



Auditing Association of Canada (AAC) Annual Conference – North York, 2013

AMEC Environment & Infrastructure

The Role of the Fire Code in Compliance Auditing

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Fire Code – Compliance Auditing

Agenda:

- Applicability
- Adoption & Enforcement
- Audit Criteria
- Personal Experience
- Common Audit Findings
- Things to Consider

Fire Code – Compliance Auditing Applicability

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■ Fire Code – Compliance Reporting Options:

- Environmental Compliance Audits (In Scope since at least 1999?)
- Health & Safety Compliance Audits (directly noted in NFC 2010)
- Due Diligence Assessments (Phase 1 ESA\$ with a twist or EMS driven)
- Storage Tank Management
(Proposed financing / Bank Initiated / Internal First Party Audit)
- Building Condition Assessment (BCA\$)

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Fire Code – Compliance Auditing Applicability

Indirect Fire Code Reference - Example: Environmental Emergencies (E2)

- Applies to any person that has the charge, management or control of a listed substance, at any time of the year, that is stored either:
 - At or above the threshold quantity specified in Column 3 of Schedule 1;
 - Or,
 - In a **container** having a maximum capacity equal to or more than the threshold quantity
- Detailing Prevention, Preparedness, **Response** and Recovery Measures
- **76 Flammable Substances** and 98 Other Hazardous Substances
- Declarations are required by EC
- **Testing the E2 Plan at least once per year is required,**

Fire Code – Compliance Auditing Applicability

Direct Fire Code Reference - Example: Petroleum Tank Management Association of Alberta

- PTMAA is delegated by the Province of Alberta with the authority to register petroleum storage tank systems regulated under **Part 4 of the Alberta Fire Code**. The PTMAA is also delegated the authority to certify individuals to *install, remove, repair and test storage tank systems*.
- Services provided by the PTMAA include:
 - All matters related to the registration of petroleum storage tanks.
 - Approval of individuals who install, test, maintain, alter, upgrade or remove petroleum tank storage systems.
 - Ensuring that storage tank systems are designed, installed, upgraded, or operated in accordance with the **Alberta Fire Code**.
 - Compliance monitoring of new storage tank installations.
 - In-service inspection of existing storage tank installations.
 - Monitoring of storage tank closures.

Fire Code – Compliance Auditing Adoption & Enforcement



- Adoption and enforcement of the National Fire Codes are the responsibility of the provincial and territorial authorities having jurisdiction.
- **The following Provinces and Territories adopt or adapt the National Fire Code:**
 - New Brunswick, Nova Scotia, Manitoba and Saskatchewan: Province-wide adoption with some modifications and additions.
 - Newfoundland and Labrador: Province-wide adoption except aspects pertaining to means of egress and to one- and two-family dwellings.
 - Northwest Territories, Nunavut and Yukon: Territory-wide adoption with some modifications and additions.

Fire Code – Compliance Auditing Adoption & Enforcement



- **The following provinces publish their own codes based on the National Fire Code:**
 - Alberta and British Columbia Province-wide fire codes that are substantially the same as National Fire Code with variations that are primarily additions.
 - Ontario Province-wide fire code based on the National Fire Code, but with significant variations in content and scope.
 - Quebec Province - Major municipalities adopt the National Fire Code.
 - Prince Edward Island . Province-wide fire code not based on the National Fire Code. Major municipalities adopt the National Building Code.

Fire Code – Compliance Auditing Adoption & Enforcement

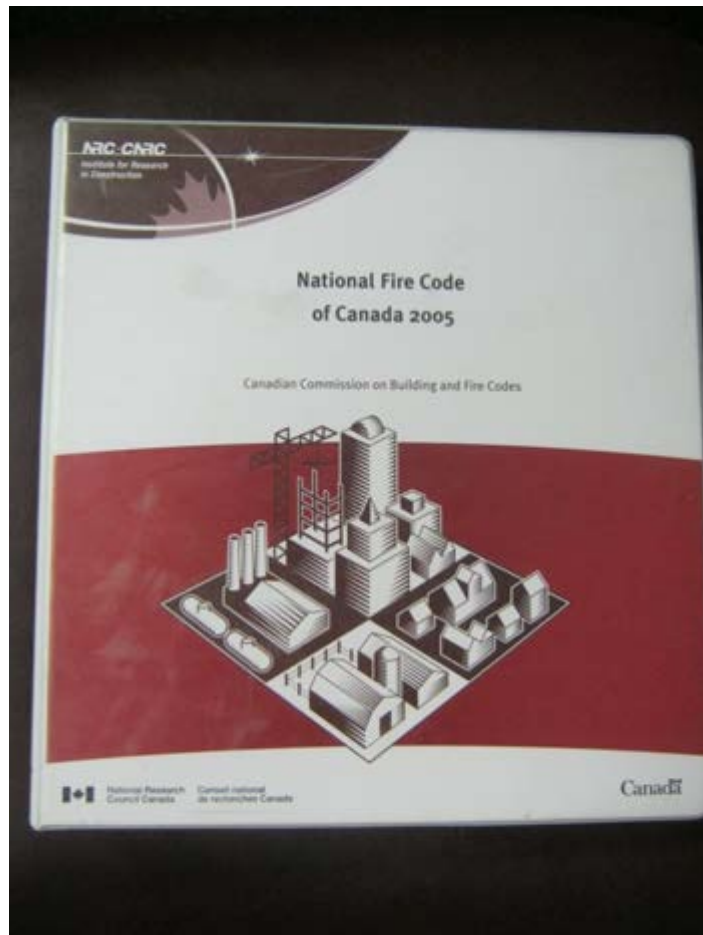


WHO ARE THE REGULATORS? – SOME EXAMPLES:

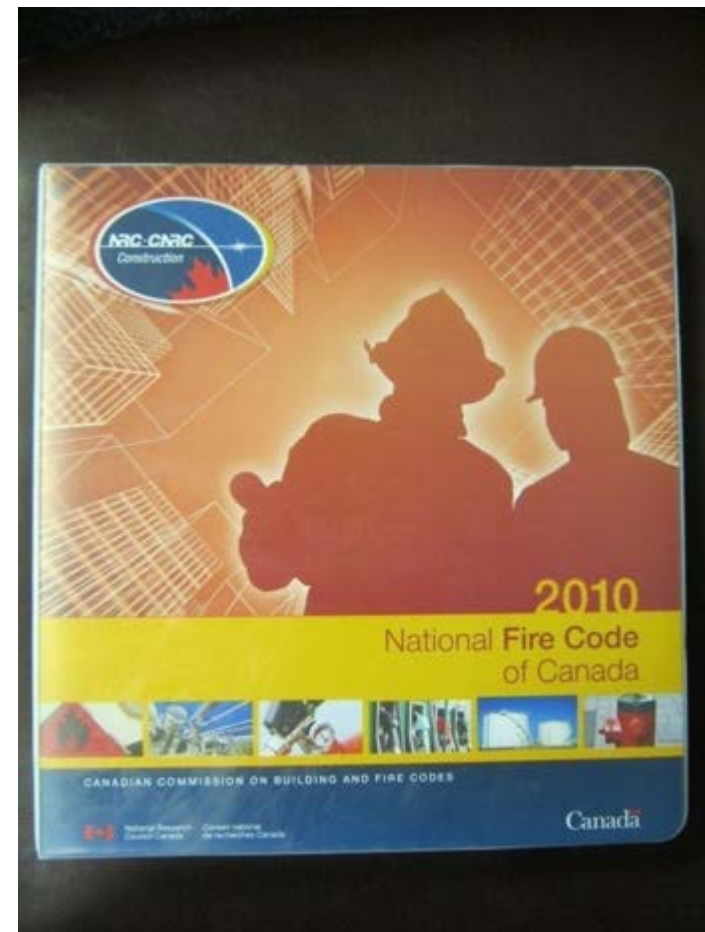
- Technical Standards and Safety Association (Ontario)
- Office of the Fire Marshal (Ontario / Quebec / Nova Scotia)
- Local Fire Department Representatives
- Fire Commissioner (BC/MB)
- Fire Discipline of Safety Services (Alberta)

Fire Code – Compliance Auditing Audit Criteria

NFC 2005



NFC 2010



Fire Code – Compliance Auditing Audit Criteria



WHAT ARE THE REQUIREMENTS?

- The **2005** edition of the National Fire Code of Canada (NFC) contained over 300 new technical changes setting out the technical provisions including regulating:
 - **Activities related to the** construction, **use** or demolition of buildings and facilities
- Three Divisions:
 - **Division A** includes the compliance options, the objectives and the functional statements.
 - **Division B** contains the provisions · now referred to as "acceptable solutions" · relating to such issues as **building and occupant fire safety, indoor and outdoor storage, flammable and combustible liquids**, hazardous processes and operations, fire protection equipment, and fire emergency systems in high buildings.
 - **Division C** contains administrative provisions.

Fire Code – Compliance Auditing Audit Criteria



WHAT ARE THE REQUIREMENTS?

- The **2010** National Fire Code of Canada (NFC) provides *minimum fire safety requirements* for buildings, structures and areas *where hazardous materials are used*, and addresses fire protection and fire prevention in the ongoing operation of buildings and facilities.
- The **2010** NFC is in an objective-based code format in which all requirements are linked to one or more of the following objectives:
 - **Safety**
 - **Health**
 - **Fire and Structural Protection of Buildings**

Fire Code – Compliance Auditing Audit Criteria



Ontario Fire Code, 2007

DIVISION B

- PART 1 GENERAL
- PART 2 FIRE SAFETY
- PART 3 FIRE SAFETY FOR INDUSTRIAL AND COMMERCIAL USES
- PART 4 FLAMMABLE AND COMBUSTIBLE LIQUIDS
- PART 5 HAZARDOUS MATERIALS, PROCESSES AND OPERATIONS
- PART 6 FIRE PROTECTION EQUIPMENT
- PART 7 INSPECTION, TESTING AND MAINTENANCE OF FIRE EMERGENCY SYSTEMS IN HIGH BUILDINGS
- PART 8 DEMOLITION
- PART 9 RETROFIT

National Fire Code, 2010

DIVISION B

- PART 1 GENERAL
- PART 2 BUILDING AND OCCUPANT SAFETY
- PART 3 INDOOR AND OUTDOOR STORAGE
- PART 4 FLAMMABLE AND COMBUSTIBLE LIQUIDS
- PART 5 HAZARDOUS PROCESSES AND OPERATIONS
- PART 6 FIRE PROTECTION EQUIPMENT
- PART 7 FIRE EMERGENCY SYSTEMS IN HIGH BUILDINGS

Fire Code – Compliance Auditing Audit Criteria

National Fire Code of Canada, 2010

Part 4 Flammable and Combustible Liquids

■ Section 4.1 General

• 4.1.1 Scope

” 4.1.1.1 Application

- 1) Except as provided in Sentences (2) and (3), this Part provides for the storage, handling, use and processing of flammable liquids and combustible liquids in buildings, structures and open areas.
- 2) Areas in process plants ..
- 3) This Part shall not apply to
 - b) ***Appliances and their ancillary equipment within the scope of CSA B139, “Installation Code for Oil Burning Equipment”***

Fire Code – Compliance Auditing Audit Criteria

Ontario Fire Code, 2007

Part 4 Flammable Liquids and Combustible Liquids

- Section 4.1 Application

- 4.1.1 Scope and Application

- ” 4.1.1.2 Application

2) Except as specifically provided elsewhere in this Part, this Part does not apply to:

b) The storage, handling, transportation and use of flammable liquids or combustible liquids to which the Technical Standards and Safety Act, 2000 and its regulations apply,”

Note that TSSA is the authority having jurisdiction for:

- Installation Code for Oil Burning Equipment
- Liquid Fuels Handling Code, 2007.

Fire Code – Compliance Auditing Audit Criteria

CSA – B139 Installation Code



Scope:

1.1 This Code applies to the installation of appliances, equipment, components, and accessories where **oil** is used for fuel purposes in applications that include

- (a) space heating;
- (b) service water heating;
- (c) power generation; and
- (d) process application.

1.3 (h) above-ground storage tanks that have a maximum individual capacity of 2500 L (550 gal) and a maximum aggregate capacity of 5000 L (1100 gal).

Oil = Fuel oil (oil) · diesel, used oil, kerosene, and hydrocarbon fuel oil.

Fire Code – Compliance Auditing Personal Experience



COMPLIANCE AUDIT RESULTS (2010):

■ No. of ECAs completed	=	38
■ No. of Days on-site	=	53
■ No. of Days per ECA	=	1.4
■ Number of Non-Compliance Findings	=	615
■ Number of NCs per ECA	=	16.2
■ Least No. of NCs	=	5
■ Most No. of NCs	=	46

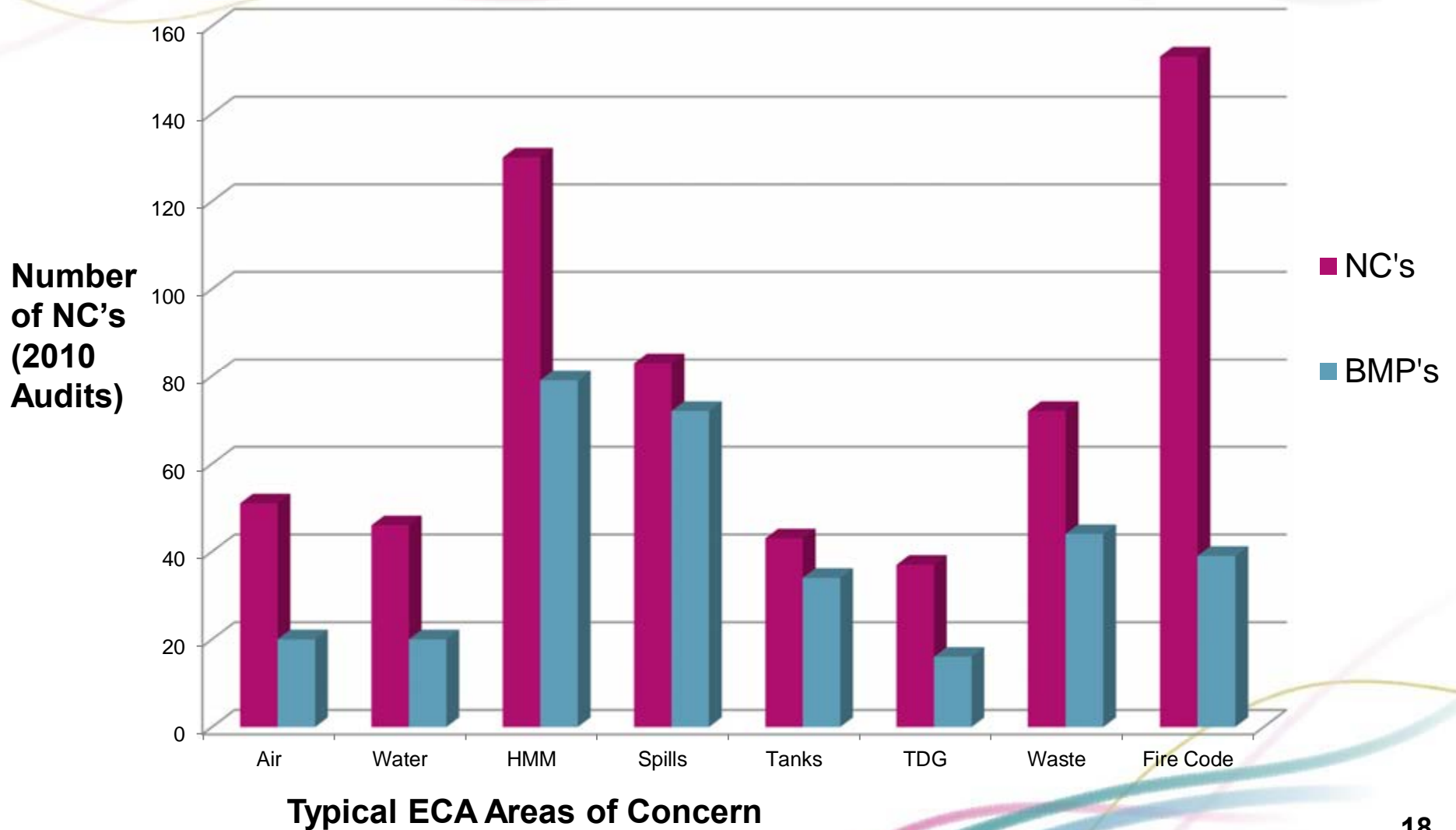
Fire Code – Compliance Auditing Personal Experience

Typical Compliance Audit Areas of Concern:

1. Emissions to Atmosphere (Air & Noise)
2. Water Management
3. Hazardous Materials Management (LBP/PCBs/ACMs/MSDSs)
4. Spills and Emergency Response
5. Storage Tank Management
6. Transportation of Dangerous Goods
7. Waste Management (Hazardous and Non-Hazardous)
8. **Fire Code**

OTHERS INCLUDE: Boiler & Pressure Vessel Management, Sewer Use, Site Remediation, Specialty Chemicals, OH&S, Pesticides, etc.

Fire Code – Compliance Auditing Personal Experience



Fire Code – Compliance Auditing Common Audit Findings

■ Common National Fire Code Findings:

- Improper storage of flammable and combustible liquids (4.1.8.1, 4.2.7.2, 4.2.7.9, 4.2.10.1)
- Improper use of yellow flammable and combustible liquid cabinets (4.2.7.10, 4.2.10.6)
- Lack of absorbent materials (4.2.7.11)
- Fire Safety Plan not reviewed every 12 months (2.8.2.1(2))
- Gas cylinders not properly stored (doorways, under stairs, unsecured) (3.1.2.4)
- Fire extinguishers (monthly / annual inspections, mounting, securing) (6.2.1.1, NFPA 10)
- Numerous Storage Tank System related issues (vents, coating, containment, labelling, protection, etc.) (4.2.3.2, 4.3.1.5, 4.3.13.5)

Fire Code – Compliance Auditing

Common Audit Findings

■ Specific Ontario Fire Code Findings:

- Lack of Spills Training every six months . (4.1.6.4(2)(h))
- Fire Safety Plan not approved:
 - %2.8.2.1(2) The fire safety plan shall be prepared, **approved** and implemented in **buildings** regulated by Article 2.8.1.1.+
 - %**approved**+means approved by the **Chief Fire Official**.
 - %**buildings**+means any structure used or intended for supporting or sheltering any use or **occupancy**.
 - %**occupancy**+means the use or intended use of the building or part thereof for the shelter or support of persons, animals or property.

Fire Code – Compliance Auditing

Common Audit Findings

■ Common Installation Code (CSA-B139) Findings:

- Spacing between wall and tank shell (6.4.2)
- Secondary containment inspection (6.8.6.1)
- Inadequate spill containment (6.4.7.1, 6.8.5.7)
- Proximity to floor drains (6.8.4.2)
- Vent pipe at least 150 mm above fill pipe (6.13.1.7)
- Storage Tank size (6.8.4.2)
- Fill pipe too close to Building Openings (6.12.6)
- Vent pipe not higher than 4.15m above tank bottom (6.13.1.8)

Fire Code – Compliance Auditing Things to Consider

- Grandfathering Provisions do exist in Ontario regarding the Installation Code for Oil Burning Equipment in Section 1(3) of Ontario Regulation 213/01 . Fuel Oil:

(3) Unless otherwise specified in this Regulation or the code adoption document, equipment installed in accordance with the predecessor of this Regulation shall be deemed approved under this Regulation on the day this Regulation comes into force if the equipment complied with the predecessor regulation at the time that it was installed.
- In Ontario TSSA still applies CSA-B139-06.....not CSA-B139-09
- Major Quebec Municipalities have not yet adopted NFC, 2010.
- Know where to draw the line between %environmental+or %health & safety+ compliance AND %engineering+requirements.
- Have access to %Technical Experts+experienced with the Building Code.
- May need to rely on Oil Burning Technicians (OBTs) or licensed Petroleum Engineers approved by the Authority having Jurisdiction for any %engineering+assessment.

Fire Code – Compliance Auditing Things to Consider

Acronym Overlap (and Overload) now affecting the Environmental Industry:

ECA = Environmental Compliance Approval (new)
MOE (Ontario) program for
Modernization of Approvals



ECA = Environmental Compliance Assessment
O. Reg. 419/05 . when considering air standards



ECA = Environmental Compliance Audit
CSA Z773-03 . Operational comparison to
Applicable Environmental Legislation



ECA = Emission Concern Areas (Marine Industry)





Contact for additional information

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FINE PRINT: This presentation is not intended to provide exhaustive coverage of federal and provincial law, regulations, and policy, but rather a general overview of current issues and some coverage of current commentary on some of these issues. Before making corporate or organizational decisions a thorough review of the applicable legislation is strongly recommended.

