AFPM is advancing how the refining and petrochemical industries approach safety training by combining immersive technologies with practical, scenario-based learning. Through its Immersive Learning and Training Committee, AFPM brings people together to develop new tools using virtual reality (VR) and augmented reality — technologies that help improve safety, boost performance and optimize training time across all safety disciplines.

One of the group's first achievements was creating AFPM's inaugural VR training simulation, a powerful tool that replicates the complex process of lighting a fired heater from a cold start. Because this operation can carry serious risks if done incorrectly, hands-on field training is often limited. The simulation provides a safe, controlled environment where trainees can practice critical procedures, build skills and gain confidence. It also allows users to prepare for rare but high-stakes scenarios without real-world consequences, leading to better training outcomes and stronger knowledge retention. This innovative tool is an asset for employees across refinery and petrochemical facilities.

Building on that success, AFPM developed the Winterization VR simulation as a supplemental training tool focused on hazard recognition and preparation for winter, cold or freezing conditions. By introducing a gamified approach, the simulation places trainees in realistic scenarios where their actions drive consequence-based outcomes. Users can experience mistakes in a digital environment where they can fail safely, reinforcing the key actions needed in the real world during each phase of winterization. The Winterization simulation is part of a broader suite of resources designed to improve performance during freezing conditions, including a three-episode podcast series, a winterization training video and a set of trivia game questions.

Complementing these immersive programs, AFPM has also focused on one of the most critical periods in any incident: the first five minutes. The actions taken by facility personnel within the first five minutes of an unintended hazardous release of materials are critical to safe outcomes. To strengthen response during this high-stakes window, AFPM developed a suite of computer-based training tools centered on this timeframe, including a video summary, interactive video and eLearning modules.

At the heart of the package is AFPM's first "choose your own adventure" simulation. This tool allows employees to navigate realistic emergency scenarios, make decisions and see the consequences of their actions in a digital environment. Together, these resources reinforce critical thinking and decision-making skills, providing a memorable, hands-on learning experience that builds confidence under pressure.

The interactive video module — originally produced in English — now includes Dutch and Mandarin translations, expanding accessibility for member companies. The entire training package is easily downloaded and can be integrated into existing online training platforms, making it both practical and scalable.

Together, these efforts reflect a cohesive approach to modern safety training — one that blends immersive technology with real-world application to better prepare employees for both routine operations and the moments that matter most.

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Media Contact:

Rachel Farbman

media@afpm.org

202.457.0480

About AFPM Editorial:

The American Fuel & Petrochemical Manufacturers (AFPM) is the leading trade association representing the makers of the fuels that keep us moving, the petrochemicals that are the essential building blocks for modern life, and the midstream companies that get our feedstocks and products where they need to go. We make the products that make life better, safer and more sustainable — we make progress.

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