EDITORIAL
ISHM is in the process of upgrading our computer information systems. When complete it will allow each certified member to access their account and update select information additionally it will streamline the payment process. We are hopeful that everyone will agree that is a long overdue improvement.

ISHM needs assistance with writing exam questions for both the CSMP and CSHM exams. We need additional questions to include in our database which will allow us to replace poorly performing questions. A CSHM can earn one (1) COC point for every 5 questions accepted by the exam committee.

ISHM will be exhibiting at several trade shows this year and could use your assistance in manning the booth. As we approach the date for an event in your area we will email you to see if you can make time in your busy schedule to help.

ISHM has entered into several partnerships with various companies and organizations. We believe that the influence of these organizations will increase the visibility of ISHM and its certifications.

Thank you for your support of ISHM!!!!
3rd Annual Middle East OHS Strategy Summit

Building on the theme ‘Prevention Through Protection’, Fleming Gulf will be organizing the 3rd Annual Middle East OHS Strategy Summit on 7 - 9 April 2014 at Le Meridien Al Khobar, Saudi Arabia.

Confirmed Speakers Representing:

Get a glimpse of the topics that would be discussed by the speakers: View brochure | To attend the conference Submit the form and avail discounts

(It is necessary to depress the Ctrl key when accessing the links)

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<th>Your Reasons for Attending</th>
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<td>Develop HSE management system comprising of all the essential components</td>
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<td>Get updated on latest approaches in prevention of slips, trips, and falls</td>
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<td>Identify the physical stressor and cope with health challenges for expatriate workers</td>
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<td>Familiarize yourself with cost efficient risk based medical surveillance program</td>
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<td>Discover the essential link between process safety and human reliability</td>
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Confirm your seat now

If you have the right products or services to ensure best & safe work practices, 3rd Annual OHS Middle East Strategy Summit is the right place to showcase your solutions. We welcome you to drop us an email for exclusive exhibition packages.

To avail ISHM members discount contact.

Alphy Nangani | Marketing – HSE

The True Cost
Of a $50 Arc Rated Shirt

Electrical incidents causing severe burn injuries Occur in the workplace more than 7,000 times Annually, of which 2,000 are severe enough to put Victims into long-term burn center treatment.

A Chicago newspaper article reported a tragic workplace fatality of a worker at an area elementary school doing electrical work. According to the County Medical Examiner, he was exposed to an electrical arc flash that caused his clothing to catch on fire. Less than a week later he died from severe burn injuries caused by this electrical incident. Left behind were his spouse and children who will pay a lifetime price for an accident that lasted less than a fraction of a second. As tragic as this event was, however, many pieces of this story are nothing more than typical.
Severe incidents are occurring in the workplace in the neighborhood of 5-10 times per day. While thermal burns are dangerous and harmful, the resulting severity and risk of fatality are more directly related to the onset of garment ignition. In nearly all of these instances the resulting severe burn injuries can be avoided or minimized, eliminating the potential for loss of human life.

The question the author of the article does not answer is if this worker was wearing polyester or cotton apparel. OSHA prohibits the use of nylons, acetates, and polyesters alone or in blend with cotton where the work around thermal exposure could create the potential for these fibers melting and sticking to the skin. Many companies, therefore, require electrical workers to wear clothing with natural fibers of 100% cotton while working in these situations. While it is commonly thought that cotton is a safer alternative to polyester and polyester blends of fabric, cotton also presents a harmful risk due to the very low arc flash incident energy that is necessary to cause the cotton fabric to ignite. In an arc flash, molten copper and metal with temperatures in excess of 1,800 degrees Fahrenheit will likely cover major portions of the shirt and pants being worn, and in most instances cause ignition of the clothing. In either circumstance, burning garments or burning and melting garments predictably increase the severity and extent of injury to the point of risk of fatality.

OSHA (Occupational Safety and Health Administration) and MSHA (Mine Safety and Health Administration) recognize the dangers of wearing improper clothing when exposed to arc flash hazards. MSHA has cited NFPA 70E as a best practice in electrical “Hazard Alerts” and have stated, “Wear appropriate personal protective equipment (PPE) as defined in NFPA 70E (Standard for Electrical Safety in the workplace) when doing any electrical work.” OSHA has requirements in their safety standards for electrical utilities and companies in general industry to ensure that clothing worn in these environments does not contribute to severe burn injuries or fatalities. For general industry, OSHA takes their requirements a step further to require that Personal Protective Equipment, including flame resistant clothing, be worn to protect exposed areas of the body from electrical hazards to the level of the potential hazard (29CFR 1910.335(a)(1)(i)). Wearing arc resistant clothing while working on or near energized equipment is very beneficial to the wearer as garment ignition is prevented, significantly lessening the severity and extent of the burn injury. Furthermore, the insulative characteristics of protective clothing defined as an arc rating (AR), or arc thermal performance value (ATPV), can be measured so that selected AR clothing systems will have higher arc ratings to minimize severity and extent of body burn. OSHA references NFPA 70E as an acceptable means to determine what levels of hazardous energy could be present if an arc flash were to occur and what combinations of PPE would result in a survivable or minimal burn related injury. In fact, the NFPA 70E Standard provides several different means to calculate the potential hazard levels and the appropriate levels of protection needed to prevent garment ignition, the root cause of the fatality mentioned above.

The most commonly referenced method is through utilization of the Hazard Risk Category task tables and Typical Protective Clothing Systems table. These task tables identify more common electrical task s and assign Hazard Category (HRC) numbers of 0 through 4 based on potential incident energies for these tasks. The problem is that assumptions are made on the available fault current and the clearing times of the protective devices within the infrastructure, information that is rarely known. The Protective Clothing table makes recommendations for the minimum protective clothing arc ratings for each category, 0 through 4. Another method is the Simplified, Two-Category, ARC-Rated Clothing System within Annex H of the standard, it is almost universal in protective clothing implementation because of its “simplified and complete approach.” Under this method, arc rated daily wear apparel with an arc rating of 8 cal/cm2 is utilized with protection to meet the requirements of Hazard Categories 0, 1 and 2. The second step in this approach is to utilize arc flash
gear protecting to at least 40 cal/cm² for tasks that fall within the exposure ranges of Hazard Categories 3 and 4. Although the NFPA 70E Standard and the above methods are widely recognized tools for determining hazard potentials, there are a variety of software calculation tools also available that can be used in combination with the 70E Standard or on their own. Performing a Hazard Analysis through software calculations is the most effective and reliable means to determine the necessary protection level needed for workers. In circumstances where an organization has taken the steps to conduct a full hazard analysis using the available software options, a PPE model identical to the Simplified, Two-Category Approach is implemented almost without exception. HRC 2 compliant apparel worn daily in combination with HRC 4 arc flash suits are the most common configuration of protection.

We do not have an account of why this worker conducted a task while the equipment was energized, and do not know why proper arc rated apparel was not worn. We can, however, make a few general assumptions based on typical behavior in our workplace. In this case, it is possible that this individual did not receive the necessary safe electrical work practices training, or his employer possibly made the decision to not make a small investment above the typical costs of everyday work wear for an arc rated shirt and pants to protect the body from thermal burns or garment ignition.

### Ask the Lawyer

**Question:** Can you please clarify the OSHA rule on personal protective equipment (PPE)? When is the employer required to provide and pay for PPE?

**Answer:** The general rule is that the employer is obligated under the law to provide and pay for PPE. The rule is set forth in section 1910.132 of the general industry standard. There are limited exceptions. er the rule, the employer must provide protective equipment “wherever it is necessary by reason of hazards of processes or environment….encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.” (29 CFR § 1910.132(a)). The employer must initially perform a hazard assessment of the work place to determine if hazards are present which necessitate the use of PPE. If so, the employer has a number of additional obligations, including providing the PPE, ensuring its adequacy, training the employees, and ensuring

<table>
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<tr>
<th>HAZARD RISK CATEGORY</th>
<th>CLOTHING DESCRIPTION</th>
<th>MINIMUM ARC RATING (cal/cm²)</th>
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<tbody>
<tr>
<td>0</td>
<td>Non-melting flammable materials</td>
<td>N/A</td>
</tr>
<tr>
<td>1</td>
<td>Arc rated FR Shirt and FR Pants or FR Coverall</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Arc rated FR Shirt and FR Pants or FR Coverall</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Arc rated FR Shirt and FR Pants or FR Coverall, and arc flash suit selected so that the system arc rating meets the required minimum</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>Arc rated FR Shirt and FR Pants or FR Coverall, and arc flash suit selected so that the system arc rating meets the required minimum</td>
<td>40</td>
</tr>
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</table>
that the employees correctly utilize it. The employer is also required to pay for the PPE. The employer may either purchase the equipment and provide it to the employees, or may provide vouchers or allowances so that the employees can purchase the PPE directly. One notable exception is if an employee chooses to use his or her own PPE that s/he already owns, the employer is not obligated to reimburse the employee for the original cost of the PPE.

The employer is also obligated to regularly assess the protective equipment to ensure that it has not become damaged. The employer must replace any PPE, at its expense, that is no longer adequate. If an employee loses or intentionally destroys the PPE, however, the employer may require the employee to pay for the replacement equipment.

The employer is also not required to pay for: non-specialty footwear, including steel-toe boots, if the employer allows the employee to wear the footwear off the job-site; non-specialty prescription safety eyewear, if the employer allows the employee to wear the eyeglasses off the job-site; everyday clothing, such as long-sleeved shirts and long pants; and ordinary clothing and skin creams used solely for protection from the weather, such as winter coats or sunscreen.

One final note, if an employee elects to utilize protective equipment that is not necessary, the employer is not required to provide or pay for the PPE. Under such circumstances, the employee may choose to use the PPE at his or her own expense.

Darren Hunter is a partner and an experienced OSHA practitioner in the Chicago law firm of Rooney Rippie & Ratnaswamy LLP. This column does not constitute legal advice or the formation or proposal of an attorney-client relationship to or with any person or entity. In addition, this column should not be understood to represent the views of ISHM, the law firm, the individual attorneys at the firm, or of any of the firm’s clients or former clients.

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**Board of Director Thoughts: Jan Rosenberg**

**Reducing Workplace Fatalities through Defensive Driving**

Not only are traffic accidents the leading cause of death among the general population, they are also one of the top causes of workplace fatalities. According to the Bureau of Labor Statistics, 36% of occupational fatalities are associated with motor vehicles. The average crash costs an employer $16,500 with the cost to the employer rising to $74,000 when a worker has an on-the-job crash that results in an injury. With this in mind, it’s important to practice good defensive driving techniques.

The good news is that these crashes are largely preventable. Recognizing the opportunity that employers have to save lives, a growing number of employers have established fleet safety programs in their companies. No organization can afford to ignore a major problem that has such a serious impact on both their personnel and the company bottom line.

The National Safety Council has defined defensive driving as "driving to save lives, time, and money, in spite of the conditions around you and the actions of others." Driving defensively involves taking measures to reduce
the risk of collision by anticipating dangerous situations, despite adverse conditions or the mistakes of others. Thus, the practice of specific driving techniques goes beyond that of following the general rules of the road.

Defensive driving is learning how to anticipate problems before they happen. Although defensive driving seems to imply that the driver is more on the defense than on the offense, defensive driving is in reality the ability to be proactive while driving, not passive.

You can drive defensively by employing a number of tactics. Defensive drivers are always aware of their surroundings, whether it’s obstacles, other drivers or pedestrians. When driving defensively, it’s important to scan surroundings, maintain a safe following distance, make smart decisions, be aware of other driver’s decisions, and act with speed and accuracy. By doing these things constantly, you can increase your safety on the road as well as the safety of other drivers.

Thus, defensive driving is the learned ability to anticipate possible outcomes in a given situation so that the driver is prepared with the skills to anticipate hazards rather than simply reacting to them. Driving defensively is an important aspect of any safety management program and can effectively help reduce workplace fatalities.