ENVIRONMENTAL HEALTH & SAFETY

Bio-Safety Cabinet Lifting Injury

Situation: EHS received an Incident Report via email regarding an employee that had experienced a strain after assisting with the lift of a bio-safety cabinet. An investigation was conducted by an EHS Safety Specialist.

A Bio-Safety cabinet needed to be lifted and moved off the pallet it was staged on. UNM Special Activities had sent a three-man team to move the unit, but a fourth person was needed. In order for the employee to reach the unit, he had to lean forward slightly and step up onto the pallet with his left foot and step forward with the right foot, resulting in an awkward dead-lift form. After lifting from this position, the employee began feeling discomfort in his lower back.

The EHS Safety Specialist found that the bio cabinet had to be lifted and raised to a handcart before it could be transported, and then lifted once again to set it in place so the cabinet could be positioned in the stand and bolted down. During both lifts, the employee was utilizing awkward posture and unsafe manual handling techniques.

Special Activities verified that due to the height of the bio-cabinets, some manual lifting had to occur in order to properly stage the cabinet on their handcart.

Conclusions:

Bio-Safety Cabinets are extremely unwieldy, heavy, and difficult to move. Before attempting to move them, the following should be taken into account:

1. Know your own capabilities before starting to lift an object.
2. Plan your lift and allow for proper foot positioning.
3. Ensure a good posture and maintain a firm grip on the load.
4. Keep close to the load at all times. Do not reach forward when attempting to lift.

In this instance, EHS does not believe proper consideration was given to the load prior to attempting to lift, and that the employee did not have training on how to properly lift heavy items. Additionally, EHS believes the unit could have been strapped down and transported on the pallet by using a pallet jack, which would have eliminated one deadlift from the process. Finally, if additional personnel were required for the lift, we believe trained staff from FM or Special Activities should have been utilized instead of department staff.

Causes:

1. The weight of the object was too heavy for the crew present. Additionally, having the unit on a pallet created the need to overextend while attempting to lift.
2. Not properly trained for the lift at hand.
3. High force during the lift.
4. Awkward posture during the lift.
5. Load was unstable, unbalanced, or hard to hold.

Corrective Action: Memo to department heads outlining the investigation and conclusions.

Prevention:

1. Departments should create a written policy or procedure for moving equipment that clarifies what role(s) staff and faculty are responsible for during each step of the process.
2. Only utilize personnel specialized and trained in moving heavy equipment when moving bio-safety cabinets.
3. Train staff and faculty on ergonomics and appropriate lifting procedures. EHS is available to assist with training.
4. Special Activities should research alternative lifting aides (shoulder dollies, forearm forklifts, pallet jacks, contractor lifts etc.) to limit the amount of deadlifts present during equipment moves. EHS is available to assist with research and review.

Reference: Ergonomics :: Environmental Health and Safety | The University of New Mexico (unm.edu)