the safety and health of the employees.

HEREBY DIRECTS THE SAID EMPLOYER, PURSUANT TO PARAGRAPH 145(1) OF THE Canada LaBour Code, Part II, to terminate the contraventions as follows.

1. A plan of action to be sent to this office no later than July 15, 1993, stipulating how and when the above-noted violations will be rectified with a full compliance date no later that July 1, 1994. The plan of action must also include interim measures to be in place pending completion of the corrective measures.

Issued at Winnipeg this 26th day of April 1993.

Luc Sarrazin
Safety Officer

TO: A.E.C.L.
Whiteshell Laboratories
Pinawa, Manitoba
ROE 1L0
Attention: Gib Drynan, Manager, Security Services

Note: For the purpose of clarity, in the following text

* a reference to the Code is a reference to the Canada Labour Code, Part II
* a reference to NBC 1985 is a reference to the National Building Code of 1985[1]
* a reference to NFC 1985 is a reference to the National Fire Code of 1985[2]

[1] "National Building Code" means the National Building Code of Canada, 1985, issued by the associate Committee on the National Building Code, National Research Council of Canada, dated 1985;

[2] "National Fire Code" means the National Fire Code of Canada, 1985, issued by the Associate Committee on the National Fire Code, National Research Council of Canada, dated 1985;

* a reference to the Regulations is a reference to the Canada Occupational Safety and Health Regulations

Submissions for the Employer

The thrust of A.E.C.L. Research's argument is that most buildings identified in the direction do not require fire alarm systems. Consequently, the fire alarm systems in place are voluntary fire alarm systems which are exempted from the application of the requirements of the NBC 1985, the standard referred to in the direction. This argument is based on the requirement to install fire alarm systems in specific buildings subject to the major occupancy[3] classification of the buildings and their respective occupant load[4] as provided by the NBC 1985, Sentence 3.2.4.1.(1). Only buildings which require fire alarm systems would have to comply with all relevant provisions of the NBC 1985.

Also, subsection 3.2.4 of the NBC 1985, which deals with "Fire Alarm and Detection Systems", refers to Appendix A of the standard. The Appendix explains the intent of the latter provision under the heading "Limitation of Application". Appendix A-3 provides, in various parts, that:

> "The provisions of this Part for fire protection features installed in buildings are intended to provide a minimum acceptable level of public safety. They are not intended to be applied to voluntary installations, i.e. those installations that are not specifically required by the (NBC 1985)... Similarly, it is not intended that voluntary fire alarm, standpipe and sprinkler installations comply with the relevant requirements in Subsections 3.2.4. and 3.2.5. ...Such good design is necessary to ensure that the level of public safety established by the (NBC 1985) requirements will not be reduced by a voluntary installation."

A.E.C.L. Research has also argued that they are in compliance with NFPA 72D (National Fire Protection Association, Standard No.72D), Standard for the Installation, Maintenance, and Use of Proprietary Protective Signalling Systems, a standard which it considers to be most relevant and appropriate under the circumstances. Required fire alarm systems would normally have to comply with Underwriters' S524, "Standard for the Installation of Fire Alarm Systems", pursuant to Sentence 3.2.4.5.(1) of NBC 1985. However, A.E.C.L. Research expressed the view that, since voluntary installations need not comply with the NBC 1985, compliance with that latter standard "is non-existent as long as the appropriate installations requirements in relevant standards are being met."

A.E.C.L. Research acknowledges, in view of the above noted classification parameters, that fire alarm systems are required in two specific buildings [Building 300 (Research and Development) and Building 406 (Cafeteria and Auditorium)]. The systems must comply with the NBC 1985, Sentence 3.2.4.4.(2) which provides for a two stage fire alarm system.

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[3] "Major Occupancy" means the principal occupancy for which a building or part thereof is used or intended to be used, and shall be deemed to include the subsidiary occupancies which are an integral part of the principal occupancy.

[4] "Occupant Load" means the number of persons for which a building or part thereof is designed.

Submissions of the Employee

The written submissions of Mr. Hilderbrand are on record. Essentially Mr. Hilderbrand, after consulting with a number of fire prevention experts on the issue of fire alarm systems, concluded that the manual pull stations at A.E.C.L. Research must cause an alarm to sound. For example, Mr. Hilderbrand was advised by one of those experts that there "is no justification to not having audible alarms ringing when you have a Fire Department close at hand."

Mr. Hilderbrand took the course "Fire Prevention and Inspection". Having been trained in recognizing fire hazards in buildings, Mr. Hilderbrand became convinced, and has expressed the same opinion throughout his written submissions, that "If the National Building Code says that a Fire Alarm System SHALL have audible alarms, there should be no exceptions." He undertook to inform A.E.C.L. Research of this situation in order to protect himself and the other employees at A.E.C.L. Research as well as "the countless number of visitors that pass through our plant each year." Mr. Hilderbrand's personal conviction and persistence in this matter led him to lodge a complaint with Labour Canada which resulted in the issuance of a direction to A.E.C.L. Research.

Mr. Hilderbrand submitted that Appendix A-3 to the NBC 1985 also provides as follows:

> "It is assumed that all fire protection features of a building, whether required or not, will be designed in conformance with good fire protection engineering practice and will meet the appropriate installation requirements in relevant standards. Such good design is necessary to ensure that the level of public safety established by the (NBC 1985) requirements will not be reduced by a voluntary installation."

Mr. Hilderbrand, as well as the safety officer, interpret the expression "meet the appropriate installation requirements in relevant standards" to be a direct reference to the NFC 1985 which is incorporated by reference in the Regulations. It follows that all fire alarm systems provided would have to cause an alarm to sound regardless of whether that is required by the legislation.

Decision

As a result of the direction and the submissions of the parties, the question to be answered in the instant case is as follows:

> Must the audible signal devices provided by A.E.C.L. Research, in the twenty two (22) buildings identified in the direction, be audible in the buildings when manual pull stations are activated?

As we will see later, the question can only be answered by resolving two important issues.

There is an assumption made in the question as formulated. The assumption is that the fire alarm systems provided by A.E.C.L. Research in the twenty two (22) buildings are voluntary installations, i.e. installations which are not required by the Code and consequently, need not comply with prescribed standards. In fact, the submissions of A.E.C.L. Research are founded on that premiss. If I were to answer the question only as formulated and rule, for example, that the

alleged voluntary fire alarm systems need not comply with the prescribed standards, then the issue of which buildings identified in the direction require a fire alarm system would remain unanswered. Such a decision would cause the employer and the employee to err in concluding that fire alarm systems are not required in the buildings identified in the direction.

In my view, to answer the question I must resolve the following two issues. I must determine whether a fire alarm system is required in each building. If a fire alarm system is required in a building, then all the relevant provisions of the Code and the Regulations necessarily apply. If a fire alarm system is not required but is provided, which essentially constitutes a voluntary installation, then I must determine what requirements under the Code and the Regulations apply, if any.

For the purpose of this decision, I have decided to reverse the order of the issues to be resolved. I will consider firstly the issue of voluntary fire alarm systems and secondly, I will determine which buildings require a fire alarm system.

1. Voluntary Fire Alarm Systems

The provisions entrenched in the Code and the Regulations are generally considered minimum safety and health requirements. Specific duties are listed at section 125 of the Code which impose upon the employer an obligation to protect the safety and health of his or her employees at work. In many instances, the duties of the employer are detailed by the Regulations which, in turn, may call up specific standards, or parts thereof, to further clarify the duty. Therefore, compliance with those duties is, in many cases, to the extent prescribed by Regulations.

The safety officer issued a direction to A.E.C.L. Research under subsection 145(1) of the Code. That provision stipulates that:

> 145. (1) Where a safety officer is of the opinion that any provision of this Part is being contravened, the officer may direct the employer or employee concerned to terminate the contravention within such time as the officer may specify and the officer shall, if requested by the employer or employee concerned, confirm the direction in writing if the direction was given orally. (my underlining)

Clearly then, the power of the safety officer to direct an employer to bring an end to a contravention is predicated on the employer violating a specific provision of the Code and, when applicable, the pursuant Regulations. Therefore, the safety officer must ensure, before concluding that the employer is in contravention of the Code, that a statutory duty exists and that a specific requirement of the duty is not being complied with.

In respect of the duty to provide fire protection equipment, there exist at least two provisions in the Regulations which address that requirement. The safety officer made specific reference to those two provisions in the direction. They are:

Section 2.1 of Part II (Building Safety) of the Regulations, which incorporates Parts 3 to 9 of NBC 1985 and which is authorized by paragraphs 125(a) and (u) of the Code; and

section 17.3 of Part XVII (Safe Occupancy of the Work Place) of the Regulations, which incorporates Parts 6 and 7 of NFC 1985, and which is authorized by paragraphs 125(o) and (u) of the Code.

The Code makes no distinction between required and voluntary fire alarm systems. It merely establishes, by reference to the NBC 1985, the obligation to install in specific workplaces, a fire alarm system. I have found no provision in the Code which would impose a specific duty upon the employer respecting voluntary fire alarm systems. Therefore, as long as the level of safety of the employees is not diminished by a voluntary installation, it is difficult, if not impossible, to argue that the employer is in contravention of provisions of the Code and the Regulations for not complying with prescribed standards dealing with required installations.

The fire alarm systems at A.E.C.L. Research were installed long before the existence of the Code and the Regulations. The manual pull stations at A.E.C.L. Research have served a dual purpose over time. At the time of its installation, the systems were incorporated into procedures intended to protect employees from potential radioactive hazards. Although the threat of radiation contamination has diminished significantly over the years, due to the technological advances in this field, A.E.C.L. Research continues to use the systems as warning systems.

From what I have seen at A.E.C.L. Research, I am satisfied that the level of safety of employees is not reduced simply because the alarms of the voluntary installations have been silenced. Once a manual pull station is activated in one of the buildings, an alert signal informs designated individuals, at the Central Control Room, that an alarm has been activated in a specific area. The alert will immediately be verified by designated individuals who may, after investigating the alert at its point of origin, activate a general sounding alarm. In addition to those measures, A.E.C.L. Research also has, on staff, a fire department which can respond rapidly, in emergency situations, with professional fire fighting capabilities. I do not believe that the safety of employees is put at risk given the measures taken by A.E.C.L. Research to ensure an effective response to a silent alarm.

Voluntary fire alarm systems must still comply with relevant standards, such as the NFPA 72D mentioned earlier. However, they do not, in my view, have to comply with the specific requirements of the NBC 1985 or the NFC 1985 for the purpose of compliance with the Code. The provisions of those two standards only apply, in the context of the Code and the Regulations, to fire alarm systems required by the legislation in order to protect employees at work. The general safety of the public or the preservation of a building itself is not envisaged by the Code. Other legislations cover those aspects.

I am of the view that the voluntary fire alarm systems, i.e. those systems not specifically required by the Code, in existence at A.E.C.L. Research, provide a level of safety which is above and beyond the requirements of the Code. Therefore, A.E.C.L. Research is not, in my opinion, in contravention of a provision of the Code and the pursuant Regulations from the perspective of voluntary fire alarm systems.

However, not all systems provided by A.E.C.L. Research are voluntary; some are mandatory.

2. Buildings that Require a Fire Alarm System

Some buildings listed in the direction require a fire alarm system. The system may have to be either a single stage or a two stage system, depending on the classification of the building, its major occupancy classification and its occupant load, in accordance with the provisions of the NBC 1985.

It is important at this stage to clarify the scope of the NBC 1985 and the NFC 1985 with respect to fire alarm systems within the context of the Code and the Regulations.

Section 2.1 of Part II (Building Safety) of the Regulations provides as follows:

> 2.1 The design and construction of every building shall meet the standards set out in Parts 3 to 9 of the National Building Code to the extent that is essential for the safety and health of employees.

Subsection 3.2.4. of the NBC 1985 is the part that deals specifically with Fire Alarm and Detection Systems. That subsection essentially determines which buildings require a fire alarm system. The requirement is established by considering specific criteria, such as the occupant load and the number of storeys of the building under consideration in light of the major occupancy classification for the building,

Similarly, subsection 17.3(1) of Part XVII (Safe Occupancy of the Work Place) of the Regulations provides as follows:

> 17.3(1) Fire protection equipment shall be installed, inspected and maintained in every building in which there is a work place in accordance with the standards set out in Parts 6 and 7 of the National Fire Code

Section 6.3 of the NFC 1985 is the part that deals specifically with Fire Alarm and Voice Communication System. Also, subsection 17.3(1) of the Regulations limits the application of the NFC 1985 to the installation, inspection and maintenance of fire protection equipment. The NFC 1985 is not concerned with determining which buildings require a fire alarm system.

In my opinion, the NBC 1985 determines which buildings require a fire alarm system whereas the NFC 1985 determines which standards cover the installation, inspection and maintenance of those fire alarm systems specifically required by the NBC 1985. The NBC 1985 and the NFC 1985 must be seen as complementary to each other, or to use the expression found in the Preface of the NFC 1985, as "companion documents" which are to be used together. Likewise, the Code and the Regulations constitute a whole. In that perspective, it makes good sense, in my view, to interpret the various provisions of the Code, the Regulations and the standards incorporated by reference as a whole in light of each other and not in isolation.

The parties in this case have referred to the Appendix section of the NBC 1985, where explanations are given for voluntary fire alarm systems, in order to substantiate their individual submissions. I must disregard those explanations because the Appendix referred to at Subsection 3.2.4 of NBC 1985 does not form part of the Regulations. Only Parts 3 to 9 of NBC 1985 are prescribed by section 2.1 of the Regulations. Also, the Appendix does not form part of the requirements of the NBC 1985 as explained in the foreword found at page 393 of NBC 1985. It states that "The Appendix to this document is included for explanatory purposes only and does not form part of the requirements." Therefore, the explanations found in the Appendix should only be used as a guide to good engineering practices. They should not be used out of context to interpret statutory requirements.

In a written submission, "A.E.C.L. Research re-affirms the position that NBC 3.2.4.4. does not apply to Buildings 400, 401, 402, 405, 408, 411, 412, 911, 413, 504, 518, 519, 415, 303, 304, 505, 526, 524 and 520 based on major occupancy classification and actual occupant load as allowed by NBC 3.1.14.1.(1)(c), "...unless it can be shown that the area will be occupied by fewer persons."" A.E.C.L. Research has entered into evidence an occupant load for each building based almost entirely on this provision.

The safety officer challenged the figures for occupant load submitted by A.E.C.L. Research. The safety officer expressed the view that the occupant load submitted by A.E.C.L. Research is a "calculated" occupant load that merely reflects the actual number of persons working in the building as opposed to the number of persons for which a building or part thereof is designed. I have decided to intervene in this matter by considering the multiple occupancies within a building with regard to the "calculated" data which has been submitted by A.E.C.L. Research. I assume that the information submitted is accurate to the extent that it is not intended to deceive.

A.E.C.L. Research has acknowledged that Building 300 (Research and Development) and Building 406 (Cafeteria and Auditorium) require fire alarm systems. It is my understanding that A.E.C.L. Research is in the process of upgrading those buildings to comply with the law. I accept without further evidence that those two buildings require fire alarm systems. Nonetheless, A.E.C.L. Research is advised that all seven stages of Building 300 must be served by a single fire alarm system, as specified by Sentence 3.2.4.2.(2) of the NBC 1985. Once it is determined that a building requires a fire alarm system, all interconnected portions of the building i.e. those parts where it is possible to communicate with one another from the inside, must be served by a single fire alarm system since there are openings in the walls permitting access between the various parts of the building, as stipulated in Sentence 3.2.4.2.(4) of the NBC 1985.

In addition to occupant load, Sentence 3.2.4.1.(1) of the NBC 1985 provides that a building requires a fire alarm system if the total number of storeys of the building is "more than three storeys, including storeys below grade". All buildings, except Building 100 which houses the WR-1 Reactor, have three or less storeys. Building 100 has four storeys (the figures submitted by the safety officer indicate there may be up to eight storeys) which, regardless of which figure submitted is accepted, brings this Building within the ambit of the NBC 1985, Subsection 3.2.4 for Fire Alarm and Detection Systems.

A.E.C.L. Research and the safety officer have both classified Building 100 as a Group F Division 1 building. Buildings that fall in this category require single stage fire alarm systems when the occupant load criterion is exceeded for this classification. In the instant case, the submitted occupant load of 76 significantly exceeds the occupant load criterion of 25. Therefore, a single stage fire alarm system is required in that building.

A.E.C.L. Research has requested that I consider the unique nature of this building in terms of the evacuation problems that may be encountered in an emergency situation. In reply, I must say that I have no discretion in this matter. The Code and the Regulations have no provision which would exempt the nuclear reactor from strict adherence to the requirement for a fire alarm system. Also, the legislator has not entrusted upon the Regional Safety Officer any discretionary power which would entitle me to exempt Building 100 from complying with that requirement.

However, the fact that an alarm rings in a building does not necessarily mean that evacuation of the building is mandatory and must take place without delay in all cases. In some cases, the emergency measures, developed in collaboration with the safety and health committee, may consider whether evacuation of the building is appropriate in certain circumstances. I refer A.E.C.L. Research to Part XVII (Safe Occupancy of the Work Place) of the Regulations for more details on this subject.

After analyzing the data submitted respecting the buildings listed in the direction with regard to the parameters of the NBC 1985, I have decided that, **in addition to buildings 100, 300 and 406**, the following buildings require fire alarm systems, i.e.

Building 405: Scientific Information Centre
This building, which is the Library, has been classified as Group A Division 2. An occupant load of 40 must be exceeded for a fire alarm to be required. Since this type of building is designed to receive persons on a regular basis, I believe that the "calculated" occupant load of 40 submitted by A.E.C.L. Research is too restrictive. In such cases, it is preferable to err on the side of safety. Therefore, in my opinion, this building requires a fire alarm system.

Building 408: Stores, Workshops and Garage This building is classified as Group F Division 2. However, the paint shop in this building, which is classified as Group F Division 1, must be considered as a major occupancy in accordance with Sentence 3.1.3.1.(6) of the NBC 1985. Consequently, as long as this occupancy remains in the building, the building is required to have a fire alarm system.

Building 518: Building 300 Trailer Extension This building is interconnected with Building 300 and therefore must be served by the same fire alarm system required for Building 300.

Building 519: Building 300 Trailer Extension Same rationale as for Building 518.

The question of what type of fire alarm system is required in the above noted buildings has been intentionally omitted, except for Building 100, because it was not an issue to be decided in the instant case. I leave it up to the parties, in consultation with the safety and health committee and, if necessary, the safety officer, to determine if single stage or two stage fire alarm systems are required.

One last issue must be addressed in this decision. The direction of the safety officer refers to paragraph 125 (s) of the Code which provides for the right to know under the legislation as follows:

> (s) ensure that each employee is made aware of every known or foreseeable safety or health hazard in the area where that employee works;

Therefore, when a silent alarm is activated, emergency procedures developed in accordance with section 17.5 of Part XVII (Safe Occupancy of the Work Place) of the Regulations must be in place. The employees have a right to be made aware of the nature of the problem and the measures taken to resolve it, if any. Only then can the employees decide if they need to exercise other rights under the Code. Since the issue was not discussed at the hearing, I presume that A.E.C.L. Research does not challenge that aspect of the direction and will take the necessary steps to comply as directed.

Therefore, for all the above reasons, I HEREBY VARY the direction given on April 26, 1993 by safety officer Luc Sarrazin to A.E.C.L. Research by replacing the list of buildings to which the direction was made applicable with the following amended list and by replacing the three paragraphs that follow the list with the following amended three paragraphs i.e

"Building:
100 - WR-1 Reactor
300 - Research and Development
405 - Scientific Information Centre
406 - Cafeteria and Auditorium
408 - Stores, Workshops and Garage
518 - Building 300 Trailer Extension
519 - Building 300 Trailer Extension

The said workplaces being sometimes known as the A.E.C.L. Whiteshell Laboratories, the said safety officer is of the opinion that the following provisions of the Canada Labour Code, Part II are being contravened.

1. Paragraphs 125 (a), 125 (o), 125 (s) and 125 (u) of the Canada Labour Code, Part II, Section 2.1 of Part II (Building Safety) of the Canada Occupational Safety and Health Regulations incorporating the National Building Code 1985, Subsection 3.2.4 and Section 17.3 of the Canada Occupational Safety and Health Regulations incorporating the National Fire Code Part 6, in that

the audible signal devices provided in the buildings, which require fire alarm systems, were not audible in the buildings when manual pull stations were activated. These are considered essential to the safety and health of the employees."

Decision rendered on November 29, 1993

Serge Cadieux
Regional Safety Officer

APPENDIX

LEGISLATION CITED

Canada Labour Code, Part II

124. Every employer shall ensure that the safety and health at work of every person employed by the employer is protected.
R.S., 1985, c. L-2, s. 124; R.S., 1985, c. 9 (1st Supp.), s.4.

125. Without restricting the generality of section 124, every employer shall, in respect of every work place controlled by the employer,

(a) ensure that all permanent and temporary buildings and structures meet the prescribed standards;

(o) comply with such statutory as are prescribed relating to fire safety and emergency measures;

(s) ensure that each employee is made aware of every known or foreseeable safety or health hazard in the area where that employee works;

(u) adopt and implement prescribed safety codes and safety standards;

Canada Occupational Safety and Health Regulations

2.1 The design and construction of every building shall meet the standards set out in Parts 3 to 9 of the National Building Code to the extent that is essential for the safety and health of employees.

17.3(1) Fire protection equipment shall be installed, inspected and maintained in every building in which there is a work place in accordance with the standards set out in parts 6 to 7 of the National Fire Code.

(2) For the purpose of interpreting the standards referred to in subsection (1), "acceptable" means "appropriate".

(3) All fire protection equipment shall be maintained and repaired by a qualified person.

17.5(1) Every employer shall, after consultation with the safety and health committee or safety and health representative of his employees and with the employers of any persons working in the building to whom the Act does not apply, prepare emergency procedures

(a) to be implemented if any person commits or threatens to commit an act that is likely to be hazardous to the safety and health of the employer or any of his employees;
(b) where there is a possibility of an accumulation, spill or leak of a hazardous substance in a work place controlled by him, to be implemented in the event of such an accumulation, spill or leak;
(c) where more that 50 employees are working in a building at any time, to be implemented where evacuation is not an appropriate means of ensuring the safety and health of employees; and
(d) to be implemented in the event of a failure of the lighting system.

(2) The emergency procedures referred to in subsection (1) shall contain

(a) an emergency evacuation plan, where applicable;
(b) a full description of the procedures to be followed;
(c) the location of the emergency equipment provided by the employer; and
(d) a plan of the building, showing
(i) the name, if any, and the address of the building, and
(ii) the name and address of the owner of the building

National Building Code, 1985

3.1.14.1.(1) The occupant load of a floor area or part of a floor area shall be based on

(c) the number of persons for which the area is designed, but not less than that determined from Table 3.1.14.A. for occupancies other than those described in Clauses (a) and (b) unless it can be shown that the area will be occupied by fewer persons.

3.2.4.1.(1) Except as provided in Sentences (2) and (3), a fire alarm system shall be installed when the occupant load in Table 3.2.4.A. for any major occupancy is exceeded, and in buildings containing
(a) more than 3 storeys, including storeys below grade,
(b) a total occupant load greater than 300, other than in open air areas, or
(c) an occupant load greater than 150 above or below the first storey, other than in open air seating areas.

3.2.4.2(1) Where there are openings through a firewall, other than those for piping, tubing, wiring and conduit, the requirements in this Subsection shall apply to the floor areas on both sides of the firewall as if they were in the same building.

(2) Except as provided in Sentence (4), where a building contains more than 1 major occupancy and a fire alarm system is required, a single system shall serve all occupancies.

(3) Except as provided in Sentence (4), where a fire alarm system is required in any portion of a building, it shall be installed throughout the building.

(4) Except as provided in Sentence (5), in a building not exceeding 3 storeys in building height, where a vertical fire separation having a fire-resistance rating of at least 1 h separates a portion of the building from the remainder of the building and there are no openings through the fire separation, other than those for piping, tubing, wiring and conduit, the requirements in this Subsection may be applied to each portion so separated as if it were a separate building.

3.2.4.4.(1) A single stage fire alarm system shall, upon the operation of any manually actuated signalling box or fire detector, cause an alarm signal to sound on all audible signal appliances in the system.

3.2.4.4.(2) A two stage fire alarm system shall

- **(a)** cause an alert signal to sound upon the operation of any manually actuated signalling box fire detector,
- **(b)** automatically cause an alarm signal to sound if the alert signal is not acknowledged within 5 min of its initiation, and
- **(c)** have each manually actuated signalling box equipped so that the use of a key or other similar device causes an alarm signal to sound and continue to sound upon the removal of the key or similar device from the manually actuated signalling box.

3.2.4.5.(1) Fire alarm and voice communication systems shall be installed in conformance with CAN4-S524, "Standard for the Verification of Fire Alarm System Installation".

National Fire Code, 1985

6.3.1.1 Fire alarm and voice communications systems shall be maintained in operable condition at all times.

6.3.1.2.(1) Fire alarm systems shall be tested in conformance with Section 4 of ULC-S536, AStandard for the Testing, Inspection and Maintenance of Existing Fire Alarm Systems.@

(2) A record shall be kept of all tests in Sentence (1), and such records shall be retained for examination by the authority having jurisdiction.

6.3.1.3 Proprietary signalling systems shall be maintained in conformance with NFPA 72D, AInstallation, Maintenance and Use of Proprietary Protective Signalling Systems.@

6.3.1.4.(1) Except where voice communications systems are used regularly as part of the operational communications systems in a building, required voice communication systems which are not integrated with a fire alarm system shall be tested monthly in conformance with Sentences (2) and (3).

(2) Loudspeakers operated from the central alarm and control facility shall be tested to ensure they can be heard in all parts of the building.

(3) The 2-way communications system from each floor area to the central alarm and control facility shall be tested to ensure proper operation.