



OFFICE OF  
**RIVER PROTECTION**  
United States Department of Energy

# Tank Farms Respiratory Equipment Management Program

Hanford Advisory Board  
Health, Safety & Environmental  
Protection Committee

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October 3, 2018



- Cartridge testing data review
- Transition from supplied air (e.g. SCBA) to full-face air purifying respirators (FFAPR)
- Path forward





WRPS's vision is to implement a strategy that both protects and is actively embraced by all workers.

So that workers *are* **safe** and *feel* safe

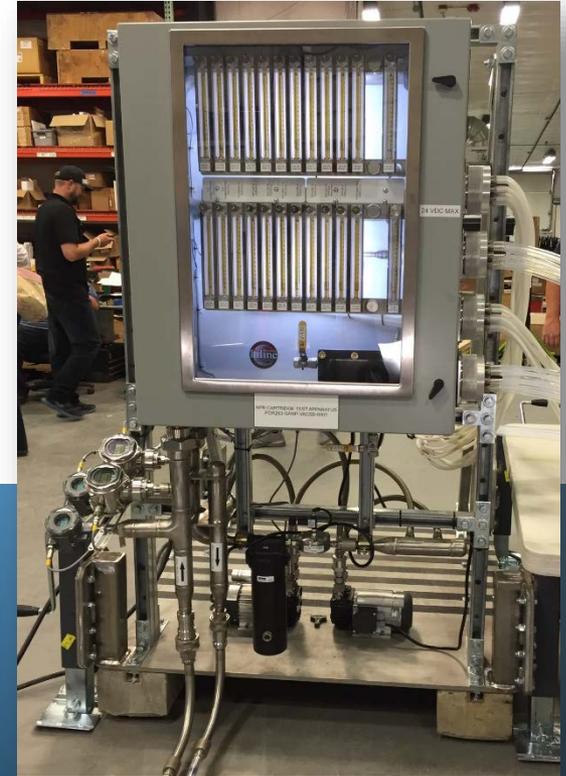
Testing and verification of air purifying respirator (APR) cartridges is one way WRPS is seeking to improve worker respiratory protection, safety, and comfort under specific working conditions.



A reliable, repeatable, conservative method of testing air purifying respirator cartridges from tank farm chemical mixtures was developed and implemented.

## Cartridge Testing Protocol

- Tank headspace vapors tested against two air purifying respirator cartridge types
- Measurements of chemicals of potential concern (COPC) upstream and downstream of cartridges were performed at regular time intervals
- Evaluated how long it took for chemicals to break through the cartridge



Cartridge testing data was reviewed by Pacific Northwest National Laboratory (PNNL).

## Independent Qualified Third-Party Review

- StoneTurn Consultants (STC), the independent third party selected by the Hanford Atomic Metal Trades Council (HAMTC), reviewed and evaluated the cartridge testing protocol and the effectiveness of cartridges against tank farm chemical vapor mixtures.
- STC also reviewed and evaluated the respiratory protection program and its implementation.



The team included respirator experts with more than 250 years of professional expertise, and included PhDs, CIHs, CSPs.

### Transition from supplied air to APR

- Use of APR for select lower risk work
  - Functional active ventilation, non waste disturbing
- SY Farm authorized December 2017
- In June 2018, WRPS implemented the use of FFAPR in AP Farm
- The path forward for other actively ventilated tank farms will be based on the assessment of AP Farm implementation
  - AN Farm authorized September 2018
  - AY, AZ, AX Farm Complex and AW Farm scheduled for October 2018



**Workers have the option to voluntarily upgrade their protective equipment, as long as the equipment does not produce additional safety hazards.**

Hanford workers, representing all major disciplines of the workforce participated in a SCBA equipment evaluation.

Vendors:

- SCOTT Safety
- 3M
- MSA – Mine Safety Appliances
- Bullard (all products displayed were PAPR and therefore not included in the evaluation)
- Honeywell

Key Items:

- Comfort, fit, and over-all weight
- Durability
- Ease of Use
- Unique Features
- Compatibility with current SCBA maintenance and laundering processes at Hanford
- Top-Rated SCBA Harnesses Evaluated

## Assessment Report FY2018-ESHQ-R-0170 – WRPS Respiratory Protection Program

- March 8-27, 2018 WRPS Respiratory Protection Program (WRPSRPP) conducted an assessment on WRPS implementation of the Hanford Site Respiratory Protection Program (HSRPP) Focus of assessment on WRPS implementation of the Hanford Site Respiratory Protection Program (HSRPP).
- No findings (significant or otherwise) identified as a result of the assessment.
- Review of Lines of Inquiry (LOIs) provided by the HSRPP, against the implementation of the WRPSRPP and the written program, TFC-ESHQ-S-IH-C-05 “Respiratory Protection” found the WRPSRPP to be in “good health”.
- Opportunities for Improvement (OFIs) were identified and corresponding recommendations to resolve were provided by the assessment team.

- Hammer Performs respirator fit testing
- WRPS is following the HSRPP (DOE 0352)
- HSRP effectively implements 29 CFR 1910.134
- WRPS verifies SCBA regulators are cleaned and tested according to DOE 0352-008 on a monthly basis
- WRPS has developed a process for verifying Grade D when odors are reported in SCBA bottles
- WRPS is implementing Respirator Electronic Tracking System (RETs)
- Mandatory Completion of form A-6006-205 for all RPE issues and concerns.



- Incorporate DOE-0352 by reference
- Improve positive control prior to RPE check in at the Mask Station Faster response in reporting regulator testing and SCBA bottle results to work force
- Continue implementation of RETS (currently not available at all mask stations)
- Faster response in reporting resolution of respirator issues and concern.



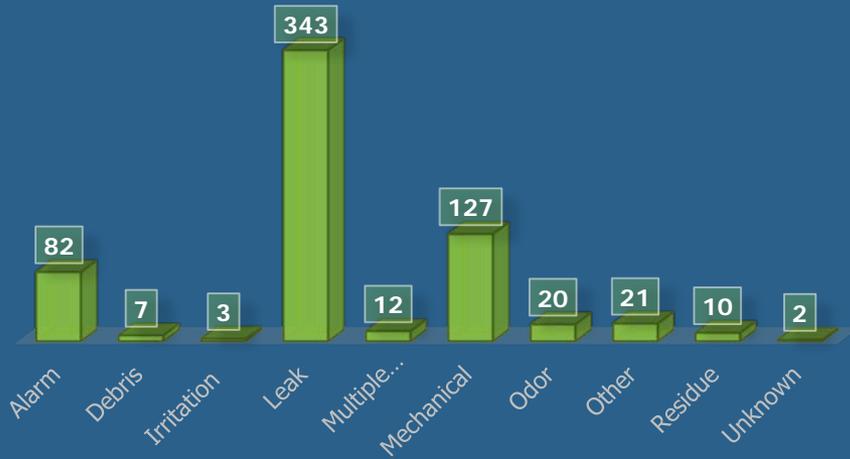
- Hanford has a site-wide committee and program for approving processes for issuing, inspecting, cleaning, and storing RPE. The program also prescribes assessment requirements.
- All RPE issues are tracked by WRPS.
- All sampling results have shown the absence of bacteriological or chemical contamination on the masks/regulators.



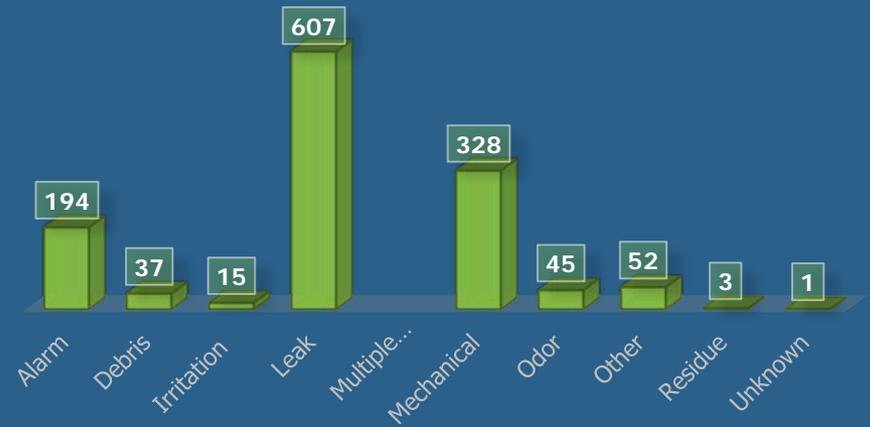


# SCBA Reported Issues

## 2017 TYPES OF ISSUES REPORTED



## 2018 TYPES OF ISSUES REPORTED



## 2017 Number of Issues



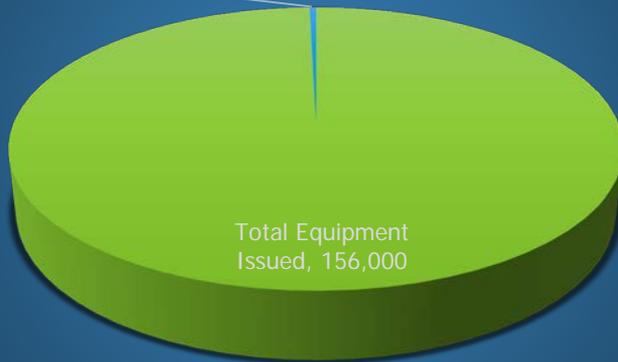
## 2018 Number of Issues





## 2017 (12 Months)

Total Issues Reported, 627

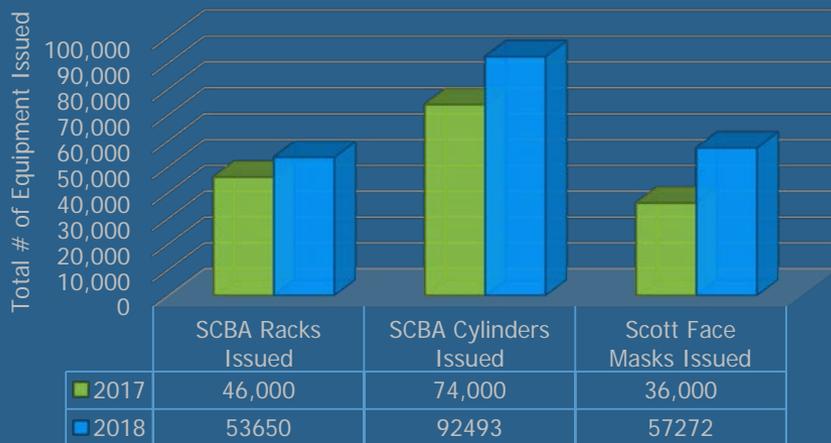


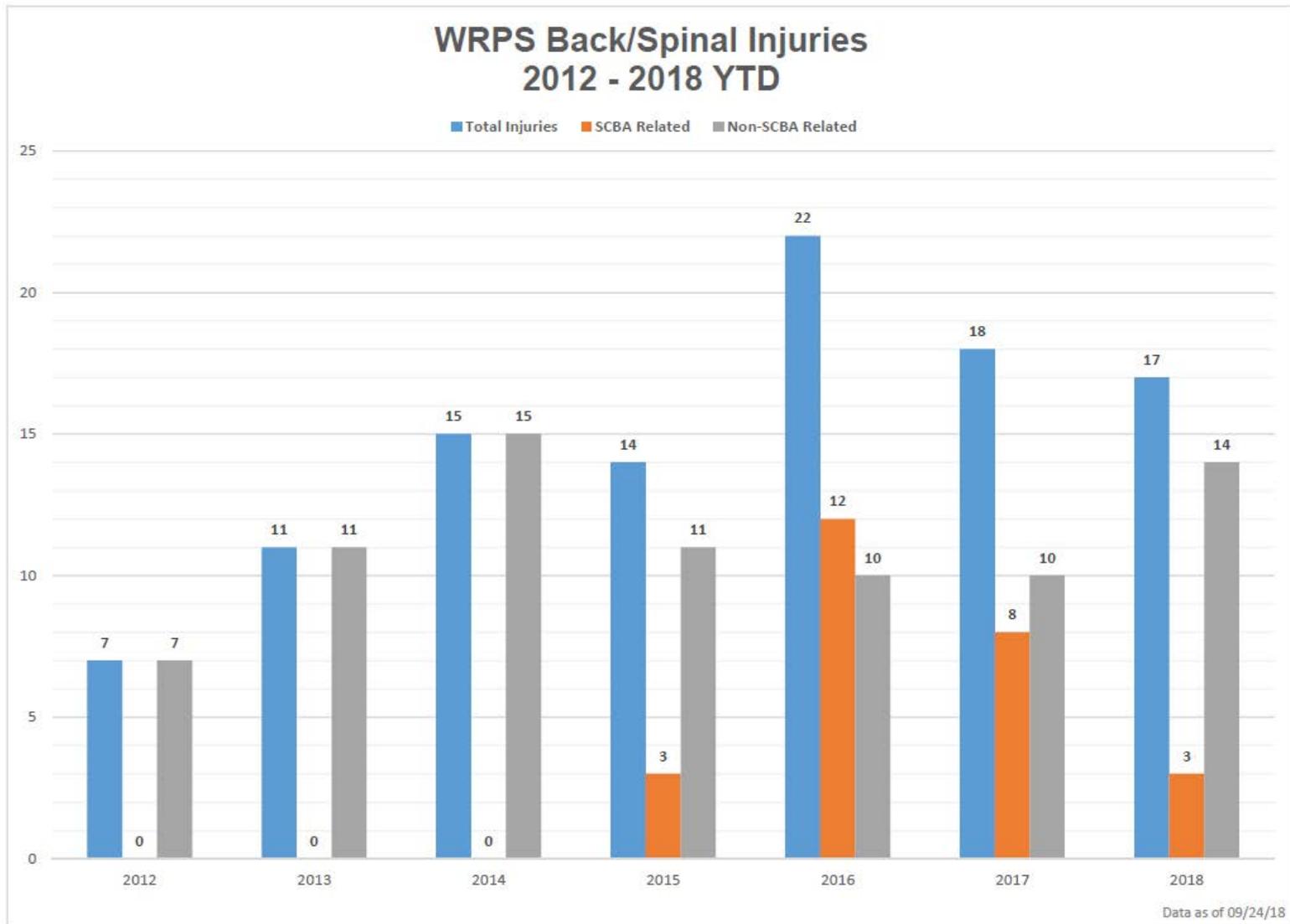
## 2018 (9 Months)

Total Issues Reported, 1,282



## 2017/2018 EQUIPMENT ISSUED





- Hanford Site Respiratory Protection Program (HSRPP)

- DOE-0352 Program
- HSRPP Charter
- Clarification Interpretation & Guidance (CIG) Forms
- Resources
- Training
- Points of Contact
- Respiratory Equipment
- Maintenance/Care & Cleaning
- Lessons Learned
- And more....

Go to <http://msc.ms.rl.gov/ims/page/cfm/FSA/RPP>

Welcome! For more information, click here.

FIELD RELATED	COMMITTEE RELATED
<a href="#">DOE-0352 Program</a> 	<a href="#">Charter</a> 
<a href="#">Clarification Interpretation &amp; Guidance (CIG) Forms</a> <a href="#">Resolution Forms</a> 	<a href="#">Meeting Summaries / Minutes &amp; Attendance Rosters</a> 
<a href="#">Resources</a> <ul style="list-style-type: none"> <li>• Worker Protection Website</li> <li>• OSHA 29 CFR 1910</li> <li>• NIOSH</li> <li>• DOE 10 CFR 851</li> </ul> 	<a href="#">Training</a> <ul style="list-style-type: none"> <li>• Training Program Description TPD)</li> </ul> 
<a href="#">Points of Contact (POC)</a> 	<a href="#">Forms &amp; Templates</a> 
<a href="#">Respiratory Equipment</a> 	<a href="#">Maintenance/Care &amp; Cleaning Instructions</a> 
<a href="#">Lessons Learned</a> 	<a href="#">Letters from Manufacturers</a> 
<a href="#">Manufacturer Advisories</a> 	



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*“Protecting our workers,  
the public, and the environment”*

The Hanford Reach  
White Bluffs Overlooking the Columbia River

