

DOE LESSONS LEARNED

Finger Injury from Fan – Ensuring Tools/Equipment Are In Safe State before Modifying/Adjusting

Lesson ID: 2014-SR-SRR-04

Originator: Savannah River Remediation (SRR)

Date: 9/30/2014

Statement: This event is an example of how at-risk behaviors and an unsafe condition can combine to produce an unwanted event, and why creating layers of defenses or "defenses-in-depth" helps ensure failure of one or multiple barriers does not result in upset.

Discussion: In the Z Area Fabrication Shop at the Savannah River Site, while attempting to move a shop pedestal fan closer to the work activities, a Savannah River Remediation employee incurred abrasions and lacerations to two fingers of his right hand when his fingers inadvertently made contact with the fan blades through the protective guard. The fan was in operation at the time of the event and examination of the fan after the event revealed an area of the guard that was previously damaged, resulting in a wider opening.

See Attachment 1 for pictures.

Analysis: Modifying or adjusting any type of portable power equipment shall be performed with the tool/equipment in a safe state, unplugged with the power cord under the control of the user.

In this event, the employee did not stop and unplug the fan; rather grabbed the fan guard while still in operation, using the guard to drag the fan closer to the work area. This action put the employee's fingers in close proximity to rotating equipment, with a guard as the single barrier to prevent injury.

Failing to identify the damage and remove the fan from service allowed equipment to remain in use in the field which had guarding that was less than adequate, per OSHA 1910.212(a)(5) - Exposure of blades. When the periphery of the blades of a fan is less than seven (7) feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than one-half (1/2) inch." The damage to the guard exceeded this maximum allowable opening.

The employee was handling equipment and did not have on protective gloves.

Recommended Actions:

- Inspect work areas for fans that have guard openings greater than one-half inch and remove from service any equipment that does not meet that specification.

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- Communicate to employees the importance of placing portable tools and equipment in a safe state before modifying or adjusting. Examples beyond shop fans included portable saws, grinders, drills, pneumatic nailers, etc.
- Reinforce personal protective equipment (PPE) usage. While PPE is our last line of defense, utilization of protective gloves for the handling and use of tools/material/equipment could have lessened the extent of injuries.

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2014-SR-SRR-04, Attachment 1



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