Change Analysis Activity

Maintenance Accident

Description:

A Maintenance Tech incurred OSHA-recordable injuries while replacing a failed drive chain on a 50 ft. high bucket elevator at a northern Michigan plant. The incident occurred at 2:35 am on 2/21/20 during an emergency call-out. While installing the master link, the Tech's hand slipped and impacted the edge of the drive base. While climbing down the caged ladder, the Tech slipped and fell the last 6-feet, spraining his ankle. The injuries required 8-stitches and 2-weeks away from work. Since the job wasn't finished, two Maintenance Techs finished replacing the drive chain after daybreak using standard operating procedures and supervision.

Exercise:

Complete Change Analysis worksheet to determine possible contributing factors that could have led to this incident.

Change factor	Difference/Change	Effect	Questions to answer
What (conditions, occurrence, activity, equipment)	1. Cut hand 2. Sprained ankle	1. OSHA recordable injuries 2. Severe injury possible	1. Was a work order written? 2. Was a task analysis done prior to starting the job?
When (occurred, identified, plant, status, schedule)	1. Night 2. Plant down 3. Unplanned work	1. Skeleton crew 2. Stressful situation 3. Higher risk	1. Why weren't 2 people called in? 2. Is production more important than safety? 3. Did they assess risks?
Where (physical location, environmental conditions)	1. Outside temperature 2. Dark 3. Difficult communication	1. 20°-30°F colder at night 2. Poor visibility 3. Difficult to call for help	1. Did the cold weather cause the tech to take shortcuts? 2. What source of lighting was used? 3. Was a portable radio available?
How (work practice, omission, extraneous action, out of sequence procedure)	1. Did not use SOP 2. No help	1. Variability in work execution 2. Difficult climbing down the ladder with 1 hand	1. Why didn't the tech use the SOP? 2. Did the tech try to get help?
Who (personnel involved, training, qualification, supervision)	1. On-call Maintenance Tech 2. Working alone 3. No supervision	1. Tech not familiar with the equipment 2. At-risk hauling tools and parts up/down the ladder 3. Shortcuts were taken	1. Was the Maintenance Tech trained? 2. What is the policy for working alone in remote locations? 3. Non-routine work policy?

Source: DOW Root Cause Analysis Guidance Document, 1992