

**NTSP 2005 International  
Telecommunications Safety  
Conference**



**St. Louis, Missouri  
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**Fire Safety in  
Telecommunications  
Facilities / NFPA 76**

# Telecommunication Facilities – Yesterday

- Bell Company Central Office
  - Fortified Concrete / Masonry Buildings
  - Bellcore (now Telecordia) Technology Equipment Standards
  - Well Trained Craft & Operating Personnel
  - Years of Proven Methodologies

# Telecommunication Facilities – Today

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  - Both Telecordia Technology Equipment & IT Standard Technology Equipment
  - Minimum Craft & Operating Personnel & Outsourced Contractor Services
  - Wide Variety of Standards

# What are Today's Likely Telecom Fire Scenarios?

- Ignition Source – Energized Electrical (Class C)
- Overheating Technology Equipment – Power Watts/ft<sup>2</sup>
- Power & Mechanical Infrastructure Equipment
- Operational Activities

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  - Technology Equipment
  - Electrical Distribution
  - Power Conversion Equipment

# What are Today's Likely Telecom Fire Scenarios?

- Overheating Technology Equipment – Power Watts/ft<sup>2</sup>
  - Recent CO Equipment = 15-25 watts/ft<sup>2</sup>
  - Latest IT Equipment = 50-200 watts/ft<sup>2</sup>

# What are Today's Likely Telecom Fire Scenarios?

- Power & Mechanical Infrastructure Equipment
  - DC Plant & UPS Power Conversion
  - Computer Room Air Conditioning (CRAC)
  - Storage Battery Arrays
  - Diesel Generators

# What are Today's Likely Telecom Fire Scenarios?

- Operational Activity
  - Technology Equipment Expansions
    - Increase Human Activity
    - Packing Combustibles
  - Power Equipment Hot Work
    - DC Plant Bus & Distribution
    - Power Cuts

# What's in Jeopardy When a Fire Threatens a Telecom Facility?

- Emergency communications (911) circuits and cellular are at risk
- Business, Government and Medical institution communications potentially disrupted
- Voice services may cease

# Fire Protection for Telecommunications Facilities

NFPA 76 - Standard Practice for Fire Protection of Telecommunications Facilities 2005

- In April of 1996, NFPA Standards Council formed Technical Committee on Telecommunications
- This Action in Response to FCC “Network Reliability Council”
- Issued by Standards Council Effective February 7, 2005

# Fire Protection for Telecommunications Facilities

NFPA 76 - Standard Practice for Fire Protection  
of Telecommunications Facilities 2005

- A performance-based document
- Includes prescriptive solutions by hazard area
- Based on the best practices of the telecommunications industry

# NFPA 76 - Highlights

- Scope of NFPA 76
  - Fire Protection Requirements for telecommunications facilities serving telephone, data, cellular, internet, voice over internet protocol and video to the public.

# NFPA 76 - Highlights

- Chapter 4 - Risk Considerations
  - Establish a Fire Protection Program Considering:
    - Exposure Threat Internal / External
    - Importance of Facility Service to Public
    - Business Risk Management
    - Service Continuity Risks

# NFPA 76 - Highlights

- Chapter 5 – Performance-Based Design
  - Performance Objectives:
    - Life Safety Egress Provisions
    - Design Protect from Worst Credible Fire
    - Document Design Assumptions
    - Address Fire Scenarios
    - Methods of Assessing Performance
    - Documentation of Design

# NFPA 76 - Highlights

- Chapter 6 – Prescriptive-Based Design
  - Prescriptive Requirements:
    - Defines Specific Areas of Protection
    - Requirements for Building Services HVAC Equipment
    - Compartmentation
    - Very Early & Early Warning Fire Detection
    - Depowering
    - Generator Fuel Control

# NFPA 76 - Highlights

- Chapter 7 – Redundant or Replacement - Based Design
  - Redundancy Onsite or Off Site
  - Replacement Facility

# NFPA 76 - Highlights

- Chapter 8 – Fire Protection Elements
  - Identifies Prescriptive Design Elements
    - Construction
    - Compartmentation
    - Alarm Processing
    - Detection
    - Automatic Fire Suppression
    - Equipment Ignition & Fire Resistance

# NFPA 76 - Highlights

## ● Chapter 9 – Fire Prevention

- Housekeeping
  - Storage Hazards
- Use of Ignition Sources
  - Open Flame Limitations
- Limiting Operations Hazards
- Prevention Awareness
- Cable Management

# NFPA 76 - Highlights

- Chapter 10 – Pre-emergency Planning Provisions
  - Content of Plan
  - Fire Department Participation
  - Depowering Procedures
  - Emergency Recovery Procedures

Questions ?

**Fire Safety in Telecommunications  
Facilities / NFPA 76**

# Thanks for Your Attention

## **Fire Safety in Telecommunications Facilities / NFPA 76**

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