



# Clark County Department of Building & Fire Prevention

4701 West Russell Road, Las Vegas, NV 89118 ~ (702) 455-3000

## Fire Protection Report Design Building Permit Guide

Jerome A. Stueve, P.E., Director  
Samuel D. Palmer P.E., Assistant Director • Girard Page, Fire Marshal

### Part I. General Information

This guide is intended to assist designers of complex facilities in preparing Fire Protection Reports (FPRs) as required by Clark County Department of Building and Fire Departments. FPRs are **required for facilities with complex fire protection aspects**. Complex facilities include high-rises, malls, atria, hospitals and other institutional uses, some amusement buildings, and fire effects.

FPRs and Master Egress Plans constitute the Life Safety Package submittal. These documents are required to be submitted during the conceptual/schematic design phase of the project at least 30 days prior to the drawing submittal. Initial drafts are considered work in progress. Specific fire protection aspects outlined in the FPR must be in substantial agreement prior to release of associated permits. Final approval is required prior to rough mechanical inspections.

FPRs are the preliminary step in developing construction documents, specifications, testing scenarios and alternate methods of construction. They describe the active and passive fire protection features of a specific site/facility. They are expected to provide an overview of the proposed construction and address pertinent impacts to the fire protection aspects of the design, along with the associated goals and objectives. The designers/author(s) are responsible to review all pertinent background information (existing conditions, drawings, alternates, reciprocal easement agreements/deed restrictions, etc.) prior to any formal submittals or meetings with the Clark County Department of Building.

The primary goal of FPRs is to describe how different fire protection aspects interrelate to provide the level of protection intended by code and address any unique or interpretative fire protection aspects. FPRs are intended as a means of coordinating fire protection aspects among the design professionals and provide Clark County concurrence prior to construction. FPRs are the organizational key to create buildings that constitute holistic fire protection systems. The specific drawing submittals expand on the information contained in the FPR.

FPRs are required to address the extent of work and the associated impact on fire protection aspects. As such, shortened versions may be submitted for renovations and expansions. For additions and renovations of existing facilities, address new fire protection aspects and impact(s) to existing systems. These documents are frequently termed TI (Tenant Improvement) FPRs.

### Part II. Submittal Requirements

FPRs for full buildings and substantial additions/renovations are to be submitted independently of the drawings. An internal tracking (PAC) number will be assigned. For review purposes, two copies are to be submitted to the Department of Building and one copy directly to the Fire Department. For final review and approval, a total of 7 copies are required. Upon approval, two copies will be routed back to the author. One of these two copies are for the author's records, the other is to be routed to the site for reference during construction and filed in the FCC after project completion.

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Provided the impact to fire protection aspects is minimal, three (3) copies of TI FPRs may be submitted along with the drawings. Upon approval, these copies will be routed with the approved drawings. As the extent of work and impact to fire protection aspects increases, TI FPRs are to be submitted as described in the preceding paragraph.

### Part III. Phased Projects

Phased construction FPRs may be proposed when the phased design approach is used. If the phased approach is desired:

- A. The extent of phasing must be agreed to by Clark County during preliminary discussions
- B. Site fire protection aspects and tower(s) are to be addressed in the initial/base FPR
- C. Supplemental FPRs will be considered addendums/chapters to the initial document and are expected to correlate with the phasing agreement

**NOTE:** For additional information on Phased Design, refer to the **Phased Design Building Program Guide** available at the Permit Application Center or on our website.

### Part IV. Fire Protection Report Requirements

Address/include the following items:

- A. Title Page identifying:
  1. Type of facility (high-rise, mall, atrium, hospital, amusement building)
  2. Name of facility
  3. Facility address
  4. Date of specific submittal
  5. Application (PAC) number(s)
  6. Parcel numbers
  7. Preparer of document
- B. Table of Contents
- C. Introduction Statement addressing:
  1. Intention of report:
    - a. Fire protection required by code
    - b. Performance-based design document
    - c. Coordinated/consolidated systems approach to fire protection aspects
    - d. How fire protection features will function as a consolidated system
  2. General overview of report contents
  3. Any unique fire protection features
  4. Basis for drawing preparation
  5. Statement that where conflicts occur between the report and drawings/specifications, the report will take precedence
- D. General Description
  1. Approximate square footage of the facility/renovation/addition
  2. Number of stories and approximate height in feet
  3. Approximate number of residential units
  4. Major uses along with approximate square footage, unique features and their approximate locations

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5. Adjacent streets and other public ways
  6. Impact to existing building(s)
  7. Include conceptual, small scale drawings in an appendix
- E. List design team contact individuals, company names/addresses, e-mail addresses and telephone/fax numbers for:
1. Owner's representative
  2. Architect
  3. Mechanical Engineer
  4. Electrical Engineer
  5. Fire Protection Engineer
  6. Other main design engineers
- F. Key issues identifying:
1. All requests for Alternate Materials and Methods
  2. Unique features that require careful coordination of fire protection aspects
  3. Questionable interpretative aspects that have been agreed to during working sessions

**NOTE:** For additional information on Alternate Materials and Methods, refer to the Alternate Materials and Methods of Construction Design Guide available at the Permit Application Center or on our website.

- G. Include a list of all applicable codes along with their respective editions:
1. Building
  2. Fire
  3. Mechanical
  4. Plumbing
  5. Electrical
  6. Adopted ordinances
  7. Nevada State Fire Marshal requirements
- H. Describe site fire protection aspects including:
1. Real and assumed property lines
  2. Any legal agreements that affect property rights (Reciprocal Easement Agreements)
  3. Fire Department vehicle access
  4. On-site hydrants
  5. Fire Department connections
- I. Passive Fire-Resistive Aspects
1. Describe primary uses along with their occupancy classification:
    - a. Include all hazardous occupancy classifications
    - b. Include all expected special events for unusual areas, such as pool decks and parking garages
  2. Describe fire-resistive construction aspects including:
    - a. General construction classification
    - b. Structural frame fire-resistive time period
    - c. Ratings of interior bearing and non-bearing walls
    - d. Ratings of exterior bearing and non-bearing walls
    - e. Fire walls

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- f. Prosceniums
  - g. Smoke barriers
  - h. Horizontal exits
  - i. Alarm zones
  - j. Fire Command Center
  - k. Fire pump rooms
  - l. Electrical equipment rooms
  - m. Occupancy separations
  - n. Fire-resistive time period of floors, shafts and roofs
  - o. Fire-resistive time period of all members supporting rated elements
  - p. Penetration and opening protection, including dampers
  - q. All applicable exceptions and justifications for any interpretative decisions
3. Describe interior wall and ceiling finishes including:
    - a. Applicable flame spread and smoke-developed ratings
    - b. Plastics and foam plastics
    - c. All unique interiors and decorative structures expected inside the main facility:
      - i. Describe the fire protection approach proposed for these features.
      - ii. Specify and confirm that structural, fire protection and other work requiring professional design will be conducted by a Nevada registered professional engineer or architect.

**NOTE:** For additional information on building interiors, refer to the Unique Building Interiors Design Guide available at the Permit Application Center or on our website. Specific information may be submitted prior to or along with the Interior Design package.

4. Describe the design of egress systems including:
    - a. Provide a statement that master egress plans will be submitted for review and approval of the specific design.
    - b. All unique and interpretative aspects
    - c. Different types of egress components expected in the facility, including fire-resistive ratings and opening protection.
    - d. Alarm zoning
    - e. Stair door locking/unlocking
    - f. Delayed egress devices
    - g. Exit signs and illumination
  5. Describe emergency signage include:
    - a. Stairway identification signs
    - b. Signs in elevator lobbies
- J. Active Fire Protection Systems
1. Describe fire suppression systems including:
    - a. Basic design of automatic sprinkler and standpipe systems
    - b. Water flow and tamper switch notification
    - c. Unusual fuel loading
    - d. Design approach when ceilings exceed 25 feet
    - e. An engineered analysis of sprinkler effectiveness for ceilings exceeding 50 ft
    - f. Secondary water supply and whether the fire pump(s) is/are electric or diesel

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- g. When fire pump(s) is/are diesel powered, include quantity of fuel supply and how it is stored to show compliance with hazardous materials requirements
  - h. Kitchen hood suppression systems
  - i. Special suppression systems
  - j. Interrelation with fire alarm and mechanical smoke management zoning
  - k. Interrelation with alarm zoning
2. Describe the fire detection system including:
    - a. Water flow
    - b. Manual pull stations
    - c. Heat and smoke detectors (including the approach for residential units)
    - d. Kitchen hood monitoring devices
    - e. Expected locations of devices
    - f. Type of annunciation (trouble, supervisory or alarm condition)
    - g. Method for compliance with required 24-hour monitoring
    - h. Interrelation with other active fire protection systems
    - i. A conceptual appendix consisting of a matrix documenting principal initiating devices and their respective output functions
  3. Describe fire alarm and emergency communication systems including:
    - a. Voice alarm
    - b. Public address
    - c. Fire Department communication system
    - d. Fire alarm indicating appliances
    - e. Zoning to coordinate with active and passive fire protection aspects
  4. Describe all active and passive smoke management systems including:
    - a. Basis of design for each smoke zone
    - b. Type of fans
    - c. Controls
    - d. Monitoring aspects (to report status)
    - e. An engineered analysis of sprinkler effectiveness relative to expected fuel loading for ceilings exceeding 50 feet
    - f. Interrelation with passive fire-resistive aspects
    - g. Interrelation with other active fire protection systems (fire detection and automatic sprinklers)
    - h. Carbon Monoxide (CO) sensors when used to activate smoke management fans
    - i. Basic acceptance criteria
    - j. Proposed approach for Fire Department mop-up operations
    - k. Weekly self diagnostic
    - l. A conceptual appendix consisting of a matrix documenting principal initiating devices and their respective output functions
    - m. Appendix of supporting documentation (zoning drawings and fire modeling)
  5. Describe the Fire Command Center aspects including:
    - a. Location
    - b. Size
    - c. Fire-resistive protection for the room
    - d. Annunciator panels

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- e. Control panels
  - f. Emergency communication features
  - g. All other items included in the room
  - h. The 24-hour monitoring location and respective emergency response features
  - i. Secondary Fire Department response points
  - j. Include a dimensioned drawing showing the proposed room layout in an appendix to the report
6. Describe emergency and standby power aspects including:
    - a. List electrical systems that will be connected to the secondary power supply
    - b. Expected time for power transfer
    - c. Quantity of the fuel supply and how it is stored to show compliance with hazardous materials requirements
    - d. Uninterruptible power
  7. Describe emergency and fire protection aspects of elevator systems including:
    - a. Passive construction aspects
    - b. Hoistway venting
    - c. A table listing the primary and secondary levels of recall for all elevators
    - d. Fire Department overrides
    - e. Protection of lobbies, hoistways and machine rooms
    - f. Landing levels with keyed only access
- K. Describe all hazardous materials, their location and protection aspects for:
1. Diesel fuel
  2. Pool chemicals
  3. Wood working operations
  4. Welding
  5. Battery rooms
  6. Refrigeration machinery rooms
  7. Special effects
  8. Other aspects of the specific facility
- L. Conclusion statement documenting that fire protection has been designed to meet the letter and intent of the applicable codes.

Prior to the signature lines, state that “We have been involved in the preparation and review of this Fire Protection Report within the extent of our professional discipline. We concur that the fire protection aspects outlined herein will be coordinated on our respective drawings and specifications.”

- M. At a minimum, provide signature lines for:
1. Preparer
  2. Engineer of record
  3. Architect of record
  4. Owner’s representative

For TI FPRs, it is frequently sufficient to only include a signature for the preparer. In all cases, a Nevada registered design professional practicing in the area of their expertise is required to seal the FPR prior to

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submission.

## Part V. Appendices

- A. Include small scale drawings showing the following:
1. Site plan (including all property lines whether real or assumed)
  2. Elevation view(s)
  3. Plan views of main floors and typical floors
  4. Location of:
    - a. Fire pump(s)
    - b. Secondary water supply
    - c. Fire Department connections
    - d. Fire Department vehicle access paths
    - e. Emergency generator(s)
    - f. Fire command Center
    - g. 24-hour monitoring
    - h. Main occupancy use areas
    - i. Spaces classified as hazardous occupancies
    - j. Pressurized stairs
    - k. Horizontal exits
    - l. Alarm zoning
    - m. Mechanical smoke management zoning along with respective supply and exhaust shafts

**NOTE:** Drawings documenting coordination of mechanical smoke management zones with automatic sprinklers and fire alarm initiating devices will be approved as part of the FPR. Other aspects (i.e. egress and architectural drawings) will be considered for reference only and may be slightly different on the final approved plans.

- B. Copies of official correspondence applicable to the FPR including:
1. Pertinent documentation between the design team/owners and the Department of Building or Fire Department (no meeting minutes)
  2. Approved alternate methods/materials and requests for modification
  3. A letter from the structural engineer of record confirming that all Fire Walls will remain structurally stable for the required duration
  4. County concurrence on interpretative item
- C. Document all pertinent fire alarm initiating devices and their respective output functions using fire alarm and smoke control matrices.
- D. Fire Modeling
1. Include calculations used to determine automatic activation time and effectiveness in spaces with ceiling heights exceeding 40 feet.
  2. Include technical backup and calculations supporting the expected fire size and exhaust rate outlined in the smoke control section of the FPR.

## Department of Building & Fire Prevention Locations & Services

<b>MAIN OFFICE</b> 4701 W. Russell Road Las Vegas, NV 89118 (702)455-3000	On-Site Plan Submittals All "Walk-Through" Plan Review / Permitting Functions Residential Tract Submittal / Permitting All Sub-Trade (Electrical, Plumbing & Mechanical) Permitting Building Inspection Scheduling Functions Fire Prevention Inspection Services Records	Temporary Certificate of Occupancy Submittals Building Inspections Building Inspector Inquiries Amusement / Transportation Systems Operation Certificates Approved Fabricators Quality Assurance Agency Listing
<b>LAUGHLIN OFFICE</b> Regional Government Center 101 Civic Way Laughlin, NV 89029 (702)298-2436	Building Inspection Services Fire Prevention Inspection Services	
<b>OVERTON OFFICE</b> 320 North Moapa Valley Blvd. Overton, NV 89040 (702)397-8089	Building Inspection Services Fire Prevention Inspection Services	

### Automated Phone System (702) 455-3000

- Option 1:** For all Inspection services or to report a building code violation.
- Option 2:** For information regarding on-site permits or new plan submittals.
- Option 3:** For the Building Plans Examination division or QAA information.
- Option 4:** For the Zoning Plans Examination division.
- Option 5:** For information or copies regarding land development, construction documents, plans or permits.
- Option 6:** To speak with Management staff.
- Option #:** For hours of operation, Office location and website information.

### Other Clark County Departments/Divisions/Districts

Air Quality & Environmental Management	500 S. Grand Central Parkway, Las Vegas NV	(702) 455-5942
Public Works, Development Review Services	500 S. Grand Central Parkway, Las Vegas NV	(702) 455-6000
Comprehensive Planning	500 S. Grand Central Parkway, Las Vegas NV	(702) 455-4314
Fire Department	575 E. Flamingo Road, Las Vegas NV	(702) 455-7316
Las Vegas Valley Water District	1001 S. Valley View Boulevard, Las Vegas NV	(702) 870-2011
Southern Nevada Health District	625 Shadow Lane, Las Vegas NV	(702) 759-1000
Water Reclamation District	5857 E. Flamingo Road, Las Vegas NV	(702) 668-8888

### State of Nevada

Division of Water Resources	400 Shadow Lane, Suite 201, Las Vegas NV	(702) 486-2770
Nevada State Contractors Board	2310 Corporate Circle, Suite 200, Henderson NV	(702) 486-1100

### Utilities

Nevada Power	6226 W. Sahara Avenue, Las Vegas NV	(702) 402-5555
Southwest Gas	5241 Spring Mountain Road, Las Vegas NV	(877) 860-6020

[www.clarkcountynv.gov/building](http://www.clarkcountynv.gov/building)