



**MONTGOMERY COUNTY
FIRE AND RESCUE SERVICE**

24-01

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**Incident Response Policy Appendix E
High Rise Fires**

07/01/2017

Issued by: Fire Chief Scott E. Goldstein

Policy Number: 24-01

Authority: Montgomery County Code Section 21-3 (b)

Supersedes: This is a new policy.

Effective Date: July 1, 2017

SECTION 1. Purpose:

This appendix to the MCFRS Incident Response Policy describes the MCFRS approach for control of fires that occur in high rise buildings.

SECTION 2. Applicability:

All MCFRS personnel while participating in MCFRS activities and personnel from other organizations while operating in Montgomery County.

SECTION 3. Background:

A fire in a residential high rise structure is, at its simplest, the same compartment fire addressed in the Structural Fires Appendix, except the fire is significantly harder to reach and there are more potential occupants in danger. The guidance provided in the Structure Fires Appendix is still applicable to the high rise fire. This appendix provides discussion specific to residential high rise fires.

Position Statement

Compartment fire suppression in high rise structures begin with the same objectives as other compartment fires, however the tactical execution needed to meet those objectives demands a different focus.

During a high rise fire people will be threatened by smoke, high levels of carbon monoxide, other debilitating gases and particulates. Given the features of high rise buildings, rapid smoke spread is likely; even in the presence of modern fire protections systems.

Each open door provides a possible path for smoke and fire travel, reducing the safety of occupants and firefighters. The firefighters cannot control all the door openings, so smoke control is made more difficult. For this reason, initial fire operations will focus on using positive pressure fans to create higher pressures in the stairwells, with the intent of limiting smoke travel.



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The stairwells in high rise structures can be considered a building within a building. They provide an area of refuge for people. It is for this reason that ventilating smoke through a stairwell is not a primary option.

Our work to protect the safety of the stairwells relies on quick pressurization of all stairwells. The intent of pressurization is to create a higher pressure area, limiting smoke migration into the compartment. The intent of ventilation is to remove smoke from a compartment.

SECTION 4. Definitions:

See Appendix Q.

SECTION 5. Policy:

a. Smoke Control

1. Smoke control is often the most effective way to enhance the safety of occupants and firefighters.
2. Personnel must not create any opening to the roof or prop open any doors until the fire is reported to be under control.
3. All personnel must ensure that all doors from corridors to stairwells remain closed to the extent possible without impeding occupant evacuation, stairwell pressurization or hoseline advancement.
4. The first due truck must initiate smoke control by placing a positive pressure fan at the base of the attack stairwell.
5. Whenever possible electric fans should be used to pressurize enclosed stairwells.
6. When an electric fan is not immediately available, a gas powered fan may be used to pressurize stairwells.
7. Whenever the fire is above the 9th floor, consideration should be given to placing fans two floors below the fire floor - in addition to fans at the base of the stairs - to supplement pressurization.
8. When necessary the movement of air, whether to pressurize or to ventilate, can and should be supported by fans placed inside the structure.
9. All stairwells should be pressurized as quickly as possible.
10. The third due truck is responsible for:
 - A. Ensuring that all stairwells are pressurized;
 - B. Designating a ventilation stairwell; and
 - C. Managing all additional smoke control and ventilation.



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b. Unknown Fire Location

1. When the location of a fire in a high rise is unknown, personnel may not use the elevator.
2. Crews must work upwards from the entry level on foot, checking each level until the source of the problem is located.

c. Lowest Level Check

1. The third due engine must check the lowest level of the structure, regardless of reported fire location.
2. Their focus must be on locating potential fires at the bottom of continuous open vertical shafts such as trash chutes and elevator shafts.
3. After completing this check, they should provide a report to their immediate supervisor and then move to the floor above the fire.

d. Wind Effects

1. All personnel must remain alert for signs of a wind driven fire such as:
 - A. Smoke or flame pulsing in and out of window openings;
 - B. High pressure against doors when opening;
 - C. Smoke "pushing" around the door; and
 - D. Flame travel in corridors.
2. Any personnel noticing any sign of a wind driven fire must immediately report their findings to the Incident Commander using the appropriate chain-of-command
3. When personnel believe that a given fire is wind driven, they are forbidden from opening the door from the apartment to the corridor or from the corridor to the stairwell.

e. Stairwell Operations

1. The integrity of the stairwell must be maintained at all times.
2. Before opening the door from the attack stairwell to the reported fire floor, crews must be prepared for smoke migration into the stairwell and must have their facepieces in place with their SCBA regulators in hand before the door is opened.
3. As the door from the attack stairwell is opened, crews must be alert for signs of a wind impacted fire.
4. When there are signs of a wind impacted fire, the unit officer must halt their advance, notify Command and prepare to make an attack from a different vantage point:
5. Whenever the corridor on the fire floor is clear of smoke, the door to the fire compartment should remain closed until:
 - A. The apartments immediately adjacent to the fire apartment are searched;



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- B. The corridor is confirmed free of occupants; and
- C. All other doors in the hallway are confirmed closed.
- 6. The door to the attack stairwell must be closed as much as possible without impeding the progress of the handline.
- 7. Whenever possible, the attack stairwell should be pressurized before fire attack begins.
- f. Designation of Stairwells
 - 1. The first due engine must designate a "fire attack stairwell".
 - 2. If necessary, the third due truck may designate a "ventilation stairwell".
 - A. The ventilation stairwell is used to exhaust smoke from the fire floor to the outside.
 - B. The ventilation stairwell must be checked for occupants on all levels above the fire floor before ventilation begins.
 - C. The intentional creation of an exhaust opening in a stairwell to move smoke outside must consider the possibility that people may be in the stairwell used for ventilation.
- g. Elevator Use
 - 1. Personnel must not use an elevator to access a fire:
 - A. If fire, smoke, or heat is detected in the hoistway or elevator shaft or reported in the elevator machine room;
 - B. If the hoistway smoke and/or heat detector indicator is activating in the elevator;
 - C. If Fireman's Service is unavailable or cannot be confirmed as operating correctly;
 - D. For any incident that is located or reported on or below the fifth floor;
 - E. Individuals who are not emergency service providers must not ride elevators under actual or potential fire conditions; and
 - F. Elevators must not be used in Independent Service mode under fire conditions.
 - 2. Before entering the elevator, personnel must:
 - A. Check the hoistway for evidence of smoke or fire;
 - B. Note the location of the nearest stairwell before entering an elevator;
 - C. Note the location and method of operation of the emergency stop switch;
 - D. Wear full PPE and SCBAs with the cylinder valves open, face pieces on, and regulators in hand for rapid connection; and
 - E. Ensure that there is sufficient room in the elevator car for all personnel to immediately attach their regulators if necessary.
 - 3. While using the elevator, personnel must:



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A. Stop the elevator car at a point midway to test the Fireman's Service operation, check orientation, and re-check the shaft for fire, smoke, or heat and;

B. Connect the facepiece regulator if the elevator car fails to stop at the midway point.

4. Returning the Elevator

A. The first unit using the Fireman's service keys must place the keys in the middle of the floor of the elevator after reaching their destination; and

B. Send the elevator back to the lobby.

h. Attack Line Deployment

1. The first due engine must stretch a *charged* hose line from the stairwell if there is any smoke or fire present on the fire floor.

2. The second due engine must assist the first due engine with advancing their line and must be prepared to extend their line if necessary.

3. Engine crews must bring at least 200 feet of hose with them to the fire floor.

4. Personnel are not restricted to using building systems, e.g., the standpipe system when alternative means for stretching lines are available.

i. Lobby Control

1. The lobby control assignment can be a critical assignment. Strong consideration must be given to assigning an available Certified Chief Officer to this role early in the incident. It is not the expectation that the assigned Certified Chief Officer will personally perform all of the duties listed below, but that rather they will conduct a needs assessment, and make recommendations to the Incident Commander for the needed support.

A. When assigned, Lobby Control is responsible for:

i. Ensuring the welfare of occupants on the lobby level;

ii. Ensuring that all elevators are controlled;

iii. Accessing the fire control room and reporting systems information; and

iv. Acquiring additional information for the Incident Commander as needed, including:

(a) Floor plans and approved evacuation plans;

(b) A list of disabled occupants;

(c) Names and phone numbers for building engineers and building management;

(d) Information concerning HVAC, utilities, mechanical rooms, and fire pumps; and

(e) Obtaining items such as master keys, window keys, and elevator keys.

j. Use of Fire Control Room



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1. Personnel assigned to the Fire Control Room are responsible for:
 - A. Establishing telephone communications with supervisory personnel operating in the building using building systems when possible;
 - B. Providing occupants and/or fire and rescue personnel with special instructions for evacuating endangered areas via a public address system;
 - C. Assisting with stairwell ventilation and pressurization at the direction of the Incident Commander or designee;
 - D. Monitoring annunciator and control panels, and reporting information; and
 - E. Resetting and silencing alarms as directed by the Incident Commander.
- k. Post Knock-Down Ventilation
 1. Once the fire is controlled, it remains important to continue limiting smoke travel.
 2. When necessary, the movement of air should be supported by fans placed on the fire floor.
 3. If hydraulic ventilation from the fire apartment is not effective, the second choice would be to use another apartment on the opposite side of the same floor to exhaust the smoke through.
- l. Exterior Streams
 1. The use of exterior streams to cool down interior compartments may be considered within the following limits:
 - A. Initial aerial placement must be optimized for occupant rescue and firefighter egress;
 - B. An exterior cool down must not delay the completion of the primary water supply; and
 - C. An exterior cool down must not delay the supplying of Fire Department connections to building fire protection systems.

SECTION 6. Responsibility:

All personnel.

SECTION 7. Procedure:

See the Structure Fire Appendix.

SECTION 8. Cancellation:

This is a new policy.

SECTION 9. Attachments:



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None.

Approved:

A handwritten signature in black ink that reads "Scott Goldstein".

Scott E. Goldstein
Fire Chief

April 14, 2017