



Safety Alert

From the International Association of Drilling Contractors

ALERT 09 – 09

ELECTRICAL ARC FLASH INJURY INVOLVING EXTENSION CORD

WHAT HAPPENED:

An employee (Welder/Fabricator) was attempting to plug in an extension cord from a 240 volt, 3 phase disconnect to a welding unit. As the employee plugged the two cords together, a short occurred and an arc flash occurred resulting in second degree burns to the employee's abdomen.

WHAT CAUSED IT:



Twist-lock 240-Volt plug & socket after incident.



PPE worn incorrectly and resulting burn in undershirt

- 1) The extension cord and welding unit had twist-lock plugs and socket ends.
- 2) The plug and wire were both large and the employee held the plug and socket end at his waist to make the connection.
- 3) When the connection was made, two of the conductors inside the connector shorted out causing an arc flash.
- 4) The employee was not wearing his personal protective equipment properly – The external button-up shirt (FRC material) was completely unbuttoned and shirt-tail out.

CORRECTIVE ACTIONS: To address this incident, this company did the following:

Instructed supervisors and HSE personnel to:

- 1) Evaluate each facility and related equipment to assess the requirement for hard wiring equipment where temporary wiring is unacceptable to meet manufacturer's specifications.
- 2) Establish a list of qualified and authorized users for each piece of equipment.
- 3) Replace all Twist-To-Lock plug and socket connectors with properly sized and non-conductive connectors. Replacement shall be performed by a qualified and authorized electrician.
- 4) Inspect all equipment that requires plug and socket connectors greater than 120 VAC to ensure that all connectors are adequately sized and in good condition, and that the cord is of adequate length and size to meet all manufacturer's specifications (Extension cords should not be used).
- 5) Provide instruction to all authorized users of equipment that all electrical connections must be made with the power "OFF" or power source otherwise locked out.
- 6) Once all electrical connections have been made the equipment may be energized by placing the electrical disconnect or breaker in the "ON" position. Stand to the side when moving the breaker or the equipment power switch to the "ON" position.
- 7) Inspect all equipment cords, plugs, sockets and electrical components at least monthly and daily before each use.
- 8) All personal protective equipment must be worn correctly at all times while in the work area.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices

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