



Personal Protective Equipment

Dow Chemical Upgrades PPE Solutions for Women with Nomex® Comfort

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Safety for Women in the Oil and Gas Industry *Comfort without Compromise*

DuPont prides itself on empowering the world with the essential innovations to thrive. By collaborating with customers around the world, they are looking deeper into the everyday challenges workers face to provide real-world solutions for those in oil and gas and other key industries.

That is why they teamed up with Cintas and Bulwark Protection to help make it safer to work as a woman in the oil and gas industry and to provide comfort without compromise.

Dow Louisiana

Dow Louisiana is the largest petrochemical company in the state, providing jobs for more than 6,000 Dow and contract employees across six locations, and manufacturing more than 100 basic and specialty chemicals that are shipped worldwide.

Dow's St. Charles operations consists of a 2,000-acre petrochemical manufacturing complex in Hahnville, just upriver from New Orleans. They manufacture chemicals used in thousands of everyday household products. Even with 10 billion pounds of annual production and over 1,000 Dow employees and 1,500 contractors, this site has been an OSHA Star Site for over 20 years with an exemplary safety record and an employee injury rate that is one of the lowest in the country.

DuPont focused on the Dow Louisiana campus for their case study because over 30% of the workforce here are women, a majority of whom are engineers. When a DuPont account manager for the oil and gas industry visited this site and toured with these engineers to understand what their daily work entailed, she noticed their flame-resistant (FR) garments weren't fitting right. "The sizing and measurements were off, resulting in a looser and baggier fit, which – in an industrial setting – can put the wearer's safety at serious risk," said Amber Izworski, Global Account Manager for DuPont Personal Protection.

When talking to women engineers across the plant, there were several common issues they faced that made addressing the problem of wearing men's-sized FR garments an easy way to continue their safety legacy at this plant.

Assembling the Team

Cintas – the largest and one of the most trusted providers of flame-resistant clothing care and maintenance programs in North America – helps more than 1 million workers stay protected on the job with flame-resistant clothing. With their professional commitment and diverse options, Cintas provides comfortable, lightweight and retail-inspired protective apparel that employees want to wear.

Bulwark Protection works every day to change the way people think of FR clothing and personal protective equipment (PPE). Born 50 years ago on the frontlines of the Canadian oil fields, Bulwark has been designing and producing quality, trusted FR protective garments that are purposefully designed to boost comfort, spirits and productivity for the industry – always focused on technological advances in protective wear.

The unique fabric technology of **Nomex® Comfort** from DuPont offers the proven protection of Nomex® in a lightweight, breathable, quick-drying fabric. Designed for extreme performance in the oil and gas and petrochemical industries, it provides wearers from the pipeline to the production line the most comfortable FR PPE on the market today.

Developing the Solution

With the inspiration from the on-site engineers and support from Dow, DuPont, Cintas and Bulwark joined forces to find a solution. First, they started by taking a close look at what duties and activities the women needed to perform on the job.

In addition to the fit issues for women that were observed, wearers of FR garments are increasingly demanding clothing that is lighter, more comfortable and breathable. That's where Nomex® Comfort comes in.

"At Bulwark, we are relentless in our pursuit of bringing game-changing FR innovations to the market that solve real-world FR problems," said Robert Grimes, VP/GM—Bulwark Protection.

The team at Bulwark designed and created a line of gear UL-certified to meet NFPA 2112 with the comfort and fit that women would appreciate with the technology and safety points that companies want and the industry demands. "We want comfortable FR to be the first thing that comes to mind as a woman puts on her lightweight and breathable shirts, pants and coveralls," said Allison Bloodworth, Director of Merchandising with Bulwark Protection.

Nomex® Comfort fabric – an innovative fabric that delivers both extreme protection and maximum comfort, developed exclusively by DuPont – was used for the designs. "Our shirts have a uniquely designed chest pocket to fit a woman because we still need secured storage. Side seams allow movement without coming untucked. Our patented pleated coverall was designed for women to have full range of motion to help move, bend and work in comfort. Because putting yourself in harm's way shouldn't require putting yourself in men's clothing," Bloodworth added.

Once Bulwark completed their iQ Series® garment line made with Nomex® Comfort, distribution to the sites and development of a roll-out program fell to the expertise of Cintas. As the contract supplier for

The Dow Chemical Company, Cintas was able to swiftly prioritize the need for each of the Dow sites.

Innovation and Collaboration in Action

Working closely with DuPont on the site wear trial, the Dow Plaquemine site in Louisiana was the first Dow site to fully implement the Bulwark® FR iQ Series® garment line made with Nomex® Comfort.

“At Dow, we pride ourselves on innovation and creating game-changing technology and we ask the same of our vendors,” said Crystal King, a former production engineer and current Senior Lead Site Manufacturing Director for Louisiana Operations at the Plaquemine site. “We were excited to be the first Dow site to introduce this new FR workwear to the women in our plant and even more excited that our collective dialogue with DuPont and the team led to a solution that makes for a safer workplace for everyone,” King said.

Kait Culy, Senior Industrial Hygiene Specialist at Louisiana Operations, understands how important safety is in the day-to-day operations of the plant. “Our reliability-centered culture means that our people are intensely focused on the possibility of an unanticipated failure and are proactively taking steps to not only prevent a failure, but identify a solution,” said Culy. “Making clothes that are safer for women and that allow them to do their job without distraction or worry is an easy win and we’re glad that DuPont, Bulwark and Cintas came together to bring this solution to the women of Dow so we can continue our tradition of safety.”

Through this collaborative effort, the team has taken the experience as an opportunity to better support innovation to bring about positive change through better fitting apparel now and into the future. Dow is currently working on a transition plan for making the Bulwark® FR iQ Series® garment line made with Nomex® Comfort available at sites nationwide, in partnership with Cintas.

“The Bulwark® FR iQ Series® garment collection is a perfect example of how working to deliver innovative solutions helps keep workers safe and more comfortable,” said Christine Christmas, Global Thermal Protective Apparel Marketing Leader, DuPont.

According to a report from the *American Petroleum Institute*, employment of women in the oil and gas and petrochemical industries is projected to account for 185,000 of the total job opportunities through 2030. “The number of women at this site and others just like it will continue to grow as opportunities in engineering and STEM-related jobs across all categories expand in this industry,” said King.

“Women engineers want the same opportunity to make a difference in this industry and they should have the same safety protections from their workwear,” added Izworski.

This collaboration and the diverse, experienced teams at DuPont, Cintas and Bulwark are using their combined skills to solve the world’s biggest challenges and bring about positive change...right now.

Learn more about DuPont's Bulwark iQ Series women's fit PPE here.

Previously Featured on DuPont's blog.