



COMMERCIAL CASE STUDY

PRODUCT

40 CAL GORE PYRAD® KITS

Arizona Public Service (APS) was in need of a solution to a common problem - the requirement for workers to wear 40 cal arc flash suits. The suits were heavy, bulky, and made it difficult for workers to comply with wearing them in Arizona's scorching temperatures. That's where Mechanix Wear came in with their ultra-lightweight 40 cal Pyrad® arc flash suit made in partnership with industry legend Chicago Protective Apparel.

Find out more about Mechanix Wear's game-changing, ultra-lightweight 40 cal Pyrad® arc flash suit, and how it improved worker compliance and stay times on the job.

RESULTS



50%

LIGHTER THAN OTHER GARMENTS IN THIS CLASS



HIGHER RATING FROM WORKERS



3X

INCREASED STAY TIMES

CUSTOMER

ARIZONA PUBLIC SERVICE

Arizona Public Service (APS) is a major utility company, generating clean and affordable energy for 2.7 million Arizonans.

\$3.8B ANNUAL REVENUE

6000+ NUMBER OF EMPLOYEES

1.3MM NUMBER OF HOUSEHOLDS SERVICED

11 NUMBER OF COUNTIES SERVICED

APPLICATION

ELECTRICAL MAINTENANCE

INDUSTRY

ENERGY + UTILITIES

CUSTOMER CONSIDERATIONS

- Must find arc flash clothing solution that provides 40 cal/cm² arc flash protection and workers will want to wear
- Arc flash clothing must be breathable and lightweight to reduce heat stress
- More comfortable and breathable PPE in order to improve compliance



KIT CONFIGURATION	PART NUMBER
40 Cal Jacket + Bib Kit, Standard Hood	AG40-GP-[CLOTHING SIZE]-[GLOVE SIZE]
40 Cal Jacket + Bib Kit, Lift-Front Hood	AG40-GP-[CLOTHING SIZE]-H3P-[GLOVE SIZE]
40 Cal Jacket + Bib Kit, Standard Hood with Fan	AG40-GP-[CLOTHING SIZE]-[GLOVE SIZE]-FAN
40 Cal Jacket + Bib Kit, Lift-Front Hood with Fan	AG40-GP-[CLOTHING SIZE]-H3P-[GLOVE SIZE]-FAN



THE PROBLEM

Electrical workers face a host of hazards on the job, but the four main types are shock, arc flash or blast, fire, and explosions. Workers have PPE to help mitigate the risk of arc flash hazards. However, just like anything used to solve a problem, there can be unintended side effects. In this case, it's heat stress. The suits worn to protect electrical workers from arc flash hazards, especially from higher energy incidents at 40 cal/cm², are generally thick, heavy, bulky, and insulating. They don't allow body heat to escape, causing a worker's temperature to rise. The discomfort is compounded if they need to wear an arc flash suit in a hot environment.

Heat stress has always been a prevalent work hazard, however OSHA has just recently made moves to establish directives and guidelines to address the issue. As of April 2022, OSHA created an instruction called the National Emphasis Program for Outdoor and Indoor Heat-Related Hazards.¹ It is designed to ensure that employees in high-

hazard industries are protected from heat-related hazards that can lead to illnesses, injuries, or even death. Use of protective clothing or gear is one of four factors cited that can lead to heat stress, the other three being environmental conditions (high weather temperatures, humidity), presence of heat sources, and level of physical activity.²

APS is the largest utility company in Arizona, responsible for generating energy for almost 3 million Arizonans all year round. Reliable service is especially critical in the summer season, when temperatures can climb over 100 degrees Fahrenheit. Even without figuring in a clothing adjustment factor (CAF), there should be a 0 stay time according to a WBGT (WetBulb Globe Temperature) reading at those temperatures. APS workers were overheating on the job while wearing their arc flash clothing, and management needed to figure out a solution to improve comfort, compliance, and to extend stay times.



SOLUTION

Having APS workers unable to work because of heat stress was not an option, so company management started seeking out a compliant, yet lightweight and breathable arc flash suit for their workers. They were introduced to Mechanix Wear's game-changing arc flash suit made with arc-rated Pyrad® Technology by GORE-TEX LABS.

The Gore Pyrad® arc flash suit consists of a jacket, bib overall, and hood, and combines arc-rated Pyrad® technology by GORE-TEX LABS with versatile and streamlined garment design. These extremely lightweight and breathable garments allow electrical workers to stay focused and productive for a longer period of time without the fatigue built up from heavier, warmer solutions. The Gore Pyrad® suit comes as part of a kit with rubber insulating gloves and leather protectors, ear plugs, safety glasses, glove bag, and gear bag - basically head-to-toe protection for electrical workers, plus a way to store and carry their gear to the job site.

The fabric itself is a single layer, making it 50% lighter and more breathable than other garments in this class. It provides 40 cal/cm² electric arc protection and is NFPA 70E PPE 4 compliant. Having a suit that consists of one layer means that the CAF, or Clothing Adjustment Factor (amount added to the measured WBGT when determining heat stress) remains at zero. Double-layer garments raise the CAF another 5.4°F³.

Matt Attleberger, the Maintenance Manager at a natural gas facility for APS, showed the jacket to workers and asked them to guess what they thought it was rated for. The workers came back with guesses ranging from 5 to 8 cal.



As a former electrical worker myself, I can confidently say that this suit is a game changer. Its lightweight and breathable design not only keeps the workers cooler and more comfortable, but also increases their stay times and improves compliance. I highly recommend this product to any facility looking to prioritize the safety and comfort of their employees.

MATT ATTLBERGER | MAINTENANCE MANAGER AT APS



USER FEEDBACK

The implementation of the 40 cal Gore Pyrad® arc flash suits has been a resounding success, with worker response being overwhelmingly positive. This is a clear indication that compliance and stay times will be greatly improved. Arizona Power Supply (APS) is eager to expand the use of these kits across all of its facilities in Arizona, so that the benefits can be seen and appreciated company-wide. This further underlines APS's commitment to ensuring the electrical safety of its employees and promoting awareness about the dangers associated with electrical sources among its customers.

SUMMARY

Arc flash clothing kits for APS:

- Lighter weight and more comfortable 40 cal arc flash suits
- Improved worker compliance and stay times
- Helps company comply with burgeoning OSHA directives and guidelines for heat stress
- Helps company reinforce a culture of safety among employees, and extends it outward to customers

¹ https://www.osha.gov/sites/default/files/enforcement/directives/CPL_03-00-024.pdf

² <https://www.osha.gov/heat-exposure/hazards>

³ <https://www.osha.gov/heat-exposure/hazards>



ARE YOU ON THE RIGHT TRACK?

JOIN AN ELITE GROUP OF COMPANIES WHO HAVE SWITCHED TO THE TRACK PROGRAM, TO TAKE CONTROL OF YOUR SAFETY AND COSTS.

- ✓ PRODUCT SAMPLES FOR TRIALS
- ✓ EXPERT JOB SITE ASSESSMENT
- ✓ DETAILED REPORT WITH PPE RECOMMENDATIONS

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