

Respiratory Protection During Post-Fire Activities–FY17–(93900BS)

Objective

- Identify the type and quantity of acute and chronic health-relevant chemical gases, vapors, and particulates in the post-fire environment.
- Evaluate the effectiveness of APR respirators fitted with CBRN canisters or cartridges, for providing adequate respiratory protection from the hazards in the post-fire environment to first responders, arson investigators, coroners, and forensic scientists.



Applicable standards

- Potential applicability as a new NFPA Overhaul Respirator Standard or update to NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*

Key Partners

- University of Arizona
- NIOSH RHD
- NIOSH DSHEFS
- Fire Service



Stakeholders

- IAB
- NFPA
- IAFF



Project Scope

- Characterize ambient post-fire overhaul environments for simulated and live-fire burns; evaluate effectiveness of APR CBRN protection using a manikin and dynamic breathing machine to simulate physiological conditions.
- Technology evaluated is commercially available and readily accessible to end users
- Research methodologies are being performed in partnership with First Responder collaborators
- Generate data such that First Responders have the necessary information needed to establish appropriately protective, and acceptable, post-fire operating procedures

Milestones

- FY 14–Completed evaluation of Canister /Cartridge performance
- FY 15–Pilot Scale Field Evaluation of post fire exposures
- FY 15/16–Field Evaluation of post fire exposures
- FY 16/17–Case Control efficacy evaluation (i.e. live burns)

Outputs

- Respirator Protecting during Post-Fire Activities guidance documents
- Peer-reviewed journal publications (2 published in JOEH)
- Written and presented recommendations to NFPA and IAFF

Outcomes

Results from this work will inform post-fire respiratory protection procedures and policy to better protect responders in post-fire activities including overhaul, arson investigation, criminal investigation by law enforcement, coroner services, and forensic evaluation. The potential use of wearing an APR fitted with a CBRN canister provides a cheaper alternative to SCBAs and more comfort to the wearer, potentially increasing using of post-fire respiratory protection.

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