

**NTSP 2005 International
Telecommunications Safety
Conference**



**St. Louis, Missouri
September 13-15, 2005**

**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

- Legacy & Non-Legacy Central Office & Telecommunications Switching Facilities

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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/ft²
- Power & Mechanical Infrastructure Equipment
- Operational Activities

What are Today's Likely Telecom Fire Scenarios?

- Ignition Source – Energized Electrical (Class C)
 - Technology Equipment
 - Electrical Distribution
 - Power Conversion Equipment

What are Today's Likely Telecom Fire Scenarios?

- Overheating Technology Equipment – Power Watts/ft²
 - Recent CO Equipment = 15-25 watts/ft²
 - Latest IT Equipment = 50-200 watts/ft²

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

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