

# Standard Operating Procedures Manual

## **City of Poquoson Fire and Rescue**



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### **EMERGENCY OPERATIONS**

**SOP#:** EO 4.00

**Title:** Ventilation

**Effective Date:** 01/01/2009

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Robert J. Nallaway, Jr.  
Fire Chief's Signature

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### **VENTILATION**

#### **I. PURPOSE**

To provide a uniform guideline for Fire Department Personnel to safely and effectively initiate ventilation.

#### **II. SCOPE**

This standard applies to incidents involving structures and confined spaces where the prompt removal of smoke, heat, and other products of combustion is necessary to quickly and safely extinguish the fire.

#### **III. GENERAL**

- Prompt and efficient ventilation is necessary to mitigate the potentially harmful effects of smoke, heat, and other contaminants within structures and confined spaces.
- If unchecked, smoke and heat will contribute to property damage and can injure and kill those who become trapped.

- Smoke and heat also hinder firefighters in their efforts to perform search and rescue operations as well as suppression.
- Therefore, it is the policy of this Department to provide prompt and proper ventilation in all buildings and confined spaces in which smoke, heat, or other products of combustion are present unless otherwise ordered by the incident commander.

#### **IV. PROCEDURES**

- Ventilation shall always be performed whenever:
  - Heat, smoke, and other products of combustion are present.
  - Hose crews cannot effectively make an interior attack due to excessive heat and poor visibility.
  - Heat, smoke, and other products of combustion block escape routes for the occupants of the structure.
- When performing ventilation, the following safety precautions should be observed:
  - Read the smoke. Observe conditions that might indicate that the potential for flashover or backdraft is present.
  - NEVER direct charged hose streams into ventilation openings.
  - Always have charge hoselines in place prior to beginning ventilation.
  - Maintain communications.
  - Wear full protective clothing including SCBA.

- Always consider structural soundness.
- Exercise caution whenever using power saws, axes, and other sharp instruments.
- Secure a lifeline to any firefighter who is on a potentially weakened roof.
- Remember that improper ventilation techniques may contribute to fire spread.

## **V. Types of Ventilation**

**Natural:** Accomplished by making use of wind currents. Open the building on the leeward side to allow smoke to escape, then open the windward side to provide fresh air.

**Mechanical:** Use of electric or gasoline-powered fans or blowers to evacuate smoke from a building or confined space.

- Negative pressure: Exhaust smoke from the building.
- Positive pressure: Blow fresh air into the building to force the smoke out.

**Horizontal:** Generally inflicts less damage to the building than vertical ventilation since it is typically accomplished through available portals such as doors and windows.

**Vertical:** May also take advantage of natural building features, such as skylights, shafts, and rooftop stairways. Many times, the only option is to cut ventilation openings into the building itself.