

## **Dragon, Karen E. (CDC/NIOSH/EID)**

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**From:** jshafer@cityofgreencastle.com  
**Sent:** Sunday, January 23, 2011 8:46 AM  
**To:** NIOSH Docket Office (CDC)  
**Cc:** Chen, Jihong (Jane) (CDC/NIOSH/EID) (CTR)  
**Subject:** 147 - Reevaluation of the NIOSH policy on emergency escape support breathing system or buddy-breather device used with open-circuit self-contained breathing apparatus Comments

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### Comments

January 23, 2011

I support NIOSH testing and approval for Emergency Breathing Support Systems (EBSS), aka, "Buddy Breathing", to be included on Self Contained Breathing Apparatus.

My background includes thirty years combined volunteer and career firefighting, as well as sixteen years involvement in firefighting equipment.

EBSS has been available as an "un-approved" option for over twenty five years. While not all fire departments select this option, an overwhelming majority do.

With this said, I feel it becomes imperative that this popular option be properly function tested to ensure its use does not decompensate the primary performance of SCBA.

As you are aware, there are significant differences in breathing rate performance between NIOSH and NFPA. NIOSH uses a 40 liter per minute (lpm) volume rate, 100 lpm peak flows, in calculating cylinder volume duration. This means, at a 40 lpm rate, a 30 minute cylinder must last a minimum of 30 minutes.

NFPA uses a 2.5 times greater breathing rate, 120 lpm, with 300 lpm peak flows. This stricter breathing rate is consistent with a firefighter performing fire attack, search and rescue, and other common strenuous firefighting activities found at a fire ground.

Performance criteria for both tests indicate positive pressure must be maintained inside the face piece at all times during the testing.

The relevance of this breathing rate information should be directly correlated into the performance testing of EBSS.

If a trapped firefighter is out of air, and located by another firefighter who implements EBSS, the initiation of EBSS should not compromise the performance of the donor's SCBA.

This seemingly would indicate testing should include breathing performance while two users are simultaneously breathing from a single air source (cylinder and regulator(s)).

Further consideration should also be given to criteria and testing of alternative air support systems, commonly referred to as "RIT PAKS".

In summary, if these optional air supply components are commonly being used in the fire service, it is best for all involved, that performance criteria be established and test methods conducted to ensure the proper use of the equipment provides the intended benefit, without compromising the safety, of a well intention air donor. I also support that the individual fire departments continue have the choice as to whether they choose to have this option installed.

Respectfully submitted,  
John Shafer