

OCCUPATIONAL SAFETY

ENSURE WIDEST DISSEMINATION

SUMMARY

Because a group of workers were not properly trained in Hazardous Energy Control (HEC) procedures, one of those workers lost his left index finger tip while performing a preliminary inspection on a belt-driven tubular centrifugal fan.

BACKGROUND

While the workers locked out electrical energy to the fan, they didn't ensure the impellers were secured from wind energy. Manufacturer's instructions state "When performing any service to the fan, disconnect the electrical supply and **secure the fan impeller**". The fan in question was also elevated. To look at the fan, the worker used a cellphone light in his right hand and saw the fan belt and pulley system moving, however, due to his unfamiliarity with the fan, he reached his left index finger into the belt and pulley area to check its condition, tension and alignment. As his finger entered into the area, the worker's left index fingertip caught resulting in amputation.

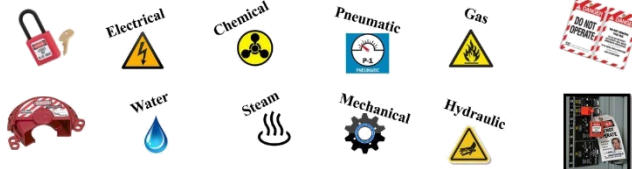
PRECAUTIONS

HEC involves more than just electricity, locks and tags! Follow manufacturer's instructions; 29 CFR; 1910.147; AFI 91-203, Chapter 21; and a Job Hazard Analysis. Basic Steps for HEC:

1. **Preparation for Shutdown** – Employees authorized in HEC of equipment shall identify the type and magnitude of the energy to be controlled, all hazards (including stored energy) and the method or means of controlling the energy. They shall also notify all affected personnel in the area equipment will have HEC applied.
2. **Equipment Shutdown** – The equipment shall be shut down by following established shutdown procedures.
3. **Equipment Isolation** – Use of disconnect switches, line valves, blocks, blinds, removal of spools and capping of lines, etc. shall be used.
4. **Application of HEC Devices** – HEC devices shall be applied to the isolation device. Each employee working on the equipment shall be responsible for attaching their HEC device without exception.
5. **Stored Energy** – After applying HEC devices to energy isolation devices, all potential hazardous stored or residual energy must be relieved, blocked, bled, restrained or rendered safe.
6. **Verification of Isolation** – Prior to starting work, after isolation and applying HEC to energy sources, turn on (try) all start buttons and other activating controls on the equipment to ensure the equipment has been de-energized. Be sure to return all controls to the off or neutral position after trying to start.
7. **Release from HEC** – Prior to restoring energy to equipment: remove all tools; ensure all effected personnel are clear and informed that energy will be restored; and ensure guards are in place. Then all HEC devices may be removed and energy restored.



HAZARDOUS ENERGY CONTROL



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LESSONS LEARNED

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