


UNIVERSITY OF
MARYLAND
Department of Fire Protection Engineering




The Effect of Fires on People, Property and the Environment


Fire Safety Systems

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Overview of Week 3 Lecture




- Introduction to fire safety systems
- Detection and alarm
- Suppression
- Smoke control



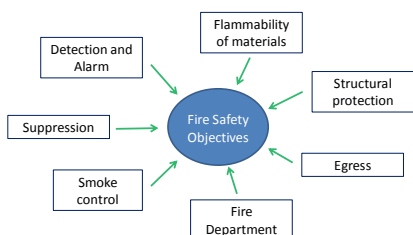
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Introduction



- Fire Safety Systems




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What Objectives?





- Life safety
- Property protection
- Mission protection
- Heritage preservation
- Environmental protection







Example






- Life safety (NFPA 101, 2013)
 - Except for occupants intimate with ignition, no occupants shall be exposed to instantaneous or cumulative untenable conditions







Example

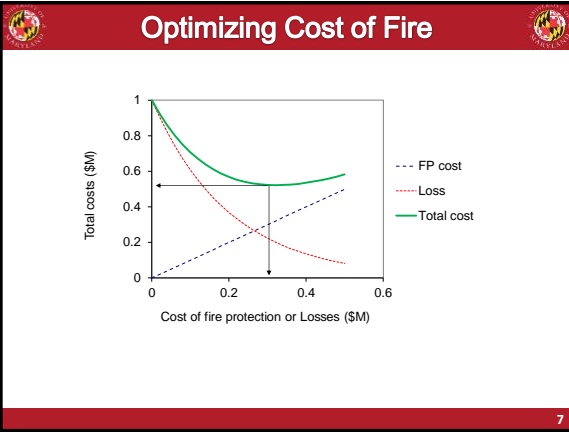


- Property Protection (BMS 92, 1942)
 - “the idea of designing some buildings for the full fire severity corresponding to the occupancy ... is a logical advance in fire protection engineering”.



WTC 5, 9-11-01



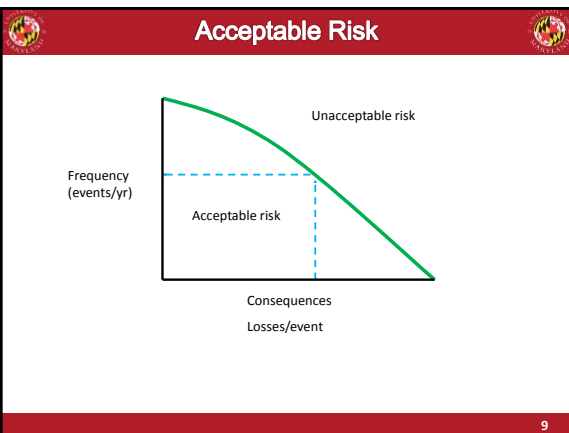


Levels of Safety

- Complete safety is impossible to achieve
- Approach: limit risk to an acceptable level
- What's risk?
 - the probability of loss or injury to people and property, general determined as product of:
 - Frequency of event
 - Magnitude of consequence



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Summary



- Fire safety is provided to achieve an acceptable level of risk.
- Fire safety systems are incorporated into building designs to achieve fire safety objectives

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