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|  | **FLINT HILL FIRE DEPARTMENT**STANDARD OPERATING GUIDELINE |

**Guideline Number:** 402.10

**Guideline Title:** Air Management

**Adopted:** 2/12/2024

**Rescinds:** New

**Approved By: (Chief)**

1. **PURPOSE:**

To establish guidelines for Flint Hill Fire Department (FHFD) to manage self-contained breathing apparatus (SCBA) air levels when working in an immediately dangerous to life and health (IDLH) environment. Running out of air is one of the critical factors in firefighter line of duty deaths. This guideline will help to reduce the chances of firefighters running out of air and having the need to call a MAYDAY while working in an IDLH environment. This guideline is intended to be used for training as well as during emergency responses.

1. **DISCUSSION:**

As firefighters, we are responsible for our own safety and the safety of our fellow firefighters. The ability to manage our individual air supply and consumption is critical to the safety of every member working in the hazard zone. A poor decision in air management will adversely affect the individual firefighter as well as every firefighter involved in attempting to rescue that firefighter.

Firefighters should exit the fire building or hazardous atmosphere before their low air alarms. This gives them reserved air, should something go wrong. When a low air alarm is heard on the fire ground, firefighters should respond as if someone is in trouble.

1. **DEFINTIONS:**

**Air Management** - An ongoing assessment of air consumption by individual firefighters and/or teams who are breathing air from their SCBA. Firefighters in a hazardous atmosphere must continually check their pressure gauges and monitor the Heads-up Display (HUD) to know how much air they have left in their cylinder.

**The Heads-Up Display (HUD)** - provides a visual monitor of the air supply in the cylinder and valve assembly. The display is fitted to the mask-mounted regulator and appears across the bottom of the user’s field of view through the facepiece. The HUD consists of four rectangular lights to represent the cylinder pressure at full, three-quarters, one-half, and one-third full. A fifth red light indicates low battery.

1. Full cylinder – two full green lights
2. 3/4 full cylinder – one full green light
3. 1/2 full cylinder – one slowly flashing yellow light
4. 1/3 full cylinder – one rapidly flashing red light (SCBA goes into Vibra-Alert)

**The Rule of Air Management (ROAM)** - Know how much air you have used and manage the amount of air you have left in your cylinder so that you leave the hazardous atmosphere before your SCBA low-air alarm is activated.

**Hazardous Atmosphere** - Any atmosphere which is oxygen deficient, or which contains a toxic and/or disease producing contaminant. This atmosphere can be an IDLH atmosphere.

**Point of No Return** - In an IDLH atmosphere when the team stops becoming part of the solution and is now part of the problem. Intervention resources may be needed that might otherwise be directed to the incident.

**R.E.A.D.Y. Check** - This is an easy-to-remember model that covers key elements needed for entry into IDLH atmospheres.

R – Radio is on, turned to the correct channel and locked, and each member knows to whom he/she is reporting.

E – Equipment is appropriate for the assigned duties.

A – Air for each member is checked prior to entering an IDLH.

D – Duties and objectives are known by each member.

Y – Yes! If the answer to all the above is affirmative… the team is READY to enter the hazardous atmosphere.

1. **GUIDELINE:**
2. It is the expectation that all FHFD members utilizing Self Contained Breathing Apparatus (SCBA) will:
3. Perform a R.E.A.D.Y. check prior to entering the IDLH.
4. Check their air levels before they enter the hazardous atmosphere. Members must have a minimum of 4000 psi in their cylinder to make entry into a hazardous atmosphere. This check can be done during the pre-entry READY check.
5. Follow the Rule of Air Management when operating in any hazardous atmosphere.
6. Air Management is each firefighter’s responsibility and is closely related to situational awareness. Firefighters should make sure that they have a full SCBA air cylinder before they enter an IDLH environment. Once inside the IDLH environment, firefighters should look at their air cylinder pressure gauges and heads-up displays at intervals and inform their officer what their air situation is.
7. Regular time intervals (approximately every 5 minutes)
8. Change of work area (floor level change, area searched)
9. Passing of major landmarks within the structure
10. Completion of assignment and prior to accepting another assignment.
11. As the situation dictates.
12. Interior attack crews should know where they are in the IDLH environment in relationship to the entry/exit points. They should constantly monitor changing conditions and other factors such as:
13. fire growth
14. smoke and heat conditions
15. team’s air supply
16. the interior layout of the structure
17. secondary means of egress
18. location of potential victims
19. how the fire attack/search is progressing.
20. When the first member of any team has their 50% capacity (2250 psi) heads up display (HUD) light activate (flashing yellow light once a second), that member should inform their officer who will radio the Incident Commander or Operations Officer that the team has 50% air left. This allows for the planning to replace that team in the IDLH environment.
21. The crew/team leader will manage the SCBA air levels of all crew members and ensure that crew egress from the IDLH occurs prior to the activation of the Vibra-Alert (use of emergency reserve air begins). Low air alarm activation (33% SCBA bottle capacity) occurs at (1500psi).
22. If a team member works into their reserve air and their Vibra-Alert alarms, in the IDLH environment, that team’s officer should report over the radio to the Incident Commander (IC) or Operations Officer their unit number, location, and that a team member’s low air alarm is sounding with an estimation of how close they are to an exit.
23. Example:

*Flint Hill Engine 1* *Officer*- “Command from Flint Hill Engine 1 Officer”

*Command* – “Go ahead Flint Hill Engine 1 Officer.”

*Flint Hill Engine 1* *Officer*– “We’re on the first floor at the Bravo - Charlie corner. Firefighter 1 air status is 1100 psi, and we are in sight of a door on the Bravo side and are existing the structure.”

*Command –* “Command copies Firefighter 1 is at 1100 psi and the crew will be exiting the first floor through a door on the Bravo side. Let Command know when the crew has exited the structure.”

*Flint Hill Engine 1 Officer* – Command, Flint Hill Engine 1 crew has exited the structure with 3 personnel and will be heading to Rehab.”

*Command* – “Command copies, Flint Hill Engine 1 crew has exited the structure and will be reporting to rehab.”

1. All members should maintain a heightened awareness of low air and PASS alarm activations. A low air alarm activated without a notification to Command will produce a call to Command from any crew or member near the alarm, reporting low air alarm activation and the possible location.
2. Example:

*Flint Hill Engine 1 Officer -* “Command from Flint Hill Engine 1 Officer.”

*Command* – “Go ahead Flint Hill Engine 1 Officer.”

*Flint Hill Engine 1 Officer* - “We hear a low air alarm on the second floor in the Bravo-Charlie corner.”

*Command* – “Command copies a low air alarm on the second floor Bravo/Charlie corner.”

1. A low air alarm sounding in a hazardous atmosphere without a crew status notification to the IC within one minute should be considered a firefighter mayday emergency until proven otherwise. (refer to SOG 402.05 MAYDAY).

**Strategic Considerations**

1. The ability of firefighters to exit the hazard zone with a reserve of 33% air is a requirement. If crews are unable to complete their assigned task with that air supply intact, it is necessary for the IC to provide an adequate number of companies to replace those initial working crews or change the strategy to defensive.
2. The strategic level of air management should be managed similarly to the accountability of all members operating in the hazard zone. Both are managed through position and function within a command system.
3. Fire crews are less apt to leave an operating tactical position if there are no crews in position to replace them in the incident operation. It is the Company Officer’s responsibility to manage the welfare of his/her crew; command should support these crews with adequate replacement resources. The intent is not to adversely impact the active firefight, but to strengthen firefighting operations with crews that have safe air levels. Companies can be assigned only as fast as they arrive.

**Tactical Considerations**

1. Individual firefighter air management is the foundation of this air management guideline. No incident command system or structure can overcome a lack of individual firefighter air management.
2. Firefighters are expected to manage their assigned SCBA for the entire work shift by doing the following:
3. Thoroughly checking the SCBA prior to shift, after using it, and whenever the functionality is in question. (refer to SOG 503.01 SCBA CHECK).
4. Firefighters are expected to know the air level of their SCBA prior to entering the hazard zone, during firefighting activities, and upon leaving the hazard zone.
5. Fire crews operating inside structures should always have an “exit plan”. This is not just the responsibility of the Company Officer. The Company Officer should communicate to the crew his/her exit plan. The plan should include the entrance taken into the building, the dedicated hose line, knowledge of other means of egress within the division and other crews operating in the division. This plan also includes the amount of air it takes to leave the hazard zone prior to the low air alarm sounding. The larger the building, the more important and difficult the exit plan becomes.