

## RPP-RPT-59584 SCBA Equipment Evaluation Report Summary

HAMMER and the Chemical Vapors Solution Team (CVST) were tasked with evaluating different Self-Contained Breathing Apparatus (SCBA) harnesses to identify harnesses which are relatively more ergonomic and lighter in weight. WRPS established a SCBA Equipment Evaluation Team (SEET) comprised of an equal balance of bargaining unit employees and WRPS management. The SEET focused on identifying possible new, market ready SCBAs for potential future use.

The SEET developed an evaluation form for screening SCBA equipment. The evaluation sheet included review of product features, ease of use, durability, compatibility with current maintenance, cleaning and laundering processes. Additionally, the SEET organized a market ready SCBA vendor presentation at the HAMMER training facility. In order for the SEET to obtain consistent information from multiple vendors about their SCBA products, WRPS workers attending were provided with a question and answer checklist. The HAMMER Vendor Presentation also included an evaluation of 45 minute bottles and higher pressure bottles with emphasis on obtaining bottles that increase use time without adding weight and bulk. After the SCBA and Power Air Purifying Respirator (PAPR) products were presented and displayed for viewing and donning, the vendors held question and answer sessions before the SEET filled out the pre-established equipment evaluation form. The results of the SEET's evaluation forms were compiled in this report.

The SCBA Vendor Presentation was attended by five different manufacturers of SCBAs and PAPRs: SCOTT Safety, 3M, MSA-Mine Safety Appliances, Bullard, and Honeywell. The 33 members of SEET who evaluated the equipment consisted of

- Nuclear Process Operators (SCBA Users)
- Construction Laborer (SCBA User)
- Mask Station Issuers (SCBA Users)
- Industrial Hygiene Technicians (SCBA Users)
- Tank Farm Radiological Control Technicians (SCBA Users)
- HAMTC Safety Representative (SCBA User)
- WRPS Safety Professional (SCBA User)
- WRPS Work Package Planner (SCBA User)
- Hanford Respiratory Committee Representatives
- Tank Farm Projects Engineer
- Hanford Fire Department Lieutenant
- WRPS Retrieval Project Manager
- WRPS Tank Farm Project Manager
- HPMC OMS Ergonomic Specialists

The top five scoring SCBA equipment in order of ranking was

1. SCOTT Safety's SKA PAC-AT
2. MSA's AIRHAWK-II (tied for 2<sup>nd</sup>)
2. SCOTT Safety's ACSi-SCBA (tied for 2<sup>nd</sup>)
4. MSA'S G-1 SCBA
5. SCOTT Safety's NXG-7 Snap Change

During the evaluation, SEET members who attended the Vendor Presentation agreed the most important aspect was how each unit fit and felt when worn. Ease of use, maneuverability and comfort provided by heavier rack and support systems was noticeably better than similar racks with fixed air-supply systems. The difference in weight between the lightest and heaviest SCBAs were minimal.

Before introducing any new products, there are several variables to consider, including a field test trial period in a non-hazardous environment, user training, mask station expansion and maintenance expansion. While SCOTT SKA PAC units are already available onsite for work in confined spaces or when operating forklifts and cranes, there is a limited need for additional SKA PAC inventory due to limited use.

The SEET-recommended path forward is:

1. Obtain senior management approval for non-hazardous field tests on the top five (except the SCOTT SKA PAC, due to a similar model already being in use in the tank farms) SCBAs
2. Field test the aforementioned SCBA units above at HAMMER in a non-hazardous environment
3. Perform hazardous field testing
4. Create a report indicating which SCBA(s) are best suited for permanent long term use and obtain resources needed to maintain new SCBA(s)
5. Keep current SCBA equipment in service and re-evaluate continued use after new SCBA(s) are graded in hazardous field testing
6. Request WRPS-ESH&Q stretch and flex program for employees before daily use of any SCBA equipment
7. Integrate use of airline equipment during Team Planning Meetings where feasible
8. Work with SCBA manufacturer to standardize a single SCBA model designed and engineered for daily use, and able to fit all users in multiple tank farm applications
9. Explore benefits of integrating quick disconnect bottles and regulator connection into a portion of SCBA equipment inventory
10. Monitor air-line use at tank farms. If there is an increase, consider benefits of integrating portable air-line breathing systems into inventory.

To view the complete report, [click here](#).