This article originally appeared on Politico.

It was 2010 and Jerry Wascom, ExxonMobil's Americas refining director, was worried. Despite fuel and petrochemical manufacturers making significant improvements in the safety of their individual operations, across the industries there was an uptick in serious incidents. Workers were getting injured, surrounding communities were losing confidence, the reputation of the industries was being tarnished and regulators were becoming increasingly engaged. Wascom turned to his counterparts within the American Fuel and Petrochemical Manufacturers Association (AFPM), the industry trade group, and asked, "Are we doing enough to protect people?"

That question led to a paradigm shift in the industries' approach to safety through a groundbreaking new program called Advancing Process Safety, or APS. The data-driven program, which celebrated its 10th anniversary in 2020, ushered in an era of collaboration, promoting knowledge sharing about safety incidents and good practices among many of the nation's refining and petrochemical companies. Today, it is considered a key driver behind a more than 50 percent reduction in incidents at the nation's refineries and petrochemical plants since 2011.

"We were very clear about our intentions," Wascom recalls. "This was not a public relations program or an effort to calm the regulators. This was 100 percent about getting better at what we do and, as a result, saving lives. If successful, our results would speak for themselves."

At the age of 18, Wascom had started his career on the refinery floor as a laborer and had intimate knowledge of facility operations. He knew this shift in how the industry approached safety required a collective push. One of his early collaborators was Jim Mahoney, then executive vice president of operations at Koch Industries, who immediately saw the value.

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"There's nothing more important than protecting people," said Mahoney, who also served as chairman of the AFPM board from 2012 to 2014. "We decided to come together as an industry back in 2010 and make a commitment to share information to reduce incidents. If we could share information, if we could learn from each other, then we could take our performance as an industry to another level. And quite frankly, if we could prevent even one incident and save lives or injuries, then it would all be worth it."

In a highly competitive business landscape where information is often proprietary, Wascom and Mahoney argued that safety should not be. And to ensure that mistakes weren't repeated at a refinery or petrochemical plant in a different company, the industry had to start collaborating.

“We recognized that, as an industry, we are only as strong as our weakest link,” said Ron Rife, process safety and human performance manager at ExxonMobil, whom Wascom tapped to help lead the APS effort from 2010 through 2015. “We needed everyone in. Because it doesn’t matter whether an incident occurs within industry at a small refinery, a big international major or a medium-sized refinery — the impact is industry-wide.”

Dawn Wurst, an early advocate of APS who was then at Flint Hills Resources, was instrumental in designing the new approach pioneered by the group.

“The impetus was that the traditional means of improvement were not working, and basically, we couldn’t just go back to the same playbook,” said Wurst. “We said: 'Why don’t we get our heads together and try to attack this in a different way?' Aggressively building on our strengths across the industry to think about what could be done, and motivated from within — it was an exciting time.”



The APS program develops resources that outline good safety practices for fuel and petrochemical facilities, like shift-turnover process documents that Phillips 66 has used to guide start-of-shift meetings (photo above, pre-pandemic). “For 10 years the APS program has been facilitating industry-wide knowledge sharing and driving improvements, contributing to fewer process safety events in our industries,” said Mike Bukowski, chair of the Advancing Process Safety program and vice president, strategy & planning at Phillips 66. “Today, collaboration on robust industry safety practices and programs is standard. This is how business is done.”



Through the APS program, eight Process Safety Regional Networks were established, convening safety professionals from refining and petrochemical plants across the U.S. to share information and good practices, learn from incidents and problem solve for common challenges.



The idea for APS originated with Jerry Wascom (left), who convened a team of safety experts from across the fuel and petrochemical sectors to engineer a new, collaborative approach to process safety. Wascom tapped Ron Rife (right), also at ExxonMobil, for the task; Rife was honored by the APS group with a “Herding Cats” award for tremendous leadership in the program.



In 2018, AmSty started their Conduct of Operations program, which includes Walk the Line, an APS sub-program. In a combined effort with Process Safety and Reliability, AmSty achieved significant improvement in process safety performance; AmSty's process safety tier 1 & 2 event annual rate is currently at zero, and the 36-month rolling average rate is at 0.09.

Today, APS comprises six sub-programs that help companies continuously improve safety performance by facilitating incident sharing, coordinating site assessments, providing hazard identification tools, offering opportunities to share practices and more. More than 200 companies have drawn on APS resources and more than 3,500 employees have directly participated in program activities. The vast toolkit of AFPM member resources was never envisioned by the roughly 20 representatives from various fuel and petrochemical companies gathered in a conference room in 2010, wondering where to start.

They began with identifying the kinds of insights needed to help prevent incidents, which required taking a holistic look at process safety data from across the industries and analyzing it in new ways. It also required bringing together the individuals responsible for on-the-ground safety at manufacturing plants — not just corporate safety leads — to discuss common issues in greater detail.

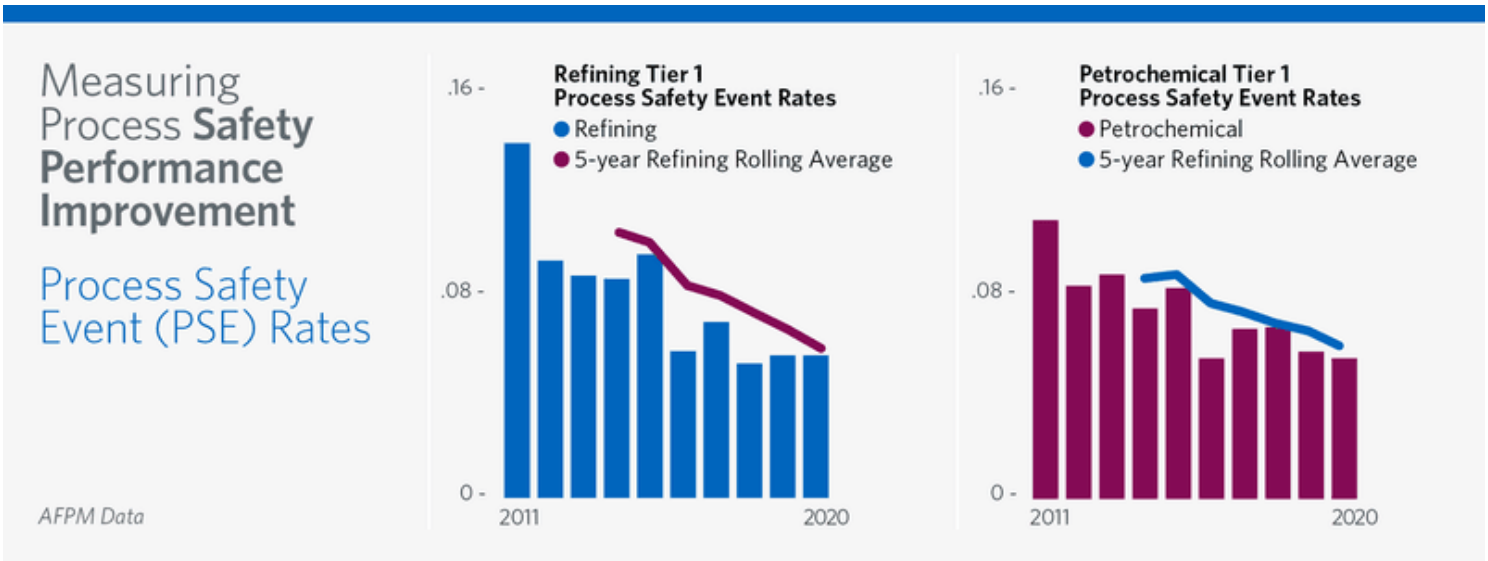
“We were starting to see trends and deepen our understanding, not just about what was happening, but about why certain things were happening — the root causes,” said AFPM Vice President of Technical and Safety Programs Lara Swett, who helped create the program.

Over time APS developers saw evidence of a trend that many had hypothesized but didn’t have industry data to support: human error contributed to about a third of workplace incidents.

“Prior to this program, we tended to focus on the things we thought we had more control over, like engineered controls,” said Jerry Forest, senior director of process safety at Celanese Corporation. Based on the new information, Forest began identifying opportunities to ensure human variability wouldn’t lead to mistakes, addressing basics such as the handover between operators during shift changes and the communication touchpoints and practices those handovers require.

Forest eventually spearheaded the development of “Walk the Line,” an APS sub-program for AFPM members that arms operators and front-line supervisors with a trove of practices, trainings, exercises and tools — like this shift handover guidance video — designed to reduce human error. If incident sharing and analysis helped the industry spot problems, Walk the Line was the part of the program that provided solutions.

AFPM’s Walk the Line program is but one of several APS initiatives credited with the record-setting reduction in incidents across the industry. Regional networks facilitate peer-to-peer discussions on common issues, including the challenges regional weather patterns bring. Landmark hazard identification tools flag potentially overlooked but common process safety hazards. Another offering is a site visit by an independent and credible team of process safety experts — many 30-plus-year industry veterans — who tour the facility and then lead a master class in industry protocols.



Process safety involves applying good operating, engineering, maintenance and other practices to manufacturing processes. Advancing Process Safety is AFPM’s flagship program developed to promote industries-wide safety collaboration. It is considered a key driver behind a more than 50 percent reduction in incidents at U.S. refineries and petrochemical plants since 2011.

“I often hear that companies never could have developed this breadth of resources on their own,” said

Swett. “These are tools designed for industry, by industry, and more than 500 experts have contributed — I can’t imagine what all their years of experience combined adds up to. They also understand that each facility is unique and it’s important to have flexibility when devising the best and safest solutions because preceptive one-size-fits-all regulations often won’t work.”

The learnings from APS don’t just stay inside the fuel and petrochemical industries. AFPM shares information with the independent government agency in charge of investigating industrial incidents to foster smoother, more effective collaboration around the shared goal of keeping people safe. Thomas Zoeller, a former senior policy advisor and acting general counsel at the Chemical Safety Board, described the program as “cutting edge.”

“It’s an incredible milestone, what they’ve done in 10 years,” said Zoeller. “The folks working on the program should be commended for the dedication that they’re bringing to continue to push through and break down those barriers. Now, they’re able to go back and point to successes and say, ‘See? We did it.’”

“Not everything has to be done by regulation,” he added. “There are some things where industry can establish the best practices. But to know what those best practices are, you have to be able to share the information.”

For AFPM, APS is a testament to the unique role of a trade association in convening experts from across industries to take on pervasive challenges.

“I’m incredibly proud of the APS program and the role it has played in making our facilities and communities safer than ever before,” said Chet Thompson, president and CEO of AFPM. “To anyone questioning the value of trade organizations like AFPM, I point them to this program. The benefits of industry collaboration are tremendous.”

“Our members will compete against each other on all levels, but there is nothing proprietary when it comes to safety,” said Chet Thompson, president and CEO of AFPM. The video above provides an inside look at how fuel and petrochemical manufacturers approach safety at the individual, facility, community and industry levels.

As Wascom reflects on 10 years of the APS program and its impact, there’s a sense of deep gratitude and satisfaction.

“It was about saving lives and improving our industry’s performance,” said Wascom. “The tireless commitment of our safety professionals and support from our trade associations has been amazing. And while there’s always more work to be done, we’ve accomplished a great deal and set the stage for ongoing improvement. We’ve really made a difference.”

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