



Facility Safety Assessment Examples:

Plant A:

Guarding:

Although this plant's guarding is good, there are many places that could use improvement.



- The shaker pan under the Q100 shredder has exposed springs that need to be covered and the electrical run is improperly attached and rubs against the shaker table, which could lead to a short.
- The trommel room contains multiple pinch and entrapment points that need to be guarded.



- The shaker pan before the Eddy current has exposed bearings that need to be covered.
- The Eddy current tail pulley is easily accessible and the bearing is also exposed. Suggest guarding this area with one guard that has a small access hole for greasing the bearing.

- The guarding on the head pulley of the Eddy current should fit tighter to remove the possibility from someone touching a rotating surface.



- The Eddy drum has exposed rotating shafts and gearbox that need to be covered. The head pulley is also easily accessible from this direction and needs to be guarded.
- There is an exposed shaft that needs to be covered on the eddy current drive motor.

E-Stops / Electrical:



- The trommel access door does not have an interlock on it, and someone could enter the chamber during operation. An interlock switch should be added.
- The 2T Chute photo eyes have been disconnected.

Tools/Maintenance:



- One or more of the screen locator bolts for the Q100 are loose and can be turned by hand.
- Several of the clamps that hold the lids onto the debris drums for the bag house are missing and/or broken. They should be replaced.
- It was found that there are many air nozzles laying around machinery platforms. These compressed air nozzles should be securely stored in the maintenance area so that no unauthorized cleaning using compressed air happens. Due to the fact that no one is

issued a respirator, there shouldn't be any cleaning using compressed air anywhere in the machine area.



- The discharge conveyor coming from the Q100 shredder material spillage coming out of the tail pulley area that should be addressed with skirting or a custom diverter.
- There is an e-stop located near the stairs of the hammer room that is not labeled.
- There are no fall back cages on the ladders leading to the eddy current – OSHA requirement.

Plant B:

Guarding:



- The bin lifter's latch is bent and workers can not latch the gate closed.
- The infeed conveyor going into shredder #1 has belly pans that can be removed without the use a tools. The current clips should be replaced with fasteners that require tools to be removed.
- The rotating shaft for shredder #1 is exposed and needs to be covered.



- The bin lifter has exposed bearings on both sides that need to be covered.
- The shredder #2 bypass conveyor does not have any belly pans. Pans should be made with a drop out chute.



- Shredder #1 bypass conveyor has exposed bearing and exposed rollers accessible to staff that need guarding.

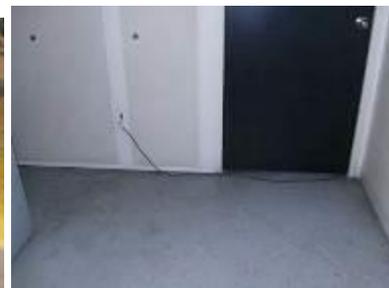


- The infeed conveyor for the Granulator is unsupported where it enters. Due to the vibration, the top of the conveyor shakes up and down several inches during operation. The conveyor need additional support to limit the possibility of the conveyor failing.



- The air lock for the bag house has several exposed shafts/bearings that need to be guarded.
- The re-dump conveyor is lacking any guarding at the tail pulley. Guards should be installed that cover both roll and the exposed bearings.

E-Stops / Electrical:



- The HPU unit for the bin lifter has a broken electrical component that needs to be fixed. (The device extends out just below the red disc.)
- The foot pedal for the new bin tipper needs to be re-located at the edge of the LOTO stand so that the operator can view what is under/around the bin when in operation.

- An extension cord was run across the floor and under the door in the MCC room. Extension cords are for temporary use and should be put away after use which should be no longer than 1 day.

Tools/Maintenance:



- The re-dump conveyor has a sprinkler under it that is very loose and should be supported.
- The shaker table prior to the mag-belt is easily overloaded and workers use a 2x4 to pry the table up so it will continue to flow material. Investigate improved screen media to minimize fouling.



- It was observed that non-maintenance personal LOTO devices were left in seemingly random places that were not designated for LOTO locks.
- One of the HPU coolers for shredder #1 has sprung a small leak and is leaking on the floor.



- The differential pressure gauges for the bag house do not have any performance indicators. Lines need to be placed on the gauge indicating normal operational pressure differential and at what value the machine should be shut down.
- The air compressor near the shred line is way past the safe to run temperature zone and should be investigated for low oil or a fouled cooler.
- The blower motor on the baghouse line does not have a local disconnect.

Plant C:



Exposed shaft on shredder bin dump



Exposed cylinder on shredder bin dump



Exposed shaft cyclone rotary airgate



No e-stops on shred line platforms



Exposed idler rollers on copper pick line



Exposed drive shaft and head pulley on copper pick line



Exposed tail pulley and belt on overband mag



Open guardrail on overband / EC platform

Maintenance & Safety Issues That Looked Great:



Great LOTO program



Great orphaned cylinder storage



Great use of E-stops on the Sensor sorter platforms

- Great employee knowledge base
- Great maintenance documentation in place
 - Well organized and visual MCC
- Organized control room with great monitoring equipment