

**AUTOMATIC FIRE ALARM ASSOCIATION
GENERAL MEMBERSHIP MEETING
MAY 29, 2008**

DCRA FIRE PROTECTION PRESENTATION

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TOPICS TO BE ADDRESSED

The initial request was to discuss DCRA'S Fire Alarm Shop Drawings submittal process. After a few emails that scope got expanded but that's a good thing.

It became evident that this would be an opportunity to present:

- First, changes at DCRA that need highlighting.**
- Second, Tips on how best to navigate the F.A. plans Approval process.**
- Third, Status of the 2008 DCMR 12 and expected impact.**

At the end of my presentation I hope you will be a little more confident in the outcome of a review by DCRA Fire Protection Engineering.

There are a few handouts which I hope everyone has.

Please hold all questions until the end of the presentation.

1) CHANGES AT DCRA

DCRA has been reorganized in its operation.

- NO BLRA (Building and Land Regulation Admin.)**
- NO HRA (Housing Regulation Admin.)**
- BLRA comprised of Tech review**
 - Permit Operations**
 - Surveyor**
 - Zoning**
 - Inspections**

The TWO NEW components that affect us are.

- LPA (Licensing and Permitting Administration)**
- ICA (Inspection and Compliance Administration)**

Drilling down even further, the areas that affect us most.

PERMITTING - Headed by a Division Manager

INSPECTION – Headed by the Chief building inspector

Permitting comprises: Tech Review

Permit Operations

Surveyor

Zoning sort of

Location – 941 N. Capitol Street N.E. – Second Floor

Inspection comprises: Commercial Inspection (former BLRA)

Residential Inspection (former HRA)

Compliance comprises: Violation Notices/Appeals/Fines

Location – 1900 Massachusetts Ave. S.E. – First Floor

II. The second item I want to discuss is How Best to Navigate The Fire Alarm Plans Approval Process through to Inspection and Occupancy Approval.

FIRE PROTECTION DIV (FPD)

The FPD is part of the Tech Review Arm of the Permitting Division providing:

**Tech support in Fire Protection and Life Safety
Tech support in Elevator and Escalator Safety**

Tech Support Efforts include:

**Code Development
Code Interpretation
Variance Review
Design Review
Plan Review
Shop Drawing Review**

NOT THE FIRE MARSHALL'S OFFICE

**Please note for future documents for my office.
I am not the Fire Marshall. Mr. Gary Palmer is**

Location 441 4th Street N.W. – Third Floor.

RELEVANT CODES

Current

2003 DCMR 12 (Municipal Regulations)

2000 ICC Family of Codes

1996 NFPA 72 – Fire Alarm

1996 NFPA 70 – NEC (National Electric Code)

1996 ASME A17.1 – Elevator and Escalator Safety

**Proposed – Still under review, likely adoption September 2008
(unofficial)**

2008 DCMR 12

2006 ICC Family of Codes

2002 NFPA 72

2005 NFPA 70 – NEC

2004 ASME A17.1

**Chap 35 of the IBC lists all the reference standards adopted by
the Building Code.**

PROCESS STEPS

The Process Steps and Sequence for the Construction Activities remain the same.

**The sequence – Building Permit – Base
Electrical Permit – Supplemental
Shop Drawing
Inspection
Occupancy**

For Fire Alarm System:

Building Permit needed – New Systems

- Addition to Existing Systems**
- Replace 10 or more Similar Devices
(Less than 10 proven in Shop Dwg.)**
- Replace FACP or FAAP**

**Electrical Permit needed – All work except Maintenance
repairs**

Shop Drawing needed - Ditto

Inspection needed - Ditto

CONTACT

Contact Points or Location:

Permits – 941 N. Capitol St. N.E., Rm. 2300

**Shop Drawings – 941 N. Capitol St. N.E., File Room
(Currently left of Rm. 2000)**

Inspections – 1900 Mass. Ave. S.E., 1st Floor

Insp. Scheduling – 941 N. Capitol St. N.E., 9th Floor

Occupancy Cert. – Same as for permits above.

SUBMITTAL REQUIREMENTS

Building Permit – See handout

Shop Drawings – 4 Sets of Fire Alarm Drawings to include:

- **Floor Layout with – All spaces labeled**
 - Square footage**
 - Fire Detection System**
 - Fire Alarm System**

- **Fire Alarm/Detection Riser**

- **Fire Alarm Annunciator Layout**

- **4 Sets of Fire Alarm Submittal Books to incl:**
 - Scope of Work**
 - Sequence of Operation**
 - Bill of Material (BOM)**
 - Battery Calculation**
 - Voltage Drop Calculation**
 - Cut Sheets of BOM items**
 - Etc. See Hand Out**

The third topic is:

THE NEW CONSTRUCTION CODE

Its impact on the Automatic Fire Alarm Business.

1. National Electric Code (NEC)

Ten years ago the DC Amendments to the NEC was a book. It will now be 2 pages, 2 items.

One deals with the maintenance of Switchboards 1000 amps and above.

The other adds a subsection to NFPA 760.24 For NPLFA panel main power supply for exist Fire Alarm system without backup power.

2. International Building Code (IBC)

A) Fire Alarm System

Zoning Indicator Panel (FAAP)

Sounder not needed if Adjacent to FACP having one.

**Required at - Main Entrance
- All Fire Dept. Entrances**

Types – LCD Directory Style

LED

Graphic

FAAP TYPES and APPLICATIONS

LCD Directory Style

- Single Zone buildings not more than 2 stories above or below Fire Department Access.**
- Located in smoke protected area.**

LCD Directory Style with permanently mounted Graphic Dgm

- Single Zone buildings up to 4 stories above and 2 stories below Fire Department Access.**

LED Type -If not LCD or required to be graphic.

GRAPHIC Type

- High-rise Buildings**
- Nursing Homes and Hospitals**
- Covered Malls**
- Buildings with 3 or more exits per floor above or below level of exit discharge.**
- Buildings with more than 1 street address with separate entrance.**
- Buildings with Use Group A Occupancies with more than 1000 persons.**

GRAPHIC Type contd.

Requirements: - Must identify at least 10 items including Elevator lobbies and machine rooms.

- Must also be located in Fire Command Centers or Fire Control Rooms.

FIRE COMMAND CENTERS or CONTROL ROOMS

Requirements: - Must be close to main entrance.

- Must have protected direct access.

- Does not need direct access from outside.

**- Size is performance based
(4ft clearance before all equipment)**

- Signage.

- Knox Box if interior.

FIRE ALARM SYSTEM vs. SECURITY NEEDS

- CONCERNS:**
- **Balance between Security and Life Safety**
 - **Increased pressure since 9/11**
 - **Requests for changes to general alarm where designs were for phased selective.**
 - **Controlled locking of stairwell doors.**

- SOLUTIONS**
- **Case by case as guided by the DCMR 12**
 - **IBC – Locks and Latches (IBC 1003.3.1.8)**
 - **Enhanced Communications. Recognized by NFPA 72 by the proposed new Chap 12 Planned for the 2010 edition.**

FIRE ALARM SYSTEM and SPRINKLER SYSTEM

Sprinkler System exterior gong:

- **Not required if sprinkler system is connected to fire alarm system.**

B) Smoke Control System

- Performance-Based Approach.**
- Prescriptive Approach.**

Result: - Instead of number of air changes it is tenability

- Need for closer scrutiny.**
- Requirements not new (IBC 909.2 and 909.3).**
- Construction Documents will be needed for review.**
- Shop Drawings and Analysis will be required.**
- Special Inspection and Testing will be required.**

Building Permit needs to include:

- Plans showing**
 - System component Layout.**
 - System component Description.**
 - Design Details.**

Shop Drawings need to include:

- Floor plans, drawings and documents providing:**
 - All elements of the design for proper Implementation of smoke control.**
 - Sequence of Operation with Matrix.**
 - Analysis to demonstrate IBC compliance**
 - Bill of material.**
 - Items subject to Special Inspection and tests to verify final proper performance.**
 - Testing Methods and Procedure.**

Inspection need to include:

- Usual Construction, Mechanical, Electrical and Fire Protection**
- Special Inspection per IBC 1704.14**
- As further developed with the Inspection Division.**

IF TIME PERMITS

Typical Review Comments and Questions of Interest:

-See Review Comments Handout.

- Positive Alarm Sequence per NFPA 72.

**Not allowed by IBC, but assembly uses of 1000 or more
The voice alarm system may be manually interrupted
For up to 3 mins to allow live voice announcement
From an approved constantly attended location.**

TYPICAL REVIEW COMMENTS

Provide Engineer or NICET III stamped and signed plans.

Provide plans of 1/8 in. min scale

Provide square feet per level

Label all spaces on plans

Provide strobes in public and common areas

Provide candela ratings for strobes

Provide core area fire alarm equipment

Provide location of FACP, NACP or similar panels

Provide location of FAAP(s)

Provide location of Fire Command Center or Control Room

Provide location fire detection devices (Heat/Smoke)

Provide location of all Sprinkler Flow and Tamper Switches

Provide fire alarm riser diagram

Provide FAAP layout or layout incomplete/incorrect

Provide Submittal Books

Provide scope of work

Provide sequence of operations

Provide bill of material

Provide battery calc

Provide voltage drop calc

Provide Cut sheets for all equipment