

HAZARD ALERT

WORKER KILLED IN ROCK CRUSHER EXPLOSION

Shortly after starting up the rock crusher for a day's production, the operator spotted smoke coming from the transmission housing. The operator immediately went to disengage the clutch and look for the source of the smoke. At that instant, the transmission blew apart with the debris causing a fatal wound. One 90-kilogram (200-pound) piece flew 5.5 metres (18 feet), striking a payloader.

The WorkSafeNB investigation determined the crusher had been properly lubricated, with operational repairs made as required. However, maintenance records were not documented, nor was there a maintenance schedule.

The drive assembly typically requires 12 to 18 belts on the drive spool. For this, the supplier recommends belts for each position. Operators typically wait until it is necessary to replace an entire set of belts. To compensate for having fewer drive belts, operators must increase the tension on the remaining belts. This results in a condition known as "side loading." This condition increases the load on the clutch assembly, potentially causing the seal to leak and create excessive wear on the clutch, leading to overheating. Should the bearing lose lubrication fully, the result is an explosive disintegration of the transmission.



Recommended Preventive Action

1. Schedule maintenance (such as all lubrication and bearing inspections), track hours of operation, and above all document all the work (lubrication by type and location, repairs made, alterations, etc.).
2. Apply the proper tension to the drive belts as per manufacturer's specifications.
3. Match the capacity of the drive unit to that of the clutch assembly.
4. Follow all supplier recommended preventive maintenance schedules.
5. Do not exceed manufacturer's recommended limits for side-pull loading.