LP CORPORATION
INCIDENT INVESTIGATION REPORT

CASE NO: R.I. 07-03

ALL SECTIONS OF THIS REPORT ARE TO BE COMPLETED

Facility : **LP Golden**	Incident Date : **October 6, 2007**	Incident Time: **10:35** AM ☒ PM ☐
Third Party : ☐ Yes ☒ No Type (Select) :	Date Reported: **October 6, 2007**	Time Reported: **10:40** AM ☒ PM ☐

☐ Near Miss	☐ Fire (Complete Fire Investigation Report)	☐ First Aid	☐ First Aid w/Drs. Visit
☐ Property Damage	☐ Medical Treatment	☐ Restricted Workday	☒ Lost Workday

Description of Work Restrictions/Medical Treatment:

EMPLOYEE IDENTIFICATION

Employee: **Name Removed**	Age: **53** M☒ F☐	Service Date : **Aug 31,1976**	Occupation: **Millwright**
Job Performed at the Time of Incident: **Millwright**	Years/Months in this Job: **31**	Area of Incident: **Green End Veneer Chipper**	
Shift: **Day**	Supervisor at the Time of Incident: **Name Removed**	Did This Job Have a JSA? **Yes** ☐ **No** ☒	

INJURY/ILLNESS INFORMATION

Injury/Illness Type (select) : Fracture	Injury/Illness Description (e.g. 2nd degree burn to left index finger): **Right ankle broken, right hand partial crush & broken little finger**
Explain Other Injury Type:	Part of Body (Select): Foot
Direct Causes (select all that apply) : **Caught in, on, between**	

Phase of Employee's Workday at the Time of Incident	☐ **a. During Break Period**	☐ **d. Performing Normal work duties**	**g. Others (Explain)**
	☐ **b. During Meal**	☒ **e. Performing Non-Routine Duties**	
	☐ **C. Overtime**	☐ **f. Entering/Leaving Plant**	

Brief Description of the Incident : Multi V-Belt Pulley weighing approximately 600 pounds unexpectedly popped completely off the driven shaft, tipped over, and pinned the Millwright who was removing the pulley between the pulley and adjacent equipment

Incident Details (Facts of the investigation based on investigator's findings and interviews, witnesses : The annual Maintenance Shut Down at Golden began on October 6, 2007. One of the projects to be performed during the shut down was replacement of the Geen Veneer Chipper Rotor. Two Millwrights were assigned to this task, Name Removed and Name Removed.

The Millwrights locked out and cleaned up the area in preparation for performing their task. They took a little time to discuss how they would proceede. The chipper assembly is too awkward to be safely removed in one piece from its operating location. While they were waiting for a crane, the Millwrights began dissassembling the chipper by removing the drive belts between the chipper motor and the rotor. The Millwrights then began to take the loosen the sheave on the chipper rotor shaft in preparation for removal by the crane. This requires the hub of the sheave to be broken free of the taper lock adapter on ths shaft. This sheave is removed at approximately 2 year intervals to facilitate changing the sheave when it is worn or to replace the bearings for the rotor shaft. The last time this was done was May 20, 2006. This time the sheave was siezed tightly to the rotor shaft and extra effort had to be applied to break it free. Inititally the Millwrights tried driving a pair of steel wedges between the face of the sheave hub and the flange of the taper adapter. They also tried a "Porta-Power" which is a compact hand pumped hydraulic piston attached to the pump by a flexible hydraulic hose. They then tried threading two bolts through through the hub of the sheave to push against the flange of the taper adapter. Name Removed was positioned in front of the outside face of the sheave and was using an air driven impact wrench to apply torque to the pusher bolts. When the hub of the rotor broke free there was an unexpected amount of stored energy released and the sheave jumped towards Name Removed and completely off of the rotor shaft. The Millwrights hand was struck by the sheave. The bottom of the sheave fell down approximately 1 foot and struck the Core Chipper Outfeed chain conveyor. The sheave then tipped away from the Veneer Chipper and pinned Name Removed lower body between it, the floor deck, and a Radicon gear reducer for another drive train that was located immediately behind Name Removed.

Name Removed tried to lift the sheave enough for Name Removed to free himself but the sheave was too heavy. Name Removed got another Millwright who was working at the Veneer Lathe about 50 feet from the chipper to help him. They managed to move the sheave enough for Name Removed to free himself. In the meantime a First Attendant who was also working at the lathe arrived at the chipper. The Millwright stood up, helped down the stairs to and was transported to the First Aid Room where he was examined by an Atttendant and referred to the hospital for medical aid.

CAUSAL ANALYSIS

Physical casual factors **The sheave broke free of the shaft with more force than expected. It is possible that because the sheave hub was of machined steel construction and the taper lock was cast that the two dissimilar materials bound together more than a cast-taper lock and cast sheave normally would.** **The taper lock adapter that was holding the sheave in place on the shaft was mounted with the flange on the inside face of the sheave allowing the sheave to completely slide off the shaft when it broke free.** **Area is congested with adjacent conveyors and associated drives and awkward to work in.**	**System causal factors (why, why, why, why, why?)** **Personnel were not aware or did not recognize the risk from the jammed sheave and the amount of energy they were putting into freeing it.**	**Human causal factors** **The body position of the Millwright was in the line of fire.** **The Millwrights did not recognize that they had caused significant energy storage in the system when they used the pusher bolts and impact wrench on components that were tightly jammed together**

ACTION TO PREVENT RECURRENCE		
Specific Action	**Person Responsible**	**Target Completion Date**
Immediate crew meeting to discuss the incident, reinforce safety awareness, safety focus, and known ways of preventing reccurence of this type of incident	Name Removed	October 6, 2007
Replace the sheave with one that will allow the taper lock to be installed flange out	Name Removed	April 30, 2008
Create an SOP for this task and include the need for a retaining device or slinging the part to a crane or overhead lifting point when removing the sheave so it cannot come off the shaft	Name Removed	November 30, 2007
Perform a mill survey using Maintenance Personnel to identify and address with SOPs other Machine Centers where this may occur	Name Removed	December 21, 2007
Presentation to the Maintenance Crew on risk recognition, hazard awareness, upset conditions, etc	Name Removed	December 21, 2007
Assess the feasibility of altering the equipment in this area to relieve the congestion	Name Removed	December 21, 2007

Investigation Team Member	**Witness**
Name Removed	Name Removed
Name Removed	Name Removed
Name Removed	Name Removed

Report By: Name Removed	**Date: Oct 7, 2007**	**Title: Maintenance Superintendent**

Supervisor _____ **Date** _____

Safety Manager _____ **Date** _____

Plant Manager _____ **Date** _____

Completed Corrective Action(s) verified by:(Other than responsible party)	

Distribution Guidelines

All Incidents -- Copies to

- **Plant Manager**
- **Supervisor**
- **Site Safety Specialist/Team**
- **Business Team Safety Manager**
- **Corporate Safety**
- **Maufacturing Manager**

Additional Distribution - Fires – copies to

- **FSG Risk Analyst – Roxane Dover** roxane.dover@lpcorp.com

Additional Distribution – Third Party – copies to

- **FSG Risk Analyst – Roxane Dover** roxane.dover@lpcorp.com

LP Fire Investigation Report

Please do not leave blank. Write "N/A" if not applicable. "Unknown" if you cannot answer.

Describe losses. If production loss, charge total time from start of interruption to resumption of acceptable production	Estimate dollar ($) amount of loss.
a Production hours (down time):	(Estimated profit * estimated down time)
b Materials:	(Estimate amount of damaged raw materials)
c Products:	(Estimate amount of damaged finished goods/inventory)
d Equipment or part damage: (press, cylinder, etc.)	(Estimate amount of damaged equipment including labor cost, materials, etc.)
e Building damage:	(Estimate labor cost & materials)
f Others:	(Estimate other significant losses)