

# DHS. Respiratory Protection Project (DHS S&T Directorate) – FY15 (93900RE)



## Project Scope

NIOSH / NPPTL will conduct research to support the development of an expanded suite of respiratory protection standards in areas that have been identified as high priorities by the response community. The outputs of this project will inform and guide standards development activities in NIOSH and in the National Fire Protection Association (NFPA) and other standards development activities as appropriate.

### Customers:

- DHS S&T
- NFPA
- IAB
- Emergency Response Personnel

## Milestones

Task 1: Conduct Research and Technology Benchmarking in support of CBRN respirator standards development

Task 2: Award contract with University of Arizona that will identify the type and quantity of the acute and chronic health-relevant chemical gases, vapors, and particulates in the post-fire environment; and evaluate using a case-control design the effectiveness of APR respirators fitted with CBRN canisters

## Outputs and Outcomes

**Task 1:** The CBRN Combination Respirator is the final CBRN respirator standard to be developed. This respirator combines variations of supplied-air and air-purifying technologies. Technology benchmarking is required to complete evaluations that examine the operational characteristics and to identify appropriate performance requirements that address safe “switch-over” between the supplied-air and air-purifying technologies in operation.

**Task 2:** During post-fire activities including overhaul, arson investigation, criminal investigation by law enforcement, coroner services, and forensic evaluation, respiratory protection is rarely used. Exposures to smoke and fine particulates have been shown to result in both acute and chronic health effects. This study will evaluate the current respiratory risk from post-fire activities to workers, including first responders (fire fighters and law enforcement), arson investigators, coroners, and forensic scientists, to understand the effectiveness of CBRN-fitted APRs at mitigating that risk.

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