**Discussion between Working Distance and Flash Boundary**

Working distance (WD) is the distance between the worker and the equipment. An Incident Energy (IE) at a corresponding working distance can be calculated. The closer the worker is from the equipment, the higher the IE.

Flash Boundary (FB) is defined as the working distance at an incident energy of **1.2 cal/cm2** (2nd degree burn).

**If all parameters are kept constant and only the working distance is changed, the flash boundary will always be the same.** This is because the boundary equation does not have a working distance parameter.

**IE = 12cal**

**IE = 1.2cal**

**IE = 4cal**

**WD = 36”**

**WD = 18”**

**FB = WD = 80”**

If the IE increases due to a parameter change other than the working distance, such as an increased arcing duration (Tarc), the previous boundary will not result to 1.2 cal/cm2 anymore. It would result in a higher IE. The new boundary will now be further from the previous boundary in order to obtain an IE of 1.2 Cal/cm2.

In other words, the higher the IE is, the further away the Flash Boundary would be. Similarly, the lower the IE is, the lower the Flash Boundary would be.

**IE = 1.2cal**

**IE = 24cal**

**Tarc ↑**

**IE = 3cal**

**Tarc ↑**

**IE = 8cal**

**Tarc ↑**

**WD = 36”**

**WD = 18”**

**FB = WD = 100”**

**WD = 80”**