

**WORKSHOP SESSION SUMMARY
NIEHS NATIONAL TRAINERS' EXCHANGE
MARCH 2012**

1. Session Title and Presenter's Contact Information

"Technological Advancements for Confined Space Training: Gas Monitor Simulator"

Aaron A. Ondo
Assistant Professor
Institute for Labor Studies and Research
West Virginia University Extension Service
716 Knapp Hall
Morgantown, WV 26506
Tel: 304.290.9202
Email: aaron.ondo@mail.wvu.edu

2. Workshop Summary

The overall objective of the workshop was to give attendees an opportunity to experience some of the capabilities of the Gas Monitor Simulator, by LightsOn Safety Solutions, from both a student and instructor perspective.

The Gas Monitor Simulator technology is incorporated within an iPod touch and mimics the function of a multi-gas meter, in real time. Students are able to use the iPod touch as if it were a real multi-gas meter. The instructor is connected to each student's iPod touch via a wireless network and is able to manipulate the gas concentrations the student sees on his or her simulated multi-gas meter. In a few taps of the instructor's iPad the student's iPod displays the concentration changes sent by the instructor. In addition to concentration changes, the instructor can send notifications or ask questions requiring a student response, all of which can be sent to every student or specific students.

Additional workshop objectives included a discussion of confined space training limitations, description of confined space props designed for the International Union of Operating Engineers National HAZMAT Program training site, discussion of multi-gas meter training limitations, review of lower explosive limit, a general hands-on demonstration of the Gas Monitor Simulator technology, and a discussion of possible training applications and scenarios for the technology.

3. Methods

The workshop included a PowerPoint presentation combined with active group discussion followed by a hands-on demonstration of the Gas Monitor Simulator technology. The PowerPoint presentation was used to elicit a class discussion of the

NIEHS WETP National Trainers' Exchange: Training Today for a Safer Tomorrow

March 28-29, 2012, Fort Lauderdale, FL.

objectives relating to confined space training specifically relating to the limitations of training props and equipment. PowerPoint was also used to project a diagram to review the concept of lower explosive limit. Participants were assigned to smaller groups for the hands-on demonstration portion of the class. Initially the instructor connected to the participants Gas Monitor Simulator (iPod) to demonstrate what the student would see. After answering questions participants were paired off and took turns such that each participant would get an opportunity to use the Gas Monitor Simulator both as a student and an instructor. The workshop concluded with answering questions regarding the technology and its possible training applications.

4. Main Points

Key Lessons

- Confined space training is not easily done without props to mimic a confined space.
- Using real instrumentation during a confined space training class, such as a multi-gas meter, is helpful for students to see and feel but limits their interaction with the meter.
- The Gas Monitor Simulator permits students to see and experience, in real time, gas concentration fluctuations as they are sent by the instructor. The instructor can increase concentrations until they exceed exposure limits causing alarms to activate. Additionally, comments and questions can be sent to students that require feedback.

Responses from the participants

- Many participants mentioned they felt the Gas Monitor Simulator technology would be useful in their current training scenarios.
- Almost all the participants were able to successfully answer questions regarding the LEL review.
- A few participants asked for more information on the Gas Monitor Simulator technology and were referred to the website address: <http://lightsonss.com/>
- Many participants indicated they were appreciative of the workshop and indicated the material was presented well.

5. References

Holtan, John (2012). Gas Monitor Simulator. <http://lightsonss.com>.

Rekus, John (1994). The Complete Confined Spaces Handbook. Boca Raton: Florida. p.135.

6. Workshop Handouts/ Resources

No handouts were given.