



3M Personal Safety Division

Standards Update

NFPA 1981/1982, 2018 Edition

March 30, 2018



Standards Update

NFPA 1981/1982, 2018 Edition

- ▶ The purpose of this presentation is to provide an update on the status of the NFPA 1981 and NFPA 1982, 2018 Edition standards.

- ▶ Topics:
 - ▶ NFPA 1982, 2018 Edition – *Current Schedule*
 - ▶ NFPA 1982, 2018 Edition – *Published Changes*
 - ▶ NFPA 1981, 2018 Edition – *Current Schedule*
 - ▶ NFPA 1981, 2018 Edition – *Proposed Changes*
 - ▶ NFPA 1981, 2018 Edition – *Universal EBSS (UEBSS)*
 - ▶ NFPA 1981, 2018 Edition – *NITMAM*
 - ▶ NFPA 1981/1982, 2018 Edition – *Certification Process*

NFPA 1982, 2018 Edition

Current Schedule



NFPA 1982, 2018 Edition

Current Schedule

- ▶ The standard is marked as 2018 Edition
- ▶ The issuance date was November 10, 2017
- ▶ The effective date was November 30, 2017
- ▶ The last ship date for 2013 Edition PASS devices is confirmed as 12 months from the effective date

NFPA 1982, 2018 Edition

Published Changes



NFPA 1982, 2018 Edition

Universal PASS Tone

- ▶ In December 2016, a Tentative Interim Amendment (TIA) was issued requiring all manufacturers of PASS devices to change the alarm tone as required in the NFPA 1982, 2013 Edition standard for PASS devices manufactured on December 21, 2016.
- ▶ This change was a result of firefighters expressing concerns about the performance and selection of the PASS tone chosen in the first iteration of the NFPA 1982, 2013 Edition standard.
- ▶ The new universal PASS alarm tone is incorporated as part of the NFPA 1982, 2018 Edition standard.

NFPA 1982, 2018 Edition

Transmitting PASS

- ▶ The standard includes (2) new RF PASS tests to improve reliability:
 - ▶ Multi-hop
 - ▶ Wireless networks use two or more wireless hops to convey information from a source to a destination.
 - ▶ Multipath
 - ▶ Propagation phenomenon that results in radio signals reaching the receiving antenna by two or more paths.
- ▶ Additional tests include:
 - ▶ Point-to-Point RF Attenuation
 - ▶ Loss-of-Signal Alarm
 - ▶ RF Interference

NFPA 1981, 2018 Edition

Current Schedule



NFPA 1981, 2018 Edition

Current Schedule

- ▶ The standard will be marked as 2018 Edition
- ▶ The issuance date is estimated to be August 2018
- ▶ The effective date is estimated to be September 2018
- ▶ The last ship date for 2013 Edition SCBA is confirmed as 12 months from the effective date
- ▶ Scott Safety estimates receiving NFPA 1981 approvals in early calendar year 2019

NFPA 1981, 2018 Edition

Proposed Changes



NFPA 1981, 2018 Edition

Second Stage Regulator Retention & Removal

- ▶ Includes a strength of interface test between the facepiece and mask-mounted regulator to ensure that the mask-mounted regulator will not inadvertently pull out of the facepiece
 - ▶ The test will pull the mask-mounted regulator by the low-pressure hose in 5 different directions at a force of 56.2 lbs.
- ▶ If the SCBA incorporates a removable regulator, two distinct actions for disconnection shall be required prior to removal of the regulator.
 - ▶ Example: Pull latch and rotate regulator

NFPA 1981, 2018 Edition

Pneumatic Data-logging

- ▶ Minimum Requirements
 - ▶ Initial Air Activation (pressure, date and time stamp)
 - ▶ Data Logging @ 30 second intervals (pressure, date and time stamp)
 - ▶ Data Logging of Pressure Milestones
 - ▶ 100%, 75%, 50%, and 35% (EOSTI)
 - ▶ Breathing Rate @ 30 second intervals (minimum 5 LPM resolution)
 - ▶ HUD Deactivation (pressure, date and time stamp)
 - ▶ Retain 36 hours of data
 - ▶ Does not replace the PASS data-logging requirement for 2000 minimum events
 - ▶ Output data to CSV file
 - ▶ *No requirement for temperature data log*

NFPA 1981, 2018 Edition

Universal EBSS Fitting

- ▶ Incorporation of a standardized EBSS fitting that would be universal between all SCBA manufacturers
 - ▶ The fittings are confirmed as Rectus 95 (male) and Rectus 96 (female).
 - ▶ Current Scott fittings will not be compatible
- ▶ Minimum Requirements:
 - ▶ The EBSS shall have an operating pressure range between 80 and 150 psi.
 - ▶ The EBSS shall have a minimum hose length of 20 inches.
 - ▶ The EBSS shall be removable from storage by the wearer using a single hand in a one-directional pull.
 - ▶ The EBSS access location shall be readily visible to an assisting firefighter.
 - ▶ The EBSS access location shall be marked UEBSS in letters that contrast with its background.

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UEBSS – A Closer Look



NFPA 1981, 2018 Edition



UEBSS – A Closer Look

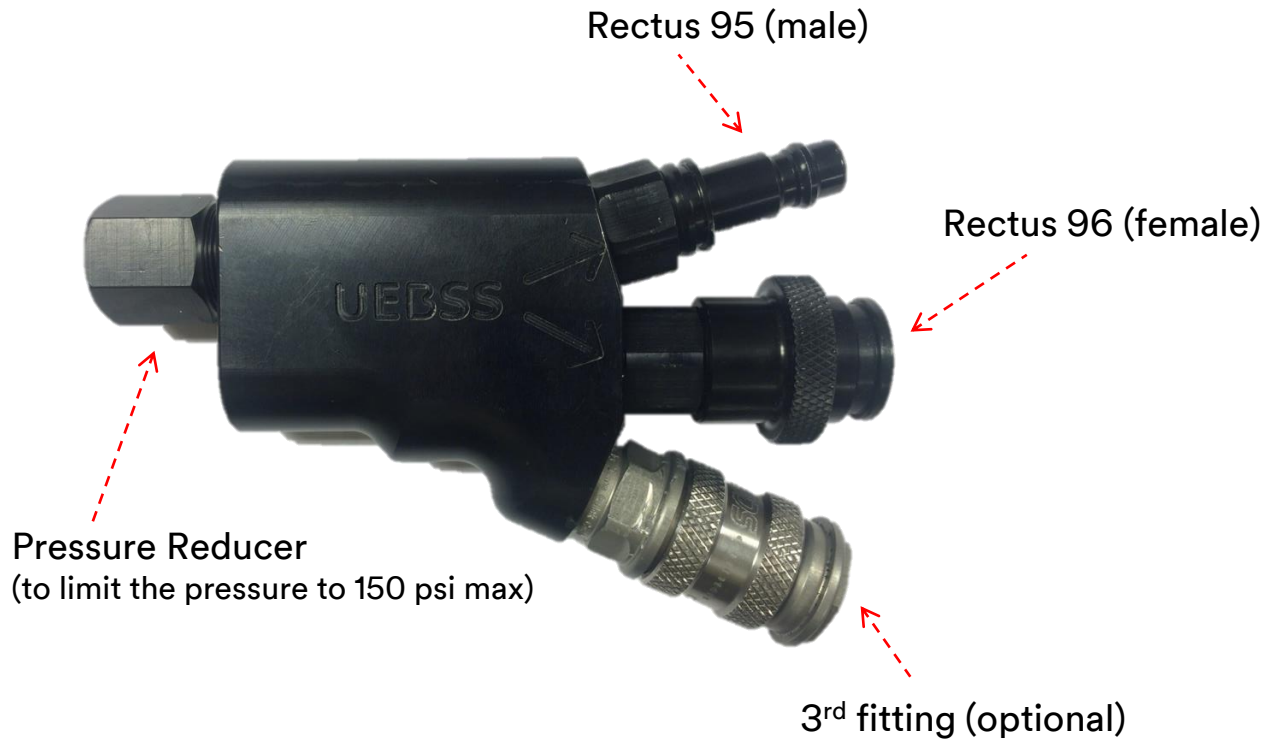
- ▶ Scott Safety **fully supports** the intent of the UEBSS requirement to enable “buddy breathing” between firefighters using different SCBA manufacturer types, and has a working design that meets the requirements.
- ▶ However, the proposed requirement is not considerate of those fire departments that already use some form of EBSS and how the change to a universal fitting would impact their ability to perform EBSS operations.
 - ▶ In essence, fire departments that are currently able to perform successful EBSS operations today with other departments using SCBA from the same manufacturer would cease to be compatible with their mutual aid partners, thus creating the problem that the proposed UEBSS requirement is trying to resolve.
- ▶ Scott Safety investigated alternative options to maintain both backward and forward-compatibility and the solution was to offer an optional 3rd fitting.
 - ▶ This would maintain compatibility between new and existing SCBA users, ensuring safety for all firefighters.

NFPA 1981, 2018 Edition

UEBSS – A Closer Look



Scott Safety's proposed UEBSS solution



NFPA 1981, 2018 Edition



UEBSS – A Closer Look

- ▶ Scott Safety sought guidance and was advised that the inclusion of a 3rd fitting would **not** meet the intent of the proposed standard.
- ▶ Scott Safety proceeded to submit a request for Formal Interpretation to the NFPA Standards Council seeking a formal conclusion on whether a 3rd fitting could be included.
 - ▶ Scott Safety awaits a final decision from NFPA, but our expectation based on preliminary responses is for confirmation that the proposed standard does not allow for the inclusion of a 3rd fitting.
- ▶ In an effort to prevent what Scott Safety believes will create an unintended safety issue within the fire service, our only option was to file a NITMAM.
 - ▶ Scott Safety waited until the last possible day to file the NITMAM, hoping that we would receive a favorable response to our request for Formal Interpretation.

NFPA 1981, 2018 Edition

NITMAM



NFPA 1981, 2018 Edition

NITMAM

What is a NITMAM?

- ▶ Notice of Intent to Make a Motion

Who can file a NITMAM?

- ▶ Under NFPA rules, any individual or organization wishing to make an allowable amending motion at an NFPA Technical Meeting must declare their intentions by filing, within the published deadline, a NITMAM.

How is a NITMAM reviewed?

- ▶ The Motions Committee of the NFPA Standards Council reviews each NITMAM to determine whether the intended motion is a proper motion.
- ▶ Once certified by the Motions Committee, a NITMAM is presented for action at the NFPA Technical Meeting.

NFPA 1981, 2018 Edition

NITMAM

When did Scott Safety file a NITMAM?

- ▶ Scott Safety filed a NITMAM on August 31, 2017.
- ▶ The NITMAM was certified by the Motions Committee on October 10, 2017.

Why did Scott Safety file a NITMAM?

- ▶ Scott Safety waited until the last possible day to file the NITMAM, hoping to receive a favorable response to the request for Formal Interpretation.
- ▶ NFPA procedures did not permit Scott Safety to make a motion to add a third fitting to the standard, therefore the only option was to propose reverting to the EBSS language found in the current NFPA 1981, 2013 Edition standard.

NFPA 1981, 2018 Edition

NITMAM

What is Scott Safety's rationale for filing the NITMAM?

- ▶ Scott Safety believes that the UEBSS requirements as proposed without consideration for an optional 3rd fitting will create an unintended safety issue within the fire service.
- ▶ Scott Safety further believes that this unintended safety issue would not be undone for 15-20 years, at a minimum, as there are currently hundreds of thousands of SCBA in use in the North American fire service, a majority of which use some form of EBSS.
- ▶ Without consideration for an optional 3rd fitting, those fire departments would be left incompatible with their neighboring jurisdictions. Beyond compatibility issues, the implementation of the UEBSS without the option for a 3rd fitting could create logistical and safety issues within a fire department itself, as many departments specify new SCBA as part of new fire station construction or apparatus replacement.
- ▶ These fire departments would be forced to maintain different configurations of SCBA meeting different editions of the NFPA 1981 standard that would no longer be compatible with one another in EBSS operations.

NFPA 1981, 2018 Edition

NITMAM

When will Scott Safety make a motion for removing the UEBSS requirements from the standard?

- ▶ Scott Safety will present our justification for filing the NITMAM at the next NFPA Technical Meeting scheduled for June 11-14 in Las Vegas, NV.
- ▶ The Chairman of the Technical Committee on Respiratory Protection Equipment will also have an opportunity to address the meeting attendees regarding the reasons why the UEBSS language was proposed as part of the NFPA 1981, 2018 Edition standard.

What determines whether the motion is carried out?

- ▶ A consensus vote will be held by NFPA members to determine whether the NITMAM is approved or rejected.
- ▶ If **approved**, the UEBSS requirements will be removed from the proposed standard and replaced with the current language found in the NFPA 1981, 2013 Edition standard.
- ▶ If **rejected**, the UEBSS requirements will remain as written in the proposed NFPA 1981, 2018 Edition standard.

NFPA 1981, 2018 Edition

NITMAM

How does the NITMAM impact the issuance of the NFPA 1981, 2018 Edition standard?

- ▶ Regardless of the outcome of the vote, the issuance date for the NFPA 1981, 2018 Edition standard will be delayed from what was previously communicated.
- ▶ Scott Safety estimates a new issuance date of August 2018, followed by an effective date of September 2018.

How does the new issuance date impact SCBA manufacturers wishing to submit product for NFPA 1981, 2018 Edition certification?

- ▶ NFPA (SEI) has officially closed the submission window and will not re-open the submission window until the issuance date of the standard.
- ▶ Based on historical trends, Scott Safety estimates another 6-9 months before NFPA 1981, 2018 Edition certifications are issued.
- ▶ The end result– manufacturers will not be able to provide SCBA approved to the NFPA 1981, 2018 Edition standard until sometime in early calendar year 2019.

NFPA 1981, 2018 Edition

Certification Process - SCBA



NFPA 1981, 2018 Edition

Certification Process - SCBA

The information below outlines the certification requirements for the NFPA 1981, 2018 edition standard.

- ▶ The NFPA Standards Council is expected to issue the NFPA 1981 standard in August 2018
- ▶ NIOSH requires new TC approval numbers to be issued for each revision of the NFPA 1981 standard. This means that a manufacturer wishing to obtain NFPA 1981, 2018 certification must submit specific SCBA configurations to NIOSH in order to obtain new TC approval numbers.
- ▶ Manufacturers will be required to submit (3) separate applications, as listed below, for each SCBA that they wish to have tested and certified to the NFPA 1981, 2018 edition standard.
 - ▶ NIOSH 42 CFR, Part 84
 - ▶ NFPA 1981
 - ▶ NIOSH CBRN

NFPA 1981, 2018 Edition

Certification Process - SCBA

- ▶ Safety Equipment Institute (SEI) is expected to begin accepting product submissions in August 2018. Once announced, the window for accepting product submissions will remain open for 30 days and is expected to close in September 2018.
- ▶ Manufacturers that submit product within the above submission window will be part of the first wave of testing and certification issuance.
- ▶ Manufacturers that miss submitting products during the above submission window will have their products tested after completion of the testing of the first wave of product submittals, resulting in certifications for products that “missed” the window being issued sometime after the first wave of certifications are issued.
- ▶ Test requirements include:
 - ▶ NIOSH 42 CFR, Part 84
 - ▶ This testing is conducted at NIOSH NPPTL in Pittsburgh, PA.
 - ▶ NFPA 1981
 - ▶ This testing is conducted at Intertek in Cortland, NY.
 - ▶ NIOSH CBRN
 - ▶ This testing is conducted jointly at NIOSH NPPTL in Pittsburgh, PA and RDECOM in Edgewood, MD.

NFPA 1981, 2018 Edition

Certification Process - SCBA

- ▶ Evaluation of products submitted for approval includes in-depth performance and qualification testing. This process is estimated to take 6-9 months for completion, beginning in October 2018.
- ▶ Approvals are granted in the following order:
 - ▶ NIOSH 42 CFR, Part 84
 - ▶ NFPA 1981, 2018 edition and NIOSH CBRN jointly issued by SEI and NIOSH
- ▶ Scott Safety expects to receive approvals and be in a position to ship NFPA 1981/1982, 2018 edition products in spring 2019.

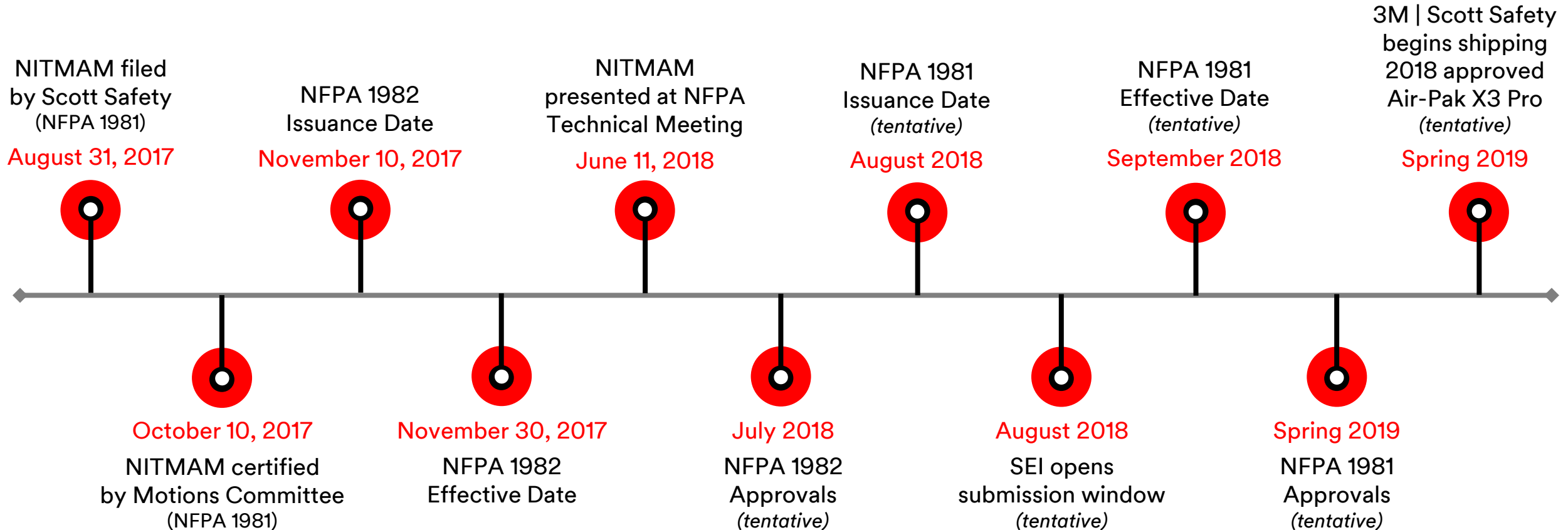
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Certification Timeline



NFPA 1981/1982, 2018 Edition

Certification Timeline



NFPA 1981/1982, 2018 Edition

Certification Process – SCBA

Upgrade Kits



NFPA 1981/1982, 2018 Edition

Certification Process – SCBA Upgrade Kits

The information below outlines the certification requirements for upgrading legacy SCBA to the NFPA 1981/1982, 2018 edition standards.

- ▶ Manufacturers are required to submit separate applications for upgrading legacy SCBA approved to previous editions of the NFPA 1981 standard.
- ▶ The process for NFPA 1981 upgrade approval is identical to the initial certification process, with the additional requirement below:
 - ▶ A requirement for achieving SCBA upgrade approvals is the submission of fielded units that have been upgraded for test and evaluation by the approval agencies.
 - ▶ Historically, the approval agencies have not considered accepting submission applications for upgrades to legacy products until the initial wave of the new standard approvals is completed.
 - ▶ Approvals cannot be issued for SCBA upgrades until the manufacturer has received the initial NFPA 1981, 2018 edition approval.

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Thank You