WEST VIRGINIA
SECRETARY OF STATE
NATALIE E. TENNANT
ADMINISTRATIVE LAW DIVISION

Form #3

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OFFICE WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE
AND
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

AGENCY: WEST VIRGINIA STATE FIRE COMMISSION TITLE NUMBER: 87

CITE AUTHORITY: 29-3-5b

AMENDMENT TO AN EXISTING RULE: YES X NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 4

TITLE OF RULE BEING AMENDED: STATE BUILDING CODE

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: ____

TITLE OF RULE BEING PROPOSED: ____

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

James W Spears

Authorized Signature

WEST VIRGINIA

STATE BUILDING CODE

TITLE 87, SERIES 4

Rules
Of the West Virginia
State Fire Commission

Approved by Secretary, Department of Military Affairs and Public Safety

James W. Spears

James W. Spears

20 July 09

Date

Approved by State Fire Commission

Sterling Lewis, Jr.

7-20-09

Date

STATE FIRE COMMISSION
1207 Quarrier Street, 2nd Floor
Charleston, WV 25301

SUMMARY OF PROPOSED RULE

The West Virginia State Fire Commission promulgates the State Building Code in accordance with West Virginia Code, Chapter 29, Article 3, Section 5b, which references the International Building Codes.

STATE BUILDING CODE

STATEMENT OF CIRCUMSTANCES

The State Fire Commission promulgates the rules for the State Building Code for adoption and enforcement by the various local jurisdictions. The International Building Codes, as referenced in these rules, provides the latest changes to the nationally recognized model building codes. Adoption of these revised rules will permit construction in West Virginia to be completed under the latest technology and professional standards.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: State Building Code

Type of Rule: [X] Legislative [ ] Interpretive [ ] Procedural

Agency: State Fire Commission

Address: 1207 Quarrier Street, 2nd Floor

Charleston, WV 25301

Phone Number: (304) 558-2191 Email: Sterling.Lewis@wv.gov

Fiscal Note Summary

Summarize in a clear and concise manner what impact this measure will have on costs and revenues of state government.

The proposed rule will provide the State Fire Commission with updated technology on building safety procedures and requirements. The initial cost for filing the International Building Codes is $1170.66 for the cost of the code books from the International Code Council.

Fiscal Note Detail

Show over-all effect in Item 1 and 2 and, in Item 3, give an explanation of Breakdown by fiscal year, including long-range effect.

FISCAL YEAR			
Effect of Proposal	Current Increase/Decrease (use "-")	Next Increase/Decrease (use "-")	Fiscal Year (Upon Full Implementation)
1. Estimated Total Cost	1,170.66	0.00	0.00
Personal Services	0.00	0.00	0.00
Current Expenses	0.00	0.00	0.00
Repairs & Alterations	0.00	0.00	0.00
Assets	0.00	0.00	0.00
Other	1,170.66	0.00	0.00
2. Estimated Total Revenues			

Rule Title: _____

Rule Title: State Building Code

3. **Explanation of above estimates (including long-range effect):**
Please include any increase or decrease in fees in your estimated total revenues.

Non-applicable

MEMORANDUM

Please identify any areas of vagueness, technical defects, reasons the proposed rule **would not** have a fiscal impact, and/or any special issues **not** captured elsewhere on this form.

The use of this technology will provide the necessary building safety features for the improved safety in building construction. Requests for updating the code have been made by building officials, architects, business and industry.

Date: 13 May 09

Signature of Agency Head or Authorized Representative

James W. Spears

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2009 JUL 21 AM 11:17

OFFICE WEST VIRGINIA
SECRETARY OF STATE

TITLE 87
LEGISLATIVE RULE
STATE FIRE COMMISSION

SERIES 4
STATE BUILDING CODE

§87-4-1. General.

1.1. Scope -- This rule establishes the standards considered necessary by the State Fire Commission for the safeguarding of life and property and to ensure compliance with the minimum standards of safe construction of all structures erected or renovated throughout this state.

1.2. Authority. -- W. Va. Code 29-3-5b.

1.3. Filing Date. --

1.4. Effective Date. --

1.5. Incorporation of other Documents: This rule does not include a reprinting of all the requirements imposed by statute or by the incorporation of various nationally recognized standards and codes cited in Subsection 4.1 of this rule. For ascertaining these additional standards and requirements, it is necessary to make reference to the other documents.

§87-4-2. Definitions.

2.1. "ANSI" means "American National Standards Institute, 25 West 43rd St., Fourth Floor, New York, NY 10036.

2.2. "ASTM" means American Society of Testing and Materials.

2.3. "Fire Commission" - means the thirteen (13) appointed members of the West Virginia State Fire Commission.

2.4. "Fire marshal" - means the West Virginia State Fire Marshal and/or his or her designated representatives.

2.5. "Local jurisdiction" - means municipal or county level government.

2.6. "ICC" or "International" means "International Code Council", 5203 Leesburg Pike, Suite 600, Falls Church, Virginia 22041-3401.

2.7. "NFPA" means "National Fire Protection Association", 1 Batterymarch Park, P. O. Box 9101, Quincy, MA 02269-9101.

2.8. "State Building Code" - means the entire contents of this rule and the referenced national standards and codes.

2.9. "State Fire Code" means the entire contents of State Fire Commission, State Fire Code, 87CSR1, and the referenced standards and codes.

§87-4-3. Conflicts.

3.1. Whenever there is a conflict between the State Fire Code and the State Building Code, the State Fire Code takes precedence.

3.2. Whenever there is a conflict between the International Plumbing Code requirements of the State Building Code and the rules of the West Virginia State Department of Health and Human Resources, the rules of the Department of Health and Human Resources take precedence.

3.3. Whenever there is a conflict between the State Building Code and statutory laws of the State of West Virginia, the laws of the State of West Virginia take precedence.

§87-4-4. National Standards and Codes.

4.1 The standards and requirements as set out and as published by the International Code Council, and American National Standards Institute, and the National Fire Protection

Association as listed in this subsection, have the same force and effect as if set out verbatim in this rule.

4.1.1. The 2009 ~~2003~~ edition, International Building Code, First ~~Sixth~~ Printing, with the following exceptions:

4.1.1.A. Provided; that the section entitled "Fire Prevention" and identified as Section 101.4.5 ~~6~~ is deleted and not considered to be a part of this rule.

4.1.1.B. Further provided that the entire section entitled "Board of Appeals" and identified as Section 113 ~~112~~ is deleted and replaced with the following:

Section 113 ~~112~~ Board of Appeals

113~~112~~.3 Qualifications. The board of appeals shall consist of five members, with up to three alternates, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. They may include, but are not limited to, a WV Registered Professional Architect or Engineer, or a WV Licensed General Building, Residential, Electrical, Piping, Plumbing, Mechanical or Fire Protection Contractor, with at least 10 years experience, five of which shall be in responsible charge of work.

4.1.2. The 2009 ~~2003~~ edition of the International Plumbing Code, First ~~Fifth~~ Printing.

4.1.3. The 2009 ~~2003~~ edition of the International Mechanical Code, First ~~Fourth~~ Printing.

4.1.4. The 2009 ~~2003~~ edition of the International Fuel Gas Code, First ~~Fifth~~ Printing, with the following exception:

Section 404.10~~9~~ Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade. If the minimum depth cannot be maintained, the piping system shall be installed in conduit or shielded in an approved manner.

4.1.5. The 2009 ~~2003~~ edition of the International Property Maintenance Code, First ~~Second~~ Printing. This Code may be rejected at the option of the local jurisdiction.

4.1.5.A. This code may be adopted by the local jurisdiction without requiring adoption of the other national codes and standards listed in this section.

4.1.6. The 2009 ~~2003~~ edition of the International Energy Conservation Code, First ~~Fifth~~ Printing.

4.1.7. The 2009 ~~2003~~ edition of the International Residential Code for One and Two Family Dwellings, First ~~Seventh~~ Printing, with the following exceptions:

Section G2415.10~~9~~ (404.10~~9~~) Minimum Burial Depth. Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade. If the minimum depth cannot be maintained, the piping system shall be installed in conduit or shielded in an approved manner.

Section R303.6. ~~4.~~1 Light Activation – The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stairway without traversing any steps. The illumination of exterior stairways shall be controlled from inside the dwelling unit. Exceptions: 1. Lights that are continuously illuminated or automatically controlled. 2. Interior stairways consisting of less than three steps.

Section R 311.3.1~~4.3~~ Landings at doors – Where a stairway of two or fewer risers is located on the exterior side of a door, other that the required exit door, a landing is not required for the exterior side of the door.

Section R311.7.~~4.5.3~~ Stair Treads and Risers

311.7.4.1.~~5.3.1~~ Riser Heights – The maximum riser height shall be eight and one-quarter (8 ¼) inches.

311.7.4.2.~~5.3.2~~ Tread Depth – The minimum tread depth shall be nine (9) inches.

Section R403.1.7.1: Building Clearances From Ascending Scopes is not applicable to this rule.

Section R403.1.7.2~~1~~: Footings Setbacks From Descending Slope Surfaces is not applicable to this rule.

4.1.7.A. Chapter 11 of the 2003 edition of the International Residential Code for One and Two Family Dwellings, Seventh Printing, entitled "Energy Efficiency", is deleted and not considered to be a part of this rule. ~~In lieu thereof, the following standards are adopted and made a part of this rule:~~

~~Chapter 11~~
~~Energy Efficiency~~

~~Section N1101~~

~~N1101.1 Performance Objective~~

~~To provide cost effective, energy related requirements for design and construction of the building thermal envelope and heating ventilating air conditioning (HVAC) systems for one and two family dwellings.~~

~~N1101.2 Building Thermal Envelope~~

~~The minimum required installed R value or maximum required U value for all elements in the building thermal envelope (fenestration, roof/ceiling, opaque wall, floor, slab edge, crawl space wall, and basement wall) shall be determined by Table N1101, based on the building type and the climate zone where the building is located. Alternative compliance based on heat loss/gain calculations or systems analysis shall comply with Section N1101.~~

~~TABLE N1101PRESCRIPTIVE BUILDING ENVELOPE REQUIREMENTS~~

~~BUILDING LOCATION~~		~~MAXIMUM U-VALUE~~		~~MINIMUM INSULATION~~					
~~ZONE~~	~~HDD~~	~~FENESTRATION~~	~~ROOF/ CEILING~~	~~FRAME WALL S3~~	~~MASS WALL S~~	~~FLOOR OVER OUTDOOR AIR OR UNCONDITIONED SPACE~~	~~SLAB EDGE WIDTH/DEPTH~~	~~CRAWL SPACE WALL~~	~~BASEMENT WALL~~
~~1~~	~~0-1,499~~	~~ANY~~	~~R-19~~	~~R-11~~	~~R-4~~	~~R-11~~	~~R-0~~	~~R-0~~	~~R-0~~
~~2~~	~~1,500-2,999~~	~~0.90~~	~~R-22~~	~~R-13~~	~~R-5~~	~~R-13~~	~~R-0~~	~~R-4~~	~~R-0~~
~~3~~	~~3,000-3,999~~	~~0.75~~	~~R-26~~	~~R-13~~	~~R-6~~	~~R-13~~	~~R-4, 2 FT~~	~~R-5~~	~~R-0~~
~~4~~	~~4,000-4,999~~	~~0.65~~	~~R-26~~	~~R-13~~	~~R-7~~	~~R-13~~	~~R-4 2 FT~~	~~R-8~~	~~R-4~~
~~5~~	~~5,000-6,999~~	~~0.55~~	~~R-30~~	~~R-13~~	~~R-8~~	~~R-19~~	~~R-4, 2 FT~~	~~R-8~~	~~R-4~~
~~6~~	~~7,000-8,999~~	~~0.45~~	~~R-30~~	~~R-13~~	~~R-8~~	~~R-19~~	~~R-5, 2 FT.~~	~~R-8~~	~~R-8~~
~~7~~	~~9,000-12,999~~	~~0.40~~	~~R-38~~	~~R-19~~	~~R-14~~	~~R-19~~	~~R-8, 4 FT.~~	~~R-10~~	~~R-8~~

NOTES:

1. Building envelopes must also meet the air infiltration requirements of Section N1101.

2. Insulation materials shall be installed in accordance with the manufacturers instructions.

3. The sum of the R-values of cavity insulation and sheathing shall be used to determine the installed R-value.

4. For slabs that incorporate heating ducts or pipes in climates above 1,000 HDD, add R-2 to the table values.

5. The required R-value shall extend down to design frost depth in Zones 4 and 5, and down to the basement floor in zones 6 and 7.

N1101.3 Floors

N1101.3.1 Floors Over Outdoor Air or Unconditioned Areas – Floors over outdoor air or unconditioned areas shall meet the minimum R-value for Floor Over Outdoor Air or Unconditioned Space in Table N1101, based on the climate zone where the building is located.

N1101.3.2 Slabs on Ground – Slabs on ground, or slabs 12 inches or less below finished grade, shall meet the minimum R-value and depth/width dimension for Slab Edge in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied to the exterior or interior of the foundation wall. Exterior insulation shall extend downward from the top of the slab and/or horizontally outward until the distance indicated in Table N1101 is reached. Interior insulation shall extend from the top of the slab downward and/or horizontally inward until the distance indicated in Table N1101 is reached. All horizontal insulation extending outward from the slab shall be covered by at least 10 inches of soil. The top edge of insulation installed between the exterior wall and the interior slab shall be permitted to be cut at a 45° angle to allow the concrete surface to extend to the wall. Slab edge insulation shall not be required in areas of "very heavy" termite infestation probability, in accordance with the Termite Infestation Probability Map in Figure R-301.2 (6).

N1101.4 WALLS

N1101.4.1 Wall Insulation – Opaque walls and band joists exposed to outside air or to unconditioned space shall meet the minimum R-value for Frame Wall or Mass Wall in Table N1101, based on the wall type and the climate zone where the building is located. For Frame walls, the sum of the R-values of cavity insulation and insulated sheathing shall be used to determine the installed R-value. Walls exposed to unconditioned space shall have an R-value of R-13 when the minimum required R-value for the wall type in Table N1101 exceeds R-13.

N1101.4.2 Wood Frame Walls – Where insulated sheathing is used on wood frame walls in areas not otherwise required to have structural sheathing, the entire opaque wall shall be considered to be covered with the insulated sheathing for purposes of determining compliance with the minimum R-value for Frame Wall in Table N1101.

N1101.4.3 Steel Frame Walls – When steel framing is used, insulated sheathing with an R-value not less than R-2.5 in Zones 3 and 4 (3,000 – 4,999 HDD), R-5 in Zone 5 (5,000 – 6,999 HDD) and R-10 in Zones 6 and 7 (7,000 – 12,999 HDD) shall be installed in addition to the minimum required R-value for Frame Wall in Table N1101.

~~N1101.4.4 Mass Walls – Masonry or concrete walls having a mass greater than or equal to 30 pounds per cubic foot (pcf), solid wall walls having a mass greater than or equal to 20 pcf, and any other walls having a heat capacity greater than or equal to 6 Btu/ftY 2° shall be considered mass walls. Mass walls with exterior insulation or mass walls with integral insulation (insulation and mass mixed, such as log walls) shall be permitted to meet the Mass Wall criteria in Table N1101 based on the building type and the climate zone where the building is located. The R-value of mass walls with integral insulation shall be based on consideration of all elements of the wall assembly. Other mass walls shall meet the frame wall criteria for the building type and the climate zone where the building is located, based on the sum of the R-values of interior and exterior insulation.~~

~~N1101.4.5 Crawl Space Walls – All walls enclosing crawl spaces where the floor above the crawl space is not insulated in accordance with Table N1101 shall meet the minimum R-value for Crawl Space Wall in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied to the inside or outside of the crawl space wall. The insulation shall extend downward from the sill plate to the level of the inside ground surface.~~

~~N1101.4.6 Basement Walls – All basement walls enclosing conditioned space shall meet the minimum R-value for Basement Wall in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied on the inside or outside of the basement wall from the sill plate down to the design frost depth in Climate Zones 4 and 5, and to the basement floor in Zones 6 and 7. Buildings having basement walls with a maximum average exposure not greater than 12 inches above the adjacent grade, and having high efficiency equipment meeting the requirements specified in Table N1101.4.6 based on the climate zone where the building is located, are not required to meet the minimum R-value for Basement Wall in Table N1101. TABLE N1101.4.6~~

~~EQUIPMENT TRADE-OFF FOR BASEMENT WALL INSULATION~~

~~BUILDING LOCATION~~		~~GAS FURNACE WITH CENTRAL AIR CONDITIONING~~	~~AIR SOURCE HEAT PUMP~~
~~Zone~~	~~HDD~~	~~Minimum AFUE~~	~~Minimum HSPF~~
~~1-3~~	~~0-3,999~~	~~—~~	~~—~~
~~4-5~~	~~4,000 – 6,999~~	~~88~~	~~7.8~~
~~6-7~~	~~7,000 – 12,999~~	~~90~~	~~8.0~~

~~N1101.4.5 Masonry Veneer – When insulation is placed on the exterior of a slab edge, crawl space wall, or basement wall supporting masonry veneer, the horizontal surface supporting the veneer shall not be required to be insulated.~~

~~N1101.4.6 Protection of Foundation Insulation – Exposed insulating materials applied to the exterior of foundation walls shall be protected to prevent degradation of thermal performance. The protection shall extend at least 6 inches below finished grade. Plastic foam insulation used below grade shall comply with ASTM C578.~~

~~N1101.5 FENESTRATION~~

~~N1101.5.1 Labeling – The U-value of fenestration products (windows and glazed doors) shall be indicated on a label affixed to these products by the manufacturer or, where such values are not indicated, the U-value shall be determined in accordance with Table N1101.5.1.~~

~~TABLE N1101.5.1~~
~~ASSUMED U-VALUE FOR WINDOWS AND GLAZED DOORS~~

~~FRAME MATERIAL AND PRODUCT TYPE~~	~~SINGLE GLAZED~~	~~DOUBLE GLAZED~~
~~Metal Without Thermal Break~~	~~1.13~~	~~0.70~~
~~Metal with Thermal Break~~	~~1.07~~	~~0.63~~
~~Reinforced Vinyl/Metal Clad Wood/ Wood/Vinyl Fiberglass~~	~~0.90~~	~~0.55~~

~~N1101.5.2 Windows For elements within the building thermal envelope, up to 6 square feet of glazed areas is exempt from the maximum required U-value in Table N1101.5.1~~

~~N1101.5.3 Skylights Minimum skylight requirements will be as follows:~~

~~Zone 1 (0-1, 499 HDD): Any skylight is permitted.~~

~~Zones 2, 3 (1,500 3,999 HDD): Any double glazed skylight is permitted; and~~

~~Zones 4 and above (4,000 HDD and above): Any double glazed skylight with a wood, vinyl or fiberglass frame. Metal clad frames will be permitted.~~

~~N1101.5.4 Opaque Doors Opaque doors shall have a maximum U-value of 0.39 or minimum R-value of 2.5. When the U-value of the door is not provided by the manufacturer, it shall be determined in accordance with Table N1101.5.1. One opaque door per dwelling unit shall be permitted to be exempt from this U-value requirement.~~

~~TABLE N1101.5.4~~
~~ASSUMED R-VALUE FOR NON GLAZED DOORS~~

~~DOOR CONSTRUCTION~~	~~WITH FOAM CORE~~	~~WITHOUT FOAM CORE~~
~~Steel Doors (1 ¾ inches thick)~~	~~0.35~~	~~0.60~~
~~Wood Doors (1 ¾ inches thick)~~	~~Without Storm Door~~	~~With Storm Door~~
~~Panel~~ ~~Hollowcore flush~~ ~~Solid core flush~~	~~0.54~~ ~~0.46~~ ~~0.40~~	~~0.36~~ ~~0.32~~ ~~0.26~~

~~N1101.6 ROOFS AND CEILINGS~~
~~Roof/ceiling assemblies, including ceilings below unconditioned attics and cathedral ceilings, shall meet the minimum R-value for Roof/Ceiling in Table N1101, based on the climate zone where the building is located. Insulation can be compressed or reduced at eaves to accommodate roof framing or ventilation.~~

~~Exception: R-30 shall be required for cathedral ceilings whenever the required R-value for Roof/Ceiling in Table N1101 exceeds R-30.~~

~~N1102 MOISTURE CONTROL~~
~~In all framed walls, floors and roof/ceilings comprising elements of the building thermal envelope, an approved vapor retarder having a maximum rating of 1.0 perm shall be installed on the warm in winter side of the insulation.~~

~~Exception:~~

~~1. Where the insulated cavity of space is ventilated to allow moisture to escape.~~

~~2. In hot and humid climate areas.~~

~~N1103 AIR INFILTRATION~~

~~The building envelope shall be designed and constructed to limit air infiltration to the conditioned area of the dwelling. All elements comprising the building thermal envelope, including all exterior joints, seams, or penetrations, shall be caulked, gasketed, taped or covered with moisture vapor permeable sheathing paper or house wrap on the exterior. All windows and doors installed in the building thermal envelope shall be weatherstripped, gasketed, or caulked.~~

~~N1104 HVAC SYSTEMS~~

~~N1104.1 HVAC AND WATER HEATING APPLIANCES~~

~~HVAC and service water heating appliances shall be labeled as complying with minimum efficiency requirements specified by the National Appliance Energy Conservation Act of 1987 and regulations adopted thereunder by the U.S. Department of Energy.~~

~~N1104.2 CONTROLS~~

~~Each heating, cooling, or combination heating and cooling system shall be provided with at least one adjustable thermostat for the regulation of temperature.~~

~~N1104.3 AIR HANDLING DUCT SYSTEM~~

~~N1104.3.1 DUCT SEALING All supply and return ducts located outside the building thermal envelope shall have joints sealed with gaskets, mastics, tapes installed in accordance with the manufacturers instructions, or by other approved methods.~~

~~N1104.3.2 DUCT INSULATION Minimum required duct insulation for all supply and return ducts located in unconditioned space shall be R-5 in all climatic zones.~~

~~N1104.4 HEATING AND COOLING PIPING INSULATION~~

~~All HVAC system piping carrying fluids with a temperature less than 55°F or greater than 120°F shall have minimum insulation thickness of ½ inch.~~

~~N1105 ALTERNATIVE COMPLIANCE~~

~~N1105.1 HEAT GAIN/HEAT LOSS CALCULATIONS~~

~~Alternative compliance with the requirements of Table N1101 shall be permitted to be determined through a heat gain or heat loss calculation as follows: the required R-value or U-value of an element in the building thermal envelope in Table N1101 may be increased or decreased, provided the total heat gain or loss for the entire building does not exceed the total resulting from conformance to the values specified in Table N1101.~~

~~N1105.2 SYSTEMS ANALYSIS~~

~~Alternative compliance with the requirements of this chapter shall be permitted to be determined through the use of a systems analysis using a standard design in accordance with Table N1101, and Section N1104.~~

~~A proposed design complies with this chapter if it has a projected annual energy use for heating, cooling and service water heating not greater than the energy use of the standard design, calculated in accordance with accepted engineering practices. Energy use for both homes shall be calculated based on the same assumptions and building location. The standard design shall have the same floor area, envelope component areas, building orientation, glazing orientation, door areas, and building geometry as the proposed design.~~

4.1.8. The 2003 ICC/ANSI A117.1 American National Standards for Accessibility & Usable Buildings & Facilities, First Printing.

4.1.9. The 2009 ~~2003~~ International Existing Building Code, First ~~Third~~ Printing, with the following exception:

4.1.9.A. Omit reference to International Fire Code and substitute NFPA Life Safety Code 2009 ~~2003~~ Edition.

4.1.10 The 2008 ~~2005~~ edition of the National Electric Code, NFPA 70.

§87-4-5. Exceptions.

The following structures are not subject to inspection by local jurisdictions:

Group U utility structures and storage sheds comprising an area not more than 150 sq. ft. which have no plumbing or electrical connections and are used only for residential storage purposes. (Examples include sheds that are for the residential storage of lawnmowers, tools, bicycles or furniture.) Not included are those utility structures and storage sheds which have plumbing or electrical connections are a non-residential use or for the storage of explosives or other hazardous or explosive materials.

§87-4-6. Availability of Code Books.

A copy of the codes listed in Subsection 4.1 of this rule have been filed with the Secretary of State. These code books, collectively or separately, may be obtained by contacting the International Code Council, 4051 West Flossmoor Road, Country Club Hills, Illinois 60478-5795, 1-888-422-7233, or the ICC Store, 1-800-786-4452.

§87-4-7. Adoption by Local Jurisdiction.

7.1. Each local jurisdiction adopting the State Building Code shall notify the State Fire Commission in writing. The local jurisdiction shall send a copy of the ordinance or order to the State Fire Marshal, West Virginia State Fire Commission, 1207 Quarrier Street, 2nd floor, Charleston, West Virginia 25301, within thirty (30) days of adoption.

7.2. Each local jurisdiction which adopts the State Building Code is responsible for the enforcement of the building code as provided in West Virginia Code 7-1-3n and 8-12-13.

7.3. Throughout the national codes, adopted in subsection 4.1 of this rule, there are discretionary provisions or amendments which require further action by the adopting local jurisdiction in order to adapt these codes to various local conditions. The appendices are not a part of the code and must also be adopted by the local jurisdiction to be enforceable. It is therefore the intent of this rule to further authorize each local jurisdiction to further complete, by order or ordinance, those respective areas which are indicated to be completed by the adopting "jurisdiction" and any of the appendices the local jurisdiction wishes to adopt.

7.4. Within the penalty sections of each of the national codes, adopted in Section 4.1 of this rule, there is a penalty for imprisonment. The provision of imprisonment for any violation of this rule is optional with each adopting local jurisdiction.

7.5. Each of the national codes adopted in subsection 4.1 of this rule provides for a separate appeals board. However, the intent and requirements for an appeal board may be met with the creation by the local jurisdiction of a single appeals board for the entire "State Building Code."

§87-4-8. Existing Building Codes.

8.1. All building codes which have been adopted by local jurisdictions prior to the passage of West Virginia Code 29-3-5b, in 1988, are null and void.

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period; Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: July 21, 2009

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (*Agency Name, Address & Phone No.*) State Fire Commission
1207 Quarrier Street, 2nd Floor
Charleston, West Virginia 25301

LEGISLATIVE RULE TITLE: State Building Code

1. Authorizing statute(s) citation 29-3-5b

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:

   May 14, 2009

   b. What other notice, including advertising, did you give of the hearing?

   Sent to various state newspapers (See Attached)

   Agency Website

   c. Date of Public Hearing(s) ***or*** Public Comment Period ended:

   June 16 2009

   d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

   Attached XX No comments received _____

e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)

July 21, 2009

f. **Name, title, address and phone/fax/e-mail numbers** of agency person(s) to receive all *written correspondence* regarding this rule: (Please type)

Sterling Lewis, Jr. State Fire Marshal 558-2191/
558-2537/Sterling.Lewis@wv.gov
Joe Leake Deputy Fire Marshal 558-2191 / 558-2537/Clarence.J.Leake@wv.gov
Tony Carrico Deputy Fire Marshal 558-2191 / Anthony.W.Carrico@wv.gov

g. **IF DIFFERENT FROM ITEM 'f'**, please give **Name, title, address and phone number(s)** of agency person(s) who wrote and/or has responsibility for the contents of this rule: (Please type)

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

b. Date of hearing or comment period:

_____

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

_____

d. Attach findings and determinations and reasons:

Attached _____

The State Fire Commission will hold two public meetings on June 16, 2009. The first meeting convenes at 10:00 AM dealing with the adoption of the 2009 National Fire Codes. The second meeting convenes at 1:00 PM dealing with the adoption of the 2009 ICC Codes (International Building Code, International Residential Code and others currently in effect). The meeting location is the State Fire Marshal's Office at 1207 Quarrier Street 2nd Floor, Charleston, West Virginia.

Public comment period (written comments) for the adoption of both the 2009 National Fire Codes and 2009 ICC Codes (International Building Code, International Residential Code and others currently in effect) ends at 4:00 PM on June 16, 2009.

All interested parties are encouraged to attend. A Court Reporter will be present and comments will be accepted in written format.

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

West Virginia Daily News
P. O. Box 471
Lewisburg, WV 24901-0471

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Shepherdstown Chronicle
P. O. Box 2088
Shepherdstown, WV 25443

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Parkersburg Sentinel
P. O. Box 1787
Parkersburg, WV 26101

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Times-West Virginian
P. O. Box 2530
Fairmont, WV 26555

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Weirton Daily Times
114 Lee Avenue
Weirton, WV 26062

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Wheeling News-Register
1500 Main Street
Wheeling, WV 26003

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Herald Dispatch
P. O. Box 2017
Huntington, WV 25720

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Register Herald
P. O. Box P or R
Beckley, WV 25801

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Clarksburg Telegram
324 Hewes Avenue
Clarksburg, WV 26301-2744

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Dominion Post
1251 Earl Core Road
Morgantown, WV 26505-6298

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Charleston Gazette
1001 Virginia St. East
Charleston, WV 25301

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Inter-Mountain
P. O. Box 1339
Elkins, WV 26241

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Bluefield Daily Telegraph
P. O. Box 1599
Bluefield, WV 24701

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Pocahontas Times
810 Second Avenue
Marlinton, WV 24954

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

The Moorefield Examiner
P. O. Box 380
Moorefield, WV 26836

STATE FIRE COMMISSION
State Fire Marshal
1207 Quarrier Street, Second Floor
Charleston, West Virginia 25301

Mineral Daily News-Tribune
P. O. Box 879
Keyser, WV 26726

REGISTRATION OF PUBLIC AT BUILDING CODE PUBLIC HEARING

(PLEASE PRINT CLEARLY)

JUNE 16, 2009 1:00 PM

1207 QUARRIER STREET, CHAS, WV

NAME	MAILING ADDRESS OR EMAIL ADDRESS	REPRESENTING	DO YOU WISH TO SPEAK? YES OR NO
Bob Cannon	RLCannon@becrly.org	City of Beckley - Raleigh Co - WVCOA	Yes ~~No~~ ✓
Jack Jamison	JACKJAMISONJR@COMCAST.NET	WVIAEI	?
Paul W Linger	1205 Fleming Ave Fairmont WV 26554	WVIAEI	?
TED A. SHRIVER	717 BIGLET AVE. CHAS, WV 25302	WV ARCHITECTS	NO
BOB TALBOTT	3601 7TH AVE	BROWER & CO	~~YES~~
Ron Brown	1615 Cypress Spring Ft. Wayne IN 46814	NFSA	YES ✓
Mike Reel	406 Williams Ave Williamstown WV 26187	WVAHI	NO
Don Peace	dpeace@unityelectrical.com	LEGRAND	NO
Ron Lord	RLord@IAPMO.org	IAPMO	~~NO~~ YES ✓
Jeff Herholdt	jherholdt@energywv.org	Division of Energy	Yes ✓
Kelly A. Bragg	kbragg@energywv.org	WVDOE	No
KEN TYREE	kentyree@charlestonfire.com		Yes ✓
CAROL NOLTE	Carol.E.Nolte@wv.gov		No
Chuck Anderson	canderson@aamanet.org		YES ✓
Beth Thomasson	HBAWV		NO
FRED BLACKMER			YES ✓
Fred Mcdowell	WVHBA		NO
David Vanden	WVHBA		NO
Bryan C. Casto	WVSFMO		N
Chris Ilaridi	Home Bldrs		Yes ✓
Rudy Raynes	WVSFMO		No
Tim Cunningham	Home Bldrs		Yes ✓
Kevin Roberts	Home Bldrs		Yes ✓

REGISTRATION OF PUBLIC AT
FIRE CODE PUBLIC HEARING
(PLEASE PRINT CLEARLY)

JUNE 16, 2009 10:00 AM

1207 QUARRIER STREET, CHAS, WV

NAME	MAILING ADDRESS OR EMAIL ADDRESS	REPRESENTING	DO YOU WISH TO SPEAK? YES OR NO
Beyan C. Casto	Beyan.C.Casto@wv.gov	WVSFMO	No

REGISTRATION OF PUBLIC AT BUILDING CODE PUBLIC HEARING

(PLEASE PRINT CLEARLY)

JUNE 16, 2009 1:00 PM

1207 QUARRIER STREET, CHAS, WV

NAME	MAILING ADDRESS OR EMAIL ADDRESS	REPRESENTING	DO YOU WISH TO SPEAK? YES OR NO
Bob Cannon	RLCANNON@BECKLY.ORG	[illegible] CO — WVCOA	Yes ~~NO~~ ✓
JACK JAMISON	JACK JAMISON JR @ COMCAST.NET	WVIAEI	?
Paul W Linger	1205 Fleury Ave Fairmont WV 26554	WVIAEI	?
TED A. SHRIVER	717 BIGLEY AVE. CHAS, WV 25302	WV ARCHITECTS	NO
BOB TALBOTT	3601 7TH AVE	BROWER & CO	~~YES~~
Ron Brown	1615 CYPRESS SPRING Ft Wayne IN 46814	NFSA	YES ✓
Mike Reel	406 Williams Ave Williamstown WV 26187	WVAHI	NO
DON PEARE	dpeare@unityelectrical.com	LEGRAND	NO
Ron Lord	RLord@IAPMO.org	IAPMO	~~NO~~ YES ✓
Jeff Herholdt	jherholdt@energywv.org	Division of Energy	Yes ✓
Kelly A. Bragg	kbragg@energywv.org	WVDOE	No
KEN TYREE	ken.tyree@charlestonfire.com		Yes ✓
CAROL NOLTE	Carol.E.Nolte@wv.gov		No
Chuck Anderson	canderson@aamanet.org		YES ✓
Beth Thomasson	HBAWV		NO
FRED BLACKMER			YES ✓
Phil McDonald	WVHBA		NO
David Vanish	WVHBA		NO
Bryan C. Casto	WVSFMO		N
Chris Ilaridi	Home Bldrs		Yes ✓
Rudy Raynes	WVSFMO		No
Tim Cunningham	Home Bldrs		Yes ✓
Kevin Roberts	Home Bldrs		Yes ✓

REGISTRATION OF PUBLIC AT FIRE CODE PUBLIC HEARING

(PLEASE PRINT CLEARLY)

JUNE 16, 2009 10:00 AM

1207 QUARRIER STREET, CHAS, WV

NAME	MAILING ADDRESS OR EMAIL ADDRESS	REPRESENTING	DO YOU WISH TO SPEAK? YES OR NO
Bryan C. Casto	Bryan.C.Casto@wv.gov	WVSFMO	No

STATE BUILDING CODE COMMENTS

1. JOHN HERHOLDT – WV DIVISION OF ENERGY
2. FRED BLACKMER – EASTERN PANHANDLE HOMEBUILDERS
3. BETH THOMASSON/DAVID VANHORN – WV HOMEBUILDERS
4. RON BROWN – NATIONAL FIRE SPRINKLER ASSOC.
5. CHUCK ANDERSON – AMERICAN ARCHITECTURAL MANUFACTURERS ASSOC.
6. ERIC LACEY – RECA
7. JAMES WILLIAMS – MARION COUNTY BOARD OF EDUCATION
8. PAUL LINGER – MARION COUNTY BOARD OF EDUCATION
9. KEN TYREE – WV FIRE MARSHALS ASSOC.
10. COREY ROBLEE – ICC
11. BOB CANNON – WV CODE OFFICIALS
12. JACK JAMISON – MEGCO INSPECTIONS
13. JOHN KRICHBAUM – AMERICAN BURN ASSOC.
14. BERKELEY COUNTY COMMISSION
15. BEN ROY – NFPA
16. JACK JAMESON – IAEI
17. ANDREI MOLDOVEANU – NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
18. CHRIS ILARDI – WV HOMEBUILDERS

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. John F. "Jeff" Herholdt Jr. Director
West Virginia Department of Energy
Capitol Complex, Building 6, Room 645
Charleston, WV 25305-0311

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Herholdt:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the 2009 IECC by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

Joe Manchin III
Governor

Kelley Goes
Secretary, WV Department of Commerce

WEST VIRGINIA DIVISION OF
ENERGY

Jeff Herholdt
Director

June 11, 2009

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

W.Va. Fire Marshal Sterling Lewis Jr.
West Virginia State Fire Commission
1207 Quarrier St., 2nd Floor
Charleston, WV 25301

The West Virginia Division of Energy is responsible for fossil, renewable and energy efficiency resource development and energy services to businesses, communities and homeowners in West Virginia.

Under its mission to advance energy efficiency in West Virginia, the division supports the West Virginia Fire Commission's proposed amendment to the West Virginia State Building Code, Title 87, Series 4, as filed with the West Virginia Secretary of State's Office.

The rule establishes the standards considered necessary by the State Fire Commission for the safeguarding of life and property and to ensure compliance with the minimum standards of safe construction of all structures erected or renovated throughout the state. As amended, the rule includes the 2009 edition of the International Energy Conservation Code, First Printing, referenced below as the 2009 IECC. The amendment also strikes a less stringent (in terms of energy efficiency) prescriptive chart that exists in the state's current building code.

Energy efficiency translates into cost savings for W.Va. homeowners. The most cost-effective way to incorporate energy-saving methods is during construction. In terms of energy efficiency, West Virginia's current residential energy code is older or less stringent than the 1998 IECC, according to the U.S. Department of Energy. On the commercial side, the state's energy code is equivalent to ASHRAE 90.1-2001/2003 IECC. The 2009 IECC is 15 percent more energy efficient than its predecessors from 2006 and 2003.

The 2009 IECC requires ceiling insulation of 12 inches (R-38); crawl space and basement wall insulation of 3 or 4 inches; a window U-factor of 0.35 (ENERGY STAR windows are 0.35 or less in West Virginia's two climate zones); and wall insulation of 4 inches or 4 inches plus one inch of sheathing, depending upon climate zone. These are minimum energy efficiency standards.

During the 2009 session of the West Virginia Legislature, the body passed and the governor approved House Bill 2976:

> §29-3-5b. Promulgation of rules and statewide building code:
> (c) The State Fire Commission shall propose a rule for legislative approval in accordance with the provisions of article three, chapter twenty-nine-a of this code to include the following building energy codes in the State Building Code:
> (1) The 2009 edition of the International Energy Conservation Code for residential buildings or other building energy code or codes for residential buildings that meets or exceeds equivalent energy savings; and
> (2) The ANSI/ASHRAE/IESNA Standard 90.1 2007 building energy code for commercial buildings or other building energy code or codes for commercial buildings that meets or exceeds equivalent energy savings.

The American Recovery and Reinvestment Act (ARRA and also known as the stimulus), directed:

> The State, or the applicable units of local government that have authority to adopt building codes, will implement the following:
> A building energy code (or codes) for residential buildings that meets or exceeds the most recently published International Energy Conservation Code, or achieves equivalent or greater energy savings
> A building energy code (or codes) for commercial buildings throughout the State that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007, or achieves equivalent or greater energy savings.

Adoption of the commission's proposed amendment will meet these directives of the ARRA. As a result, West Virginia is initiating investments to improve the energy efficiency of state and local government facilities, reducing the cost of government to West Virginia taxpayers. These investments would not have been possible without ARRA support.

Advancing energy codes in West Virginia to the most current code does more than meet requirements to release federal funds to the state. The energy-saving building practices of the 2009 IECC will lower annual energy costs to new homeowners and help protect West Virginians from future energy cost increases. As building practices evolve, energy codes are changed and improved, offering West Virginians even more energy and cost savings.

The West Virginia Division of Energy is committed to easing the transition to improved energy codes and is prepared to provide increased training opportunities as well as to facilitate any local concerns.

The West Virginia Division of Energy supports the amendment to the state building code as proposed by the West Virginia Fire Commission.

Sincerely,

John F. "Jeff" Herholdt Jr., director
West Virginia Division of Energy

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Fred Blackmer
Eastern Panhandle Homebuilders Association
Director of Government Affairs
2220 Washington Street East, Suite 1
Charleston, WV 25311

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Blackmer:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interests in the Building Codes specifically your request to exclude the 2009 IRC requirement for mandatory sprinklers in one and two family dwellings and manufactured homes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

HOME BUILDERS ASSOCIATION OF WEST VIRGINIA

A MEMBER OF THE NATIONAL ASSOCIATION OF HOME BUILDERS

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

2220 Washington Street East, Suite 1 • Charleston, WV 25311 • Phone (304) 342-5176 • Fax (304) 342-5177
Web Site: www.hbawv.org E-Mail: bthomasson@hbawv.org

President
David W. VanHorn

First Vice President
Fred H. McDonald

Second Vice President
Jacob S. Meck

Associate Vice President
David N. Fleming

Secretary
Katy M. Fidler

Treasurer
Robert W. Ritenour

Associate Treasurer
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State Representative
John G. Brumley

National Director
Fred H. McDonald

Alternate National Director
Alan D. Baker

Associate Member Director
Carl D. York

Alternate Associate Member Director
Thomas H. Board II

General Counsel
William F. Richmond, Jr.

Subject: Mandatory Sprinklers in One and Two Family Dwellings and Manufactured Homes.

West Virginia is in the process of updating current building code requirements. This involves adopting various dated code versions. The latest IRC code version (2009) includes mandatory sprinkled fire suppression systems for one and two family residential homes. Manufactured homes are also included. I am here on behalf of the Homebuilders Association of West Virginia asking that this particular requirement be excluded from any future enactment. There are three areas that support exemption.

1. Economic impact on one and two family structures.
2. Actual health and benefit to West Virginia residents.
3. Special interest groups that quite literally hijacked the issue from code officials.

Sprinkler systems have been used in fire suppression for decades. Their effectiveness in commercial and high density residential applications has had some demonstrated positive benefit. One and two family home applications do not have that same measurable track record. There are some simple basic facts to consider.

Economics cannot be the basis to support requiring these systems. Residential sprinkler systems have estimated absolute costs from $2000 to $16,000 dollars. Evidence of overall home ownership dollar savings from the installation of these systems doesn't seem to be readily available. The single biggest purported saving is insurance credit when these systems are installed. That credit is small in real dollars. Studies have indicated that a 2 to 10 percent insurance credit may be available. These same statistical studies find that even a 10 percent credit would require 35 years to recover initial cost.

West Virginia has limited public water utilities. This factor is key in the affordability and effectiveness of a home sprinkler system. Without public water sources the cost of these systems becomes prohibitive. Additional storage tanks, pumps and control hardware to meet a one size fits all standard can carry staggering cost.

Our state has prided itself on home ownership. When thousands of dollars are added to what could have been an affordable home, one more family has been denied experiencing that pride of ownership.

Areas of health and benefit to West Virginia residents fares no better than economic issues. The Center for Disease Control (CDC) published fire and death statistics for 2006. This report had two very significant findings. First, the number of residential house fires (412,500) and deaths (2,580). That represented a mortality rate of six tenths of one percent resulting from house fires. Second, the report went on to say that "most victims of fires die from smoke or toxic gases and not from burns". There can be no doubt that smoke and CO2 detectors are the front line in saving lives during family home fires. Early warning and escape from the residential structure is key to survival. Virtually all organizations that talk about the value of sprinkler systems state that they should only be used in addition to smoke and CO2 detectors. Sprinklers may provide some added protection in rare circumstances. Detectors have "stand alone" life saving impact. They identify a specific danger, are inexpensive and easily maintained. That can't be said for single-family residential sprinkler systems.

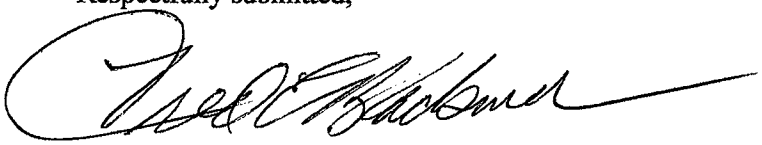
This issue has been debated for several years by the International Code Council (ICC), the body that recommends standards and changes to building codes. The ICC has a membership drawing from many interests. Government Code inspectors, private inspectors, safety experts, professional fire fighters and building trades people bring the balance needed for informed decisions. This gathering of professionals discusses multiple issues. They form consensus based on multiple views with a cross section representation of the building industry and regulators. The September 2008 ICC meeting was an exception.

Manufactures, installers and fire officials created a coalition. They conducted a multi million dollar campaign to control and prevail on this single issue. The campaign wasn't about advertising and issue research. It wasn't about winning a factual debate. It wasn't about bringing experts to participate in the entire code conference. The campaign focused on covering travel expenses for fire fighters and other supporters to attend a single hearing and vote in favor of sprinkler mandates. Fire departments across the country were able to join the ICC and designate a large roster of new voters. New one time voters overwhelmed the process. The smoking gun was found when hundreds of participants left the week long conference immediately following that single vote.

Building Codes and regulators are designated to protect the public. They are not in place to bend to the whim of manufacturing and service businesses. Abuse of a regulatory system should not be tolerated at any level. The very way this particular provision was enacted should raise warning flags. When these tactics are needed by business and industry, the merit of their position has to be questioned.

Consideration of benefit, cost and effectiveness of single family residential sprinklers should be the primary issue when granting this exemption. If there is any doubt as to the truth in conflicting statements, look to the methods that were used to force the issue before you. If there were a legitimate need or benefit for every home to have these devices, the public would demand them. Supporters of this sprinkler provision chose not to debate but to mandate.

Respectfully submitted,



Fred Blackmer
Eastern Panhandle Homebuilders Association
Director of Government Affairs
304 725 6754
fredblackmer@aol.com

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. David W. VanHorn, President
Home Builders Association of West Virginia
2220 Washington Street East, Suite 1
Charleston, WV 25311

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. VanHorn:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interests in the Building Codes specifically your request to exclude the 2009 IRC requirement for mandatory sprinklers in one and two family dwellings and manufactured homes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Beth Thomasson, Executive Officer
Home Builders Association of West Virginia
2220 Washington Street East, Suite 1
Charleston, WV 25311

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. VanHorn:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interests in the Building Codes specifically your request to exclude the 2009 IRC requirement for mandatory sprinklers in one and two family dwellings and manufactured homes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

HOME BUILDERS ASSOCIATION OF WEST VIRGINIA

A MEMBER OF THE NATIONAL ASSOCIATION OF HOME BUILDERS

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Inspection Division

2220 Washington Street East, Suite 1 • Charleston, WV 25311 • Phone (304) 342-5176 • Fax (304) 342-5177
Web Site: www.hbawv.org E-Mail: bthomasson@hbawv.org

President
David W. VanHorn

First Vice President
Fred H. McDonald

Second Vice President
Jacob S. Meck

Associate Vice President
David N. Fleming

Secretary
Katy M. Fidler

Treasurer
Robert W. Ritenour

Associate Treasurer
Carl D. York

State Representative
John G. Brumley

National Director
Fred H. McDonald

Alternate National Director
Alan D. Baker

Associate Member Director
Carl D. York

Alternate Associate
Member Director
Thomas H. Board II

General Counsel
William F. Richmond, Jr.

WHEREAS, Residential fire suppression systems have been shown to reduce property damage in some instances; and

WHEREAS, Passive fire suppression systems have been shown to be effective in commercial and multi unit residential settings; and

WHEREAS, the cost benefit of systems is proportionate to the threat, and declines as the number of residences served in a single structure is reduced; and

WHEREAS, Technology of current system hardware requires continuing maintenance and inspection to sustain effectiveness and benefit; and

WHEREAS, Inspection and maintenance causes continuing legacy cost to homeowners; and

WHEREAS, the system cost is fixed and will be born disproportionately by workforce homebuyers; and

WHEREAS, the level of personal and family protection each individual homeowner requires and cost of that protection should be an individual choice;

BE IT RESOLVED, the Home Builders Association of West Virginia opposes mandatory installation of fire suppression systems in single-family residential detached structures. We support the availability and inspection of all installations to ensure the individual homeowners receive the level of protection they desire.

Unanimously adopted by the WV Home Builders Association Board of Directors at its meeting April 21, 2007.

ATTEST:

Beth Thomasson
Executive Officer

David W. VanHorn
President

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Ron Brown
National Fire Protection Association
40 Jon Barrett Road
Patterson, New York 12563

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Brown:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the 2009 IRC by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

NFSA
The Voice of the Fire Sprinkler Industry

40 JON BARRETT ROAD • PATTERSON, NEW YORK 12563 • (845) 878-4200 • FAX (845) 878-4215
E-MAIL: INFO@NFSA.ORG • WEBSITE: HTTP://WWW.NFSA.ORG

June 16, 2009

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

State of West Virginia Fire Commission
1207 Quarrier St.
Charleston West Virginia 25301

Dear Commissioners and Other State Officials:

At the opening of this letter let me clearly state that the National Fire Sprinkler Association (NFSA) supports the State of West Virginia's un-amended adoption of the 2009 International Residential Code. Of particular interest to the member contractors of NFSA is the residential sprinkler requirement, R313.1, R313.2 and P2904 of the code. As we know the International Residential Code like all model codes is assumed to be the national minimum requirement for the construction of a safe and structurally sound one and two family dwelling by today's standards. The requirement for the inclusion of a residential sprinkler system is now found as a minimum fire safety component requirement in both the National Fire Protection Association (NFPA) and the International Code Councils (IRC 2009) national model codes.

The residential fire sprinkler requirement found in the codes is about saving lives. Current NFPA data indicates on average there are approximately 2,800 lives per year lost to fire in residential structures. In fact the United States is among the worst of the world's industrialized nations when it comes to civilian deaths and injury in residential fires. There is also on average 100 firefighters killed in the line of duty each year approximately 25% of those are lost while fighting fires involving residential structures. According to 2007 National Fire Incident Reporting statistics West Virginia reported 64 civilian and 5 firefighter's deaths. This data has been somewhat constant over the past several years and places West Virginia in the top 25% of our nation's worst in terms of the number of citizens lost to fire. The number of civilians and firefighter's deaths and injuries in West Virginia and in our nation is unacceptable.

The fire service has known for some time that fire sprinklers are the answer to significantly reduce these tragic fire losses. The Federal Department of Homeland Security, the Federal Emergency Management Agency, the United States Fire Administration and virtually every national fire service organization has called for and issued letters of support for fire sprinklers as a minimum safety component in new one and two family residential construction. Included among these organizations is the International Association of Fire Chiefs the International Association of Fire Fighters the Fire Inspectors Association, The National Volunteer Fire Council and many others.

You will hear and read many facts, figures and much data both in support and in opposition to the value of residential fire sprinklers. There is much data, facts and figures out there both accurate and inaccurate about residential fire sprinklers. I ask you as you review this data that you keep in mind, all of this information has already been thoroughly reviewed at the right place, official national code meetings and by the right people, building contractors, as well as building professionals and fire officials and based upon their review and professional opinions they voted by an overwhelming 72% in support of including the residential fire sprinkler requirement as a minimum life safety component in the residential building code.

During the course of your deliberation you will hear that a newly constructed home is less likely to burn than an older home. The fact is the home is not the problem, men, women and children are the leading cause of fire and the contents of the home more often than not becomes the fuel for the fire before the structure is ever involved. More often than not the structure becomes the container within contents burn. Unfortunately when new homes do become involved in fire they are now recognized as far less safe for firefighters because many new homes are constructed of engineered structural members that are by design much stronger than standard lumber but under fire conditions fail much quicker and become a death trap for firefighters upon arrival at an involved residential structure. The other point to be made here is that even if the theory that new homes don't burn were correct (it is not) then if all goes well that new home will at some time in its history be considered an older home and as a result of this code would then be properly protected (fire sprinklers) when it qualifies to be referred to as an old home.

You will also be told that interconnected smoke alarms have been required for many years and have proven to be very successful in reducing the number of lives lost to fire and are therefore all that is needed for fire safety in a residential structure. It is true smoke alarms have been very successful in significantly reducing the number of lives lost to fire over the past 25 years. However as noted above there are still an unacceptable number of civilian lives lost to fire in residential settings each year. The fact is smoke alarms provide notification of fire but they do nothing to aid in evacuation or increase the time for safe exit from the home. As a result children, elderly, disabled and impaired individuals become the most likely victims of residential fires. The residential fire sprinkler system installed in accordance with NFPA 13D is designed to provide a minimum 10 minutes of fire control (two heads discharging) to allow adequate time for structural evacuation. NFPA 13D is a life safety designed system not a property saving system. Having said that hundreds of tests and actual activation data demonstrate the system will control or extinguish a residential fire 90% of the time. Remember smoke inhalation is the killer of civilians in residential setting approximately 75% of the time. Sprinklers STOP smoke production while smoke alarms alone cannot. When a home is constructed with a combination of interconnected smoke alarms and fire sprinklers the residents have an 84% chance of survival if fire strikes. We would not think of buying a new car with seatbelts or airbags only we build and buy them with the combination of both because this is the combination that maximizes automobile safety. The same principal applies in the residential stetting.

You will hear water supply is a problem in fact it is not. If a home is on a well or a water main makes no difference the system is designed around the available water supply. The average cost of installation in $1.61 per sq. ft. and in a competitive environment some systems are being installed for less than one dollar a sq. ft. or about 1.3% of the construction cost.

The systems are reliable and very low maintenance. Sprinkler head failure is 1 in 16 million and the likelihood of a plumbing failure is no greater than any other domestic water pipes found in the residential setting. If a sprinkler head opens it flows from 12 to 15 gallons of water per minute on a fire. This compared to 95 to 125 gallons per minute from a firefighting 1 ¾ inch hose line. Data indicates sprinkler activated fire control and water damage is far less than a fire which requires firefighting tactical intervention.

Residential fire sprinklers are a GREEN (environmentally friendly) construction component in that they save property and the environment from the loss of natural resources, limit smoke emitted to the atmosphere in a fire scenario, they significantly reduce the amount of waste material that go the landfill should the property experience a fire and finally sprinklers reduce the amount of water consumed during fire control activities.

There is much more that could and should be said but this is not the time nor method to provide a through education as to how residential fire sprinklers are installed, how they work or to attempt to dispel untrue myths such as when one sprinkler activates they all activate (not true they activate one at a time with two heads typically controlling a residential fire 90% of the time), or sprinklers activate when exposed to smoke the fact is they activate with heat at 135 to 165 degrees.

In closing let me that restate because of the proven life and property safety benefits of residential fire sprinklers the members of the National Fire Sprinkler Association ask that the state of West Virginia adopt the 2009 International Residential Code to include the residential sprinkler requirement. It is our opinion that to adopt a nationally recognized minimum residential building code and to delete a minimum life safety component such as the residential sprinkler requirement form the code would unwise and irresponsible.

Thank You

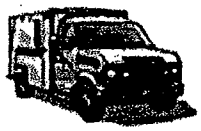
Respectfully

Ron Brown, Regional Manager
National Fire Sprinkler Association

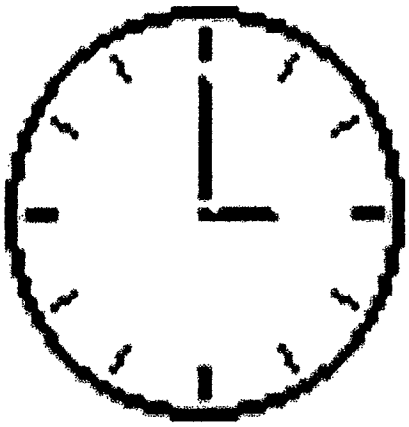
RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

2004 United States Fire Loss Clock

One vehicle fire was reported every **106 seconds**.



One civilian fire injury was reported every **30 minutes**



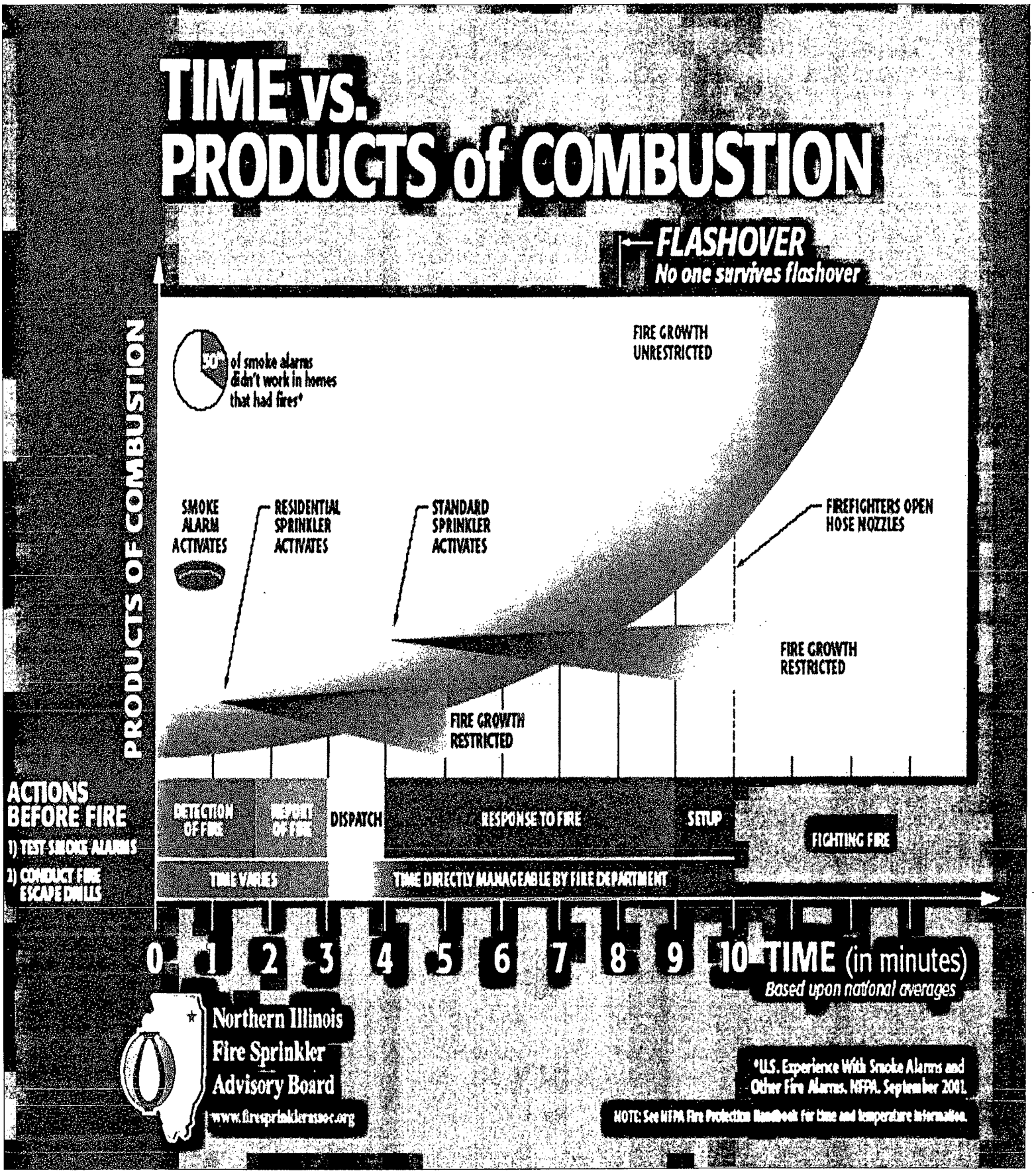
One structure fire was reported every **60 seconds**.

One outside fire was reported every **43 seconds**.

Every **20 seconds** a fire department responded to a fire.

One home structure fire was reported every **80 seconds**.

One civilian fire death occurred every **2 hours and 15 minutes**.


TIME vs. PRODUCTS of COMBUSTION
FLASHOVER
No one survives flashover
PRODUCTS OF COMBUSTION
30% of smoke alarms didn't work in homes that had fires*
FIRE GROWTH UNRESTRICTED
SMOKE ALARM ACTIVATES
RESIDENTIAL SPRINKLER ACTIVATES
STANDARD SPRINKLER ACTIVATES
FIREFIGHTERS OPEN HOSE NOZZLES
FIRE GROWTH RESTRICTED
FIRE GROWTH RESTRICTED
ACTIONS BEFORE FIRE
1) TEST SMOKE ALARMS
2) CONDUCT FIRE ESCAPE DRILLS
DETECTION OF FIRE
REPORT OF FIRE
DISPATCH
RESPONSE TO FIRE
SETUP
FIGHTING FIRE
TIME VARIES
TIME DIRECTLY MANAGEABLE BY FIRE DEPARTMENT
0 1 2 3 4 5 6 7 8 9 10
TIME (in minutes)
Based upon national averages
Northern Illinois Fire Sprinkler Advisory Board
www.firesprinklernsac.org
*U.S. Experience With Smoke Alarms and Other Fire Alarms. NFPA. September 2001.
NOTE: See NFPA Fire Protection Handbook for time and temperature information.

04/20/2009

How cheap do sprinklers have to become before they're considered cost-effective?

The cost of residential fire sprinkler systems has been a major point raised by builders in the residential fire sprinkler battle. They often cite unknown studies pointing to how many people will not be able to afford a home if the residential (one and two-family) code requirement is adopted.

I recently sat next to an actuary during one of my many flights and engaged in conversation as I often do with my seat mates. Of course, the conversation turned to residential fire sprinklers when he asked what I do for a living. So began the opportunity to take advantage of a "teachable moment" as I explained the whole residential sprinkler issue to this person who, as many persons, had not even thought of this technology when making a home purchase decision.

The very first question he asked after he learned all about this life safety technology was, you guessed it; how much does it cost? I explained about the 1 to 1.5% of a home's cost and the research putting this cost at $1.61 a sq. sprinklered foot. Immediately his mathematical mind went to work and within seconds he said; "That would only translate into approximately $5.00 extra mortgage payment a month" After I got over my awe of his mathematical abilities without the use of a calculator I remembered reading somewhere someone say that the additional mortage amount would equal the cost of a "Big Mac" a month.

During one of the recent hearings, someone provided testimony begging the question posed by the title of this blog. I bring it to you here in its entirety and urge you to make similar analogies, if given the chance, when addressing the cost of residential sprinkler systems. The testimony follows:

"To really look at the issue of the cost impact on homes and whether sprinklers will impact the cost of affordable housing, there is a basic question that has to be asked, "What drives the price of a new home?" In many, if not most, markets, the answer to this question is not construction costs, but instead, what the market will bear, with sales prices rising and falling based on what buyers are willing to pay. In such markets, costs associated with mandatory sprinklers are absorbed into the price by adjusting other costs or features or builder markup.

Even if there is an increase in the cost of a home based on sprinklers, the impact on a monthly mortgage payment is negligible in an average home.

Consider a hypothetical $3,000 sprinkler system in a $300,000 home with a 6.5% mortgage, a 5% credit on a $2,000/year insurance bill, and a combined Federal/State income tax rate of 33%; the net cost of fire sprinklers, after mortgage related tax deductions, would be $4.37 per month. This represents a 0.23% increase in the monthly payment and roughly equates to the cost of a premium beverage at your local coffee shop

So, I pose the question to everyone listening to this program today, just how cheap do sprinklers have to become before they're considered cost-effective?"

Maria Figueroa

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

FIRE SPRINKLER INITIATIVE: BRINGING SAFETY HOME

Fires in the home pose one of the biggest threats to the people of your community. Nearly 400,000 home fires occur every year in this country and, in one recent year, nearly 3,000 people died in fires that started right at home. Home fire sprinklers are a proven way to protect lives and property against fires at home.

These life-saving systems respond quickly and effectively to the presence of a nearby fire. When sprinklers are present, they save lives.

- **If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.**
- **People in homes with sprinklers are protected against significant property loss—sprinklers reduce the average property loss by 71 percent per fire.**

Model safety codes now require the use of home fire sprinklers in new one- and two-family homes. These requirements offer the highest level of safety to protect the people of your community.

- **Home sprinkler systems respond quickly to reduce the heat, flames, and smoke from a fire, giving families valuable time to get to safety.**
- **Roughly 90 percent of the time, fires are contained by the operation of just one sprinkler.**
- **Each individual sprinkler is designed and calibrated to go off when it senses a significant heat change.**
- **Only the sprinkler closest to the fire will activate, spraying water directly on the fire.**

FACTS ABOUT THE COST OF HOME FIRE SPRINKLERS

The Fire Protection Research Foundation recently issued the *Home Fire Sprinkler Cost Assessment* report. The report reveals that the cost of installing home fire sprinklers averages $1.61 per square foot for new construction. Installing home fire sprinklers can:

- **Reduce property loss in the event of fire**
- **Cut homeowner insurance premiums**
- **Help qualify a home for a tax rebate**

FACTS ABOUT U.S. HOME STRUCTURE FIRES

U.S. fire departments responded to an estimated 399,000 home structure fires in 2007.
These fires caused:

- 2,865 civilian fire deaths
- 13,600 civilian fire injuries
- $7.4 billion in direct damage

Roughly 84 percent of all civilian fire deaths in 2007 resulted from home structure fires.
On average, eight people died in U.S. home fires every day.

Sources:
Fire Loss in the United States during 2007 by Michael J. Karter, Jr., NFPA, Quincy, MA, August 2008
Home Structure Fires by Marty Ahrens, NFPA, Quincy, MA, September 2007

NFPA

The Fire Sprinkler Initiative, a project of the National Fire Protection Association, is a nationwide effort to encourage the use of home fire sprinklers and the adoption of fire sprinkler requirements for new construction.
**Data referenced from NFPA, the Home Fire Sprinkler Coalition, and other sources.*

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

MYTHS VS. FACTS

When considering home fire sprinkler requirements for your community, it is important to address key myths often raised by sprinkler opponents. The fact is, because automatic sprinkler systems have been commonly used in structures for many years, the evidence is clear that such systems:

- Are a proven way to protect lives and property against fires.
- Respond quickly and effectively to the presence of a nearby fire.
- Function well, without creating problems for homeowners.

Model safety codes now require the use of automatic fire sprinklers in new one- and two-family homes. While public education has increased the number of residents who have voluntarily installed sprinkler systems in their homes, ***it is time to take public safety efforts a step further by requiring the life-saving protection of fire sprinklers in new homes.***

Following are a few of the myths along with the facts about home fire sprinklers.

Myth
"Home fire sprinklers are expensive and will make housing unaffordable, especially for first-time buyers moving to our area."

Fact
The fact is, home fire sprinklers are affordable. The Fire Protection Research Foundation recently issued the *Home Fire Sprinkler Cost Assessment* report, which revealed that the cost of installing home fire sprinklers averages $1.61 per square foot for new construction.

To put the cost of a sprinkler system into perspective, many people pay similar amounts for carpet upgrades, a paving stone driveway, or a whirlpool bath.

Sales in many U.S. communities where sprinkler systems are available show that, not only are consumers requesting this feature, but also that houses with sprinkler systems are selling faster than those without.

Installing home fire sprinklers can help residents:

- Significantly reduce property loss in the event of fire
- Cut homeowner insurance premiums
- Help qualify home for a tax rebate
- Help support local fire service efforts

Myth

We don't need sprinkler mandates; they can be installed in homes voluntarily.

Fact

Mandating sprinklers in new one- and two-family homes provides a greater overall level of safety in communities. By requiring these life-saving devices in new homes you are ensuring that a large number of residents can enjoy the same level of safety found in many offices, schools, apartments, and public buildings.

Beyond the life safety benefits of home sprinklers, there are other incentives for jurisdictions that mandate sprinklers in new homes. By mandating sprinkler requirements, cities and towns can reduce the strain on fire service personnel, limit damage to property, and help conserve municipal water resources by reducing the amount of water needed to fight fires (fire-fighting hoses use more than eight times the amount of water used by automatic fire sprinklers).

Myth

"Home fire sprinklers often leak or activate accidentally."

Fact

Home fire sprinkler systems are much like home plumbing systems – when installed and maintained properly, there is a very low risk of leaks. Each individual sprinkler is designed and calibrated to activate only when it senses a significant heat change, directing water to the area of the fire.

Over the last 50 years, records indicate the likelihood of leaks from automatic sprinkler systems is very remote.

Myth

"When a fire occurs, every sprinkler will activate and everything in the house will be ruined."

Fact

In the event of a fire, only the sprinkler closest to the fire will activate, spraying water directly on the fire, leaving the rest of the house dry and secure. Ninety percent of the time, fires are contained by the operation of just one sprinkler.

Myth
"The water damage caused by the sprinkler system will be more extensive than fire damage."

Fact
Home fire sprinklers can significantly reduce property loss and damage due to a fire. The sprinkler will quickly control the heat and smoke from the fire, limiting damage to other areas of the house, giving residents valuable time to get out safely.

Any resulting water damage from the sprinkler will be much less severe than the damage caused by water from fire-fighting hose lines. On average, home fire sprinkler systems use about eight times *less* water than fire hoses.

Myth
"Home fire sprinkler systems are not practical in colder climates, as the pipes will freeze and cause water damage."

Fact
With proper installation, home sprinkler systems will not freeze in cold settings. NFPA13D sets forth guidelines on proper insulation to avoid pipes freezing. The Chicago area is a great example of a cold weather region where many jurisdictions have passed sprinkler mandates for new homes with limited to no problems with systems freezing.

Myth
"Home fire sprinkler systems are unattractive and will ruin the aesthetics of our residents' homes."

Fact
Actually, new home fire sprinkler models are very unobtrusive, can be mounted flush with walls or ceilings, and can be concealed behind decorative covers.

Myth
"Any time a smoke alarm goes off it will activate the home fire sprinklers."

Fact
This is incorrect. Each individual sprinkler is designed and calibrated to activate when it senses a significant heat change. They do not operate in response to smoke, burned toast, cooking vapors, steam, or an activating smoke alarm.

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

Myth
"A smoke alarm provides enough protection."

Fact
Smoke alarms alert occupants to the presence of danger, but do nothing to extinguish the fire. Home fire sprinkler systems respond quickly to reduce heat, flames, and smoke from a fire, giving residents valuable time to get out safely.

If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.

May 14, 2009

Ray Andrews, Asst. Director of Code Development
NY State Dept. of State, Code Enforcement and Administration
99 Washington Ave, Suite 1160
Albany, NY 12231

RE: NY State Residential Fire Sprinkler Committee Report - Public Forum

Dear Mr. Andrews:

Thank you for the opportunity to add a few comments to the draft report on residential fire sprinklers being prepared for the NY State Codes Council.

In reviewing the report, the fire sprinkler facts and data are well covered. However, there is an inherent benefit (and factual data to support) the environmental benefit of having fire sprinklers in all occupancies. Specifically in one- and two-family homes the occupancies, that produce the nation's highest number of fire fatalities.

Buildings, with automatic fire sprinkler systems require far less water to hold a fire in check and have fractional amounts of toxins and carbon output at the same time. This translates to shorter fire department operation times, leading to less energy usage.

A fire sprinkler system typically applies 20 to 30 gallons per minute to a fire, versus two or three 1-3/4" fire attack lines at 125 to 150 gpm each addressing a much larger fire. Also consider, 2 or 3 fire apparatus using 1000 to 2000 gpm each at a single house fire. Water runoff will create a concern of erosion of the local surface areas in fires. Dirt and silt from these fires further clogs our natural waterways and harms the living entities in those waterways.

Aging water mains, joints, flanges and shifting ground all contribute to unseen and unmeasured water loss. System operating pressure forces water through existing cracks and fissures in the system out into the surrounding ground. Unseen, unreported leakage continues for years, forcing water systems to produce and pump more water than necessary. With more fire sprinkler systems on a distribution system it is possible to reduce the size of the mains at installation or upon repair. Smaller mains will have smaller leaks than the larger mains required in areas completely reliant on traditional fire suppression forces.

Tons of toxic gases are released annually due to structure fires. Contaminated water can be released from structure fires in the millions of gallons. Fire pumpers, ladder trucks, heavy rescue units, and ambulances waste thousands of gallons of diesel fuel annually, not only for responding and returning to incidents, but at large incidents that can require multiple pieces of equipment for days of operation at a fire scene that did not have the benefit of automatic fire sprinklers. Fire apparatus operating at fire incidents of less duration will also extend their life span not requiring replacement or overhaul as quick as those that are required to address stressful incidents of many hours. Burnt building materials will end up in the landfill as most material will be beyond recycling or reuse capabilities. Not just the burnt material is discarded from a structure involved in a fire. The peripheral materials will also need replacement either by code or design of the new part of the structure or by insurance and liability driven issues for the contractor in order to guarantee his work. For example, if a roof is damaged by the fire and firefighting operations, the roofer is not just going to patch a hole. The roofer is going to replace a significant area or the entire roof to insure his work. In many cases involving a one- or two-family home, the whole roof of a home may be replaced. Many times exposed neighboring structures have radiant heat damage and will also produce tons of discarded building materials to our landfills.

Fire deaths and injuries require tons of materials annually used in emergency medicine and care of burn patients. These materials are considered bio hazards and need to be disposed of accordingly as hazardous materials. Tons of materials could be saved if we did not have to treat over 3,400 fire victims that die and tens of thousands of fire victims that survive each year. The energy used to manufacture and then later incinerate would be significantly reduced through the wider use and acceptance of automatic fire sprinklers in all new commercial and residential construction.

Burn survivors need a lifetime of care against infection and disease. Each burn survivor will require tons of materials in their perpetual care and will use countless units of Energy for their surgeries and care.

Please consider all of these environmental impacts while evaluating the case for fire sprinklers in homes.

Sincerely,

Kenneth E. Isman, P.E.
Vice President of Engineering

PUBLIC EDUCATION KIT

YOUR COMPLETE RESOURCE FOR COMMUNITY EDUCATION AND OUTREACH

Home Fire Sprinkler COALITION
Protect What You Value Most
HomeFireSprinkler.org

FIRE SPRINKLER FACTS

- Eight of out 10 fire deaths occur in the home.
- Fire sprinklers save lives, reduce property loss and can even help cut homeowner insurance premiums.
- Home fire sprinklers can contain and may even extinguish a fire in less time than it would take the fire department to arrive on the scene.
- Installing both smoke alarms and a fire sprinkler system reduces the risk of home fire death by 82%, relative to having neither.
- Only the sprinkler closest to the fire will activate, spraying water directly on the fire. Ninety percent of fires are contained by the operation of just one sprinkler.*
- Nationally, on average, home fire sprinkler systems add 1% to 1.5% of the total building cost in new construction.
- Home fire sprinklers use only a small fraction of the water used by fire department hoses.
- Modern residential sprinklers are inconspicuous and can be mounted flush with walls or ceilings.
- For more information go to the Home Fire Sprinkler web site at: www.homefiresprinkler.org.

*Automatic Sprinklers: A 10-Year Study, Scottsdale, AZ

Visit HFSC online at HomeFireSprinkler.org

Position Statement

Fire Sprinklers in New Construction

The International Association of Fire Chiefs adopts the position that all new construction, including one- and two-family dwellings, should be built with fire sprinklers installed to protect the public, fire service personnel, the structure, its contents, the economy and the environment.

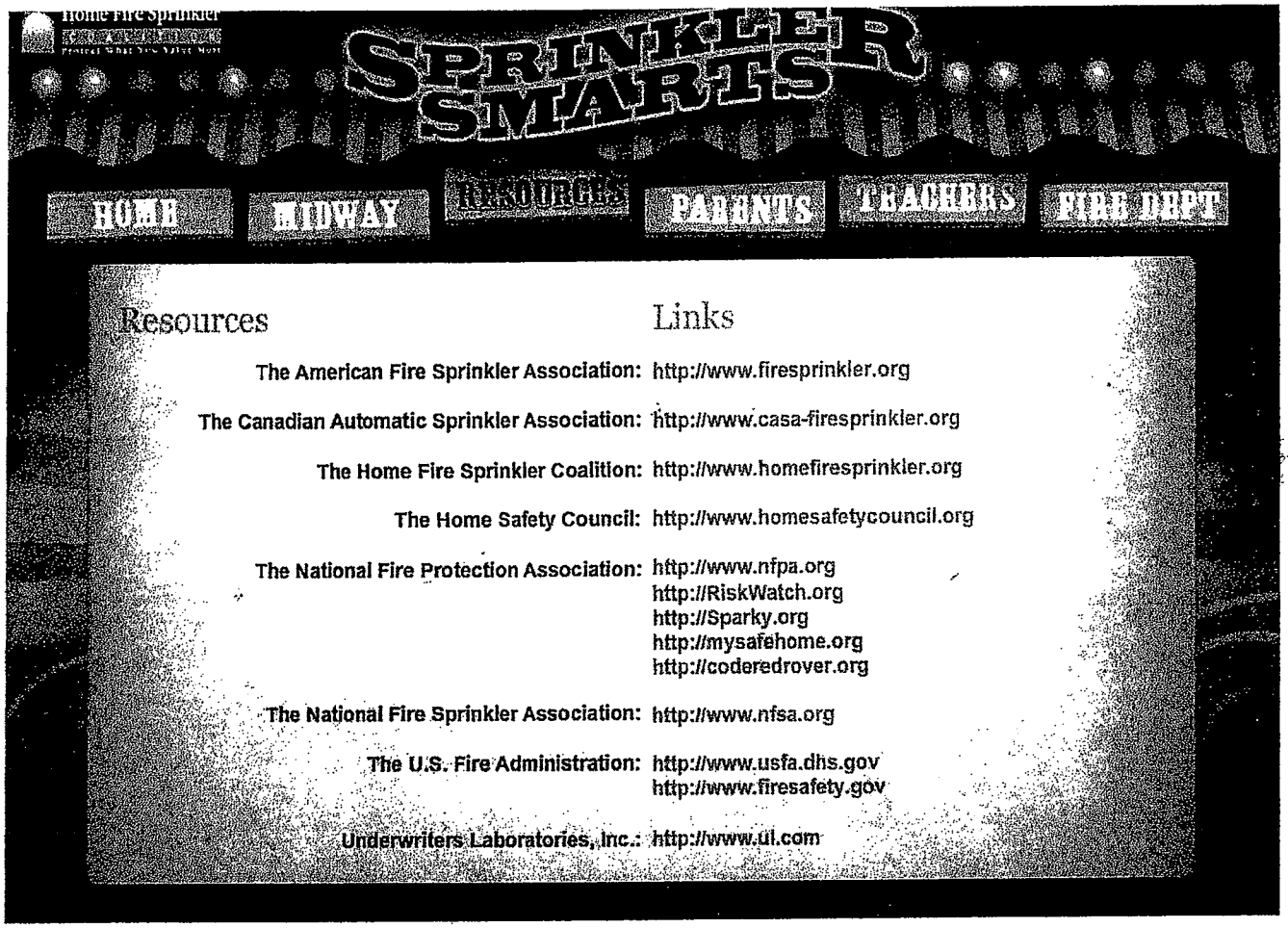
In an effort to reduce the number of deaths from an average of 3,000 citizens and 100 firefighters annually and to avert billions of dollars annually in property loss to the effects of fire, we must include fire sprinklers as an integral part of a community's fire protection. The increased demands made today on local fire departments, usually without increased staffing or funding, and the changes in building materials and home contents, all increase the risk to firefighters and the public. It's time to add active fire protection as a baseline in all new construction.

The time is now for the fire service to adapt to the changes in construction techniques; as new technologies becomes the norm in construction (light-weight construction, etc.), and as building contents become more flammable and more toxic as they burn. We must protect our communities in non-traditional ways with proactive, rather than reactive, approaches. The current built environment and furnishings necessitate the additional protection of built-in fire protection. Fire sprinklers will provide the active protection needed to reduce the fire risk of these new building components to citizens and firefighters.

We further state that we do not support and will oppose regulations that prevent or discourage the installation of fire sprinklers. We also stand against fees and charges that create economic barriers to the installation of fire sprinklers. We support incentives for business owners and citizens to protect their buildings, thus protecting our citizens, their property and fire service personnel.

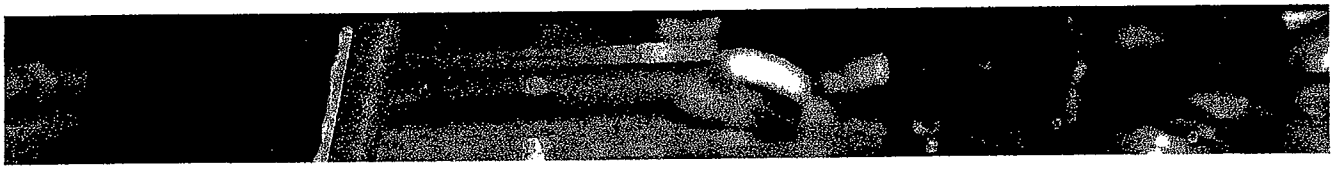
This position statement supports the priorities of the International Association of Fire Chiefs and we pledge to work with IAFC sections, IAFC divisions, and other organizations which are interested in being proactive in providing community fire protection. We welcome partners and collaborative efforts that support similar goals. It's time for us all to take action.

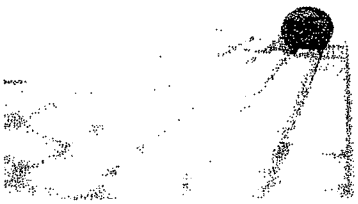
Adopted by: IAFC Board of Directors
Date: March 13, 2008


Home Fire Sprinkler
SPRINKLER SMARTS
HOME
MIDWAY
RESOURCES
PARENTS
TEACHERS
FIRE DEPT
Resources
Links
The American Fire Sprinkler Association: http://www.firesprinkler.org
The Canadian Automatic Sprinkler Association: http://www.casa-firesprinkler.org
The Home Fire Sprinkler Coalition: http://www.homefiresprinkler.org
The Home Safety Council: http://www.homesafetycouncil.org
The National Fire Protection Association: http://www.nfpa.org
http://RiskWatch.org
http://Sparky.org
http://mysafehome.org
http://coderedrover.org
The National Fire Sprinkler Association: http://www.nfsa.org
The U.S. Fire Administration: http://www.usfa.dhs.gov
http://www.firesafety.gov
Underwriters Laboratories, Inc.: http://www.ul.com

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

The Fire Sprinkler Initiative is a project of the National Fire Protection Association.





Links

Many additional resources are available for those interested in learning more about fire sprinklers:

American Fire Sprinkler Association
The American Fire Sprinkler Association is a non-profit, international association representing open shop fire sprinkler contractors, dedicated to the educational advancement of its members and promotion of the use of automatic fire sprinkler systems.

Common Voices
Common Voices is an advocates' coalition sponsored by the National Fire Sprinkler Association. The advocates that serve as the Coalitions Advisory Committee have all been directly affected by fire. By bringing their voices together, the NFSA hopes to assist the advocates in their quest to ensure that others will not have to deal with similar tragedies. This Coalition strives to make a difference by sharing their stories and influencing change.

Fire Protection Research Foundation
The nonprofit Fire Protection Research Foundation works to plan, manage and communicate research in support of the NFPA mission: to reduce the worldwide burden of fire and other hazards on the quality of life. In September 2008, the Foundation released a report showing that the cost of installing residential fire sprinklers averages $1.61 per square foot.

Fire Safety Council
FireSafety.gov is a one-stop information resource on the Internet for residential fire safety and prevention information distributed by the federal government. Its Web site contains statistical information on residential fires.

Home Fire Sprinkler Coalition
The nonprofit Home Fire Sprinkler Coalition is a leading resource for independent, noncommercial information about residential fire sprinklers. The HFSC has developed educational material about automatic home fire sprinkler systems, how they work, why they provide affordable protection and answers to common myths and misconceptions about their operation. The HFSC Web site includes detailed information for consumers, builders, the fire service, real estate agents, insurance agents, and local officials.

International Association of Fire Chiefs
The International Association of Fire Chiefs represents the leadership of over 1.2 million firefighters and emergency responders. IAFC members are the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search and rescue, and public safety legislation.

International Residential Code Fire Sprinkler Coalition
The International Residential Code Fire Sprinkler Coalition is a not-for-profit corporation whose mission is to promote the health, safety and welfare of the public and emergency responders by supporting the installation of fire sprinklers in residential occupancies. The IRCFSC Web site features many useful resources, including a map of state and local supporting organizations.

National Fire Protection Association
National Fire Protection Association is the authority of fire, electrical, and building safety. The NFPA's fact sheet on home fire sprinklers includes facts and figures about the technology, a free report on the "U.S. Experience with Sprinklers and Other Automatic Fire Extinguishing Equipment", and information about NFPA 13D, Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

National Fire Sprinkler Association
The mission of the National Fire Sprinkler Association is to protect lives and property from fire through the wide-spread acceptance of the fire sprinkler concept. Download this free guide on "Residential Fire Sprinklers: A Step-by-Step Approach for Communities" (PDF, 3 MB)

National Institute of Standards and Technology
The National Institute of Standards and Technology is a non-regulatory federal agency within the U.S. Department of Commerce whose mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. In 2007, NIST published a report on the Benefit-Cost Analysis of Residential Fire Sprinkler Systems.

Residential Fire Safety Institute
The Residential Fire Safety Institute (RFSI) is a public interest group created in 1982 to promote fire-safe homes through built-in fire protection and fire safety education. The RFSI Web site features many useful resources, including this list of answers to home builders objections.

U.S. Fire Administration
The mission of the USFA is to foster a solid foundation in prevention, preparedness, and response by providing national leadership to local fire and emergency services. The USFA Web site states: "It is the official position of the U.S. Fire Administration that all Americans should be protected against death, injury, and property loss resulting from fire in their residences. All homes should be equipped with smoke alarms and automatic fire sprinklers, and families should prepare and practice emergency escape plans." USFA information on fire sprinklers.

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FIGURE 2

Example 1

BUILDING A BALANCE: CONSTRUCTION COSTS FOR SINGLE-FAMILY HOME

Construction Costs for Single-Family Unit
Lot 107 Pleasant View Village
284 Augusta Avenue
September 15, 2007
2,186 square feet; 2 bedroom, 3 bath

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I. Sale Price Breakdown	Average	% of Total
Finished Lot Cost (including financing cost)	$33,000	13.4%
Total Construction Cost	$176,376	71.7%
Financing Cost	$6,989	2.8%
Overhead and General Expenses	$0	0.0%
Marketing Cost	$1,250	0.5%
Sales Commission	$7,377	3.0%
Profit	$20,908	8.5%
Total Sales Price	**$245,900**	**100.0%**

II. Lot Cost	Average	% of Lot Cost
A. Raw Lot Cost	$33,000	100.0%
B. Development Costs:	$0	0.0%
a. cost of processing approvals	$0	0.0%
b. site preparation	$0	0.0%
c. site improvement	$0	0.0%
- paving	$0	0.0%
- water	$0	0.0%
- erosion and sediment	$0	0.0%
d. impact analysis	$0	0.0%
e. water/electric hook-up	$0	0.0%
f. land dedication or fee in lieu	$0	0.0%
g. bonding/escrow fee	$0	0.0%
h. financing cost	$0	0.0%
i. tree preservation and planting	$0	0.0%
j. wetland preservation and planting	$0	0.0%
- value of unbuilt land	$0	0.0%
- cost of mitigation	$0	0.0%
k. value of land left unbuilt as green space or park	$0	0.0%
l. other costs	$0	0.0%
Total B (a...l above)	**$0**	**0.0%**
Total Finished Lot A + B	**$33,000**	**100.0%**

III. Construction Cost Breakdown	Average	% of Construction Cost
Building Permit Fees	$4,315	2.4%
Impact Fee	$3,750	2.1%
Water and Utility Fees*	$8,137	4.6%
Excavation, Foundation, and Backfill	$7,147	4.1%
Termite Shield	$184	0.1%
Framing and Trusses	$26,734	15.2%
Firewall	$0	0.0%
Windows	$8,007	4.5%
Exterior Trim	$1,919	1.1%
Roof	$5,653	3.2%
Brick, Siding & Mortar	$24,513	13.9%
Plumbing	$7,008	4.0%
Electrical Wiring & Lighting Fixtures	$8,969	5.1%
Fire Sprinklers*	$2,343	1.3%
HVAC	$12,781	7.2%
Insulation	$2,634	1.5%
Drywall	$6,553	3.7%
Painting (interior & exterior)	$9,034	5.1%
Cabinets and Countertops	$9,600	5.4%
Appliances	$2,439	1.4%
Carpet, Tile & Hardwood	$5,453	3.1%
Interior Trim	$6,952	3.9%
Hardware	$1,639	0.9%
Landscaping and Sod	$1,704	1.0%
Garage floor, Driveway & Porches	$5,191	2.9%
Garage Door	$715	0.4%
Alarm System	$532	0.3%
Other	$2,471	1.4%
Total	**$176,376**	**100.0%**

.93

*The upsize of the residential meter from 3/4" to 1" because of the fire sprinkler is an additional cost of $200 on the water utility fees.

Example #2

BUILDING A BALANCE: CONSTRUCTION COSTS FOR SINGLE-FAMILY HOME

Construction Costs for Single-Family Unit
Lot 25 Pleasant View Village
159 Augusta Avenue
September 15, 2007
2,139 square feet; 3 bedroom, 3.5 bath

I. Sale Price Breakdown	Average	% of Total
Finished Lot Cost (including financing cost)	$20,000	8.3%
Total Construction Cost	$176,022	73.4%
Financing Cost	$10,941	4.6%
Overhead and General Expenses	$0	0.0%
Marketing Cost	$1,250	0.5%
Sales Commission	$7,197	3.0%
Profit	$24,490	10.2%
Total Sales Price	**$239,900**	**100.0%**

II. Lot Cost	Average	% of Lot Cost
A. Raw Lot Cost	$20,000	100.0%
B. Development Costs:	$0	0.0%
a. cost of processing approvals	$0	0.0%
b. site preparation	$0	0.0%
c. site improvement	$0	0.0%
- paving	$0	0.0%
- water and sewer	$0	0.0%
- erosion and sediment	$0	0.0%
d. impact analysis	$0	0.0%
e. water/electric hook-up	$0	0.0%
f. land dedication or fee in lieu	$0	0.0%
g. bonding/escrow fee	$0	0.0%
h. financing cost	$0	0.0%
i. tree preservation and planting	$0	0.0%
j. wetland preservation and planting	$0	0.0%
- value of unbuilt land	$0	0.0%
- cost of mitigation	$0	0.0%
k. value of land left unbuilt as green space or park	$0	0.0%
l. other costs	$0	0.0%
Total B (a...l above)	**$0**	**0.0%**
Total Finished Lot A + B	**$20,000**	**100.0%**

III. Construction Cost Breakdown	Average	% of Construction Cost
Building Permit Fees	$3,311	1.9%
Impact Fee	$3,750	2.1%
Water and Utility Fees*	$8,593	4.9%
Excavation, Foundation, and Backfill	$5,585	3.2%
Termite Shield	$127	0.1%
Framing and Trusses	$23,253	13.2%
Firewall	$4,104	2.3%
Windows	$11,802	6.7%
Exterior Trim	$1,156	0.7%
Roof	$3,011	1.7%
Brick, Siding & Mortar	$19,159	10.9%
Plumbing	$8,920	5.1%
Electrical Wiring & Lighting Fixtures	$10,659	6.1%
Fire Sprinklers*	$2,242	1.3%
HVAC	$9,063	5.1%
Insulation	$1,945	1.1%
Drywall	$7,839	4.5%
Painting (interior & exterior)	$11,104	6.3%
Cabinets and Countertops	$7,640	4.3%
Appliances	$1,459	0.8%
Carpet, Tile & Hardwood	$10,959	6.2%
Interior Trim	$11,836	6.7%
Hardware	$1,207	0.7%
Landscaping and Sod	$394	0.2%
Garage floor, Driveway & Porches	$3,318	1.9%
Garage Door	$740	0.4%
Alarm System	$507	0.3%
Other	$2,341	1.3%
Total	**$176,022**	**100.0%**

.95

*The upsize of the residential meter from 3/4" to 1" because of the fire sprinkler is an additional cost of $200 on the water utility fees.

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Chuck Anderson, PE
American Architectural Manufacturers Assoc.
131 Meadowlark Lane
Mineral Wells, WV 26150

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Anderson:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the 2009 IRC by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes without exceptions with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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IRC 2009

613.3.1 TESTING and LABELING. EXTERIOR WINDOWS ...

... approved permanent label ...

NOTE: FOR THIS SECTION, Permanent, shall be defined as a label, mark, brand, or bog that cannot be removed and reapplied without destroying the label.

Chuck Anderson, PE

Submitted by: CHUCK ANDERSON, PE

SE REGION DIRECTOR
AMERICAN ARCHITECTURAL MANUFACTURERS ASSN
131 Meadowlark Lane
Mineral Wells, WV 26150

canderson@aamanet.org
877-700-3110 (office)
304-893-2262 (cell)

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

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Chairman
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STATE FIRE COMMISSION
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Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Eric Lacey, Chairman
Responsible Energy Codes Alliance
1850 M Street NW, Suite 600
Washington, DC 20036

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Lacey:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the 2009 IECC by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a specia meeting, the Commission approved the Codes without exceptions with the required rule changes a presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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STATE FIRE MARSHAL
Administration

RECA

RESPONSIBLE ENERGY CODES ALLIANCE

1850 M Street, NW, Suite 600
Washington, DC 20036

(PH) 202-339-6366
(FAX) 202-342-0807

www.reca-codes.com
eric@reca-codes.com

June 16, 2009

VIA E-MAIL

Sterling Lewis, Jr.
Fire Marshal
West Virginia State Fire Commission
1207 Quarrier Street, 2nd Floor
Charleston, WV 25301

Re: Comments of the Responsible Energy Codes Alliance (RECA) Supporting Adoption of the 2009 International Energy Conservation Code (*IECC*)

Dear Mr. Lewis:

The Responsible Energy Codes Alliance supports the adoption of the 2009 *IECC* for residential and non-residential construction in West Virginia, as noticed May 22, 2009 in the West Virginia State Register. We believe the 2009 *IECC* should be an integral part of the state's energy future, and the proposed rule will bring about a more consistent, more efficient set of energy requirements. We also recommend two editorial changes to the proposed rule that should add further clarity.

RECA is a broad coalition of energy efficiency advocates, product and equipment manufacturers, trade associations, and regional organizations administered by the Alliance to Save Energy. A list of RECA's members is included at the end of this letter. Our primary mission is to urge all states and localities to adopt the most recent version of the *IECC* without substantive weakening amendments.

The proposed rule increases energy efficiency and simplifies compliance with and enforcement of the energy code. It also follows through on Governor Manchin's commitment to revise the energy codes in order to receive $32,746,000 in State Energy Program funds under the 2009 American Recovery and Reinvestment Act (Stimulus Bill).
http://www.energy.gov/media/3154ManchinWestVirginia.pdf

The proposal adopts the 2009 International Codes, including the IECC and International Residential Code (IRC), and deletes Chapter 11 of the IRC to ensure that all construction – residential and non-residential – meets the requirements of the IECC. (This approach has been used successfully in a number of states.) The proposal also eliminates an outdated state-specific

compliance option that conflicts with the national model code. These simple changes will keep West Virginia on track with the national model energy code and will bring a number of energy-saving and cost-saving benefits to the state's citizens.

We recommend two editorial changes that we believe are consistent with the intent of the rule and will provide added clarity for code officials. First, Section 4.1.7.A should reference the 2009 IRC, which was adopted by reference in Section 4.1.7. Second, Section 4.1.7.A should clarify that the adoption of the 2009 IECC and the deletion of IRC Chapter 11 means that all construction should meet the energy requirements of the 2009 IECC. An edited version of the paragraph would read as follows:

> 4.1.7.A. Chapter 11 of the 20039 edition of the International Residential Code for One and Two Family Dwellings, ~~Seventh~~ First Printing, entitled "Energy Efficiency", is deleted and not considered to be a part of this rule. ~~In lieu thereof, the following standards are adopted and made a part of this rule:~~ Compliance with this chapter shall be demonstrated by meeting the requirements of the 2009 International Energy Conservation Code.

West Virginia Will Benefit from Adopting the 2009 IECC as the Single Energy Efficiency Code for the State.

- The adoption of the 2009 IECC was designated by Congress as a specific requirement for states to receive $3.2 billion in State Energy Program funds through the Stimulus Bill.
- The 2009 *IECC* is the final product of a code development process that involved the nation's leading experts in energy efficiency, building design and product performance, state and local code officials, product manufacturers and homebuilders. Customers are demanding energy efficient or "green" building, and are willing to pay more for these homes, even in a slumping housing market. Builders gain credibility by following the latest national energy standards.
- Statewide implementation and enforcement of the 2009 IECC will ensure that every buyer of a new home gets one that is sensibly efficient. A home built to the 2009 IECC will have an efficient duct system, a well-sealed thermal envelope, a programmable thermostat, and a properly-sized heating and cooling system.
- By adopting the 2009 IECC, West Virginia will stay on track with statewide energy efficiency goals and will guarantee homeowner benefits for many years. New construction is the most cost-effective time to install good insulation, quality windows and doors, and efficient heating and cooling equipment. Construction costs will be reduced through economies of scale, as suppliers and retailers may reduce inventories and streamline production to meet more consistent energy targets.
- The 2009 IECC will facilitate compliance and enforcement of the code, and will allow builders to take advantage of free Department of Energy trainings, free compliance software like *RES*check, and other programs. These programs do not apply to the *IRC* or any state-created energy codes.

The Proposed Rule Correctly Replaces the Outdated State-Specific Compliance Option with a Reference to the IECC.

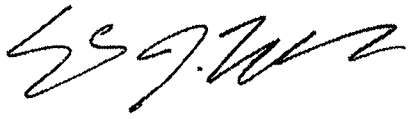
The proposed rule eliminates a significantly weaker compliance option that conflicts with the IECC. For a number of reasons, the IECC is the best available option for an energy efficient code.

- The 2009 IECC is a more energy efficient and more robust code than Chapter 11 of the 2009 IRC or the alternative Chapter 11 currently in the State Building Code. While the IRC includes only a simple prescriptive option, the IECC includes several flexible compliance options that are designed to maintain efficiency.
- The IECC is the only code recognized in federal law and nationwide as the comprehensive model energy code for all residential and commercial buildings. More than two thirds of states have adopted the IECC as their mandatory statewide energy code.
- Under the federal Energy Policy Act of 1992, the US Department of Energy (DOE) is required to review each new version of the IECC and determine if it is an improvement in energy efficiency over previous versions. (IRC Chapter 11 does not undergo such a rigorous assessment by DOE, so it is not clear whether it would meet the same high standard for energy efficiency improvement.) States are also required by federal law to undertake a review of the state energy code and determine whether state energy efficiency requirements meet the stringency of the IECC every time the Department of Energy makes a determination on the updated IECC.
- The IECC also serves as the basis for federal tax credits for energy efficient homes, energy efficiency standards for federal buildings, and qualification for FHA mortgages. The IECC is also referenced in LEED and many other state and federal programs. As mentioned above, Congress designated the IECC as the threshold requirement for State Energy Program funds available under the Stimulus Bill. None of these programs even references the IRC.

Conclusion

Building efficiency is a key component to the state's efforts to secure its energy future. RECA supports West Virginia's incorporation of the 2009 *IECC* for both residential and non-residential construction. These simple changes will ensure that the state qualifies for Stimulus funding and will save homeowners (and the state) money in energy savings for many years to come.

Respectfully Submitted,



Eric Lacey
Chairman

RECA

RESPONSIBLE ENERGY CODES ALLIANCE

RECA is a broad-based consortium of energy efficiency professionals, product and equipment manufacturers, and trade associations with expertise in the adoption, implementation and enforcement of building energy codes nationwide. RECA is dedicated to improving the energy efficiency of homes in West Virginia and throughout the U.S. through greater use of energy efficient practices and building products. It is administered by the Alliance to Save Energy, a non-profit coalition of business, government, environmental and consumer leaders that supports energy efficiency as a cost-effective energy resource under existing market conditions and advocates energy-efficiency policies that minimize costs to society and individual consumers. Below is a list of RECA Members and other organizations that endorse these comments.

Air Barrier Association of America

Alliance to Save Energy

American Chemistry Council

American Council for an Energy-Efficient Economy

Cardinal Glass Industries, Inc.

CertainTeed Corporation

Guardian Industries Corporation

Johns Manville Corporation

Knauf Insulation

National Fenestration Rating Council

Northeast Energy Efficiency Partnerships, Inc.

North American Insulation Manufacturers Association

Pactiv Corporation

Polyisocyanurate Insulation Manufacturers Association

PPG Industries, Inc.

Southeast Energy Efficiency Alliance

Southwest Energy Efficiency Project

The Department of Military Affairs and Public Safety

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Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. James F. Williams
622 Jo Harry Drive
Fairmont, WV 26554

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Williams:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the NEC2008.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

8-Jun-2009
622 Jo Harry Dr.
Fairmont, WV 26554

WV State Fire Commission
1207 Quarrier St., (2nd Flr.)
Charleston, WV 25301

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

Dear Sirs:

This is in reference to adoption of the 2008 National Electric Code.

I an a journeyman electrician employed by the Marion County Board of Education. (Affiliation for identification only.) I speak for myself, not for the board or for any of its management.

When the NEC2008 was issued, it was evident to me that it contained provisions that could make schools safer. I immediately began using the NEC2008 to govern our new and maintenance wiring. Areas of the code of particular safety interest to me are:

200.2(B) The continuity of a grounded conductor shall not depend on a connection to a metallic enclosure, raceway, or cable armor.

210.4(A) .... All conductors of a multiwire branch circuit shall originate from the same panelboard....
210.4(D) The ungrounded and grounded conductors of each multiwire branch circuit shall be grouped by wire ties or similar means in at least one location within the panelboard ....

210.8(B) all 125-volt, single-phase, 15- and 20-ampere installed in locations specified in (1) through (5) shall have ground-fault circuit-interrupter protection for personnel: (1) Bathrooms, (2) Kitchens, (3) Rooftops, (4) Outdoors, (5) Sinks.

310.15(B)(c) ...Where conductors or cables are installed in conduits exposed to direct sunlight on or above rooftops, the adjustments shown in table 310.25(2)(B)(c) shall be added to the outdoor temperature to determine the applicable ambient temperature....

406.8(B) 15- and 20-ampere, 125- and 250-volt receptacles installed in wet locations shall have an enclosure that is weatherproof whether or not the attachment plug is inserted....

410.130(G) .... fluorescent luminaires that utilize double-ended lamps and contain ballast(s) shall have a disconnecting means either internal or external to each luminaire....

422.52 Electric drinking fountains shall be protected with ground-fault circuit-interrupter protection

I urge the Commission to adopt NEC2008 so that these (and other) safety provisions become the norm for the entire state. Thank you very much.

Sincerely,

James F. Williams

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Paul W. Linger
c/o Marion County Board of Education
1205 Fleming Avenue
Fairmont, WV 26554

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Linger:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the NEC2008 as it relates to ACI breakers.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

June 14, 2009

1205 Fleming Ave.
Fairmont, WV 26554

WV State Fire Commission
1207 Quarrier St. (2nd Flr.)
Charleston, WV 25301

Dear Sirs:

This is in reference to adoption of the 2008 National Electric Code.

I am a journeyman electrician employed by the Marion County Board of Education. (affiliation for identification only) I am an electrical contractor and owner of Linger Sales and Service. I have been installing ACI breakers the past two years.

When the NEC2008 was issued, it was evident to me that it contained provisions that could make schools safer. I began installing the NEC2008 to govern our new and maintenance wiring.

Areas of the code of particular interest to me are:

680.12-680.71 Swimming Pools, Hot Tubs, Garden Tubs, GFCI Protection, and grounding of swimming pools.

310.15(B)(c) Where conductors or cables are installed in conduits exposed to direct sunlight on or above rooftops. The adjustments shown in table 310.25(2)(B)(c) shall be added to the outdoor temperature to determine the applicable ambient temperature...

700.6© Automatic Transfer Switches shall be electrically operated and mechanically held. Automatic transfer switches, rated 600 VAC and below, shall be listed for emergency system use.

I urge the Commission to adopt NEC2008 so that these and other safety provisions become the norm for the entire state. Thank you for your consideration of this matter.

Sincerely,

Paul W. Linger

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Ken Tyree
Fire Marshals Association of WV
PO Box 2052
Charleston, WV 25301-1700

Re: Comments towards the proposed 2009 Building Code

Dear Mr. Tyree:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes especially the 2009 IRC by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

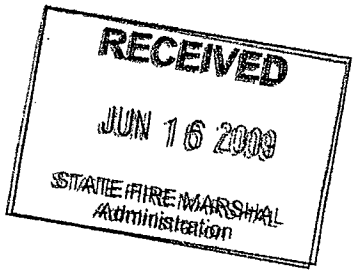
Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

FIRE MARSHALS ASSOCIATION OF WEST VIRGINIA (FMAWV), INC.



Good Afternoon,

I'm Ken Tyree, a Lieutenant with the Charleston Fire Department with 15 years of service of which 13 ½ years has been in Fire Prevention as a fire inspector, plans reviewer, and fire code enforcer.

I'm also the President of the Fire Marshals Association of West Virginia (FMAWV) Inc. whose membership encompasses over 100 active members of the fire service. Our members come from departments and services throughout this state to include members of the State Fire Marshals office, Municipal and Volunteer Fire Departments throughout this great State, from the ranks of Firefighter up through Fire Chief. The fire marshals association is a chapter of the International Fire Marshals Association whose mission is to: *"Aid in the preservation of life and property by advocating, promoting, and providing leadership in the prevention or mitigation of fire, explosions, and other related hazardous conditions"*.

The office I hold as president of this association is a non paid position so, I come to you today as one whose concern is public safety and firefighter safety.

As president of this association, I respectfully ask this commission to send forth a recommendation to the legislative service to adopt the International Residential Code (IRC) as a part of the State Building Code which shall include the installation of automatic sprinkler systems in all newly constructed one- and two-family dwellings in accordance with NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

This association only recommendation for amendment would be the effective date of installation of automatic sprinkler systems to the year 2012 instead of 2011 (See R313.2, International Residential Code, 2009 Edition); since the potential date for the State adoption of these codes would be 2010 instead of 2009.

The IRC was voted on as a consensus in September of this past year by the International Code Council membership to require this life safety technology.

This vote constituted the last of the recognized standards utilized in the United States to contain such language. This is recognition of the need of enhanced safety measures when it comes to any residential occupancies.

Normally, the fire service does not speak up with concerns when it comes to the State Building Code but with this life safety technology being a part of the International

Residential Code, I think it is proper place for the fire service community to stand up and support this important requirement.

As I understand the Fire Commission's mission to *"PROVIDE, THROUGH LEADERSHIP, THE BEST POSSIBLE FIRE PREVENTION, LEGISLATION, EDUCATION, TRAINING, STANDARDS AND RESOURCE ALLOCATION."* It should go without saying that safety should always come first and the adoption of the IRC with the one

referenced amendment should be done to provide the safest conditions possible to all who reside here.

FACT: Nearly 3,000 people die annually in fire related incidents; 8 out of 10 of them dying in home fires. On average 100 firefighters die annually in fire related incidents.

In this great State alone in the past 10 years we have had 334 people die in fire related incidents with 278 of them dying in homes; with only 28 of those deaths occurring in fixed mobile homes (trailers). (those statistics come from the State Fire Marshals office National Fire Incident Reporting System (NFIRS).

The question I propose to this commission and others who will consider the adoption of this code is: Are we interested in saving Lives? Can we put a particular price on a life?

If we are concerned with saving lives; let's do it without so much of the concern being cost. When we consider cost, is it any more than an upgrade in flooring or countertops? Studies show that sprinklers are affordable and can be a cost saver compared to property being protected or the limited reconstruction cost when automatic sprinklers are in place.

The majority of fire sprinkler systems use a public water supply as their source of water. In rural and suburban areas without public water mains, fire sprinklers are the most affordable and economic form of fire protection to be had. In rural communities, where fire departments are farther away, and response times are often affected by the number of volunteers that can be assembled, a fire can destroy most of a building before the fire department ever arrives.

The other considerations that should be made in this decision of this adoption is the concern of people escaping house unharmed which sprinklers is the answer to that concern. Some of the options for rural water supply for fire sprinkler protection when a public water supply is not available are: Elevated tanks, a storage tank with a pump, or underground well. When taking these things into consideration, the implementation of the minimum standard as identified in the International Residential Code is the answer. It should be noted that the system that would be required in one- and two-family dwellings is different and would be considerably less expensive than that which is installed in commercial construction (i.e. NFPA 13 systems).

Automatic sprinklers are life safety devices that do SAVE Lives; firefighters lives too! Sprinklers have been around for years, and it is not new technology when it comes to one- and two-family dwellings. The whole key to getting out of a house alive in a fire is early warning which comes with smoke alarms, and the prevention of FLASHOVER (or WHERE ALL COMBUSTIBLES IN A ROOM BECOME FULLY INVOLVED IN THE FIRE). The prevention of flashover occurs with automatic sprinkler protection in place.

Quick response sprinklers are a newer technology which are used in many other types of occupancies but are first and foremost used in residential occupancies to include one- and two-family homes which enhance life safety for those subjected to fire. I have attached a document titled: Time vs. Products of Combustion which shows the importance automatic sprinklers being in place, and how it enhances the chance for control and extinguishment of the fire. It also helps the occupant's ability to escape

safely and also helps in the safety of firefighter on the scene of the fire. With the occurrence of "flashover", there is no chance for survival for occupants and some time even firefighters.

Remember this automatic sprinkler installation requirement will pertain only to newly constructed homes. The two year delay in the installation of automatic sprinklers into one- and two-family dwellings gives all parties involved time to establish the infrastructure necessary to meet any and all needs and concerns.

The documents that will be attached to this submittal and comments will help to assist in further understanding of this great technology, dispels myths, and gives you facts. Most of the information you will or can review speaks for itself: Residential Sprinkler Technology and installation in newly constructed homes is essential when it comes to safety.

I feel the time has come for the fire service and this commission to **step up** on this issue that can and will affect firefighter's lives as well as the general public. The legislative service should study, research, and resolve to make a decision based on the need to provide the people of this state first rate safety technology that has been voted on and passed by consensus body of individuals that span experience of the best engineering, building, and fire safety community this country has seen.

I ask this commission to send forth a recommendation for the adoption of the International Residential Code as a part of the State Building Code which includes the installation of an automatic sprinkler system in all newly constructed one- and two-family dwellings.

Automatic Sprinklers are a plus also in the new "Green Environment" people are concerned with. This means LESS WATER USE WITH AUTOMATIC SPRINKLERS, SPRINKLERS KEEP FIRE DAMAGE TO A MINIMUM, AND LESS FIRE DAMAGE GIVES YOU A CLEANER ENVIRONMENT!

It also goes with out saying when sprinklers and in place and operable that people are back in their homes much sooner and firefighters go home safer and sooner.

There are concerns from others who do not want this technology as a part of the code that has questions or concerns about items such as cost, water supply, the technology in general; which I think need to be discussed in detail. This discussion can be ongoing with a two year infrastructure period to work with; all concerns can be address if people come to the table and discuss them. This commission could take a place at the table with others such as: Fire Departments (Paid and Volunteer), Public Policy Leaders, Building Officials, Builders/Developers, Fire Sprinkler Contractors, Engineers, Water Purveyors, Real Estate Agents, City and County Planners, Interior Designers, and the

Insurance Industry.

This code adoption should not be lessened by the removal or amending out this life safety technology of automatic sprinklers. What some people see as down sides to the adoption of this new technology should be given consideration but when it comes to safety it should come first. With at least two years in front of us, an infrastructure could be put in place for this new requirement and technology.

Automatic sprinklers and their installation in new construction is not cost prohibitive because their could be trade offs possible that could help a builder in a subdivision development project add homes due to spacing requirements between homes being able to be reduced; the possibility of savings on hydrants that could be spaced farther apart. These are two examples where there could be savings in construction cost. Some concerns that will need to be addressed in this two year period are: The water main tap installation fee and water stand-by fees. But these are concerns can be addressed. The water purveyors in this state should be met with to see if concessions could be made that would eliminate or at least lessen the stumbling blocks to this proposed adoption. The stand-by water fees in place are another issue that unfortunately has to be dealt with. When you look at the fees that are sometimes charged for these two issues, it can appear that you pay more for better protection and technology when we all are aware that less water is used when fire sprinkler activation occurs due to a fire compared to extinguishment by a responding fire engine. Studies and evaluation shows that on average, 341 gallons of water is used by sprinkler activation compared to 3000 gallons usage when using fire hoses in extinguishment.

The fire commission and the legislative service needs to take the lead when it comes to safety and this new safety requirement. None of us should look at this as a mandate or requirement forced upon them; but we all should look at this with one another's safety in mind. Fire does not discriminate; it happens in newer homes as well as older homes. Fire happens in smaller homes as well as larger ones.

On behalf of the members of the Fire Marshals Association of West Virginia, I ask that this commission and potentially the legislative service send forth the 2009 International Residential Code as a part of the State Building Code to show the people of this great State your concern for the safety of all West Virginias and others who visit. I would be happy to provide you with any additional information needed to support the need and use of this life safety technology. Thank you for your time.

Sincerely,

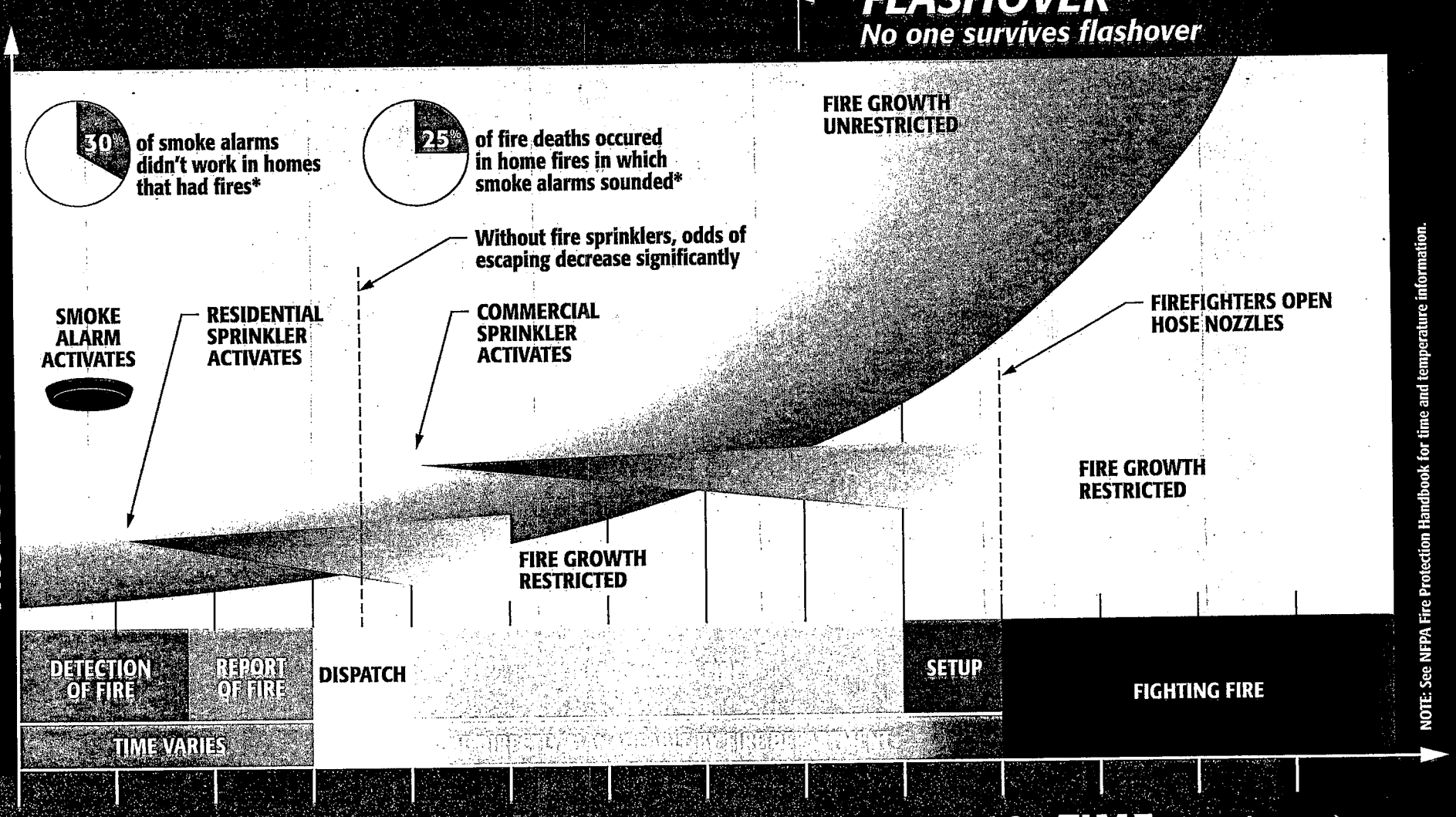
6/16/09
(Date)

Kenneth E. Tyree Jr.
President
Email @ ken.tyree@charlestonfire.com
Phone: (304) 348-8058

Attached Documents:

1) Time vs. Products of Combustion Chart
2) Document titled: Fire Sprinkler Initiative: Bringing Safety Home
3) Document titled: Fire Sprinkler Initiative, Myths vs. Facts
4) Document titled: Fire Protection System Water Supply Issues, A White Paper, July 31, 2006

TIME vs. PRODUCTS of COMBUSTION



NOTE: See NFPA Fire Protection Handbook for time and temperature information.

ACTIONS BEFORE FIRE

1) TEST SMOKE ALARMS
2) CONDUCT FIRE ESCAPE DRILLS

*U.S. Experience With Smoke Alarms and Other Fire Alarms. NFPA. September 2001.

Northern Illinois Fire Sprinkler Advisory Board
FireSprinklerAssoc.org

CHICAGO SPRINKLER FITTERS LOCAL 281 EST. 1901

ORLAND FIRE PROTECTION DIST.

ORLAND PROFESSIONAL FIREFIGHTERS Local 2754

STEAMFITTERS LOCAL 669

Doc # 2

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

FIRE SPRINKLER INITIATIVE: BRINGING SAFETY HOME

Fires in the home pose one of the biggest threats to the people of your community. Nearly 400,000 home fires occur every year in this country and, in one recent year, nearly 3,000 people died in fires that started right at home. Home fire sprinklers are a proven way to protect lives and property against fires at home.

These life-saving systems respond quickly and effectively to the presence of a nearby fire. When sprinklers are present, they save lives.

- **If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.**
- **People in homes with sprinklers are protected against significant property loss—sprinklers reduce the average property loss by 71 percent per fire.**

Model safety codes now require the use of home fire sprinklers in new one- and two-family homes. These requirements offer the highest level of safety to protect the people of your community.

- **Home sprinkler systems respond quickly to reduce the heat, flames, and smoke from a fire, giving families valuable time to get to safety.**
- **Roughly 90 percent of the time, fires are contained by the operation of just one sprinkler.**
- **Each individual sprinkler is designed and calibrated to go off when it senses a significant heat change.**
- **Only the sprinkler closest to the fire will activate, spraying water directly on the fire.**

FACTS ABOUT THE COST OF HOME FIRE SPRINKLERS

The Fire Protection Research Foundation recently issued the *Home Fire Sprinkler Cost Assessment* report. The report reveals that the cost of installing home fire sprinklers averages $1.61 per square foot for new construction. Installing home fire sprinklers can:

- **Reduce property loss in the event of fire**
- **Cut homeowner insurance premiums**
- **Help qualify a home for a tax rebate**

FACTS ABOUT U.S. HOME STRUCTURE FIRES

U.S. fire departments responded to an estimated 399,000 home structure fires in 2007.
These fires caused:

- 2,865 civilian fire deaths
- 13,600 civilian fire injuries
- $7.4 billion in direct damage

Roughly 84 percent of all civilian fire deaths in 2007 resulted from home structure fires.
On average, eight people died in U.S. home fires every day.

Sources:
Fire Loss in the United States during 2007 by Michael J. Karter, Jr., NFPA, Quincy, MA, August 2008
Home Structure Fires by Marty Ahrens, NFPA, Quincy, MA, September 2007

NFPA

The Fire Sprinkler Initiative, a project of the National Fire Protection Association, is a nationwide effort to encourage the use of home fire sprinklers and the adoption of fire sprinkler requirements for new construction.
**Data referenced from NFPA, the Home Fire Sprinkler Coalition, and other sources.*

VOC# 3

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

MYTHS VS. FACTS

When considering home fire sprinkler requirements for your community, it is important to address key myths often raised by sprinkler opponents. The fact is, because automatic sprinkler systems have been commonly used in structures for many years, the evidence is clear that such systems:

- Are a proven way to protect lives and property against fires.
- Respond quickly and effectively to the presence of a nearby fire.
- Function well, without creating problems for homeowners.

Model safety codes now require the use of automatic fire sprinklers in new one- and two-family homes. While public education has increased the number of residents who have voluntarily installed sprinkler systems in their homes, ***it is time to take public safety efforts a step further by requiring the life-saving protection of fire sprinklers in new homes.***

Following are a few of the myths along with the facts about home fire sprinklers.

Myth
"Home fire sprinklers are expensive and will make housing unaffordable, especially for first-time buyers moving to our area."

Fact
The fact is, home fire sprinklers are affordable. The Fire Protection Research Foundation recently issued the *Home Fire Sprinkler Cost Assessment* report, which revealed that the cost of installing home fire sprinklers averages $1.61 per square foot for new construction.

To put the cost of a sprinkler system into perspective, many people pay similar amounts for carpet upgrades, a paving stone driveway, or a whirlpool bath.

Sales in many U.S. communities where sprinkler systems are available show that, not only are consumers requesting this feature, but also that houses with sprinkler systems are selling faster than those without.

Installing home fire sprinklers can help residents:

- Significantly reduce property loss in the event of fire
- Cut homeowner insurance premiums
- Help qualify home for a tax rebate
- Help support local fire service efforts

Myth
We don't need sprinkler mandates; they can be installed in homes voluntarily.

Fact
Mandating sprinklers in new one- and two-family homes provides a greater overall level of safety in communities. By requiring these life-saving devices in new homes you are ensuring that a large number of residents can enjoy the same level of safety found in many offices, schools, apartments, and public buildings.

Beyond the life safety benefits of home sprinklers, there are other incentives for jurisdictions that mandate sprinklers in new homes. By mandating sprinkler requirements, cities and towns can reduce the strain on fire service personnel, limit damage to property, and help conserve municipal water resources by reducing the amount of water needed to fight fires (fire-fighting hoses use more than eight times the amount of water used by automatic fire sprinklers).

Myth
"Home fire sprinklers often leak or activate accidentally."

Fact
Home fire sprinkler systems are much like home plumbing systems – when installed and maintained properly, there is a very low risk of leaks. Each individual sprinkler is designed and calibrated to activate only when it senses a significant heat change, directing water to the area of the fire.

Over the last 50 years, records indicate the likelihood of leaks from automatic sprinkler systems is very remote.

Myth
"When a fire occurs, every sprinkler will activate and everything in the house will be ruined."

Fact
In the event of a fire, only the sprinkler closest to the fire will activate, spraying water directly on the fire, leaving the rest of the house dry and secure. Ninety percent of the time, fires are contained by the operation of just one sprinkler.

Myth
"The water damage caused by the sprinkler system will be more extensive than fire damage."

Fact
Home fire sprinklers can significantly reduce property loss and damage due to a fire. The sprinkler will quickly control the heat and smoke from the fire, limiting damage to other areas of the house, giving residents valuable time to get out safely.

Any resulting water damage from the sprinkler will be much less severe than the damage caused by water from fire-fighting hose lines. On average, home fire sprinkler systems use about eight times *less* water than fire hoses.

Myth
"Home fire sprinkler systems are not practical in colder climates, as the pipes will freeze and cause water damage."

Fact
With proper installation, home sprinkler systems will not freeze in cold settings. NFPA13D sets forth guidelines on proper insulation to avoid pipes freezing. The Chicago area is a great example of a cold weather region where many jurisdictions have passed sprinkler mandates for new homes with limited to no problems with systems freezing.

Myth
"Home fire sprinkler systems are unattractive and will ruin the aesthetics of our residents' homes."

Fact
Actually, new home fire sprinkler models are very unobtrusive, can be mounted flush with walls or ceilings, and can be concealed behind decorative covers.

Myth
"Any time a smoke alarm goes off it will activate the home fire sprinklers."

Fact
This is incorrect. Each individual sprinkler is designed and calibrated to activate when it senses a significant heat change. They do not operate in response to smoke, burned toast, cooking vapors, steam, or an activating smoke alarm.

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

NFPA
A PROJECT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

Myth
"A smoke alarm provides enough protection."

Fact
Smoke alarms alert occupants to the presence of danger, but do nothing to extinguish the fire. Home fire sprinkler systems respond quickly to reduce heat, flames, and smoke from a fire, giving residents valuable time to get out safely.

If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.

Doc # 4

Fire Protection System Water Supply Issues

A White Paper

July 31, 2006

Prepared by:

Buddy Dewar, Director of Regional Operations
National Fire Sprinkler Association

Fire Protection System Water Supply Issues – A White Paper

A key element in effective life and property protection from fire is the automatic fire sprinkler system. Data compiled by the United States Fire Administration and the National Fire Protection Association have clearly proven the life safety and property preservation benefits of fire sprinkler systems. This data shows that residential fires account for over 80% of our nation's fire deaths. People are not dying from fires in fire sprinkler protected property. A study based upon 15 years of fire loss data from Scottsdale, Arizona shows the average property loss for residential homes with fire sprinkler systems was $2,166 compared to a $45,019 average loss for homes without fire sprinklers. Prince George's County, Maryland, also reports a significant difference in fire losses between homes that are sprinkler protected and those that are not. Thus, there has been, and will continue to be, an increase demand for new buildings to be constructed with fire sprinklers installed including the residential home.

And key to successful fire sprinkler operation is adequate water supply. The national design and installation criteria for automatic fire sprinkler systems have been adopted by the State Fire Marshal for statewide application through statutory empowerment. The role of local government is to ensure these national fire sprinkler system design standards are met when these fire sprinkler systems are installed in new and existing buildings. Compliance with these national design standards, for the most part, are consistently applied and enforced throughout the State of Florida by fire and building departments. However, even though these national standards establish optional criteria for water supply connections, these national fire sprinkler design standards for the most part are ignored by water purveyors. These standards provide for alternative designs and often the water purveyor selects the allowable option, a decision that is intended to be decided by the owner. This inconsistency has caused horrendous cost overruns in fire protection system installations; additional and unnecessary taps; diminishing levels of life safety; significantly increased but unnecessary infrastructure costs; discriminatory fees; and a multitude of sidebar problems that, simply stated, must stop. It is the consumer who is paying outrageous fees and unnecessary material costs that is being hurt by this lack of consistent statewide application of codes and standards for water supplies for fire protection systems.

Accordingly, we strongly encourage the Florida Fire Safety Board to recommend that the CFO through its seat as a Cabinet member to recommend that the Governor and Cabinet appoint a select committee to research solutions to this growing problem and recommend needed actions to the Governor and Cabinet and, if necessary, the Florida Legislature. Because the Florida Public Service Commission, The Department of Environmental Protection, The Department of Financial Services, our Water Management Districts, and the Department of Professional and Business Regulation all have some degree of oversight with our state's water supplies it is felt the Governor and Cabinet appointed select review committee is appropriate.

DISCUSSION:

ISSUE 1. In the August 2006 edition of ***Florida Trend*** magazine there is an article on water conservation. This article reports that Miami-Dade County must prepare for a 100 million-gallon-per-day increase in water usage expected over the next twenty years. We must argue that many political jurisdictions have failed miserably in identifying the significant water distribution system cost savings allowed by the widespread use of automatic fire suppression systems.

Community water distribution systems are sized based upon expected growth and water supply demand. Typically a water department will provide fire protection for the community they serve by providing the required fire flow for fighting fires. The size of a water distribution system is often governed by the expected demand of the calculated fire flow for that area. This demand on the water system will increase the diameter of the piping and the amount of water that is in storage resulting in an increase in the cost of a water distribution system. A savings of 20-80% is possible on fire flow demands when sprinkler systems are installed. This reduction can save the water authorities thousands of dollars each year.

The Florida Fire Prevention Code requires that every building site have adequate water for fire fighting. The amount of water necessary to fight a fire for a particular building is based on the type of construction, building size, and fire hazard of the occupancy. The following is one of many different examples of fire flow requirements, again based upon the type of material used for construction.

Total Fire Area in Square Feet					
(Gallons per Minute Fire Flow)	Construction Type				
	I II-Fire Resistant	II one hour III one hour	IV Heavy Timber V one hour	II nonrated III nonrated	V nonrated
500	5500	3700	2600	2100	1600
750[NT1]	7800	5000	3500	2700	2000
1000[NT2]	11100	6800	4700	3500	2400
1250[NT3]	15900	9300	6200	4500	2900
1500[NT4]	22750	12700	8200	5900	3600
1750	30200	17000	10900	7900	4800
2000	38700	21800	12900	9800	6200
2250	48300	24200	17400	12600	7700
2500	59000	33200	21300	15400	9400
2750	70900	39700	25500	18400	11300
3000	83700	47100	31100	21800	13400
3250	97700	54900	35200	25900	15600
3500	112700	63400	40600	29300	18000
3750	128700	72400	46400	33500	20600

THE SIGNIFICANT ISSUE here is the fire flow demand for properties with a fire sprinkler system is much less than non-sprinkler protected buildings. Buildings that are protected by a full sprinkler system designed in accordance with national fire sprinkler design standards need only provide the required water supply for the system as designed. An example, it may take only 375 GPM to meet the fire sprinkler system design flow for a 60,000 square foot Type I Fire Resistant sprinkler protected building – if fire sprinklers were not installed then the fire flow demand is 2,750 GPM. The Florida Fire Prevention Code requires a minimum of 1,000 gallons per minute fire flow as a liberal safety factor. Thus, adding fire sprinklers can reduce the fire flow demand by 1,750 gpm in this example where a smaller diameter pipe could be used. Florida's Building and Fire Codes already require most of these larger occupancies to be protected with automatic fire sprinkler systems yet we have not done a great job in designing our water supply infrastructure, downsizing the system to meet new fire flow demands. This is particularly true when major plots of land is converted into commercial and residential property and new water distribution systems are design and installed. A recent development announcement of 4,211 acres of land into what will become a new city in Escambia County underscores the need for further investigation of water distribution systems. Starting with this vacant undeveloped land, it is possible to reduce the material costs for the water distribution system by over 50%, which then causes less demand for water meaning less reserves, which means less leakage as the pipes are smaller, which means a significant cost savings on this new community's water distribution infrastructure.

Fire fighting actually consumes a small amount of water compared to the total annual water usage. The one time fire flow demand is really what dictates the larger flow requirements. Based on the 10-year study of the fully sprinklered community of Scottsdale, AZ an average of 209 gallons of water was used by a sprinkler system as compared to an average of 3,290 gallons of water used by the fire department. Therefore, by reducing the demand needed to fight fires, the water distribution system can be smaller. A community that takes advantage of sprinkler systems installed in buildings can reduce the required fire flow and save money. While area feeder lines may still be of substantial size, branch lines clearly should be reduced when fire sprinklers have reduced the needed fire flow in new developments.

Recommendation: The focus group should discuss ways of reducing the size of water distribution system fire flow requirements where widespread use of fire sprinklers is present. Again, widespread demand for fire sprinklers already exists for many occupancy types in the current Florida Building and Fire Codes.

Issue 2. Cross-Connection protection is a substantial issue impacting the cost of fire sprinkler systems. While nobody disputes the liability avoidance need for cross-connection protection, the type and degree of cross-connection protection requirements imposed in Florida is very problematic.

Cross-connection protection has been greatly reviewed and reported on by many water purveyor industry related associations. Specifically, **AWWA Manual M-14,** ***Recommended Practice for Backflow Prevention and Cross-Connection Control,*** **3rd**

Edition, 2004, has been publish to provided expert guidance to the water purveyor on cross-connection or backflow protection.

Information on backflow prevention and fire protection is incorporated into Chapter 5, *Typical Hazards,* of the 3rd edition of M-14. Previous editions classified fire-suppression systems into 6 classifications based on the complexity of the system. The classification system is no longer used and the recommended protection now depends on the degree of hazard presented by the system. A low hazard (non-health hazard) is a potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced in the potable water supply. A high hazard (health hazard) is a potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death or illness, spread disease, or has a high probability of causing such effects.

The following requirements are generally for new systems.
Wet-Pipe Fire Sprinkler Systems - These systems usually have stagnated water that may not be acceptable to drinking water standards. For new systems a DCV is recommended on closed (nonflow-through) systems.

Dry-Pipe Nonpressurized Fire-Suppression Systems (Deluge)
These systems are open to the atmosphere and generally do not require backflow protection unless chemicals will be added when water flows, in which case a RPZ is suggested.

Dry-Pipe Pressurized and Preaction Fire-Suppression Systems
Dry-pipe pressurized systems typically are pressurized with air or nitrogen. Preaction systems may or may not be pressurized. A DCV is recommended unless there is a risk of a high hazard (e.g. chemicals) in which case a RPZ or air gap is recommended.

Residential, Single-Family Fire Sprinkler Systems
No backflow assemblies are required on systems that are constructed of approved potable material and are designed to flow water so it does not become stagnate.

Other Fire-Suppression Systems
Since system design can vary the level of backflow protection should be based on the type of cross-connection and the degree of hazard. The local plumbing code could regulate systems connected to private plumbing systems.

Fire Hydrants
Fire hydrants are used to supply water for fighting fires, but can also be used for other purposes such as temporary water service lines or testing and flushing water mains. Both the water purveyor and the fire authority should monitor fire hydrants. If backflow prevention is recommended it will depend on the degree of hazard presented by the use of the hydrant.

Unfortunately, we are finding demands for RPZ throughout the State of Florida when there is no indication, no high risk, and no need for cross-connection protection greater than the DCV.

Recommendation: The provisions of **AWWA Manual M-14, *Recommended Practice for Backflow Prevention and Cross-Connection Control,* 3rd Edition, 2004,** should be adopted for statewide application and the decision of which backflow device should be used is that of the owner and it shall be the burden of the water purveyor to prove high hazard conditions exist before requiring higher levels of cross-connection protection.

Issue 3. The size and timing of system taps is not cost effective. The most cost effective time for a tap would be when the underground piping is being installed. For the most part the location of the new building, its occupancy or hazard classification, the fire sprinkler system design criteria are already known before the water distribution system is installed in new developments. If taps could be made when the pipe is being installed then capped for future use, this would save a tremendous amount of time and money. We often have to destroy a new road or core bore under a new road when domestic and fire line taps are extended from mains on the opposite side of the road from the construction site.

And often the size of the tap is far greater than what is needed to supply the fire protection systems. The size of the tap often is decided after the construction contract has been let for the building causing much conflict and disputes over change orders to pay for the larger than needed taps. Many within the fire protection industry feel that the larger tap sizes are demanded solely for larger fees.

Recommendation: Any tap for a fire line should be of sufficient size to meet the design criteria of the fire protection systems and larger size taps should be prohibited. And water purveyors, when domestic and fire flow demands are known should allow for taps and under road extensions during the initial water distribution system installation and a reduced tap fee should be established to encourage such activity.

Issue 4. The conflict of meter sizes and fees is causing horrendously high fees to be imposed upon the new homeowner. If I choose to add a fire sprinkler system to my new single-family home, the cost (initial and monthly fees) of this system is a critical factor in my decision. If it is programmed than my base meter is a 5/8 inch and this meter will meet my domestic water demands then I would pay a set rate – typically a base rate computed considering the size of the meter plus consumption. But the design of my fire sprinkler system creates a water flow that is not attainable with the 5/8 inch meter and I need to upsize the meter to a 1 inch meter. If the sole reason for upgrading the meter is to meet fire sprinkler design criteria, then some jurisdictions charge a residential base rate for the 1 inch meter that is not overwhelming. But some jurisdictions demand a commercial base rate plus consumption when this commercial base rate is many times more than that required of the 5/8 inch meter.

Some water purveyors demand a separate tap for a single-family home fire line. This is unnecessary and again simply an added cost. Water purveyors should embrace automatic fire protection systems instead of creating barriers for their installation. Attached is a paper that discusses residential water supplies.

Recommendation: That a residential rate be established for a 1 inch meters that is not punitive and that this rate be made available throughout the state. That the NFPA water supply criteria be adopted as a statewide standard for water main connections for single-family homes.

There are many other issues but addressing these four will be a major start down the road of reducing conflicts that sometimes results in diminished life safety. We suspect some of the other issues will come out during the select committee's discussions.

We must, however, re-emphasize the critical issues needing resolution. First, our state's growth is expected to continue; the growth demands of our water distribution systems and its ability to provide fire flows needs to be managed; to properly manage this growth, developing fire flow guidelines and taking advantage of significantly reduced water distribution system size and capacity reductions afforded by fire sprinkler protected property must be considered; this should be a must for those large pieces of land that are being converted to commercial and residential use, land where new water distribution systems are needed, new systems that can be downsized; this should not be an overwhelming task as many new properties are already required to be sprinkler protected through the provisions of the Florida Building Code and Florida Fire Prevention Code; barriers that are adding cost and no value such as overkill on cross-connection protection, excessive meter charges, excessive taps, oversize taps should all be eliminated and controlled. This is in the best safety and economic interest of the public.

NATIONAL FIRE SPRINKLER ASSOCIATION, INC.

Water Purveyors Guide to Fire Sprinklers in Single Family Dwellings

Fire sprinklers have long been used in commercial buildings and large residential occupancies to provide economical life safety and property protection in those buildings. Starting in 1976, the National Fire Protection Association (NFPA) has made available a special, low cost, design and installation standard (NFPA 13D) to bring this important technology into one and two-family dwellings and manufactured homes. Every year, approximately 300,000 fires occur in homes in the United States resulting in thousands of deaths. These deaths can be prevented by the installation of a fire sprinkler system in each home.

In addition to their life safety abilities, fire sprinklers also offer the water purveyor a cost effective method of managing their water usage. During a fire in a home that does not have a fire sprinkler system, the fire department will use thousands of gallons of water to fight that fire. In a home with a fire sprinkler system, a few hundred gallons are all that the sprinkler system and the fire department will need. This efficient use of water translates into significant savings for the water purveyor.

This guide will provide a water purveyor with information on the topics that need to be addressed in preparing a jurisdiction for fire sprinklers in single-family dwellings. Although there is general information provided on all sprinkler systems this guide will concentrate on fire sprinkler system for one- and two-family dwellings, manufactured homes and townhouses. In order to save space, this guide will refer to "single family dwellings" or "homes" to make a distinction between this kind of building and a larger multi-family building like an apartment building or multi-unit condominium. In all cases, the rules that apply to single family dwellings or homes also apply to two-family dwellings, manufactured homes and townhouses that are built with sufficient separation to be considered individual homes or two-family buildings.

Model Codes

The following model codes contain requirements for fire sprinkler systems in new homes.

- The *International Building Code,* 2003 and 2006 editions, require sprinkler protection for all residential occupancies. This code is typically used for larger residential occupancies such as hotels, apartments, dormitories or condominiums, but it could also be used for single family dwellings units as well (R-3 occupancies), which would be required to be sprinklered due to this provision.

Antifreeze is permitted by NFPA 13, NFPA 13R and NFPA 13D for use in fire sprinkler systems. Only "Food Grade" (pure 95% grade Glycerin or Propylene Glycol) antifreeze is currently allowed to be used in fire sprinkler systems that are connected to any potable water source. When CPVC pipe is used in a fire sprinkler system, the only antifreeze that is allowed to be used is glycerin.

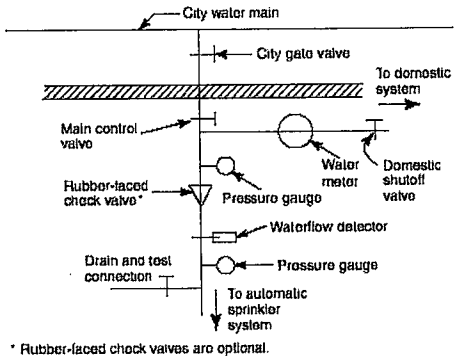
Backflow preventer approvals include the following organizations:

- The Foundation for Cross-Connection Control & Hydraulic Research at the University of Southern California
- Underwriters Laboratories - listed (classified) for friction loss and body strength
- Factory Mutual - Friction loss and body strength

NFPA13D Installation Arrangements

NFPA 13D expresses a preference for arranging the connection to a public water supply in Figure A.6.2 (shown below). The connection includes a single supply from the water main into the house. Once inside the house, the water delivery is split so that the domestic system is isolated from the fire sprinkler system. The water meter is only installed on the domestic portion, and therefore does not need to be included in the hydraulic calculations for the fire sprinkler system, and does not need to have any special requirements as far as the sprinkler system is concerned.

NFPA 13D Figure A.6.2 (a) Preferable Arrangement



The advantage to the configuration shown in Figure A.6.2(a) is that the only shut-off valve for the fire protected system also shuts off water to the domestic system. This encourages people to keep their sprinkler systems operational.

There has been significant discussion about the use of water meters on sprinklered lines. Some water purveyors want the fire sprinkler portion of the system to have a water meter, however, this practice should be discouraged on systems with waterflow alarms. Fire sprinkler systems are closed systems that do not have outlets where the homeowner can readily take water. A fire sprinkler system with a waterflow alarm will warn purveyors if an occupant of a home inappropriately attempts to take water. Given all of the problems that water meters bring to fire protection (excess friction loss, flow restriction, increased cost) it would be better to do without them. In the long run, the fire sprinkler systems

will save water purveyors money by reducing the amount of water used in fighting fires in homes. The elimination of the meter on the fire sprinkler portion of the system is a small price to pay for the life safety and water savings that the sprinkler's provide.

Figure A.6.2(b) of NFPA 13D shows another acceptable arrangement. This arrangement uses two separate supply lines from the water main into the building, one for the domestic usage and one for the fire sprinkler system. The domestic line contains a water meter while the fire sprinkler line does not. See the discussion above for justification on not putting a meter on the fire sprinkler line. This arrangement is not preferred because of the additional cost of the second supply line into the house. The homeowner should not have to pay for two separate lines.

NFPA 13D Figure A.6.2 (b) Acceptable Arrangement with Valve Supervision – Option 1

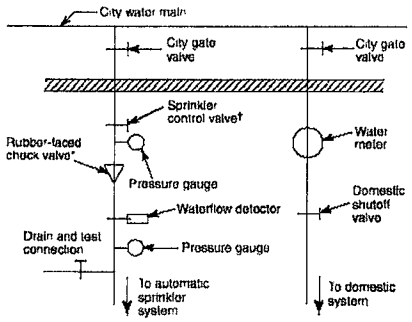
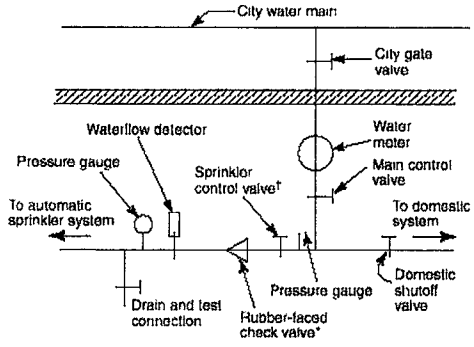


Figure A.6.2(c) of NFPA 13D shows another acceptable arrangement. This is actually similar to the preferred arrangement shown in Figure A.6.2(a), but includes a water meter on the main supply for both the fire sprinkler and the domestic water systems. While this is acceptable, the cost of the larger meter is considerable and the meter will need to be of a type that will not cause problems for the fire sprinkler system. The friction loss of the meter will need to be included in the hydraulic calculations of the fire sprinkler system.

NFPA13D Figure A.6.2(c) Acceptable Arrangement with Valve Supervision – Option 2



a potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death or illness, spread disease, or has a high probability of causing such effects.

The following AWWA M14 requirements are generally for new systems. Existing systems usually do not require additional backflow protection if they already have some form of acceptable directional flow-control protection in place (ex: single check valve or alarm check valve) until the system is substantially altered. Requiring additional backflow prevention on existing systems can have a detrimental effect on the hydraulic capability of the system as well as the cost.

AWWA M-14 recommends two approaches for backflow protection on commercial fire sprinkler systems. The 1st approach recommends a double check valve assembly (DCV) on all systems, unless there is a risk of a high hazard cross-connection, in which case a reduced-pressure zone principal backflow prevention assembly (RPZ) is recommended. The 2nd approach is to assess each type of system individually. For this approach, M-14 provides guidance on the following types of fire-suppression systems:

Wet-Pipe Fire Sprinkler Systems usually have stagnated water that may not be acceptable to drinking water standards. For new systems a DCV is recommended on closed (nonflow-through) systems, unless there is a risk of a high hazard, in which case a PRZ or air gap is suggested. For existing systems with a low hazard of cross-connection an existing modern UL listed alarm check valve (containing no lead) can continue to be used to control the direction of flow. Existing systems that have an alarm check valve that contains lead should consider protection using a DCV. If the existing system is significantly modified then the backflow protection should also be reexamined. A fire department connection may also present a potential source of contamination based on the fire departments water supply and if additives are used.

Dry-Pipe Nonpressurized Fire-Suppression Systems (Deluge) are open to the atmosphere and generally do not require backflow protection unless chemicals will be added when water flows, in which case a RPZ is suggested.

Dry-Pipe Pressurized and Preaction Fire-Suppression Systems typically are pressurized with air or nitrogen. Preaction systems may or may not be pressurized. A DCV is recommended unless there is a risk of a high hazard (e.g. chemicals) in which case a RPZ or air gap is recommended.

Residential, Single-Family Fire Sprinkler Systems do not require backflow assemblies on systems that are constructed of approved potable material and are designed to flow water so it does not become stagnate. A DCV is suggested on other systems unless there is a risk of a high hazard cross connection in which case a RPZ or air gap is recommended

Other fire-suppression systems designs can vary and the level of backflow protection should be based on the type of cross-connection and the degree of hazard. The local plumbing code could regulate systems connected to private plumbing systems.

Recommended Backflow Protection

The water purveyor needs to provide safe and reliable drinking water to all customers, and therefore needs to address all types of cross-connections. In most cases the water purveyor also needs to provide water for fire fighting operations throughout the community while at the same time continuing to address future development of the community and expansion of the total system demand.

Backflow preventers should not be necessary on small residential systems with the same components as domestic systems or on small residential systems integrated with domestic systems. Research sponsored by the United States Fire Administration and conducted by Worcester Polytechnic Institute showed that water that sits for long periods of time in fire sprinkler systems is not hazardous as long as the pipe is an approved potable piping material. The following is a summary of documents that require a backflow protection device or provide guidance for their installation.

NFPA 1, *Uniform Fire Code,* requires the installation of backflow devices to protect the public water supply from contamination and they must comply with NFPA 13 or NFPA 24, *Private Fire Mains,* and the plumbing code. Backflow prevention devices must be inspected, tested, and maintained in accordance with NFPA 25, *Inspection, Testing and Maintenance of Water-Based Fire Protection Systems.*

The *Uniform Plumbing Code* recommends the following protection for fire systems as appropriate (see Section 603.4.18); Double Check Valve Assembly, Double Check Detector Assembly, Reduced Pressure Backflow Preventer or Reduced Pressure Detector Assembly. A Reduced Pressure Backflow Preventer or Detector Assembly is only required when a system is within 1700 feet of a non potable water source and a fire department connection is provided or if there is an additive is in the system.

The *International Plumbing Code* (§P608.16.4) requires that the potable water supply connected to an automatic fire sprinkler or standpipe system be protected against backflow by using a double check-valve assembly or a reduced pressure principle backflow preventer as appropriate. Additives or a nonpotable water source (§P608.16.4.1) require a reduced pressure principle backflow preventer. Examples could include chemical additives, antifreeze, or connections to a nonpotable secondary water supply assuming there is a fire department connection. Backflow protection is not required when a fire protection system is part of the water distribution system and there is no fire department connection nor is backflow required on deluge, preaction or dry pipe systems.

AWWA Manual M-14, *Recommended Practice for Backflow Prevention and Cross-Connection Control,* 3rd Edition provides the following information on backflow prevention and fire protection systems. The recommended backflow protection is based on the degree of hazard presented by the system, either low hazard or high hazard. A low hazard (non-health hazard) is a potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced in the potable water supply. A high hazard (health hazard) is

The manufactures of small meters have used construction criteria for residential fire meters which is similar to that for existing fire meters over 3 inches in diameter. Some of the concerns for the use of these meters included; using dirty water under high flow conditions, endurance versus accuracy, 3rd party certification, and any increase in cost.

Although friction loss tables can be used to estimate pressure loss in average meters, actual friction loss from the manufacturer should be used because true values vary between manufacturers and sizes. The following table is taken from NFPA 13D and shows the average friction loss in psi through some common meter sizes. Note that at a flow of 26 gpm, common for many NFPA 13D systems, the friction loss in a 5/8 inch meter is prohibitive and in a ¾ inch meter may be too high to be acceptable. Also note that in some circumstances, the two sprinkler design requirements of NFPA 13D might make flows in excess of 31 gpm mandatory, leaving little choice except a 1 inch meter.

Pressure Losses in Water Meters

Meter (in)	Flow 18	23	26	31	39	52
5/8	9	14	18	26	*	*
3/4	4	8	9	13	*	*
1	2	3	3	4	6	10
1 1/2	*	1	2	2	4	7
2	*	*	*	1	2	3

Pressure Loss psi

* Above Maximum rated flow of commonly available meters
** Less than 1 psi

From NFPA 13D, Table 4-4.3(e)

AWWA Reference Material on Meters:

M6, *Water Meters - Selection, Installation, Testing, and Maintenance*
M22, *Sizing Water Service Lines and Meters*
C703, *Fire Service Meters,* covers fire meters 3 inches and larger.

See the discussion on arrangements of systems later in this guide for a more detailed discussion of meter sizes and arrangements.

AWWA policies and research

The following residential fire sprinkler policy statement was adopted by the AWWA Board of Directors on February 4, 1996, and was reaffirmed on June 13, 2004.

> "The American Water Works Association (AWWA) recognizes the increasing use of residential fire sprinkler systems and encourages that they be designed by licensed or accredited professionals and installed by licensed fire sprinkler contractors or properly trained personnel. The design of a system requires communication with the utility so that available water pressures and flow to the residential fire system can be determined and the design can meet the utility's requirements."

AWWA Research Foundation has published the following report: *Impact of Fire Flow on Distribution System Water Quality, Design, and Operation.* This report concludes the following:

> "Water-efficient fire suppression technologies exist that use less water than conventional standards. In particular, the universal application of automatic sprinkler systems provides the most proven method for reducing loss of life and property due to fire, while at the same time providing faster response to the fire and requiring significantly less water than conventional fire-fighting techniques. It is recommended that the universal application of automatic fire sprinklers be adopted by local jurisdictions."

Residential Fire Meters

As a general rule a fire protection water line should not have any devices in line that could restrict the flow of water (for example a meter). If this were true in all cases we would not need to develop standards for fire meters. But recognizing that combined domestic/fire protection water lines may need metering then this should be the only time such meters should be used. The scope of these efforts should not be to mandate fire service meters on dedicated fire protection lines. Meters on fire lines should have a minimal friction loss. These meters should be able to fail safely in the full flow position and an increase in sediment in the water should not affect the meter. The meter should be able to continue to flow under various failed conditions. These meters do not necessarily need to be listed for fire service, as this will increase the cost. This concept is recognized by both NFPA 13D and NFPA 13R, which allows the sprinkler system to be connected to a reliable waterworks system.

There are residential fire meters being manufactured although there is no universal standard guiding their construction. Underwriters Laboratories is in the process of releasing a document on residential fire meters (SUBJECT 327A, OUTLINE OF INVESTIGATION FOR INFERENTIAL TYPE RESIDENTIAL FLOW METERS).

At no time is the flow allowed to be less than 0.05 gpm per sq ft of coverage area.

- The domestic water demand must be added to this flow if the system is part of a combined domestic/fire protection system. Tables are provided to estimate the domestic water demand.
- The maximum system pressure is 175 psi, although some equipment is rated for higher pressure.
- The minimum operating pressure for a sprinkler is 7 psi, or the pressure needed to obtain the minimum flow, or the pressure corresponding to the sprinkler manufacturer's listing, whichever is greater.

- NFPA 13D, *Standard for the installation in Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,* is a reasonable life safety standard for providing fire sprinkler protection in homes.
  - Wet pipe systems only
  - NFPA 13D uses up to 2 sprinklers flowing to determine the pressure and flow of the sprinkler system. For example 2 sprinklers flowing 13 gpm each would produce a total system demand of approximately 26 gpm.
  - Figure A.6.2 (a) illustrates the preferred arrangement for piping arrangement and meter location. In this case the meter would only be used on the domestic water line and therefore should not be subject to the scope of our residential fire meter project.
  - Figure A.6.2. (b) Illustrates an acceptable arrangement with 2 water lines, one for the domestic and one for the sprinkler system. Only the domestic water line is metered.
  - Figure A.6.2 (c) illustrates an acceptable arrangement with a meter on the combined domestic/fire protection water line. This should be the only illustration that would require a meter that would restrict the water to the sprinkler system.
  - The minimum flow for each sprinkler is determined by the manufacturer's listing, which is dependent on the area that the sprinkler is listed to cover. At no time is the flow allowed to be less than 0.05 gpm per sq ft of coverage area.
  - If the house is a duplex and the water supply combines the domestic/fire protection then 5 gpm must be added to the total demand.
  - The maximum system pressure is 175; unless nonmetallic pipe is used in multipurpose domestic/fire protection systems then the working pressure can be 130 psi. (See 5.2.1.2 and 5.2.1.3)
  - The minimum operating pressure for a sprinkler is 7 psi, or the pressure needed to obtain the minimum flow, or the pressure corresponding to the sprinkler manufacturer's listing, whichever is greater.
  - Plans and calculations are not required by the standard, although many local jurisdictions do require them.
  - The sprinkler contractor is required to provide the home owner with inspection, testing and maintenance information

- The *International Fire Code,* 2003 and 2006 editions, also requires sprinkler protection for all residential occupancies.

- The *International Residential Code*, 2006 edition, has a residential sprinkler requirement in the appendix which allows a state or community to adopt language requiring sprinkler protection for single family dwelling units.

- NFPA 101, *Life Safety Code,* 2006 edition, now requires sprinkler protection for all new single family dwelling units.

- NFPA 5000, *Building Construction and Safety Code,* 2006 edition, now requires sprinkler protection for all new single family dwelling units.

- NFPA 1, *Uniform Fire Code,* 2006 edition, references NFPA 101 for the residential sprinkler requirement.

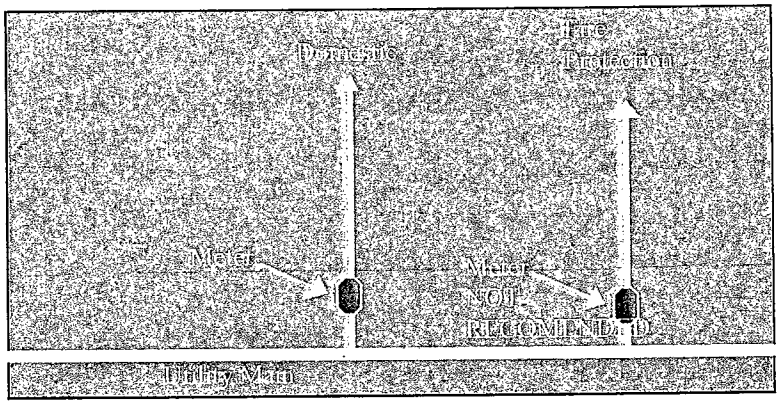
Sprinkler Standards

The following standards address the installation requirement for sprinklers in residential occupancies.

- NFPA 13, *Standard for the Installation of Sprinkler Systems,* can be used for sprinkler systems in any residential occupancy. It is typically used in large apartment and hotel buildings.
    - NFPA 13 uses a density/area method of determining the total flow and pressure for the sprinkler system. For example, in many residential occupancies a minimum water density of 0.1 gpm/sq ft is required over an area of 1500 sq ft. Other options exist including the use of residential sprinklers with a 4-sprinkler design.
    - Residential occupancies are typically considered Light Hazard.
    - The maximum system pressure is usually 175 psi, although some equipment is rated for higher pressure.
    - The minimum operating pressure for a sprinkler is 7 psi, or the pressure needed to obtain the minimum flow, or the pressure corresponding to the sprinkler manufacturer's listing, whichever is greater.

- NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height,* can be used in residential occupancies up to 4 stories in height. NFPA 13R has a high level of life safety with a lesser level of property protection than NFPA 13.
    - NFPA 13R uses up to 4 flowing sprinklers to determine the flow and pressure demand of the system. For example 4 sprinklers flowing 13 gpm each would produce a total system demand of approximately 52 gpm.
    - The minimum flow for each sprinkler is determined by the manufacturer's listing, which is dependent on the area that the sprinkler is listed to cover.

The following figure, showing a separate domestic service and fire protection service, each with its own meter is not referenced in NFPA 13D and is not considered acceptable for fire protection.



Hydraulic Requirements

NFPA 13D: (1-2 sprinkler design area)

- The design must include the flow and pressure for the most demanding pair of sprinklers in the same room. If all of the rooms in the home can be protected by a single sprinkler, then the design is just for a single sprinkler.
- Sprinklers are listed with a minimum flow discharge to cover a specific area. The flow is not permitted to be less then 0.05 gpm/sq ft. The flow is up to the manufacturer to declare and is different for each models of sprinkler. The manufacturer must prove that the flow from the sprinkler will control a severe fire in tests performed by independent laboratories. Examples of listed residential sprinklers are the Reliable model R3516 recessed pendent sprinkler listed to cover a 12 ft by 12 ft area at a minimum flow of 13 gpm at 7 psi and a Tyco model TY2596 concealed pendent sprinkler is listed to cover a 20 ft x 20 ft area at a minimum flow of 24 gpm and a minimum pressure of 32.7 psi.

NFPA 13R: (1-4 sprinkler design area)

- The design covers all of the sprinklers in the most demanding room up to a maximum of four sprinklers. If all of the rooms are protected with less than four sprinklers, the design will be for all of the sprinklers in the most demanding single room.
- Sprinklers are listed with a minimum flow discharge to cover a specific area. The flow is not permitted to be less then 0.05 gpm/sq ft. The flow is up to the manufacturer to declare and is different for each models of sprinkler. The manufacturer must prove that the flow from the sprinkler will control a severe fire in tests performed by independent laboratories. Examples of listed residential sprinklers are the Reliable model R3516 recessed pendent sprinkler listed to cover a 12 ft by 12 ft area at a minimum flow of 13 gpm at 7 psi and a Tyco model TY2596 concealed pendent sprinkler is listed to cover a 20 ft x 20 ft area at a minimum flow of 24 gpm and a minimum pressure of 32.7 psi.

NFPA 13: (4 sprinkler design area)

- When using residential sprinklers, the design area includes the four hydraulically most demanding sprinklers regardless of how many sprinklers are in the most demanding room. If the most demanding room does not have four sprinklers, additional sprinklers are added from adjacent rooms.
- The minimum required discharge from each sprinkler must be per the listing requirements of the sprinkler (see examples above) which are not permitted to be below 0.1 gpm/sq ft over the design area.

Rural water supply options

The majority of fire sprinkler systems use a public water main as the source of water supply. In rural and suburban areas without public mains, fire sprinklers are the most affordable and economic form of fire protection. In rural communities, where fire departments are farther away, and response times are often affected by the number of volunteers that can be assembled, a fire can destroy most of a building before the fire department ever arrives. Once the fire department arrives, water must be obtained from somewhere to fight the fire. Whenever a building is constructed, consideration needs to be given to how much water will be needed to fight a fire in that building. The water must be either available at the sight, or the fire department must be capable of delivering the water in a timely fashion. Calculating how much water will be needed is a function of the building's construction, size, use, contents and the fire protection systems installed.

In sprinklered buildings, the Required Fire Flow is generally the demand for the fire sprinkler system, which is much less than the demand of an unsprinklered building. This can save a community hundreds of thousands of dollars in construction costs and fire department operating budgets.

Rural water supply options include the following for supplying water to a fire sprinkler system when a public main is not available:

- Elevated tank
- Storage tank with a pump
- Pressure tank
- Underground well

Each of the options has advantages in certain situations. For all of these options, the two critical things to consider are:

1) Is the capacity of the water supply large enough to provide the demand of the sprinkler system over the required duration?
2) Is the method of obtaining water pressure adequate to provide the minimum necessary pressure at the highest, most remote sprinkler in the system?

There are a number of formulas and methods for determining the needed fire flow for a subdivision of homes. The Uniform Fire Code and NFPA 1142 each contain tables that provide the needed fire flow calculated by considering the most demanding building in a

subdivision. Each of these fire flow calculation methods contains significant reductions for fully sprinklered buildings and communities, which will help save the water purveyor in the development and maintenance costs of their own mains and distribution systems.

Water Department Fees

Many water purveyors require people that make connections to their water mains to pay "standby fees" in order to maintain their connections, even if they use little or no water. The justification for these fees is that the water purveyor makes the water available, and incurs some cost in doing so, making it logical that the person with the connection pay for the fact that the water was available for use. While this practice makes sense with many types of voluntary connections, it does not make sense with fire sprinkler systems.

Consider two identical homes right next door to each other; one with a fire sprinkler system, the other without. If a fire occurs in the home with a fire sprinkler system, the amount of water used to fight that fire will be tremendously less than the amount of water used to fight the fire that would occur in the unsprinklered home. Yet, if standby fees were being charged for the sprinklered home, the person spending their own money to save the water department money would be expected to pay an extra standby fee, while the person wasting the water purveyor's money (without the fire sprinkler system) is encouraged to continue the waste by not having to pay a standby fee.

Rather than charge standby fees, water purveyors are encouraged to build a fee structure based on the Required Fire Flow necessary to fight a fire in the building. A fee structure based on the fire flow would get everyone who relies on water for fire protection to pay for it, rather than allow people without sprinkler systems to skate by without paying their fair share. At the same time, such a fee structure would recognize the fact that less water is used in sprinklered buildings by charging people with sprinklered buildings less. This would be a fair way to share the cost of fire protection in a community without penalizing building owners who install fire sprinkler systems. This fee structure could actually increase the revenue for the water purveyor.

Scottsdale, Arizona, has been a sprinklered community for more than 15 years and has more than 50 percent of the homes protected with fire sprinkler systems. According to the Scottsdale Report, there was less water used in fires in the homes with sprinklers. Sprinkler systems discharged an average of 341 gallons of water/fire as compared to 2,935 gallons of water/fire released by firefighter hoses. Many water departments and communities have recognized this savings by developing incentives for the installation of fire sprinkler systems. The following are some examples of incentives:

- California AB 2943 – Water Charges: Residential Fire Sprinkler Systems. Under existing law, local water suppliers impose charges for water service in accordance with various requirements. This bill would prohibit a local water supplier that supplies water to retail customers from imposing or increasing water charges solely due to the installation of a residential fire sprinkler system. The bill was

referred to the State Assembly Committee on Local Government on March 30, 2006.

- The City of Altamonte Springs, FL allows a 40% credit against the water connection charge for residential occupancies which have a sprinkler system installed.

- The Kentucky Public Service Commission ordered all utilities that currently access a minimum monthly bill for fire protection services to file a new rate structure and to eliminate standby fees.

- The City of Erie, PA has made a decision to provide a rate relief which would provide a 67% decrease for sprinkler standby fees and a 35% for sprinkler connections of 2 inches or less.

- M31, *Distribution System Requirements for Fire Protection,* mentions that water utilities can levy a one-time capital recovery fees or annual standby charges for fire protection systems. These charges should be based on the actual cost to provide the service.

- M1, *Principals of Water Rates, Fees, and Charges,* recognizes that sprinklers can reduce fire demands by faster, more efficient extinguishing of fires. In additi0n, private sprinkler connections use significantly less water than hydrants for fire fighting; as a result, they may reduce actual fire demands, because water is typically supplied only in the area if the fire. Accordingly, it is argued, there should be no additional charges for private fire service.

Maintenance

NFPA 13D, section A.4.2.1 provides information on residential sprinkler maintenance. It is the responsibility of the building owner for properly maintaining a sprinkler system. They should understand how the sprinkler system operates. A minimum monthly maintenance program should include the following:

(1) Visual inspection of all sprinklers to ensure against obstruction of spray.
(2) Inspection of all valves to ensure that they are open.
(3) Testing of all waterflow devices.
(4) Testing of the alarm system, where installed. (Note that where it appears likely that the test will result in a fire department response, notification to the fire department should be made prior to the test.)
(5) Operation of pumps, where employed. (See NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection.*)
(6) Checking of the pressure of air used with dry systems.
(7) Checking of water level in tanks.
(8) Special attention to ensure that sprinklers are not painted either at the time of installation or during subsequent redecoration. When sprinkler piping or areas

next to sprinklers are being painted, the sprinklers should be protected by covering them with a bag, which should be removed immediately after painting is finished.

The most important thing that a homeowner needs to remember is what NOT to do to a sprinkler system. Do not hang objects from the sprinklers or the pipe. Do not paint, coat or obstruct the sprinklers. And do not turn off the control valve. These simple rules will ensure that the sprinkler system is functional for years to come.

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July 13, 2009

Mr. Corey M. Roblee
International Code Council
333 E. Royal Forest Blvd.
Columbus, Ohio 43214

Re: Comments towards the proposed 2009 Building Code

Dear Mr. Roblee:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes especially the 2009 IBC, IRC, IPC, IMC, IFGC, IECC, IEBC, IPMC, and ICC/ANSI A117.1 by offering your full support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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June 16, 2009

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JUN 16 2009
STATE FIRE MARSHAL
Administration

West Virginia State Fire Commission
1207 Quarrier St., 2nd Floor
Charleston, WV 25301

Re: Adoption of the 2009 International Codes

Commissioner Guffey,

My name is Corey M. Roblee and I am the Regional Director of Government Relations for the International Code Council (ICC). I serve the ICC in the State of West Virginia and I am submitting written testimony today as a proponent of adopting the 2009 editions of the International Building Code (IBC), International Residential Code (IRC), International Plumbing Code (IPC), International Mechanical Code (IMC), International Fuel Gas Code (IFGC), International Energy Conservation Codes (IECC), International Existing Building Code (IEBC), International Property Maintenance Code (IPMC), and ICC/ANSI A117.1 as West Virginia's model codes.

I am pleased to report that the ICC has enjoyed a long-standing relationship with the state of West Virginia as a partner in providing model codes such as the IBC, IRC, IPC, IMC, IFGC, IECC, IEBC, IPMC and ICC/ANSI A117.1. We wish to continue providing the most complete and comprehensive family of codes in the industry.

The International Code Council, a membership association dedicated to building safety, fire prevention and energy efficiency, develops the codes used to construct residential and commercial buildings, including homes and schools. Most U.S. cities, counties and states choose the International Codes, building safety codes developed by the International Code Council.

In addition to the adoption of the I-codes, I am requesting that all references to the International Code Council reflect the current address of our headquarters at: 500 New Jersey Ave., N.W., Sixth Floor, Washington, D.C. 20001

And finally, in previous years there has been confusion regarding language in Subsection 87-1-1, 4.1 pertaining to the usage of NFPA 5000 as the building code. I would appreciate it if the Fire Commission would consider amending this section to reflect the proper reference to the IBC as the model building code, further alleviating any perplexity.

Sincerely,

Corey M. Roblee
Regional Director, Government Relations

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Bob Cannon
WV Code Officials Association
203 South Eisenhower Drive
Beckley, WV 25802

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Cannon:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes by offering your support of the new codes as well as the International Fire Code

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption. The Fire Commission did not accept your recommendation of incorporating the International Fire code as a part of the Building Code.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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STATE FIRE MARSHAL
Administration

2009 BUILDING & FIRE CODE ADOPTION RECOMMENDATIONS

The WV COA Board of Directors, by unanimous vote at its 6/10/09 meeting endorsed the following recommendations for the 2009 adoption of the State Building and Fire Codes:

Fire Code

1. Adoption of the **2008 NFPA 70/NEC, without amendment.** Arc fault protectors on all circuits and tamper resistant receptacles are not a major cost factor per new residence (less than $1000 in the average $200,000 home) compared with the safety benefits.

2. Delete: **NFPA 5000** from Title 87 Series 1, Fire Code, Section 87-1-4, Section 4.1, line 8 & 9. NFPA 5000 is not the adopted WV State Building Code and not relevant to the State Fire Code.

Building Code

1. ADD a new **Subsection 1.6** to 87-4-1 GENERAL (Legislative Rules)

1.6 Enforcement: Enforcement of the State Building Code by all adopting counties and municipalities shall be consistent and uniform. The State Fire Commission shall determine the standards of enforcement. *(Note: WV 29-35b-(e)grants the FC authority ..."determines compliance with the state building code by officials of the state, counties, municipalities and political subdivisions of the state." Further, 29-3-5b-(d) authorizes the FC to "establish advisory boards as it deems appropriate to encourage representative participation in subsequent rulemaking from groups or individuals with an interest in any aspect of the state building code or related construction or renovation practices."*

2. ADD adoption of the 2008 NFPA 70/NEC, without amendment, as part of the Building Code. Arc fault protectors and tamper resistant receptacles are not a major cost factor per new residence (less than $1000 in the average $200,000 home) compared with the safety benefits.

3. Adoption of the 2009 IBC with the following amendment:

DELETE: 4.1.1.A Unnecessary

CHANGE: 4.1.1.B Section 112 to **Section 112.3** *This corrects an error in the 5/15/06 Title 87, Series 4, that deleted the entire Section 112 instead of sub section 112.3 The error deleted the authority for the Board of Appeals.*

Include adoption of Appendix G **Flood Resistant Construction.** *This affects only municipalities and counties who have adopted a flood plain ordinance by identifying requirements, variances and conditions that simplify building code compliance for new or renovated structures within a flood plain. It has no effect on municipalities and counties without a flood plain ordinance.*

4. Adoption of the 2009 IRC with the following amendment:

ADD: **SPRINKLERS FOR NEW ONE & TWO FAMILY DWELLINGS SHALL NOT BE REQUIRED PRIOR TO ADOPTION OF THE 2012 IRC.**

This extends the ICC effective date of 2011 to 2012 in West Virginia. It allows the ICC code adoption process to more effectively deal with water flow and pressure issues or alternate technology to make residential sprinklers more feasible in WV, where adequate water supply and pressure are significant issues in most areas of the state.

CHANGE Table R301.1(1) GROUND SNOW LOAD to **LIVE LOAD/ROOF SNOW LOAD OR OR GROUND SNOW LOAD**

This eliminates confusion for local jurisdictions and design professionals, simplifies the design requirements for 30 psf live load and roof snow load. Comparable ground snow load calculations are in the 20 psf range.

DELETE 2006 amendment to Section G2415.9 Minimum Burial Depth - Unnecessary

DELETE 2006 amendment to Sections R311.5.3.2 & 2 Maximum Riser Height and Tread Depth - Unnecessary

DELETE 2006 amendment to Section R311.4.3 Landings at doors - Unnecessary

DELETE 2006 amendment to Section R403.1.7.1 Building clearances from ascending slopes - Unnecessary

DELETE 2006 amendment to Section R403.1.7.2 Footing setback from descending slope surfaces - Unnecessary

DELETE 2006 amendment to Chapter 11 Energy Efficiency Section N1101, pages 4-8 - Unnecessary

5. Adoption of the 2009 IPC, IMC, IFGC (2006 amendment to Section 404.9 unnecessary) & IECC without amendments.

6. Adoption of the 2009 IPMC. This code may be rejected at the option of the local jurisdiction or may be adopted by the local jurisdiction without adopting the other national codes and standards listed in this section.

7. Adoption of the 2009 IEBC without amendment. The 2006 amendments are unnecessary.

8. Adoption of the 2003 ICC/ANSI A 117.1 Accessible and Usable Building and Facilities – unchanged from 2006

9. Adoption of the 2009 IFC as a part of the State Building Code, pending receipt and review of the 2009 printed edition. This code is a significant tool for design professionals and code officials, combining the applicable NFPA standards into one publication. As a building code element **IT HAS NO EFFECT ON THE STATE FIRE CODE.** Also, the Legislative Rule, Title 87, Series 4, Section 87-4-3 Sub Section 3.1 specifies "Whenever there is a conflict between the State Fire Code and the State Building Code the State Fire Code takes precedence." A review of the 2009 edition can determine, identify and eliminate any such conflicts prior to adoption. WVCOA will provide all necessary administrative assistance to the FM Staff.

10. Change 87-4-5 Exceptions - - Group U utility structure ...150 sq. ft. to **200 sq. ft.** – consistent with IRC and IBC provisions exempting 200 sq. ft. utility structures.

11. Change all applicable addresses etc, upon review of the 2009 printed editions. Again WVCOA will provide any assistance desired by the FM staff.

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Jack E. Jamison Jr.
MEGCO INSPECTIONS
991 River Road
Morgantown, WV 26501

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Jamison:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes especially the International Residential Code and the 2008NEC in its entirety by offering your support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

MEGCO INSPECTIONS

1-800-595-7952
991 River Road
Morgantown, WV 26501

June 16, 2009

To Whom It May Concern

I, Jack E. Jamison, Jr., support the WVCOA Board of Directors 2009 ICC Building Codes adoption code recommendations.

I am especially interested that the electrical portion of the International Residential Code be adopted in its entirety without deletions or alterations.

Respectfully,

Jack E. Jamison, Jr.
Chief Inspector

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STATE FIRE MARSHAL
Administration

MEGCO INSPECTIONS

1-800-595-7952
991 River Road
Morgantown, WV 26501

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JUN 16 2009
STATE FIRE MARSHAL
Administration

June 16, 2009

To Whom It May Concern

I, Jack E. Jamison, Jr, recommend that the 2008 National Electric Code be adopted in its entirety without deletions or revisions.

One area that the WV Home Builders Association appears to have concerns with is NEC 210.12(B) requiring arc fault circuit interrupters (AFCIs) throughout the residence. These breakers may be purchased in quantities at any local supply house or building supply warehouse for $30-$40 each depending upon manufacturer and style. An example - at Lowes, a Square D Homeline is $34.97 individually but $31.95 when purchased in quantities of six or more. Square D QO is $39.97 individually and reduced to $34.97 in quantities of six or more. Ordinary thermo magnetic trip breakers are approximately $4 which would be eliminated when using AFCIs. Therefore, the actual cost difference of an AFCI would be $25-$30 times approximately 12 circuits. The current series AFCIs would offset all but $10 of the combination AFCIs. Therefore, 15 combination AFCI breakers in a panel would increase the price of the panel $300-$400.

The WV Home Builders other area of concern is NEC 406.11 tamper resistant receptacles. Tamper resistant receptacles raise the price of conventional receptacles less that $1. Most homes have fewer than 100 receptacles which would be a total increase of less than $100.

For an investment of less than $500, AFCIs will protect our homes from more than 50% of the electrical fires and tamper resistant receptacles will protect our children from many of their natural curiosities. This would be less than a 1/4 of 1% increase in the cost of an average $200,000 home - pennies a day on a new mortgage.

Informed West Virginia home buyers are interested in protecting their children and grandchildren with tamper resistant receptacles and the added piece of mind that the technology of today's combination AFCIs will provide.

The 2008 National Electric Code had 3,688 proposals and 2,349 public comments processed by the 20 code making panels in the two years preceding its printing. We must recognize the thought processes and evaluations that were given to these code changes by these consensus committees. Experts and leaders from the community and industry are on these panels and found more than 200 code changes worthy of adoption in the 2008 NEC. Recognize the endeavors of these committees and make the 2008 NEC West Virginia's current electric code.

Respectfully,

Jack E. Jamison, Jr.
Chief Inspector

WV Division
International Association of Electrical Inspectors
991 River Road
Morgantown, WV 26501

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Inspection Division

June 16, 2009

To the WV State Fire Commissioners:

According to statistics submitted to the WV State Fire Marshal's Office from the fire service throughout the state, fires attributed to **ELECTRICAL IGNITION FACTORS** totaled 10% of **ALL** fires reported for the calendar year 2007.

There were 3 civilian deaths and 4 civilian injuries associated with these fires. In addition, there were 8 firefighter injuries associated. Moreover, the total dollar loss estimated from these fires totals $6,823,715!

Nationwide statistics like these were the reasons the U. S. Consumer Product Safety Commission encouraged the development of devices to lessen electrical related fires and injuries. These devices and the associated code requirements were initiated by the Consumer Safety Council, not a manufacturer with a profit motive. This has resulted in the expanded use of ground fault circuit interrupters, development and improvement of arc detecting circuit interrupters, and tamper resistant receptacles to safe guard our children from their natural curiosities.

The West Virginia Division of the International Association of Electrical Inspectors (IAEI), a Division of the Ohio IAEI Chapter, is in full support of the adoption of the 2008 National Electric Code (NEC) without revisions or amendments.

We would like to submit for your consideration a white paper with supporting documentation prepared by Tim McClintock and Tom Moore, Ohio IAEI Board Members, who served on the Ohio Electrical Ad-Hoc Committee to consider this adoption. This document is a response to the concerns of the Ohio Home Builders Association to the compatibility and cost of the required residential code revisions. Please give particular attention to Tab 1 (response to concerns), Tab 10 (NFPA code adoption process), Tab 11 (FEMA report on residential electrical fires), Tab 13 (arc fault circuit interrupter and tamper resistant electrical receptacles), Tab 14 (NEMAs real impact of a fire), and Tab 18 (a chronological discussion of the development of code changes pertaining to arc fault circuit interrupters, ground fault circuit interrupters, and tamper resistant receptacles.) Also included is electrical manufacturer's information.

With the exception of Ohio statistics, this document is relevant to West Virginia as well as any other states' adoption process. We have also included a copy of the Nov-Dec IAEI magazine with an article entitled, "Code Adoption: Ohio's Fight for Electrical Safety."

The impact of electrical related incidents affecting the safety and welfare of West Virginia residents, can be significantly improved by your proposed adoption and support of the NEC 2008 in its entirety.

Respectfully yours,

Jack E. Jamison, Jr.
Secretary, WVIAEI

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

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July 13, 2009

Mr. Jimmy Parks, RN, MS
American Burn Association
625 N. Michigan Avenue, Ste. 2550
Chicago, ILL 60611

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Parks:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the NEC2008 as it relates to tamper resistant receptacles.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

American Burn Association

625 N. Michigan Avenue, Ste. 2550
Chicago, IL 60611

Voice (312) 642-9260 • Fax (312) 642-9130
e-mail: info@ameriburn.org

May 28, 2009

RECEIVED
JUN 01 2009
STATE FIRE MARSHAL
Administration

Attn: Sterling Lewis Jr., State Fire Marshal
c/o Nancy Olson, Secretary
West Virginia Fire Commission
Office of the State Fire Marshal
1207 Quarrier Street, 2nd Floor
Charleston, WV 25301

Dear Mr. Lewis:

Soon you will consider the adoption of the 2008 National Electrical Code which includes a requirement that all new home construction use tamper-resistant electrical receptacles. This requirement was included in the new national code after considerable research and thoughtful discussion.

The purpose of the requirement is to protect very young children from electrical burn injuries. These children are too young to *learn* not to stick keys, hairpins and other objects into electrical outlets. At this very early age, in fact, we are encouraging children to learn about shapes—to learn that round pegs fit in round holes and square ones in the square holes. It is unrealistic to expect them to discriminate between a toy and an electrical outlet. We certainly don't want them to learn this by trial and error.

Adopting this code will contribute significantly to reducing these disfiguring and disabling electrical injuries. It is critically important that the wording of this code not be changed from the current mandatory provision to a permissive statement. Adopting this code will reduce the suffering and pain that is the human cost of these injuries and will lessen the health care costs associated with these injuries.

On behalf of burn surgeons, nurses, and other members of the burn care team and the patients they serve, the American Burn Association urges your state to adopt the 2008 National Electrical Code requirement that all new homes use tamper-resistant electrical receptacles.

If you would like further information on this issue, please contact Jimmy Parks, RN, MS, Chair of the ABA Burn Prevention Committee, at The Burn Center at Arkansas Children's Hospital, 800 Marshall Street, Slot 210, Little Rock, AR 72202 (501-607-4374; fax: 501-978-6411; ParksJC@archildrens.org).

We thank you for your time and consideration of this correspondence.

Jimmy Parks, RN, MS
Chair, ABA Burn Prevention Committee

John A. Krichbaum, JD
Executive Director, ABA

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The Department of Military Affairs and Public Safety

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STATE FIRE COMMISSION
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Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Mr. Ronald K. Collins, President
Berkeley County Commission
400 West Stephen Street, Suite 201
Martinsburg, WV 25401

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Collins:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes by offering your support of the new codes.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

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1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
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July 13, 2009

Mr. Ben Roy
National Fire Protection Association
One Batterymarch Park
Quincy, MA 02169

Re: Comments towards the proposed 2009 State Building Code

Dear Mr. Roy:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the NEC2008 by offering your support of the new codes

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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JUN 12 2009
STATE FIRE MARSHAL
Administration

Testimony of Ben Roy
National Fire Protection Association
Submitted to the
West Virginia Fire Commission
Public Hearing
June 16, 2009

Good morning. My name is Ben Roy, and I am the Mid-Atlantic Regional Manager for the National Fire Protection Association (NFPA). I am submitting this written testimony on behalf of the NFPA to urge the West Virginia State Fire Commission to support the adoption of the 2008 NFPA 70, *National Electrical Code*® (NEC®).

The NEC focuses on the proper installation of electrical code systems and equipment to protect people and property from the potential dangers of electricity. As electrical equipment has become more complex and widespread, the NEC has adapted to meet new challenges. Revised every three years to allow for new technologies and improved installation safety practices, the code is the most detailed of any code or standard. As a result, the NEC is a ready-to-use, comprehensive code suitable for adoption.

For experts in the electrical community, the NEC is considered the blueprint for electrical safety throughout the world. We believe the best measure of the NEC's valuable role in public safety is its widespread use and past performance. Today, the NEC serves as the basis for electrical codes in all 50 states and around the world. NFPA is proud that the quality of the NEC makes it the most widely used and adopted code for electrical installations and the most widely adopted construction code in the world.

Using the ANSI-accredited consensus code development process, the NEC's development involves 450 volunteers, representing electrical contractors, designers, inspectors, and manufacturers; electrical testing laboratories, electrical suppliers and utilities; as well as enforcing authorities, insurance organizations, labor, and other users. These volunteers are organized into 20 code-making panels, balanced to ensure fair representation of affected interests. An 11-member correlating committee oversees the efforts of the panels. And because the process utilizes a comprehensive pool of professional expertise and safety knowledge, the resulting code protects the public while allowing for advances in design and development.

Many of the volunteers involved in the NEC development process you know well. They are representatives of the National Electrical Contractors Association; the International Brotherhood of Electrical Workers; the International Association of Electrical Inspectors; the National Association of Homebuilders; the Independent Electrical Contractors; and many others representing a broad cross section of interests and expertise.

According to the U.S. Fire Administration, each year home electrical problems cause 70,000 fires, resulting in 485 deaths and $868 million in property loss. According to NFPA, each year home fires with electrical failure or malfunction as a factor contributing to ignition accounted for 53,630 fires, 507 civilian deaths, 1,431 civilian injuries and $1,421 million in direct property damage. Because of different reporting cycles, definitions, etc. statistics can often vary slightly; however, it is clear from both reports that the problem is very serious. In a continuing effort to reduce these life safety and property loss concerns, the 2008 NEC includes provisions that reflect the two fundamental safety tenets that have been the purpose of the NEC for its more than 112 year history; protection against fire and shock hazards arising from the use of electricity.

Noteworthy changes in the 2008 NEC include the following:

1) Expansion of requirements on ground-fault circuit interrupter protection
These all important devices are time-tested in protecting the users of electrical appliances against shock hazards.

2) A new requirement for tamper-resistant receptacles (TRR)
TRRs are aimed at protecting unsuspecting young children from accidental contact with energized parts of electrical outlets. Each year approximately 2,400 children suffer severe shock and burns when they stick items into the slots of electrical receptacles. The cost of a TRR adds about $0.50 – 0.75 to the cost of an unprotected receptacle. Based on current statistics, the average home has about 75 receptacles resulting in an overall added cost of approximately $50.

3) Expansion of arc-fault circuit interrupter protection (AFCI)
The original call for enhanced branch circuit and cord protection came from the US Consumer Product Safety Commission (CPSC) based on fires attributed to electrical origin. The manufacturers, in concert with Underwriters Laboratories, worked toward developing a product and a product standard to address the CPSC concern. The AFCI was the product developed as the means to mitigate the types of circuit malfunctions that circuit breakers and fuses are not designed to protect against. The 2008 NEC expands the areas within a home required to have AFCI protection. Modern technology has provided us with the opportunity to incorporate this next generation of circuit protective devices into homes. These

devices advance the cause of electrical safety by providing early reaction and circuit interruption where wiring systems concealed within walls and ceilings are damaged. These devices also respond to damaged appliance cords, a known cause of home fires. Why wasn't this protection provided before? It is because the technology did not exist.

The CPSC believes that the AFCI form of circuit breaker, if installed in all homes, could prevent 50% of electrical fires from occurring. I appreciate the fact that any cost increase in home construction must be closely scrutinized; however, the cost for including this life-saving technology is truly insignificant. Using the 1700 square foot dwelling unit as an example, the NEC requires only 3 general lighting circuits, plus two circuits for the kitchen area, a laundry circuit and additional circuits for any specialized equipment, such as clothes dryers, electric ranges, and air-conditioning equipment. Based on the minimum circuit requirements the 2008 NEC would require only four AFCIs for this single-family dwelling. The electrical system of a single-family dwelling wired per the 2005 NEC is, in all likelihood, equipped with two or three AFCIs. The net increase of AFCIs based on the 2008 NEC is only one or two devices. With that said most electrical contractors provide more circuits than the national standard requires. Even if the number of circuits requiring AFCI protection in this dwelling is doubled to eight, the increase in the number of AFCIs is only going to be five or six because two or three are already being provided to comply with the 2005 NEC.

Total cost of applying the 2008 NEC code requirements to three houses

The cost impact statements below were prepared by three board members of the Ohio Chapter of the International Association of Electrical Inspectors. All three members have extensive experience with the electrical code. If these costs are amortized over a 30 year mortgage, the resulting monthly costs based on the current prime rate are as follows:

900 square foot home = $160.18 or 93 cents/month
1700 square foot home = $205.27 or $1.19/month
2100 square foot home = $241.36 or $1.40/month

However, the discussion of affordability is a red herring. Historically the mathematical relationship between the cost to build a home and the cost to buy a home has been questionable at best. The price of a new home is governed by market forces, including the cost of existing homes. Savings that are realized from new methods and less expensive materials, such as lightweight truss construction, are typically not passed on to the consumer. Granite counter tops and whirlpool baths are often installed in spec homes, even though they are not required, yet those homes still need to compete with the existing housing stock.

Representatives speaking on behalf of the homebuilding industry have been vocal in opposing the important and needed safety improvements in the 2008 NEC. Their opposition has been based primarily on cost. This industry segment is represented on the NEC technical committees and was aware that these changes were going to be made unless they brought the issue before the NFPA membership with a persuasive argument. They chose not to do so.

In conclusion, these changes, which were arrived at after significant substantiation and deliberation from numerous, diverse organizations and individuals, have a single-minded purpose of making electrical systems safe in the place that we expect to be safest – our homes.

NFPA supports the adoption of the 2008 NEC as written understanding that states may have special circumstances that need to be addressed though the state committee process. However, we believe those amendments to be mostly administrative issues and limited in nature.

It is NFPA's hope that you will continue to move forward by providing its citizens with the appropriate level of safety outlined in the 2008 NEC.

Thank you for the opportunity to address this Commission. We at NFPA look forward to working with you and supporting the adoption of the 2008 NEC.

NEMA®
Setting Standards for Excellence

RECEIVED
JUN 16 2009
STATE FIRE MARSHAL
Administration

June 9, 2009

State of West Virginia Fire Commission
C/O Nancy Olson, Administration
Office of the State Fire Marshal
1207 Quarrier Street
2nd Floor
Charleston, WV 25301

Dear State of West Virginia Fire Commission Members:

On June 16, you will hear public testimony regarding the adoption of the 2008 *National Electrical Code®*, including recommendations for Section 406.11, which requires tamper-resistant receptacles to be installed in new residential construction. On behalf of the National Electrical Manufacturers Association (NEMA), I wholeheartedly support Section 406.11 and urge you to retain this standard in West Virginia's electrical code.

The NEC's purpose is to protect people and property from the hazards of electricity, and the tamper-resistant requirement was written into the Code after considerable research and discussion. Each year approximately 2,400 children receive emergency room treatment for injuries related to electrical outlets, or receptacles, according to U.S. Consumer Product Safety Commission data.

Tamper-resistant receptacles offer the only automatic and permanent protection against electrical injuries. The built-in shutter system prevents foreign objects from touching electrically live components, but plugs can be inserted and removed as usual. Research shows that plugs are not more difficult to remove with these devices. And while there is no substitute for parental supervision, tamper-resistant receptacles offer greater peace of mind which many of your residents would appreciate.

NEMA is working with burn surgeons, nurses and other members of the American Burn Association – medical professionals who treat debilitating and disfiguring burn injuries every day, often related to electrical receptacles. The ABA supports NEC Section 406.11 because it recognizes the priceless benefits of this greater level of electrical safety.

Nearly 30 states have already begun enforcement, or are on schedule to implement the Code by the end of 2009, and West Virginia children deserve the same level of protection. It is critically important that this becomes a mandatory provision.

More information can be found at www.childoutletsafety.org. Together we can create a safer world for children.

Sincerely,

Andrei Moldoveanu
Technical Director, National Electrical Manufacturers Association

The Department of Military Affairs and Public Safety

Joe Manchin III, Governor

Charles L. Eversole
Chairman
Bill L. Spencer
Vice Chairman
Chuck Runyon
Secretary

STATE FIRE COMMISSION
1207 Quarrier St, 2nd Floor
Charleston, WV 25301

Phone: (304) 558-2191
Fax: (304) 558-2537

July 13, 2009

Andrei Moldoveanu
NEMA
1300 North 17th Street
Suite 1752
Rosslyn, VA 22209

Re: Comments towards the proposed 2009 State Building Code

Dear Moldoveanu:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes specifically the NEC2008 as it relates to tamper resistant receptacles.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

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July 13, 2009

Mr. Chris A. Ilardi, Chairman
Home Builders Association of West Virginia
2220 Washington Street East, Suite 1
Charleston, WV 25311

Re: Comments towards the proposed 2009 State Building Code

Dear Ilardi:

We are in receipt of your comments submitted prior to the deadline of June 16th, 2009 at 4:00pm. We thank you for your interest in the Building Codes and your position to oppose the 2009 IRC.

We have shared your comments with the members of the Commission and on June 29th at a special meeting, the Commission approved the Codes with the required rule changes as presented and we will recommend them to the Legislature in the 2010 session for adoption.

Sincerely,

WV State Fire Commission

Ted A. Shriver AIA, Commissioner
Acting Code Committee Chairman

/tas

HOME BUILDERS ASSOCIATION OF WEST VIRGINIA

A MEMBER OF THE NATIONAL ASSOCIATION OF HOME BUILDERS

2220 Washington Street East, Suite 1 • Charleston, WV 25311 • Phone (304) 342-5176 • Fax (304) 342-5177
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June 16, 2009

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JUN 16 2009
STATE FIRE MARSHAL
Administration

West Virginia State Fire Commission
1207 Quarrier Street, 2nd Floor
Charleston, WV 25301

Dear Sirs,

Please consider this our written comments on the proposed rule change to the State Building Code filed May 14, 2009, **OPPOSING** the adoption of the 2009 International Energy Conservation Code in lieu of the existing language. We are most concerned on the effect this new code would have on the cost of constructing a new home, and we are therefore providing you with the following information.

This comparison reflects changing from the "Energy Efficiency" section of the Legislative Rules, adopted on 3/05/07 and effective 04/01/07, for the State Building Code to those found in the 2009 IECC. We have based this information on building a very modest 2 story, 3-bedroom home over an unfinished basement with no garage or carport. The dimensions are 28 feet by 32 feet for all floors with a simple gabled roof with a 5/12 pitch. The finished square feet would be 1,792. This would be a simple design and a smaller than average home than those being built in West Virginia today.

The change in R values for insulating the home would require the following:

CHANGE REQUIRED	MATERIALS COST DIFFERENCE
1. Change from R-30 to R-38 in attic ceiling for 896 sq. Ft.	$ 107.43
2. Change from R-13 to R-20 in walls. R-13+5 is acceptable, therefore an additional 1 inch, R-5 foam board needs to be added for 2900 sq. ft.	1,905.09
3. Presently, sealing of seams with tape, caulking or weather stripping is sufficient to limit air infiltration. New code will require additional sealing of new areas, as well as needing house wrap to ensure compliance with air test of home to achieve standard of < 7 air changes per hour. House wrap for 2900 sq. ft.	588.30
Tape & foam insulation for new areas only	117.53
4. Change from R-4 to R-10/13 in basement walls. 2 inch foam instead of ½ inch. 1080 sq. ft.	1,180.31

A Building Force

5. Window ratings changed from Ua 55 to Ua 35 max. Windows changed from Ua 48 to Ua 35. Cost to include extension jambs needed for additional 1 inch wall thickness. **855.95**

   Doors need extension jamb material as well.
   76.89

6. Change from R-5 to R-8 for ductwork outside of thermal envelope in attic. **217.65**

7. Change from standard to programmable thermostat **163.69**

8. Air to air exchanger due to "tightness" of home. **529.00**

9. Pressure test of home for < 7 air changes per hour **400.00**

10. Pressure test of duct work for < 6cfm air loss. **175.00**

TOTAL MATERIALS ***$6,316.84***

The costs outlined above are for materials only. The overall cost of the home would be increased by the labor associated with adding foam to outside frame walls, installing house wrap, installing windows and doors with extension jambs, sealing and insulating the additional areas per the new code and the installation of the air to air exchanger. These additional labor costs would make the ***overall additional costs well over $8,500.00*** for this very modest home. Our example does not exhaust the areas that will have these types of additional costs, but is being used to show the effect the adoption of the 2009 IECC will have on very modest homes.

As we are sure you are aware, our industry is suffering from the current economic conditions more than most. Many of our members are struggling to survive, especially in areas where real estate values are in decline. The sales price on homes is based on appraised values and not cost. The additional costs as outlined above, will not increase the appraised value and therefore not increase the sales price. Unless the purchaser can agree to pay for these additional costs outside of their mortgage, homes cannot be built to these standards, without putting the builder at risk of going bankrupt.

It is important to note that these new standards are rarely chosen by home buyers now, because they are not cost effective. The average energy savings from implementing the 2009 IECC standards is $240 per year. This would not cover the interest payment on the money borrowed to install these items, never mind actually *paying back* the homeowner for their investment.

We are aware that these standards are being sought by the Administration for the purpose of acquiring federal grants of approximately $32,000.000. However, these monies will not be provided to those who are actually carrying the burden of adopting the 2009 IECC, but used only to make ***government owned buildings more energy efficient***. The adoption of these codes is also only part of the requirements to receive these funds, one of which is the commitment that the State will reach 90% compliance within 8 years. This means that the 2009 IECC will have to be enforced in these areas, which will add permitting and inspection fees in addition to the previously described costs to builders. Since only 7 counties and 47 municipalities have adopted the State Building Code to date, there will also be administrative costs to the State or local government with jurisdiction for hiring and training new inspectors and implementing this new law.

We thank you for taking the time to consider our concerns and we hope that you will look favorably on our request to not adopt the 2009 IECC at this time.

Sincerely,

Chris A. Ilardi
Chairman
Government Affairs Committee

THE DEPARTMENT OF MILITARY AFFAIRS AND PUBLIC SAFETY
OFFICE OF THE FIRE MARSHAL

IN RE: Building Code Public Hearing

FILED
2009 JUL 21 AM 11:25
OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

Transcript of proceedings taken on the 16th day of June, 2009, at 1:00 p.m., before Francis A. Guffey, II, Hearing Examiner, at the State Fire Commission, Litton Building, 1207 Quarrier Street, Charleston, West Virginia, before Pamela Wood, Certified Court Reporter, duly certified by the West Virginia Supreme Court of Appeals, and Notary Public in and for the State of West Virginia.

PHYLLIS HAYNES EDENS, CCR, INC.
CERTIFIED COURT REPORTERS
Post Office Box 13337
Charleston, West Virginia 25360
(304) 984-3531 WEST VIRGINIA (800) 248-3531

BEFORE: **FRANCIS A. GUFFEY, II, ESQUIRE**
165 Lakeshore Drive
Charleston, West Virginia 25313

APPEARANCES

ON BEHALF OF THE STATE FIRE COMMISSION:

STERLING LEWIS, JR.
West Virginia State Fire Marshal

Joe Leake
Carol Nolte
Rudy Raynes
Bryan C. Casto

PUBLIC REGISTRATION AT FIRE CODE PUBLIC HEARING:

Bob Cannon, WVCOA
Jack Jamison, WVIAEI
Paul Linger, WVIAEI
Ted A. Shriver, WV Architects
Bob Talbott, Brewer & Co.
Ron Brown, NFSA
Mike Reel, WVAHI
Don Peace, Leground
Ron Lord, IAMPO
Jeff Herholdt, WV Division of Energy
Kelly A. Bragg, WVDOE
Ken Tyree, Charleston Fire Commission

Chuck Anderson, AAMA
Beth Thomasson HBAWV
Fred Blackmer, NAHB
Fred Meadows, WV4BA
David
Chris Ilardi, Allegheny Development Corp., Inc.
Tim Cinningham, Home Builders
Kevin Roberts, Roberts Construction

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Attachments:

Registration Sheet
Typed Statement of Jeff Herholdt
Typed Statement of Buddy Dewar
Typed Statement of Corey M. Roblee
Typed Statement of Bob Cannon

Type Statement of Jack Jimison
Typed State of Jimmy Parks
Typed Statement of David W. VanHorn
Type Statement of Ron Brown
Typed Statement of Chuck Anderson
Typed Statement of Eric Lacey
Typed Statement of James F. Williams
Typed Statement of Ken Tyree
Typed Statement of Ronald K. Collins
Typed Statement of Ben Roy
Typed Statement of Andrew Moldoenonu
Typed Statement of Chris Ilardi

Reporter's Certificate..... 60/61

HEARING EXAMINER GUFFEY: Has everybody signed in that wants to speak?

If everybody's signed in that doesn't want to speak, we want to know who's here.

Okay. Cell phones, turn them off, throw them away.

Do I have everybody's written comments? These need to be stamped in and written comments will be received until four o'clock this afternoon. That's when the office closes.

Our court reporter today is Pam Wood. We have a special seat wired with electrodes for you to come up. I want you to speak distinctly. Speak slowly on the really technical stuff.

And this is to gather testimony. There is no debate, no rebuttals, tell us what you think. Take as long as you want. We can be here all day, at least until four o'clock.

On the 29th of this month the State Fire Commission will have a special meeting here at ten o'clock to vote on the codes - June 29th at ten o'clock. It's a public meeting. Everybody's invited. We'll fit you in somehow or the other.

I was asking the question a little while ago how come the residential codes are about 3/8ths of an inch thicker than the building codes. Nobody has given me an answer yet.

Okay. Those wishing to speak, and I'll just start at the top of the list, Bob Cannon, Chief Building Code Official, City of Beckley and Raleigh County.

MR. CANNON: I'm Bob Cannon. I'm the building official for the City of Beckley and Raleigh County and the President of the West Virginia Code Officials Association.

On behalf of all three entities we urge the Commission to adopt the 2009 edition of the ICC Building Codes with the minimum number of amendments, especially that element which is NFPA 70, The National Electric Code, again without amendment, as it stands as a safety geared document. The remainder of my comments are in my submitted written comments for the Commission's edification. Thank you.

HEARING EXAMINER: Thank you, Bob. I might mentioned who I've received written comments from.

Responsible Energy Code Alliance, West Virginia Division of Energy; James F. Williams; and Paul W. Linger; NFPA; Fire Marshals Association of West Virginia;

Megco Inspections, Jack Jamison; ICC, International Code Council; Bob Cannon; American Burn Association; The County Commission of Berkley County which was written to Governor Manchin; Ben Roy, National Fire Protection Association.

Now, all of these will be made part of the record.

(Off the record discussion)

HEARING EXAMINER: All of this will be made a part of the record along with the transcript of our meeting today.

There was a meeting at ten o'clock this morning regarding the NFPA fire codes. There were several comments that were made that referred to the building codes, so if you're interested in those, you'll need to give Nancy your card and say I want a copy of it.

They do sort of cross pollinate with each other, so it's hard to separate one from the other.

Okay. Jack Jamison has a question mark whether he wants to speak or not.

MR. JAMISON: I'll just echo Bob's comments and pass.

HEARING EXAMINER: Okay. Paul Linger, a similar question mark.

MR. LINGER: The same, Francis.

HEARING EXAMINER: Bob Talbott, Brewer and Company.

MR. TALBOTT: Yes, I wanted to speak before I realized Bob Brown was here.

HEARING EXAMINER: Okay. Ron Brown, NFSA.

MR. BROWN: Thank you, sir. I mentioned to the gentlemen in the back that the opportunity to sit here and speak to this microphone and this beautiful young lady here is like an opportunity to speak with my wife; you get no feedback and say all you want. They do what they want anyway.

HEARING EXAMINER: Pam has been very patient so far.

MR. BROWN: Well, anyway, I do thank you for the opportunity to speak here today.

My name is Ron Brown. I am here today representing the National Fire Sprinkler Association. We like to believe that the association is actually the voice of the fire sprinkler industry, both commercial and residential.

And I know sometimes that causes individuals to raise their eyes, because there's a belief

that there's more of a financial interest than perhaps a real heartfelt interest in residential sprinklers or sprinklers in general.

So let me make it clear. I have 32 years of experience in fire service. I was a fire chief in Fort Wayne, Indiana, served 20 years there. I was a fire chief in O'Claire, Wisconsin for 12 years and retired from that organization before I took the position with The National Fire Sprinkler Association.

I took the position because I have the experience of actually seeing the results of residential fires, commercial fires, fighting both of those types of fires in the absence of life loss and the absence of injury, and I've had the unfortunate experience of being at the scene of many fires where there was severe injury and, unfortunately, life lost.

So my commitment to the sprinkler industry is much much more than a person who is being compensated to be here and I hope that others understand that.

My comments come with deep felt feelings and sincere belief and absolute knowledge that fire sprinklers are the instrument that will save lives in the

future, they will reduce fire injuries, and they will reduce the cost of fire loss in our communities, and particularly in this case in the state of West Virginia.

In 9/11/2001, in the twin towers, there were 2,749 lives lost. We reacted very quickly to that as a nation. We put ourselves at war. We spent billions of dollars to develop a new department of homeland security and other agencies, including the rather inconvenient cost of going into an airport and having to almost to take off all your clothes. There's a considerable cost to those individuals that work for TSA that check us out everyday. All of that because of our deep concern that it's unacceptable to lose 2,749 lives.

Having said that, each year, on average, we're losing 2,800 people which are more than what was lost in the twin towers, eight people a day, in residential structure fires.

If that would happen all at once, we would react and we would respond quickly and we would do it without hesitation. We'd try and stop that type of thing from happening in the future.

Let me be clear. Every United States agency that has anything to do with fire, including the

National Fire Academy, the US Fire Administration, The Department of Homeland Security and The Federal Emergency Management Agency, supports the code adoption including residential fire sprinklers.

In addition to that, every fire service organization in this nation - I'll repeat that - every fire service organization in this nation including The International Association of Fire Chiefs, The International Association of Firefighters, The National Fire Inspectors Association, The National Volunteer Fire Council, all of those and every organization in the nation supports residential fire sprinklers.

Why is that the case? Because these are the people, the professionals in the organizations who understand the value of and the benefit of residential fire sprinklers. So the support is out there.

Let me give just a brief history. I won't take a lot of time here. Fire sprinklers were actually invented in 1807. They've been around for 200 years. If they didn't work, there would be new technology to replace them. They've proven themselves. Their early purpose was to protect property. As a result of that 200 year history, we've learned that they not only save

property, but they save lives.

As a result of that and the fire problem the United States was experiencing, in 1973 President Nixon put together what was called The America Burning Report. He had a commission put together to look at the fire problem of the United States because it was unacceptable. We were losing about 8,000 lives a year to fire then.

I was at America Burning team that charged the fire service to do something to reduce fire loss in this nation -- property loss and life loss.

At post-commission, you saw the National Fire Protection Association and other fire service officials and organizations begin to work on the problem. Fire service people understood that fire sprinklers were the answer to the problem, so they began to develop a type of sprinkler system or a code for a sprinkler system that was ascetically attractive. You had to do that so that people would feel comfortable with them in their homes.

You had to find a way to cause the sprinkler heads to discharge quickly at a little bit lower temperature than you find for commercial heads, and you had to change the pattern of the fire sprinkler head so that it covers a different type of environment and provided for

life safety in our homes.

That's been done, and these systems are ready to go. They are reasonably priced, which I'll talk about in a little bit, and they are effective. They do save lives. In fact, a home that has residential interconnected smoke alarms in combination with a residential sprinkler system, you have an 84 percent chance of surviving a serious fire incident in your home.

There will be a lot of data talked about today. There will be facts and figures tossed around and, frankly, I think any one of us could say I don't agree with that, I don't think that's right, Well, that sounds reasonable, This doesn't sound reasonable, but, you know, the point is here, it doesn't make any difference. It doesn't make any difference what is heard today in terms of these numbers and these figures and these facts.

Because the fact is, this code was adopted in the right place by the right people. It was adopted in an international code council setting, with professional architects, engineers, builders, fire service people and all the people who understand these kinds of things, looking at the various data, questioning the data, changing the data and beginning to make some judgments; and

the fact is, the vote was 72 percent to put this requirement in the international code 2009.

So, the fact is now with that requirement being in the ICC 2009 International Residential Code, it is recognized as a minimum life-safety component in a residential setting. I repeat that. A minimum life-safety component, because that's what this code is. It's a minimum standard for safety and quality of construction of our residential structures, not only if you adopt this code in the state of West Virginia, but also in the nation.

So those decisions have already been made and I question whether it is wise to consider removing this, if it is considered to be removed from the code, I question whether it would not be a very unreasonable thing to do given it is a minimum life safety code requirement that is found in every code that's recognized as a model code in our nation.

I'm going to go down through a list of things you'll hear today and provide a little bit of counter-argument to them, and I'm sure that there are other arguments that will come from both sides.

But you'll hear today that new homes don't burn. Well, if that were the case, which it's not,

then I would question you when does a new home become old, because when it becomes old, it ought to have a sprinkler system in under that assumption.

The reason I say that new homes do burn is because the leading cause of fire happens to be men, women and children, and the contents of the home is what actually burns in the home. The house actually becomes a container within which a fire begins to develop.

Real quick, a little bit of science on fire development. A fire that ignites in a home, within about two minutes a situation develops where it becomes almost untenable for human existence. Within three to four minutes, if you are in the area of the room of origin, you will not survive. The temperatures are 1,500 to 1,800 degrees at ceiling level. They are 6- to 700 degrees at floor level, and the smoke is toxic and it will choke the life right out of you.

Most people do, by the way, two-thirds of them who die in house fires, die not from the fire, but from smoke inhalation as a result of the fire developing in the home.

A fire sprinkler system properly installed will actually, if it's in the area of the fire,

will discharge water at about 12 to 15 gallons per minute. After the head reaches a temperature of 135 to 155 degrees., one head goes off. They do not all go off at the same time. They go off one at a time as necessary.

The tests on residential fire sprinkler systems have shown us that typically in 90 plus percent of the time, two heads will extinguish the fire. So you're getting a flow of about anywhere from 24 to 30 gallons per minute of water on the fire. That's far less than 135 to 165 gallons per minute that the one inch and three-quarter fire fighting hose stream will put on a house once firefighters arrive on the scene.

Can you get rid of a fire department if you put a residential sprinkler system in nd everybody has one and every building in the community has one? No. You still need the fire service, because somebody has to come in and do the final extinguishment overhaul and get the house back in living order.

Are the chances that a person could go back into that house shortly after the fire has occurred? Yes. It becomes an environment that can be cleaned up, put back in livable condition in a very short order.

Let me make the final statement about new

construction as it relates to fire. In most cases now, if you're using engineered structural members in a newly constructed home, that new home actually becomes far less safe for the resident and the firefighters, because however the engineered structural members are stronger than standard lumber, they do fail quickly in fire conditions.

So what we're finding is in an increasing number of cases where firefighters have lost their lives, because they're arriving on the scene five to six minutes after omission, sometimes ten minutes, you never know when they're going to arrive, but they're actually walking into a death trap, into a condition where the engineered structural members are in a position to collapse upon entry.

One of the most recent case that comes to my mind occurred in Green Bay, Wisconsin just a year and a half ago. Two firefighters fell through a floor with engineered structural members.

Let's talk a little bit about cost of sprinklers. You're going to hear a wide range of costs. I can tell you this, that the one official source to make some judgments about that is the document that's put out by the National Fire Protection Association.

They surveyed across the nation in ten communities, and I believe these are communities where there had been competition driving pricing and the prices were in the neighborhood or on average $1.61 per square foot - per sprinkler square foot.

I did submit for the Commission's consideration a review, a document that, in fact, comes from Cheatham County, Tennessee, and if you look at both document one and document two, this is also a community where residential fire sprinklers are required. The cost of construction was 1.3 percent of the total cost of the building in both cases.

In one case, which was a 2,186 square foot residential structure, the installation cost was 93 cents a square foot. In case number two, a 2,139 square residential structure, 95 cents per square foot.

Now, I do acknowledge that that's in an environment where there is a competitive market. My judgement is, and I think the business people in here would agree with me, if you create a market, competition will come to that market and prices as a result of the competition are driven down.

So I do also want to point out - and when

you look at these numbers that are on these two examples I've given you, there are terribly wide swings in the percentage of costs incurred on these two structures in the area of carpet, tile and hardwood, cabinets, outside siding and so forth. So there are wide swings in costs that it looks like builders are willing to accept in many areas of construction, but seem to not be willing or interested in taking about something as minimal as 1.3 percent per square foot.

In fact, in these two examples I give you, the fire sprinkler system is the third cheapest item that's listed and itemized on this spread sheet.

Does that mean in West Virginia you see $1.61 per square foot? I doubt it. Again, you have to have a competitive market to even be able to get a handle on what the prices might be in the future.

We'll hear talk about the economy is too bad right now to do this, and I certainly understand the economic conditions that this nation is in and I particularly am sensitive to what situation the home builders find themselves in right now. It is a terrible market and it doesn't look like it's going to get very promising for them for a year or two years or three years.

If that becomes an issue, you know, one of the things that happened at the code council was to move the implementation date of this sprinkler requirement forward in the code to 2011.

If there's some thought on the part of the Commission because of the economic conditions to move that out of the code, what I would suggest is you give consideration to the possibility of extending the implementation date for both the townhouse and the one or two-family dwelling to a date even further out.

My example would be to move the townhouse component which is 313.1 or 312.1, I'm not sure of the number, move that out to 2012 and move the one or two-family dwelling out to 2013.

What benefit do you get from that? It doesn't have a financial impact immediately. It gives the economy time to turn around. It gives us time to begin to look at the infrastructure and develop a market or understand better how these systems work and how they go in and so forth, and I believe that one of the issues that the home builders association, which I assume will speak to this issue, they may not speak to this issue, but they'll speak today, I think that there's some belief on their part

that in 2011 this particular work requirement may come out of the code; and if that's the case, extend the date out. It does no harm t leave it in, because then you just simply come back and say well, it's not in the code any longer, we're going to remove it from our code.

So I offer that just as a suggested point of consideration.

Some will talk about water availability being a problem. Remember, NFP 13D which is the standard on which the residential one or two-family dwelling sprinkler systems are installed, goes to the system around available water. So if you had zero water, you had zero water and zero water pressure, what you would do is you would simply have a storage tank and it would have a capacity of about 4- to 500 gallons and you would have a pump on that tank that would deliver that water over a ten minute period of time.

The code says that you have to provide a sufficient amount of water for a ten minute flow maximum from two heads. So if the flow is 15 gallons a minute out of each head, that's 30 gallons, times ten minutes, that's 300 gallons of water on a pump and you can put a system in that will meet that standard.

I also want to point out having said that, the NFPA 13D standard is not a property saving standard. So, will houses burn down from time to time that have a residential sprinkler system? Yes.

But the standard is written so that the people or the occupants within that structure have ten minutes to get out of that structure, or if it's a case where you have a disabled individual, ten minutes for someone else to help that individual evacuate the building or the structure.

Another thing you're going to hear today is "We really don't need this." There has been a significant reduction in national fire loss over the past 25 years, because interconnected smoke alarms are, in fact the key to life saving in a home.

I agree. Granted, interconnected smoke alarms have done a wonderful job. They have reduced probably the loss of life in our nation by at least 50 percent if not more. However, a smoke alarm system is a notification device. It assumes that someone or the occupants within that home are capable of making the right decision, have not been overcome by carbon monoxide where their thought process is altered, and they're not blocked

by the path of a fire in their exit route.

We still are losing people because they do not get out, people do not react properly from time to time or they're incapable of reacting properly for various reasons.

So just like an automobile. You would not buy an automobile today if it only had air bags or if it only had seatbelts. You would buy it because it has a combination of two that maximize life safety.

The same principle applies here. Interconnected smoke alarms with fire sprinkler systems are the absolute best in life safety and are now the minimum code requirement that we have to deal with.

Water leaks -- going off in a structure right now, the heads discharge rate, this is non-fire related discharge rate, is 1 in 16 million is the likelihood that the sprinkler head would go off. I think that's a far less possibility than a plumbing leak in your residential structures.

The plumbing leading to those sprinkler heads have no more of a potential for a water leak than domestic water supply that you find in today's homes have. So this is not -- it's not the problem that it's made out

to be.

Let me just touch real quick on the final one that I want to speak on. I appreciate your tolerance, Mr. Chairman, I know I've been awhile here, but --

HEARING EXAMINER: She's the one that's working.

MR. BROWN: Was this question of choice. I embrace wholeheartedly a choice in life. There are many things that I feel the government has forced upon us that ought not be forced upon us. I feel uncomfortable with that.

But I can tell you that if left to choice, the consumer - and I think the homebuilders would testify to this - oftentimes do not make the right kind of decisions when it comes to critical life safety issues within their homeS.

If we leave the question of residential fire sprinklers to choice, why don't we leave the size or gauge of wire that we put in the house to choice of the consumer. Why don't we leave the spacing of the floor joists and the roof rafters to choice for the consumer. Why don't we allow the truck driver driving down the road who's trying to make a dollar have a choice about how fast he or she can drive on the highway.

When it comes to safety features like this, it simply does not make sense to allow the public the choice, because, as you know, we've seen a number of residences where the choice would be to put in a lawn sprinkler system before they would put in a primary life safety system that might save their child.

So that, Mr. Chairman, I appreciate again your time and patience and that concludes my statement.

HEARING EXAMINER: Thank you. We've received two more comments, both from the Homebuilders Association of West Virginia.

Okay. Next up is Jeff Herholdt, West Virginia Department of Energy.

MR. HERHOLDT: And, again, I'm Jeff Herholdt, Director of the Division of Energy.

Under its mission to advance energy and efficiency in West Virginia, The Division of Energy supports the West Virginia Fire Commission's proposed amendment to the West Virginia State Building Code, Title 87, Series 4, as filed with the Secretary of State's Office.

In terms of energy efficiency, West Virginia's current residential energy code is older or less

stringent than the 1998 International Energy Conservation Code according to the US Department of Energy.

On the commercial side the state's energy code is equivalent to ASHRAE 90.1-2001 or the International Energy Code 2003.

During the 2009 session of the West Virginia legislature, the legislature passed and the Governor signed, or has signed House Bill 2976 dealing with the promulgation of rules for a statewide building code.

This specifically identifies the 2009 edition of the International Energy Conservation Code for residential buildings or other building code or codes for residential buildings that meet or exceed equivalent energy savings.

Also put into effect was the standard 90.1-2007 for building energy code for commercial buildings.

The West Virginia Division of Energy is committed to easing the transition to improve energy codes and is prepared to increase training opportunities as well as facilitate any local concerns.

The West Virginia Division of Energy supports the amendment to the state building code as

proposed by the West Virginia Fire Commission.

Certainly, one of our concerns is the impact on builders given the current downturn in the housing market. We're encouraged to hear today coming out from the US Department of Commerce that housing starts has jumped to a 17.2 percent during the past month compared year to year.

Also, there's been a 4 percent increase in building permits for new construction. That's it.

CHAIRMAN GUFFEY: Thank you, Jeff. Next up is Lieutenant Ken Tyree of the Charleston Fire Department.

MR. TYREE: Good afternoon. I'm Ken Tyree a Lieutenant with the Charleston Fire Department with 15 years of service of which 13-1/2 have been in fire prevention as a fire inspector, plans reviewer and fire code enforcer. I'm also the president of the Fire Marshal Association of West Virginia whose membership encompasses over 100 active members of the fire service.

Our members come from departments and services throughout this state to include members of the State Fire Marshal's Office, municipal and volunteer fire departments throughout this great state from the ranks of firefighter up through fire chief.

The Fire Marshals Association is a chapter of the International Fire Marshals Association whose mission is to aid in the preservation of life and property by advocating, promoting and providing leadership and the prevention or mitigation of fire, explosion and other related hazardous conditions.

The office I hold as president of this association is a non-paid position. So I come to you today as one whose concern is public safety and firefighter safety.

As president of this association I respectfully ask this Commission to send forth a recommendation to the legislative service to adopt the International Residential Code, IRC, as a part of the state building code which shall include the installation of automatic sprinkler systems in all newly constructed, one to two-family dwellings and townhouses in accordance with NFPA 13D, standard for the installation of sprinkler systems in one and two-family dwellings and manufactured homes.

This association's only recommendation for amendment would be the effective date of installation of the automatic sprinkler system to the year 2012 instead

of 2011 and I'm referring to R313.2 of the International Residential Code, 2009 Edition, since the potential date for the state adoption of these codes would be 2010 instead of 2009.

The IRC was voted on as a consensus in September of this past year by the International Code Council membership to acquire this life safety technology.

This load constituted the last of the recognized standards utilized in the United States to contain such language. This is recognition of the need of enhanced safety measures when it comes to any residential occupancies.

Normally, the fire service does not speak with concerns when it comes to the state building code, but with this life safety technology being a part of the international residential code, I think it's a proper place for the fire service community to stand up and support this important requirement.

And as I understand, the Fire Commission's mission is to provide through leadership the best possible fire prevention, legislation, education, training, standards and resource allocation. It should go without saying that safety should always come first in the

adoption of the IRC with the one referenced amendment should be done to provide the safest conditions possible to all who reside here.

It was already referred to that nearly 3,000 people die annually in fire related incidents. Eight out of ten of them dying in homes, home fires. On average one hundred firefighters die annually in fire related incidents.

In this great state alone in the past ten years we've had 334 people die in fire related incidents with 278 of them dying in homes, with only 28 of those deaths occurring in fixed mobile homes or what some people refer to as trailers and these were statistics that came from the State Fire Marshal's Office, the national fire incident reporting system.

The question that I propose this commission and others who will consider the adoption of this code is are we interested in saving lives, can we put a particular price on life.

If we are concerned with saving lives, let's do it without so much of a concern being cost, and I'm a respecter of cost. We all have budgets, but when we consider cost, is it anymore than an upgrade in flooring or

countertops.

Studies show that sprinklers are affordable and can be cost savers compared to property being protected or the limited reconstruction cost when automatic sprinklers are operable and in place.

The majority of the fire sprinkler systems used have public water supply as their source of water. In rural and suburban areas without public water mains, fire sprinklers are the most affordable and economic form of fire protection to be had.

In rural communities where fire departments are farther away in response times are often affected by the number of volunteers that can be assembled. A fire can destroy most of a building before the fire department ever arrives.

As I've said before, and I want to emphasize the national response time for the country is four minutes and we take into consideration even in urban areas that four minutes is not achievable at times. So, there was no -- I want to make sure that everyone is aware that I'm not making any dig or a negative comment towards the volunteer fire service. They're definitely a viable community support and communities all throughout this great

state. So I definitely want to make that clear.

The other considerations that should be made in the decision of the adoption of this concern of people escaping a house unharmed with sprinklers is the answer to that concern.

Some of the options for rural water supply for fire sprinkler protection when public water supply is not available are elevated tanks, a storage tank with a pump or an underground well. When taking these things into consideration, the implementation of minimum standard as identified in the international residential code is the answer.

It should be noted that the system that would be required in one or two-family dwellings is different and would be considerably less expensive than that which is installed in a commercial construction; for example, NFPA 13 system is what would be required in commercial construction and 13D for one and two-family dwellings.

Automatic sprinklers are life safety devices that do save lives, firefighter's lives, too.

Sprinklers have been around for years and it's not new technology when it comes to one and two-family

dwellings.

The whole key to getting out alive, a house alive in a fire is early warning, which comes with smoke alarms and the prevention of flashover, or flashover is where all combustibles in a room become fully involved in the fire.

Prevention of flashover occurs with automatic sprinkler protection in place. Quick response sprinklers are a newer technology which are used in many other types of occupancies, but are first and foremost used in residential occupancies to include one and two-family dwelling homes, which enhance life safety for those subjected to fire.

I have attached a document titled "Time versus Products of Combustion" which shows the important automatic sprinklers being in place and how it enhances the chance for control and extinguishment of the fire. It also helps the occupants be able to escape safely. It helps in safety of firefighters on the scene of a fire.

With the occurrence of flashover, there is no chance for survival for occupants and sometimes even firefighters.

Remember, this automatic sprinkler

installation requirement will only pertain to newly constructed homes. The two year delay in the installation of automatic sprinklers in one or two homes will give all parties involved time to establish the infrastructure necessary to meet any and all needs and concerns.

The documents that will be attached to this submittal and comments will help to assist in further understanding of this great technology, and also I have to add that what was expressed by Ron Brown for NFSA will add a lot to the considerations.

Also, the information provided will dispel myths and give you facts. Most of the information you will or can review speaks for itself, residential sprinkler technology and installation of newly constructed homes is essential when it comes to safety.

I feel the time has come for the fire service and this Commission to step up on this issue that can and will affect firefighters' lives as well as the general public.

The legislative service should study, research and resolve to make a decision based on the need to provide the people of this state first rate safety technology that has been voted on and passed by consensus

body of individuals that expand experience of the best engineering building and fire safety community this country has seen.

I ask this Commission to send forth a recommendation for the adoption of the IRC as a part of the state building code which includes installation of automatic sprinkler systems in all newly constructed one and two-family dwellings.

Automatic sprinklers are also a plus in the new GREEN environment people are concerned with. This means less water use with automatic sprinklers. Sprinklers keep fire damage to a minimum and less fire damage gives you a cleaner environment.

It goes without saying that when sprinklers are in place and operable, that people are back in their homes much sooner and firefighters go home safer and sooner.

There are concerns from others who do not want this technology as a part of the code that has concerns and questions about items such as cost, water supply, the technology in general, which I think need to be discussed in detail and with the two year infrastructure if this was to go forth from this Commission, it would give

many people the time and opportunity to come to the table and voice their concerns, people such as the fire service, paid and volunteer, public policy leaders, building officials, builders and developers, fire sprinkler contractors, engineers, water purveyors, real estate agents, city and county planners, interior designers and insurance industry.

This code adoption should not be lessened by the removal or amending out this life safety technology of automatic sprinklers.

What some people see as a downside to the adoption of this new technology should be given consideration, but when it comes to safety, it should come first. With at least two years in front of us an infrastructure could be put in place for this new requirement in technology.

Automatic sprinklers in the installation of new construction is not cost prohibitive, because there could be tradeoffs possible that could help a builder in a subdivision development project to add homes due to spacing requirements between homes being able to be reduced, the possibility of savings on hydrants that could be spaced farther apart.

These are two examples where there could be savings in construction costs.

Some concerns that will need to be addressed in this two year period are the water, main tap installation fee and water standby fees, but these are concerns that can be addressed. The water purveyors in this state should be met with to see if concessions could be made that would eliminate or at least lessen the stumbling blocks to this proposed adoption.

The standby water fees in place are another issue that, unfortunately, has to be dealt with. When you look at fees that are sometimes charged for those two issues, it can appear that you pay more for better protection and technology when we all are aware that less water is used when fire sprinkler activation occurs due to a fire compared to extinguishment by a responding fire engine.

Studies and evaluations show that average 341 gallons of water is used by sprinkler activation compared to nearly 3,000 gallons usage when fire hoses are used for extinguishment.

The Fire Commission and legislative service needs to take the lead when it comes to safety and

this new safety requirement, none of us should look at this as a mandate or requirement forced upon them, but we all should look at this with one another's safety in mind.

Fire does not discriminate. It happens in newer homes as well as older homes. Fire happens in smaller homes as well as larger homes.

On behalf of the members of the Fire Marshals Association, I ask this Commission and potentially the legislative service to send forth the 2009 IRC as a part of the state building code to show the people of this great state your concern for the safety of all West Virginians and others who visit.

I would be happy to provide you with any additional information needed to support the need and use of this life-safety technology. I do appreciate your time.

HEARING EXAMINER: Thank you, Ken. Chuck Anderson.

MR. ANDERSON: My name is Chuck Anderson. I'm the Southeast Regional Director for the American Architectural Manufacturer's Association.

We are a trade association that represents the window industry with over 300 members. We create standards, we certify products to those standards

and then we act as a code advocate for the finished restoration of the window industry.

We are here to support the adoption of the I Codes. We have submitted a written comment for one minor change to the IRC. It has to do with Section R613.3.1. That's the section that requires that windows be labeled and details what standards they be labeled to.

The only change that we wish to make is to insert the word "permanent" in front of label. And then we further add a note that basically defines permanent, it says for this section, "permanent shall be defined as a label marked brand or bug that cannot be removed and reapplied without destroying the label."

Currently, there are probably five or six agencies that offer certification for windows to the OMO 101 standard. All but one of those actually already comply with this.

The easiest way for me to explain probably to this group as to why you would need to make that label permanent, on this label there's performance criteria, particularly design pressure that's used in designing the window for wind speed.

If you would consider breakers, what if

breakers only had to be approved by a designated certifying agency, but you didn't have to put the current rating on the breaker? That would mean that would put a lot less value on that certification of that breaker.

So that's a pretty simple explanation and I'll leave that part alone.

Furthermore, I would like to comment on the adoption of the I Codes in general. Previously, my organization wasn't taking a strong position one way or the other. What has changed is earlier in this month the United States Congress House of Representatives have taken some moves to create a national building code.

A national building code would basically supercede the consensus ICC process. And the Alum (phonetic) membership feels that while the I Code process isn't perfect, we much prefer it to a government agency basically dictating an energy code, too, as nationwide, and then enforcing that from a federal position. Thank you.

CHAIRMAN: Thank you, Chuck. Okay. Mr. Blackmer.

MR. BLACKMER: I'm Fred Blackmer. I'm Director of Government Affairs for the Eastern Panhandle Homebuilders Association, and I'm also on the State Board

of Directors for the West Virginia Homebuilders Association.

I'm here today to speak to mandatory sprinklers in single family and two-family residences.

I'll start by saying that we're requesting that that be exempted or removed if and when the 2009 code is adopted.

There are some reasons for that and, fortunately, some of the speakers before you have already identified some of the debate issues surrounding this, but I will only talk to the things that I have here.

There are three things that should be considered in support of exempting this particular mandate.

Number 1) is the economic impact on one and two-family structures. Number 2) the actual health and benefit to West Virginia residents, and Number 3) the special interest groups that quite literally hijacked the issue from code officials last September at the ICC Convention.

Sprinkler systems have been used in fire suppression for decades or centuries depending on the definition of the modern sprinkler system.

And it is true that they are effective in

commercial applications and high density residential applications. There is demonstrated positive benefit.

One and two family home applications do not have that same measurable track record. There are some basic factors to consider.

Economics cannot be the basis to support these required systems. Residential sprinkler systems have estimated absolute costs of $2,000 to $16,000 per residential unit. Those figures come, I believe, from the same study that was mentioned earlier that gave an average cost on residential structures that is totally dependent on the area and the jurisdiction and the circumstances surrounding the applications of those standards.

The single biggest purported saving that's mentioned in these things for the homeowner is insurance costs. Those insurance costs are estimated to be from 2 to 10 percent of the homeowner's insurance premium.

If the full 10 percent was recognized by an insurance company, it would still require approximately 35 years based on standard figures to recover the initial cost of a home sprinkler system.

One of the key factors that makes this particularly important to West Virginia residents and the

bodies that will have to make this decision, is that West Virginia has limited public water utilities. This factor is key when afford ability and effectiveness of a home sprinkler system.

Without public water sources, the cost of these systems becomes prohibitive. They require additional storage tanks, pumps, control hardware and create a one-size fits all standard that can have staggering costs.

The cure for the attempt to solve a problem, costs and just the durability, far outstrips the process.

Our state has prided itself on home ownership. When thousands of dollars are added to what could have been an affordable home, one more family will be denied the experience and pride of home ownership. They simply will raise the bar for qualify for home purchase on this item.

Areas of health and benefit to West Virginia residents fares no better than economic issues. The Center for Disease Control publishes fire and death statistics. The latest ones I have available were 2006, but they are representative of the issue.

This report has two very significant

findings. First, the number of residential house fires is 412,500 with deaths of 2,5080. That is a staggering number and it is unfortunate that those deaths occur.

That represented a mortality rate of 6/10th's of 1 percent resulting from house fires.

The second portion of the CDC Finding, when I have to say, quote, "Most victims of fires die from smoke or toxic gases and not from burns."

There can be no doubt that smoke and CO2 detectors are front line in saving lives during family home fires. Early warning and escape from a residential structure is key to survival.

Virtually, all organizations that talk about the value of sprinkler systems state that they should only be used in addition to smoke and CO2 detectors. Sprinklers may provide some added protection in rare circumstances as applies to single family and two-family homes.

Detectors have stand alone life saving impact. They identify a specific danger, are inexpensive and easily maintained. That can't be said for single family residential sprinkler systems.

The maintenance issue is a key issue in

these systems, and how they function and their effectiveness over an extended period of time.

The organization that does this has two positions on the maintenance. The first position is that properly installed sprinkler systems in single family homes require little or no maintenance and have an expected 20 year useful life without maintenance.

They also recommend compliance with the National Fire Council's recommendations and in a rural setting, such as West Virginia, a majority of the structures that would meet this standard would require number 1) all of the additional materials to meet the quo, but also the recommendation that they have pressurized systems with anti-freeze that need to be inspected, tested and refilled annual.

These could either be cost prohibitive or I believe the case would actually be that the lack of maintenance due to cost or the owner of the house not taking active part in their own maintenance would render them useless.

This issue has been debated for several years by International Code Council, which is the ICC that's been mentioned here repeatedly, the body that

recommends standards and changes to building codes.

The ICC has a membership drawing from many interests. Government Code inspectors, private inspectors, safety experts, professional firefighters and building trades people bring the balance meter for informed decisions.

This gathering of professionals discusses multiple issues. They form consensus based on multiple views. This represents the cross section representation of the building industry and regulators.

On September 2008 the ICC meeting was an exception. Manufacturer's, installers and fire officials created a coalition. They conducted a multi-million dollar campaign to control and prevail on this single issue. The campaign wasn't about advertising an issue research, it wasn't about winning a factual debate. It wasn't about bringing experts to participate in the entire code conference.

The campaign focused on covering the travel expenses for firefighters and other supporters to attend a single hearing and vote in favor of sprinkler mandates.

Fire departments across the country were

able to join the ICC and designate a large roster of new voters. New one time voters overwhelmed the process. The smoking gun was found when hundreds of participants left the week-long conference immediately following that single vote.

Billing codes and regulators are designated to protect the public. They are not in place to balance the wheel of manufacturing and service businesses.

Abuse of a regulatory system should not be tolerated at any level. The very way this particular provision was enacted should raise warning flags. When these tactics are needed by business and industry, merit of their position has to be questioned.

Consideration of benefit cost and effectiveness of single family residential sprinklers should be the primary issue when granting this exemption.

If there is any doubt as to the truth in conflicting statements, look at the methods that were used to force the issue before you. If there was a legitimate need or benefit for every home to have these devices, the public would demand them.

Supporters of this sprinkling provision chose not to debate, but to mandate the outcome.

Now, there have been some discussions here and with the other homebuilder associations, and it is true that building codes themselves are protecting the public. The quality and new types of construction have, in fact, contributed to the reduction in deaths from a myriad of issues in private home ownership.

There is a place for this type of thing in commercial and high density residential. It can't be argued that these aren't effective in apartment houses, high rise buildings and commercial applications to save property.

What can be argued is that the cost, the benefit and the proven or statistical safety that these issues provide have yet to be brought up.

And my research on this and the testimony I heard today, there was not one mention that I heard of the actual number of people who have died in West Virginia residential single family and duplex residential structures, and how that might have been prevented by the use of sprinklers.

There are statistics and unfortunate statistics that are all too true about the number of people that die in fires here, but this is a specific issue on a

specific item.

It's important that we protect the people of West Virginia with their safety, but also take into consideration their ability to raise their families, to own their own home, and to participate in the public process.

And Home Builders Association would be glad to answer any questions the Commission might have or any clarification they might need in detail prior to their vote on this matter. Thank you.

HEARING EXAIMNER: Thank you, Fred. We now skip to Chris Ilaridi, Home Builders.

MR. ILARIDI: Thank you Mr. Guffey.

HEARING EXAMINER: Yes, sir.

MR. ILARIDI: Most of my comments have already been put into written testimony. I just wanted to take out some of the highlights again.

I hear that housing starts are up from a report that Kelly heard earlier today. That's good. Glad to hear that. Unfortunately, it doesn't really change our opinion that we would like to see the IECC 2009 not be added to the adopted State Building Code in lieu of the Energy Conservation Code that was previously added at the last revision of the State Building Code.

This is a huge jump. In my written testimony I have detailed what those costs would be on a small average home. Initially, all of those costs would be borne by the builder. We're talking between 8- and $10,000 on a small 1,800 square foot home, kind of a starter size house.

These costs cannot be brought back up in an appraisal, which, actually, is what justifies the purchase price; so, therefore, the initial costs are going to be borne by the builder and at this time, for that matter almost anytime, $10,000 on a house that size and that price would be a rather extensive cost to try to add in to the project, but most importantly, at this time, the way the economy is, especially in our industry.

Eventually, however, of course those costs would end up being passed on to the home buyer. The energy savings provided for those costs, however, based on a standard current interest rates in the 6 percent range, there isn't going to be enough life for that to be paid back.

If they have to borrow that with their mortgage, with the amount of savings that would come from including those energy savings, they will never pay back

that 8- to $10,000 when added to their original mortgage. It wouldn't cover the interest on that 8- to $10,000, never mind paying back any of the principal.

In terms of the cost, I think one of the other things to consider is that this was an issue that was brought forth by the Governor's office in an attempt to achieve some stimulus money that, unfortunately, neither the builders who would originally have to pay for these costs or the homeowners who would end up eventually paying for these additional costs get the benefit of directly of the money that could be used only in energy saving initiatives and government buildings and not going through either the people who would be the ones end up having to pay this bill; and, therefore, that is why the Association is adamantly opposed to making these drastic increases from the current standards.

Whether they're the '98, the 2006 or the 2003, it's still the existing standards that we have in West Virginia today and these costs increase would be real.

We're not opposed to looking at each one of these recommendations and maybe picking some that are easily done or that we can compromise on for affordability, but as they are presently written in its current form, in

adopting the code in its entirety is something that we would definitely be opposed to.

And I thank you for your time.

HEARING EXAMINER: Tim Cunningham, Home Builders Association.

MR. CUNNINGHAM: My name is Tim Cunningham and I represent the West Virginia Home Builders Association. I would like to speak on the issue of the adoption of the 2008 electrical code; specifically, the first issue is the adoption of Section 406.11, Tamper-resistant receptacles.

We would like to see that stricken from the code in requiring the use of receptacles in the one and two-family dwelling.

We feel that the information that was given to make a decision to add this to the National Electric Code was not clear. It was obscured. It was taken from a test market of people. It does not take in the gambit of the nation on a whole as far as injuries.

The injuries that were reported in the documentation for it did not clarify that the electrical injuries, the shock injuries were actually caused by a receptacle in any way. It could have come from any manner, but the way the report was taken and the information was

gathered, it was in an electrical shock.

In my last time that we met I showed you that the tamper-proof receptacles were easily manipulated with a set of keys. It just goes to show that they're not fool proof.

There's been no testing done to tell us whether or not that in a fail situation that these devices would fail safe or fail open. There's been no testing to that.

We just feel, also, that requiring an entire residence was just too much to ask. We would like to see some consideration for revision of the code and require them in areas that would be accessible to small children. Strike out of the code the section for having to require them in attics, crawl spaces, countertop areas, which are the most used areas are the countertops, bathroom countertop being number one in usage, kitchen countertops.

These areas are not readily accessible to young children. We just feel that the code needs to be written so that those are taken out of it.

I would like to see when the code is written that they take into consideration the requirement of tamper-proof in areas such as daycare centers, in

schools. This was not addressed in this code. So we would like to see that stricken until it's rewritten in a manner that would be acceptable.

I would also like to speak on the issue of the arc-fault breakers as required in one or two-family dwellings. Section 210.12. Therein, again, a lot of the data that was collected for the study of this is obscure.

There's not been any studies done to show us that these devices actually work as the manufacturers are saying they work.

We feel that we ought to have a test period. They ought to be tried and tested before it's required. It would be fine for a recommendation until they get out there in the field.

I know personally as an electrician the ones that we are required to use in bedrooms. We've had several malfunctioning ones we've had to replace. It's cost us time and money.

We feel there needs to be more study done on it before we adopt that section of the code in and let the manufacturers have more time to work on a better product.

I would like to see some more stringent

guidelines and testing on breakers on a whole. I don't think that we would need the use of an arc-fault in a lot of locations if breaker manufacturers were required to test the breakers to a standard that they would properly work.

In both instances on these codes, the Home Builders Association feels that it bears an undue additional cost to residential construction, the cost that we're not able to recoup from our customers. It's just part of our doing business that we would have to eat the cost of doing this.

With the home building industry in the shape it is, anything that adds a cost to residential construction, we need to look closely at and try to hold down the costs.

I just feel that we need to revise these, you know, these codes before they're written in.

I appreciate your time.

HEARING EXAMINER: Thank you, Tim. Okay. Kevin Roberts, Home Builders Association.

MR. ROBERTS: My name is Kevin Roberts. I'm with the Home Builders Association from the mid-Ohio Valley.

They've touched on a lot of our concerns.

I think one thing that hasn't been addressed yet is the inspection.

The majority of residents in West Virginia are not covered by any building code. Most counties -- according to my understanding, the counties have to adopt, or municipalities have to adopt the building codes.

As of right now we have seven counties and approximately 50 municipalities that have adopted these building codes. So the contractors are out doing the jobs right, building to the codes, will adhere to them.

We're on an unfair playing field by putting us against the people out there who will never see an inspection and aren't doing the jobs properly.

So I think a lot of things need to be addressed as how these inspections are going to be done. You can keep adding codes and adding codes, but if you don't adopt and don't have an inspection, you're not putting us good builders on the same playing field with the guys that are still making money, because you're putting us so far reach.

And I can guarantee you after all this is said and done and we add another 15- to $20,000 to the cost

of building a house, because I have no ties with any fire departments; I have no ties with any fire agencies or any window people. I'm a builder. I make money, or try to make money. The state of West Virginia is going to come to us and they're going to say "When are you guys going to start building affordable houses," and every time this comes up, it's another $20,000, another $20,000.

We need to take that into consideration when we're looking at these codes. In this economic time, $20,000 out of my pocket, it's time for me to go down and get some of the stimulus money from the unemployment office.

That's my big thing. The inspection process has to be looked at and I want to thank you.

HEARING EXAMINER: Thank you, Kevin. That ends the speaker list, but as I did this morning, if there's anyone that has a sudden pang to speak, if you put no, we can put down a yes and just tell me who you are. We're here to listen and want to get input from everybody.

You are?

MR. LORD: Ron Lord, International Association of Plumbing Mechanical Officials.

To mention inspection issue. There is an

American Sanitary - it's ASSE, and I can't remember what it stands for - has just come out with the 7,000 series that will certify not only inspectors, but installers of fire suppression systems which will allow a jurisdiction to provide a level of inspection that's both knowledgeable on both the inspection side, but the installation of it as well.

I'm kind of a fish out of water on this residential sprinkler issue. The real reason I was attending the meeting was the Section 42-32-4 of the legislative rules that talks about the West Virginia Fire Commission adopting the plumbing code.

The list of the public hearing said International Building Code, International Residential Code and other codes. So I'm assuming there's a plumbing code in addition to that. I know a hearing isn't supposed to be back and forth.

HEARING EXAMINER: I will tell you that the International Building Code adopts 20 pages, tiny print, very closely spaced, of reference standards.

It also adopts the plumbing code, mechanical code, the fuel gas code. Help me out if you know some more.

Anyhow, there's a number of codes that travel along with this.

MR. LORD: And as a representative of IAMPO we would respectfully request the Fire Commission to take time to review the uniform plumbing code and uniform mechanical code to see if there is a benefit of combining that with the international building code and international residential code.

We provide that combination in other jurisdictions around the country and literally around the world where you were just adopted in India and adopted in China and Abu dhabi, and the Kingdom of Jordan.

So about two-and-a-half billion people use some form of the uniform plumbing code.

So we would offer free code books to the Commission to review both the plumbing and mechanical code to take a review and take a moment to see if there are benefits.

The issue with the residential sprinklers, we just allowed in our 2009 uniform plumbing code residential gray water and reclaimed water so folks out in rural areas could use rain harvesting as a possible way of providing the needed water for those systems.

So that's something that we would be very happily supportive of whatever need the Commission has to review those codes and see if we could make that as expeditious as possible. Thank you for your time.

HEARING EXAMINER: Thank you. I've got the other codes here. Wild and Urban Interface Code, Existing Building Code, Property Maintenance Code, Performance Code, Buildings and Facilities, Private Sewage Disposal Code.

Anyone else have a change of heart and want to speak? If you have any written comments, they need to be here by the close of business which is four o'clock. So the doors will be open until that time. No more comments. Thank you very much for your interest. I'm glad you came. Again, our vote on this will be June 29 here at ten o'clock. Thank you. We are adjourned.

(WHEREUPON, the hearing was concluded.)

REPORTER'S CERTIFICATE

STATE OF WEST VIRGINIA
COUNTY OF KANAWHA to-wit:

I, Pamela I. Wood, Certified Court Reporter and Notary Public in and for the State of West Virginia, duly commissioned and qualified, do hereby certify that the foregoing proceedings were duly taken by me and before me at the time and place.

I do further certify that the said proceedings were written out in full and transcribed into the English language under my supervision; that this is a true record of the proceedings held in this matter.

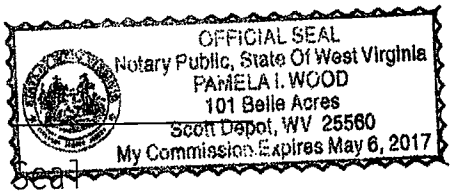
I further certify that I am neither attorney or counsel for, nor related to or employed by any of the parties to the action in which the proceedings were held; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially interested in the action.

Given under my hand this 16th day of June 2009.

My commission expires May 6, 2017.

Pamela I. Wood

PAMELA I. WOOD - CCR - NOTARY PUBLIC



Seal