

### OSHA Electric Power Standards - Session 4 - QAndA Report

<p>Is there an assessment other than table 1 in the appendix that will be available as a handout?</p>	<p>Unfortunately there is not. I would suggest utilizing the information in Table 1 to develop your assessment criteria.</p>
<p>If you maintain MAD from other 2 phases, while rubbering up the 3rd, can you use the single phase table?</p>	<p>If you remove the potential for phase to phase exposure, then yes you can.</p>
<p>If you have an 8-cal clothing system on, and put a hi-viz vest over that, does the vest need to be arc rated (no specific rating) or is FR acceptable?</p>	<p>I would suggest looking on <a href="http://arcwear.com">arcwear.com</a> to find an article written on this subject.</p>
<p>While working on a 3 phase pole, if I cover up my way into the center phase, and uncover my way out, is this considered single phase only?</p>	<p>Yes, that would be considered single phase.</p>
<p>What are some examples of when incident energy can ignite clothing?</p>	<p>An arc can ignite insulating fluid in transformers, etc. which could ultimately ignite clothing. Current passing through grounding conductors can melt those conductors and ignite clothing. Hot debris from faulted equipment can spew out and ignite clothing.</p>
<p>Can I use other guideline such as working distances to calculate incident energy levels other than those listed in Appendix E?</p>	<p>Yes. You may use other distances if those distances reasonably resemble the actual exposures faced by employees.</p>
<p>What does a reasonable likelihood that an electric arc will occur mean?</p>	<p>OSHA considers a reasonable likelihood whenever the probability of an event is higher than it is under the normal operation of equipment.</p>
<p>How can I reduce incident energy levels?</p>	<p>Through engineering controls and work rules which could include moving the employee further away from the arc potential. Instead of gloving you may change the work rule to using hot-sticks, etc.</p>
<p>Do I have to wear FR clothing even when I'm not performing electrical work?</p>	<p>According to OSHA, arc rated clothing is only required to be worn when the assessments have indicated that the potential of incident energy exists. If a worker has no exposure to an arc flash (example: digging/trenching operation) there is no requirement to wear the clothing. However, the company may have a work rule that requires FR/AR clothing be worn at all times; if this is the case, the worker would be required to wear the clothing.</p>
<p>I have garments with a label that says Cat 2 and another label that says 2112. What do those mean?</p>	<p>The Cat 2 label refers to the category of arc rated clothing from NFPA 70E. There are 4 categories. The 2112 refers to a NFPA standard for protection against flash fire and is not associated with arc flash specifically. A garment can meet both standards.</p>

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<p>I have garments with a label that says Cat 2 and another label that says 2112. What do those mean?</p>	<p>The Cat 2 label refers to the category of arc rated clothing from NFPA 70E. There are 4 categories. The 2112 refers to a NFPA standard for protection against flash fire and is not associated with arc flash specifically. A garment can meet both standards.</p>
<p>Our company requires a Category 2 clothing. Is everything in a Category 2 rated the same?</p>	<p>Unfortunately no, Category 2 clothing has to have a minimum arc rating of 8 cal/cm<sup>2</sup>. Category 3 must have a minimum arc rating of 25 cal/cm<sup>2</sup>. That means that clothing labeled Category 2 could be anywhere between 8-25 cal/cm<sup>2</sup>. It's always a good idea to see what the ATPV of the actual garment is to ensure it is rated for the estimated incident energy exposures.</p>
<p>Can I use a garment if it has prohibited fabrics on the label but is FR rated?</p>	<p>The garment must have an ATPV value and testing using ASTM 1506 Standard Performance Specification for Flame Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards.</p>
<p>What were the 1910 and 1926 sections again?</p>	<p>General Industry is 1910.269(l)(8) and Construction is 1926.960(g)</p>
<p>Do utilities utilize multiple working distances? or do they use a default distance such as 18 inches in 70E?</p>	<p>They will utilize multiple working distances depending on the work. They may have a working distance calculated at the end of a hot stick.</p>
<p>NFPA 70E requires Arc rated clothing at 1.2 cal/cm<sup>2</sup> what is the IE for utilities that Arc rated clothing is needed?</p>	<p>2 cal/cm<sup>2</sup> is the number from OSHA.</p>
<p>Would an increase in cycle time for a circuit trip from 7 cycles to 15 cycles require a new engineering analysis? This was done at our utility last year and I pushed for one to be done.</p>	<p>Absolutely, this would change the amount of incident energy.</p>
<p>So we are required to maintain shirts/pants that are FR for the employee?</p>	<p>Yes, ultimately the employer is responsible for ensuring that the employee is caring for and maintaining the clothing properly.</p>
<p>Working on a 345kV transmission line at over 11' MAD and employer tells you that there is a 12 cal incident energy exposure at the work location, do you have to wear 12 cal clothes even at that distance?</p>	<p>Possibly, I would suggest discussing this with the engineers that calculated the 12 cal/cm<sup>2</sup> and see if it was calculated at the MAD or another distance. If it was calculated at the MAD then, yes the clothing would be required at that distance.</p>
<p>Can you add the cal rating on two garments, for example a 4 cal undershirt and an 8 cal shirt to make 12 cal protection?</p>	<p>Unfortunately, no. However many manufacturers have done these calculations and performed tests with multiple layers and have made it available to the public. If you are using different manufacturers (example: Carhart t shirt with Bulwark uniform shirt) it can be more difficult. If you check at the arcwear website they have actually done some testing with different manufacturers to give those values.</p>