Validation of Cleaning Procedures for Fire Fighter Personal Protective Equipment
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Objectives
- To identify and categorize the chemical and biological contaminants embedded in fire fighter PPE, specifically turn-out gear.
- To devise a laboratory method to consistently contaminate clothing.
- Develop criteria that would be used to validate Independent Service Providers (ISPs).

Potential Impact
- Update to NFPA 1851 to include a procedure for qualifying ISPs.
- Development of better cleaning techniques to remove more contaminants from fire fighter PPE.
- A decrease in the number of fire fighters exposed to hazardous contaminates trapped in their PPE.
- A reduction in the number of cancer related cases among fire fighters.

Outputs
- All data will be shared with the NFPA 1851 committee so that informed decisions can be made regarding the next revision to this standard.
- The laboratory methods developed for contaminating and validating level of cleaning will be incorporated into the next revision of NFPA 1851.
CLEANING VERIFICATION KIT PROCESS

Representative sample prepared

Sample contaminated in laboratory process

Sample packed in kit and sent to organization seeking verification

Sample placed inside surrogate turnout clothing item

CONTAMINANT SWATCH

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Clothing and sample washed according to organization's existing process

Sample packed in kit and sent to qualified lab

Sample analyzed for different contaminant levels

Results provided for showing cleaning effectiveness by contaminant

CONTAMINANT

100% ✓
90% ✔
80% ✓
70% ✔
60% ☐
50% ☐
YouTube Video
https://www.youtube.com/watch?v=yvY8vvTc3DU&t=115sTube
Project on “Fire Service Gear Cleaning Validation
AFG: EMW-2017-FP-00582

- Focused investigation on cleaning improvements
- Extension of procedures to other garment layers
- Development of approaches for:
  - Gloves
  - Footwear
  - Helmets
  - SCBA
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