The Maryland Fire and Rescue Institute of the University of Maryland is the State’s comprehensive training and education system for all emergency services.

The Institute plans, researches, develops, and delivers quality programs to enhance the ability of emergency service providers to protect life, the environment, and property.
Fire Inspector III
Lesson 1-1: Program Orientation

Student Performance Objective

- Given an overview of the course that includes an orientation, student performance expectations, course structure, schedule, and assignments, students shall explain their roles and responsibilities in the Fire Inspector III course.

Overview

- Program Explanation and Introductions
- Job Performance Requirements
- Learning Activities/Projects
- Group Assignments
- Peer Evaluations
- Team Building Activities
Program Explanation and Introductions

Activity 1.1
- Name, title and organization
- Years experience in fire prevention
- Positions held in fire prevention
- What do you want to get out of this FI-III program?

Program Explanation and Introductions

Activity 1.2
- Registration
- Complete all forms
- ScanTron forms need to be completely filled in
- Instructor will provide course number, etc.

Fire Inspector III

10 modules
3 class hours/module
2-3 hours outside work
Certified FI-II to attend
Meets NFPA 1031 Standard
Strong written and verbal skills

Are YOU Committed to Successful Completion?
Program Explanation and Introductions

Fire Inspector III Course
- Requires college-level work
- Is academically and personally challenging
- Promotes equity, trust, and academic performance
- Presents a broad perspective on the functioning of a fire prevention office
- Leads to Pro-Board certification at the state and national level
- Develops effective management and leadership skills
- Cultivates team development

Program Explanation and Introductions

Fire Inspector III course
- Provides plans review skills
- Provides skills to perform complex fire inspections
- Helps you understand political reality of managing a fire prevention office

Program Explanation and Introductions

Fire Inspector III provides exposure to:
- Team building / individual growth
- Conducting outside research
- Problem-solving
- Following and leading
- Ethical standards of conduct
- Creativity, innovation, and marketing
- Organizational dynamics
Program Explanation and Introductions

Fire Inspector III provides exposure to:
- Plans review
- Political implications and realities
- The code adoption process
- The code modification process

Job Performance Requirements (JPRs)
- Describe the task to be performed
- List the items necessary to complete
- Define measurable and observable outcomes

Fire Inspector III
- 20 JPRs
- Based on NFPA 1031
  - Inspection skills
  - Management skills
  - Plans review
Learning Activities/Projects
- Activities are individual / group projects
- Projects are related to specific JPRs
- Projects must be grammatically correct, complete sentences, properly punctuated, and spell checked
- Projects are the principle final evaluation
- Each project must be passed

Learning Activities/Projects
- Projects must be in Microsoft Word
- Printers are available
- The completed project must be on a CD that is turned in to the instructor
- You will use PowerPoint to make presentations

Group Assignments
- Designed to bring course participants together as individuals and decision-making groups to collectively address / solve organizational problems.
  - Break into groups as directed.
  - Develop group contact list.
Peer Evaluations
- Behavior evaluation
- Self evaluation
- Peer evaluation
- Group discussion
- Feedback for improvement
- Open mind

Activity 1.3
- Group activity
  - When I first enter a new group, I feel…
  - On my job, my greatest strength is…
  - A personal weakness in me and something I am trying to improve is…
  - In this group, my impression of each of you is…

Team Building Activities
- Activity 1.4
  - Review Activity 1.4 in Student Manual
  - Discuss with instructor to answer questions
Student Performance Objective

- Given an overview of the course that includes an orientation, student performance expectations, course structure, schedule, and assignments, students shall explain their roles and responsibilities in the Fire Inspector III course.

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Review

- Program Explanation and Introductions
- Job Performance Requirements
- Learning Activities/Projects
- Group Assignments
- Peer Evaluations
- Team Building Activities
Fire Inspector III
Lesson 2-1:
Policy Development

Student Performance Objective
Given information from lecture, discussion, and reading materials, the student will describe the purpose of policies and procedures and develop policies and procedures for a fire prevention office.

Overview
- Purpose
- Development Process
- Writing Policies and Procedures
- Policy Development Exercise
Purpose

Policy
- Definition
  - From Middle English policy meaning government
  - A high-level overall plan embracing general goals and acceptable procedures especially of a governmental body
  - Guidance to help govern an organization’s activities
  - Written statement indicating the position and values of the organization on a given subject
  - Contains rules and tells what to do

Procedure
- Definition
  - From Middle English proceder meaning government
  - A series of steps followed in a regular, definite order
  - Written sets of instructions describing the approved and recommended steps for a particular act or sequence of acts

Development Process
- Approval
- Review
  - Review regularly
    - Note review date if there are no changes
    - All previous dates included
  - Solicit input
  - Combine similar or conflicting policies
  - Delete obsolete policies
Development Process

- Revision
  - Major revisions follow approved process
  - Revision date noted and all previous dates included

Education/Training

- Key component in development and revision of policies and procedures
- Emphasis on changes to ensure full understanding of changes
- Old copies removed and replaced with newer version

Writing Policies and Procedures

- Elements
  - Format
  - Layout
  - Style

Format

- Manuals
  - Single manuals work well in small organizations with limited policies
  - Multiple manuals work well in large organizations with numerous policies

- Categories
  - Administration ADM
  - Emergency Services ES
  - Facilities/Maintenance FAC
  - Human Resources HR
  - Vehicle Maintenance VE
Writing Policies and Procedures

- Policy numbering
  - All policies must have a unique identifier or policy number for reference
  - Each category distinguishes policies and each issued a policy number

- Indexes
  - Extremely useful in finding policies
  - Master indexes involving multiple manuals weighed against well-organized indexes for each manual

Writing Policies and Procedures

- Layout
  - Master template
  - Order
    - Policy statement
    - Procedures
    - References
    - Definitions
      - Required at end of individual policy and procedure
      - May be incorporated in appendix and referenced in individual policy

Writing Policies and Procedures

- Layout
  - Origination date
  - Actual revision date
  - Approval date and signature
  - Review date
  - Sample forms
Writing Policies and Procedures

Style

• Typeface and margins
  • Easily readable font
    – Arial
    – Times New Roman
  • Larger font size and bold for titles and headings
  • Standard date format is month/year, e.g., 09/2007

Writing Policies and Procedures

Style

• Grammar
  • I.e. and e.g. are abbreviations for two words so each letter has a period
  • Etc. written in a sentence is preceded and followed by a comma
  • For parenthetical statements at end of a sentence, period follows the parenthesis
  • For sentence within parentheses, period is inside parenthesis

Writing Policies and Procedures

Style

• Caps and bold
  • Header titles should appear bolded
    – Policy title
    – Policy number
    – Approved by
  • Text heading should appear caps and bolded
    – Policy
    – Procedures
    – Reference
    – Definitions
Writing Policies and Procedures

- **Style**
  - Writing
    - Clear text
    - Concise language
    - Capitalization
      - Proper names
      - Department names and position titles
    - Reference at end
  - Military time
  - Numbers
    - Use numeral not word
    - 6 not six
  - Position titles versus individuals’ names or department names

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Student Performance Objective

Given information from lecture, discussion, and reading materials, the student will describe the purpose of policies and procedures and develop policies and procedures for a fire prevention office.

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Review

- Purpose
- Development Process
- Writing Policies and Procedures
- Policy Development Exercise
Fire Inspector III

Lesson 2-2:
Vision and Mission Statements

Student Performance Objective

Given information from lecture, discussion, and reading materials, the student will develop mission statements, vision statements, and core values.

Overview

- Mission Statements
- Vision Statements
- Core Values
- Mission Statement Exercise
Mission Statements

Definition
- Mission statements describe why you exist today
  - Describe what the department does and for whom in a concise paragraph
  - State the department’s purpose
  - Reflect on the purpose of existence
  - Usually created before the vision statement

Mission Statements

Definition
- A brief description of a department’s fundamental purpose. A mission statement:
  - Articulates the purpose of the department for the department, its members, and the public
  - Provides a baseline for an effective business plan
  - Has significant meaning to a department and guides the department
  - Acts as a moral and corporate compass
  - Aligns decisions with values and goals
  - Is a template to initiate, evaluate, and refine activities and decisions

Mission Statements

Purpose in strategic management
- Provides direction in planning process
  - Creates sense of purpose
  - Inspires employees
  - Communicates values and goals to the citizens
  - Assists in comparing objectives with purpose
  - Motivates behavior
Mission Statements

Developing a mission statement
- Identify purpose served
- Identify service recipients
- Describe needs fulfilled
- Outline how needs are fulfilled
- Detail values represented

Level of specificity
- Intent should be first consideration in evaluating a strategic decision
- Range from very simple to very complex
- Considerations
  - Moral/ethical position of department and its desired public image
  - Key strategic influence of the department
  - Description of service
  - Geographic domain

Consider the final product and its effect
- Seek input
- 3-4 sentences long
- Believe in the mission statement
- Orient toward the future
- Focus on one common purpose
- Make it specific to the organization
Vision Statements

Definition

- Future-oriented
- Formulated after the organization is viable and profitable
- Usually listed first from business planning perspective

Purpose

- Creates commitment, understanding, and focus on future
- Enables others to understand leader’s vision
- Provides picture of department in 1, 3, or 5 years
- Answers:
  - What type of department is it?
  - Who does it serve?
  - What is its geographic scope?
  - What services are provided?
- Part of overall business plan

Developing a vision statement

- Draw on beliefs, mission, and environment
- Describe what future looks like
- Be specific to each division
- Be positive and inspiring
- Avoid limiting to framework of today
- Encompass vision within your beliefs
Vision Statements

Beliefs should:
• Meet department and community goals
• Be statements of department’s values
• Be precise and practical
• Be a public/visible declaration of department’s expected outcome
• Guide actions of all involved
• Be a key component of strategic plan

Benefits of a vision statement
• Breaks members out of boundary thinking
• Identifies direction and purpose
• Alerts members to needed change
• Promotes interest and commitment
• Encourages and builds confidence
• Builds ownership
• Results in efficiency and productivity

Vision killers
• Tradition
• Fear of ridicule
• Stereotypes
• Complacency of members
• Fatigued leaders
• Short-term thinking
• Naysayers
Core Values

Definition
- A small set of guiding principles that have a profound impact on how everyone in the organization thinks and acts
- Define an organization's sense of character or integrity
- Have intrinsic value and importance to members
- Are guiding principles of department
- Are so fundamental and deeply held, they seldom change

Core Values

Developing core values
- Group representing organization makes list of personal values
- Group reviews list and identifies two or three as organization's core values
- Bundling: embedding one value in another and counting two or more values as one
- Allow retaining multiple values by incorporating and defining their meaning

Mission Statement Exercise

- Review mission statement exercise
- Working in your group, create a set of core values for the Tri-Cities Fire Protection District
- Based on the core values, develop a mission statement for the Tri-Cities Fire Protection District
- Prepare to present the core values and mission statement to the Fire Chief
Student Performance Objective

Given information from lecture, discussion, and reading materials, the student will develop mission statements, vision statements, and core values.

Review

- Mission Statements
- Vision Statements
- Core Values
- Mission Statement Exercise
Fire Inspector III
Lesson 3-1:
Code Development and Adoption

Student Performance Objective
- Given information from lecture, discussion, and reading materials, facilitate code adoption and modification, assess the impact of proposed codes, and develop policies and procedures for the administration of inspection functions.

Overview
- Code Adoption and Modification
- Proposed Code Impact
- Policy Development
Code Adoption and Modification

- Documentation and data
  - Facilitate adoption and modification process
  - Allow assessment of the impact of proposed codes internally and externally
  - Support technical reference material acquisition
  - Allow coordination of fire and life safety issues across multiple jurisdictions
  - Support proposals

- Ensure well written statutes, ordinances, and regulations to enhance enforcement
- Minimize conflicts within different documents to improve enforcement
- Allow preparation of clear, unambiguous, technically sound, funded codes

- Political process
  - Identify code to adopt
  - Hold public hearings
  - Identify politics involved in code and compliance issues
  - Understand objective
    - Politics affects everything
    - Department future depends on politics
Proposed Code Impact

- Don’t reinvent the wheel
  - What are other jurisdictions doing?
  - How is present code going to be enhanced by proposed new code?
  - Does your state provide a Fire Prevention Code and blanket enforcement?

Proposed Code Impact

- ICC is combined code of previous code developers
  - Building Officials and Code Administrators (BOCA)
  - Southern Building Code Congress International (SBCCI)
  - International Council of Building Officials (ICBO)

Proposed Code Impact

- Adoption of code should not be taken lightly
- All codes or laws have unintended consequences on the community
  - “Fill the Boot” drives
  - “RAVES”
  - Multiple codes
    - Who is the watchdog?
    - Resources required/available
Proposed Code Impact

- Code interpretations
  - Read NFPA 101 (2006), Section 13.2.2.2.3
    - What is this about?
      - Delayed egress?
      - Panic hardware?
      - Mercantile?
    - What is its intent?

Policy Development

- Responsibility for code interpretation and enforcement
  - Inspector
  - Inspection supervisor
  - Fire Chief
  - Building code official
  - Legal affairs
  - Jurisdictional attorney
  - Judge

- Considerations for code development
  - Historical events justifying changes
  - Responsibility for writing and submitting new codes
  - Requirement for codes to be sponsored by specific individuals
  - Research to provide justification for code changes
Policy Development

Considerations for code development
- Jurisdictional workload division
  - Who has inspectors?
  - Who is responsible?
    - Fire department
    - Building department
    - Housing department
    - Health department
    - Public Works department
    - Water department

Considerations for code development
- Jurisdictional responsibility
- Hierarchy for procedural overlap
- Handling inter-department conflicts
  - MOUs
  - Enabling legislation
    - Difference
    - Agreement vs. law

Classroom exercise
- Write a proposal to adopt a model code
  - International Code Council (ICC)
  - National Fire Protection Association (NFPA)
  - Jurisdictional code
Student Performance Objective

- Given information from lecture, discussion, and reading materials, facilitate code adoption and modification, assess the impact of proposed codes, and develop policies and procedures for the administration of inspection functions.

Review

- Code Adoption and Modification
- Proposed Code Impact
- Policy Development
Fire Inspector III
Lesson 4-1: Budget

Student Performance Objective
- Given lecture, discussion, and reading materials the student will describe the budget functions and process, prepare a budget for a fire prevention division, and present the budget to class members serving as a senior management panel.

Overview
- Budget Function
- Budget Process
- Budget Formats
- Performance Objectives
- Budget Presentation
- Budget Exercise
Budget Function

- BUD-JET n. from the Latin *bulga, leather bag.*
  - An itemized summary
    - Probable expenditures
    - Projected income
    - Fixed period
  - Formal process
    - Implement plan
    - Particular purpose or time period

Budget Function

- Used to plan for the future
- Communicates organizational goals and objectives
- Helps citizens understand how tax dollars are being spent
- Serves three major purposes
  - Prioritizing direction
  - Implementing programs
  - Controlling costs

Budget Function

- Planning is both a bottom-up and top-down process
  - Senior management communicates organizational goals and objectives
  - Lower level identifies resources required to accomplish objectives
- Budgets assist in identifying objectives and timetables
- Monitoring identifies needed modifications
- Programs should be designed and executed within budget guidelines
Budget Function

- Identifies revenue and should be monitored continuously
- Controls expenditures

Budget Function

- Budget Components
  - Operating Budget
  - Capital or Capital Improvement Budget

Budget Function

- Operating Budget
  - Day-to-day operations and obligations of the government
  - General government administration
  - Debt service
  - Transfer payments such as school funding
- Funding
  - Taxes
  - Fees, Licenses, Fines
  - Inter-Governmental Revenues such as State and Federal Aid
Budget Function

Capital Budget
- Specific long range budget plan
- Guides financing and construction of capital projects
  - Building schools and other government facilities
  - Fire Stations
  - Parks
  - Roads

Funding
- Bond issues
- Transfer payments from operating budget

The Budget Process

Governments develop annual fiscal plan
- Maintain rigorous controls over revenues and expenditures
- Act as a financial trustee

The Budget Process

Budget plan provides detailed information on:
- Anticipated costs of services
- Expected revenue for fiscal year

Budget process provides a built-in system to monitor and review fiscal progress during the budget year
The Budget Process

- Budgeting is sound fiscal practice
  - Legal and financial reporting requirements
  - Balanced budgets
    - Only the federal government is allowed to run a deficit
    - States and localities are required to have balanced budgets

The Budget Process

- State laws require local government audits
- Government financial management
  - Generally accepted accounting principles
  - Governmental Accounting Standards Board

The Budget Process

- Accounting Basis
  - Modified Accrual Basis
    - Revenues recognized when measurable and available for expenditures in current period
    - Expenditures recognized when liability incurred
  - Principal and interest recorded as fund liabilities when due
- Auditing
  - Government accounting standards
  - State auditors set requirements
The Budget Process

- Most states require local governments to use fund accounting methodology
- Fund accounting matches revenue with expenditures
- Most states require localities to meet budget requirements
- Municipalities have fiscal year from July 1 to June 30

The Budget Process

- Municipality must approve balanced budget
  - Includes operating budget
  - Sets tax rate in advance of fiscal year
- Budget approval requires public hearing

The Budget Process

- Ongoing process
  - Planning begins in current fiscal year for next year
  - Agency budgets reviewed quarterly
  - Proposed budget typically submitted 9-10 months before new year
  - Submissions reviewed and forwarded to jurisdiction’s managers
- Agency budgets reviewed with department heads
- Official budget recommendation submitted to governing body
The Budget Process
- Public hearings held for citizen input
- Governing body adopts an official budget plan
- Appropriate tax rate set
- Budget year begins

Budget Format
- Lump Sum
- Formula
- Line Item
- Program
- Performance/Function
- Zero Based
- Hybrids

Budget Format
- Lump Sum
- Agency given lump sum and managers spend as they see fit
- Mismanagement of resources led to line item budgets
Budget Format

Formula format
• Line item reduced or abandoned
• Resources distributed in lump sum
• Focus is on programs and service levels not inputs

Line item
• Is organized by categories
• Shows exactly where money is spent
• Controls overspending
• Advantages
  • Ease of preparation
  • A detailed planning vehicle
  • Means of comparing performance from one fiscal period to another fiscal period

Line item
• Disadvantages
  • The difficulty of relating the line-item budget to the goals of the organization
  • The tendency of the miscellaneous line to grow
  • Comparing this year to last year is more complex and misrepresents variables within the line-item budget
Budget Format

Program format
- Organized by major activities
- Summarized by programs not category
  - A program budget assists in evaluation of each program
  - Personnel presenting should be familiar with programs and able to justify their costs

Disadvantages
- During the adoption it forces staff to think along program lines in contrast to the comfort-zone associated with previous budgeting methods
- Some people can become defensive when required to "...analyze, report and justify how they spend their time."

Performance/Function format
- Is organized by performance to be accomplished
- Identifies funds needed to accomplish the program
- Is organized by activity
  - Assists in monitoring staff and cost of tasks
  - Emphasizes quantity, not quality
- Disadvantages
  - Emphasis on quantity of work
  - No emphasis on quality of the activity being monitored
Budget Format

**Zero Based**
- Requires identification and ranking of programs in order of value
- Requires review and identification of advantages and disadvantages of all programs
  - Budget must be reproduced every year
  - Review process identifies future costs and possible cuts
  - Organizational goals/objectives not always written in budget and require referral to budget development
  - Advocates claim beneficial in forecasting future cost and direction of programs
  - The process is time consuming

**Disadvantages**
- It is time-consuming
- Starting at "zero" implies that all aspects of the operation will undergo examination and justification
- It intrudes on day-to-day operational activities

Performance Objectives

**Budgts include some standard of performance measure**
- Standard of performance set for each unit
- Compliance measured against standard
- Goal is to reduce or maintain unit cost
Performance Objectives

- Performance Examples
  - Feet of sewer pipe inspected per crew
  - Number of street lights repaired per crew
  - Number of street signs installed per crew
  - Number of taxpayer audits per examiner

Performance Objectives

- Indicators developed within agency
  - Take care to develop indicators that are meaningful
  - Ensure the department has some control over performance indicators
- Performance indicators include measure of quality
  - Customer satisfaction
  - Overall program effectiveness

Budget Presentation

- Budget presentation is very important document
- Thorough understanding of budget and presentation format important
- Highlights and key points presented
  - Hand out copies of budget to identify detailed points
  - Statistical data can delay process but should be prepared to support program effectiveness
  - Comparing valued programs with budget helps explain budget requests
Budget Exercise

- Review budget exercise
- Develop a budget package for newly merged Tri-Cities Fire Protection District
- Prepare and present your budget to the Fire Chief

Student Performance Objective

- Given lecture, discussion, and reading materials the student will describe the budget functions and process, prepare a budget for a fire prevention division, present the budget to class members serving as a senior management panel.

Review

- Budget Function
- Budget Process
- Budget Formats
- Performance Objectives
- Budget Presentation
- Budget Exercise
Student Performance Objective

Given information from lecture, discussion and reading materials, identify the process used to create and approve code modifications, explain why modifications are required by the codes, identify the major participants in the code modification process, formulate a proposed code modification, and develop a code modification process.

Overview

- Code modification
- Code compliance requirements
- Code modification formulation
- Code modification approval
- Code modification record storage
- The appeals process
- Example
Code Modification

- Allows the building owner to use an alternative method to meet the intent of the code
- Is legally enforceable
- Is mandated by each of the model codes to meet the intent of the code

Code Compliance Requirements

Section 104.10 of the *International Building Code* states:

- “Wherever there are practical difficulties involved in carrying out the provisions of this code, the building official shall have the authority to grant modifications for individual cases, upon application of the owner or owner’s representative, provided the building official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.”

Code Compliance Requirements

Section 1.4.3 *NFPA 101, The Life Safety Code* states:

- “Equivalent Compliance. Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this code”
Code Compliance Requirements

The International Fire Code states:

• "Wherever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner’s representative, provided the code official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the fire department."

Code Compliance Requirements

Code modifications:

• Are mandated by the codes
• Do not allow the code official to waive the code!
  • In fact the appendix of the Life Safety Code is quite specific in stating that it “is not a waiver or deletion of the code requirement.”
• Allow the use of alternative methods and materials to meet the intent of the code
• Allow the use of new technology which may not have existed when the code was published

The Code Modification Process

Each jurisdiction needs to develop a procedure for handling modification requests which includes:

• A method of ensuring their receipt
• Acknowledgement of receipt
• What was done with the request
The Code Modification Process

Ideally all of the affected parties will have the opportunity to have input into the approval of a modification request.

Usually this is accomplished by establishing a committee consisting of the various code officials or their representatives which may include:

- Building Officials
- Fire Officials
- Zoning Officials
- Health Officials
- Planning Officials

The Code Modification Process

The real question you must answer is:

- Will the change meet the intent of the code without diminishing the structure, safety, or livability of the building?

This is why a group process to approve the modification request is important.

Code Modification Formulation

The process begins with the request for the modification from the building owner or representative.

The request should be specific about which section of the code the building owner or representative is unable to comply with and why.
One element that each modification request must contain is a “quid pro quo”
- The designer must give you something in order to receive something in exchange
- The proposed modification cannot be something that is already required by the code

The code officials are not in the design business
- While you may offer suggestions, it is not up to you to come up with a proposal to meet the intent of the code.
- The owner’s representative, usually a designer or engineer, will meet with the building or fire official to outline the proposed modification
- The official will then have the opportunity to express any reservations and give the designer the chance to refute them

If the proposal is totally unacceptable to the official this is also an opportunity for the designer to suggest other alternatives and seek tentative approval for them
Code Modification Approval

- This is where you have to earn your money!
- It now becomes a matter of opinion versus the specific requirements of the code.
- A large part of your job as a code official is to foster economic development in your community and the modification process is a big part of that

Code Modification Approval

- How can you make such a difficult decision without adversely affecting occupant safety or the community’s economic development?
  - This is why a group process is important
  - Members of the group weigh in with their opinions based on their experience and education
  - The model code organizations can be contacted to see if they have dealt with similar situations in the past
  - Sometimes peer officials from other jurisdictions may have dealt with similar requests and can be asked for their opinion

Code Modification Approval

- After deciding whether a proposal is acceptable the code official needs to communicate the decision to the owner or representative
  - It is a good idea to have a form letter for this which states your appeal process and makes it very clear to the owner that the modification must be maintained for the life of the building
Code Modification Approval

- If it is approved, the owner must sign a document that clearly states what the modification is and that he/she agrees to implement it.
  - This form should be approved by your attorney to ensure it is legally enforceable.
  - This document, along with any other supporting documentation that you feel is relevant, must be placed in a file that will be maintained for as long as the building stands.

Code Modification Record Storage

- Most jurisdictions keep the approved modifications in the building file for that particular address.
- Other jurisdictions make it part of the building’s deed so that it is never lost and each subsequent owner is aware of the change.
  - This is important since the modification must be maintained for as long as the building stands, no matter who owns it.

Code Modification Record Storage

- No matter the system used to keep modifications, the one official that must be kept informed of all modifications is the fire official.
  - The fire official is going to be inspecting the building for as long as it stands, so future generations of inspectors need to be able to understand why the building does not comply with the codes that were in effect when it was built.
Appeals Process

- If you do not approve the requested modification then the owner has the right to take it through the appeals process
- You should ensure each owner is clearly notified of the right to appeal the decision

Appeals Process

- Some code officials use this process to avoid making a decision which could come back to haunt them later
  - Their view is that if the appeals board approves the modification and something goes wrong, then they are absolved of responsibility for the change
  - This is not a good way to use the appeals process
    - As the code official it is your responsibility, not the appeals board’s, to approve or deny modifications
    - A large part of your job as a code official is to foster economic development in your community and the modification process is a big part of that

Appeals Process

- In those cases where you honestly believe that the proposed modification does not meet the intent of the code you will be hard pressed to win at the appeals board when you have sent every request to them
  - After all, how does the board know which modification you think is okay, but you are afraid to approve, versus the ones that you believe are unsafe?
Example
- The conversion of an existing building to another use will frequently require the use of a code modification.
- In this case the owner wants to convert a vacant retail building into apartments.
- The existing stairs are two inches too narrow.
- Each of the proposed changes to make the stairs code-compliant are not economically feasible.

Example
- The FPE hired by the owner proposes to sprinkle the building in lieu of modifying the stairs.
- Does the request meet the requirements of a code modification?

Example
- Would you approve it?
  - The designer is not asking for a waiver of the code.
  - The present design does not meet the specific requirements of the code.
  - The "quid pro quo" is the sprinkler system.
  - A sprinkler system is not required by other code sections.
  - Will a fully sprinklered building allow extra egress time to compensate for the narrow staircase?
  - It is clearly an economic improvement for the community.
Student Performance Objective

Given information from lecture, discussion and reading materials, identify the process used to create and approve code modifications, explain why modifications are required by the codes, identify the major participants in the code modification process, formulate a proposed code modification, and develop a code modification process.
Review

- Code modification
- Code compliance requirements
- Code modification formulation
- Code modification approval
- Code modification record storage
- The appeals process
- Example
Fire Inspector III
Lesson 6-1: The Plans Review Process

Student Performance Objective

- Given information from lecture, discussion, and reading materials, outline the plans review process, identify issues encountered during plans review, and explain the revision process and record keeping requirements so that a fire inspector could function in the plans review process.

Overview

- Plans Review Organizations
- Legal Proceedings
- Plans Submittal Process
- Documents, Permits, and Fees
- Plans Review Sequence
- Plans Deficiencies
- Plans Revisions and Records
Plans Review Organizations

- Perform reviews on building plans and issue permits
- Can be state, county, or local jurisdictions
- Get authority from:
  - State charter
  - Municipal statute
  - Home Rule

Plans Review Organizations

- Authority Having Jurisdiction (AHJ)
- Plans review authority
  - Appropriate legislation
  - Charter amendment
  - Administrative chapter of the legislation
    - Requirements for building permits
    - Review of plans
    - International building and fire codes

Legal Proceedings

- Plans examiners may be called to testify and must be familiar with these proceedings
- Administrative process/Board of Appeals resolves differences between building and fire code departments and applicant
- Judicial/court system
  - Failure to comply
  - Failure to obtain permits
  - Failure to issue permits
Plans Submittal Process

- Handling and routing of plans responsibility of AHJ
- All agencies needed to review in same location
- All plans submitted at the same time
- Fast track and partial permits
  - Plans are reviewed in phases as construction progresses
  - Construction starts before all plans are approved
  - Plans examiners must monitor progress of project

Documents, Permits, and Fees

- Code authorizes collecting fees and issuing of permits
- Application must be written with supporting documentation

Documents, Permits, and Fees

- Fees cover administrative costs and are charged according to:
  - The number of floors
  - Square footage of the structure
  - Specific Fees
    - Plumbing – number of fixtures
    - Electrical – number of boxes
Plans Review Sequence

- Is an official government act
- Varies between jurisdictions
- Process:
  - Submit application and plans
  - Provide supporting documents
  - Review by examiners
    - Meets code
    - Needs correction
  - Approve plans
  - Begin construction
  - Record permit issuance
    - Plans kept by AHJ

Plans Review Sequence

- Construction drawings
  - Submittal process established by AHJ
    - Process should be consistent with accepted professional practices
    - Processing should facilitate, not hinder, approval
    - Plans should be submitted so examiners can make informed decisions about code compliance
    - Process for submittal must be presented to applicant so proper procedure can be followed
  - Supporting Documentation
    - Cut sheets
    - MSDS
    - Catalog sheets

Plans Deficiencies

- Code violations
- Incorrect design
- Missing information

The responsibility of the examiner is to:
  - Identify the problem
  - Cite the code requirement
  - Explain what is necessary to receive approval
Approved Plans and Revisions

- Construction should go according to the plan
- The change order must be reviewed and a revision submitted
  - Revisions indicated on a drawing by red circle and “Triangle Notation”
- “As Built Drawings”
  - Renovation work
  - Justification needed for approval

Student Performance Objective

- Given information from lecture, discussion, and reading materials, outline the plans review process, identify issues encountered during plans review, and explain the revision process and record keeping requirements so that a fire inspector could function in the plans review process.

Review

- Plans Review Organizations
- Legal Proceedings
- Plans Submittal Process
- Documents, Permits, and Fees
- Plans Review Sequence
- Plans Deficiencies
- Plans Revisions and Records
Student Performance Objective

- Given information from lecture, discussion, and reading material, demonstrate use of the Life Safety Code and other codes to review submitted construction plans for fire and life safety components, determine code compliance or lack thereof, and provide guidance for correcting deficiencies as needed.

Overview

- Components of Effective Fire Prevention
- Fire Inspector’s Role
- Purpose of Plans Review
- Passive and Active Fire Protection
- Alternative Design Processes
- Plans Review Checklist
- Plans Review Exercise
Components of Effective Fire Prevention

Education
- Provides explanation and interpretations of codes and standards
- Educates designers and contractors

Components of Effective Fire Prevention

Engineering
- Related to fire and life safety
- The design of construction features to provide life safety and fire prevention in the structure
- Related to fire cause and behavior
  - Design features to deter vertical and horizontal fire spread
  - Sprinkler and fire wall designs
  - Shaft way protection and fire resistance

Components of Effective Fire Prevention

Code Enforcement
- Requires proper code adoption
- Reduces fire hazards
- Mandates proper construction and maintenance of buildings
- Provides adequate community fire prevention
Fire Inspector’s Role

- Conduct, coordinate, oversee inspection of highly complex facilities
  - Extreme hazards
  - Complex fire and life safety systems
  - Application of performance-based engineering designs

Fire Inspector’s Role

- Understand fire behavior and fire growth
  - Heat content of materials involved
  - Exposed surface area
  - Material height and arrangement
  - Continuity of combustible materials
  - Ceiling height
  - Ventilation of the space
  - Detection and protection equipment

Fire Inspector’s Role

- Understand availability of ignition source not considered in fire growth evaluations
  - Assumes that fire has already begun
  - Fire growth not predicated on whether fire will or will not start
- Evaluate, not design, fire protection solutions
Purpose of Plans Review

- Evaluate emergency planning and procedures
  - May incorporate location and operation of emergency shutdown systems
  - Include chemical, explosive, large mechanical, high voltage, electrical, and hazardous occupancies
- Coordinate with other agencies to provide uniform approach to fire-safe environment

Purpose of Plans Review

- Building fire/life safety components
  - Fire and life safety components
    - Means of Egress
    - Fire Sprinkler Systems
    - Alarm Systems

Purpose of Plans Review

- Building fire/life safety components
  - Building Construction
    - Active Protection Systems
      - Fire protection features that can be used in event of a fire
      - Systems actively suppress fires
    - Passive Protection Systems
      - Fixed building features that resist and prevent fire spread in the building
      - Features resist fire spread by nature of construction types and materials
Purpose of Plans Review

- Knowledge of codes and standards
  - Installation and acceptance testing requirements
  - Integrated fire protection and life safety systems
    - Elevator recall
    - Smoke removal HVAC activation
    - Integrated fire protection system

Alternative Design Processes

- Alternative materials, alternative methods, and equivalencies
  - Performance based codes
    - Advantages
      - Buildings change and codes don’t
      - Codes are way to integrate old to new
      - Once established as alternate code, they can be used for future projects

Alternative Design Processes

- Engineering approach to fire protection
  - Established fire protection and safety goals
  - Fire scenario analysis
  - Quantitative assessment of design alternatives
Alternative Design Processes

Board of Appeals
- Cannot waive code
- Must have qualified members
  - Engineers
  - Architects
  - Trades people
- Uses qualified experts in the field
- Must publish decisions in writing that are understood by all parties

Methods for appeals
- Alternative methods
  - Used when emergency operation is necessary
  - Not specific to code but will work
- Alternative materials
  - Structure is in place
  - Occupancy has changed with renovation
- Equivalencies
  - Use different methods and materials
  - Meet intent of code

Methods for appeals
- Field-based building
  - Difficult to regulate
  - Reflects evolutions in technology
    - New designs and innovations
    - Diversity of buildings
    - New methods and materials
Alternative Design Processes

- Performance-based testing process
  - Develop trial design
    - Determine how to use established methods
    - Detect or combat fire if alternative is used
  - Evaluate trial design
    - Did it work more than once?
    - Performance-based design process
      - Scope of project
      - Extent and nature of project

- Performance-based design process
  - Scope of project
  - Extent and nature of project

Alternative Design Processes

- Develop performance based criteria
- Develop fire scenarios
- Select final design

Plans Review Checklist

- Determine owner information
- Identify occupancy type
- Check for addresses
  - Principles
  - Contact Numbers
- Verify construction type complies with occupancy requirements
Plans Review Checklist

- Note contractor information
- Review fire lane requirements
- Review fire resistance requirements
- Review sprinkler information
  - Occupancy requirements
  - Design protection

Plans Review Exercise

- Exercise 6-2
  - Project plans and provide with copies on tables
  - Follow along as plans are initially reviewed
  - Read instructions
  - Treat plans as a set provided to your office as a complete set for review

Student Performance Objective

- Given information from lecture, discussion and reading materials explain the plans review process and the means by which effective fire prevention and protection can be achieved.
Review

- Components of Effective Fire Prevention
- Fire Inspector’s Role
- Purpose of Plans Review
- Passive and Active Fire Protection
- Alternative Design Processes
- Plans Review Checklist
- Plans Review Exercise