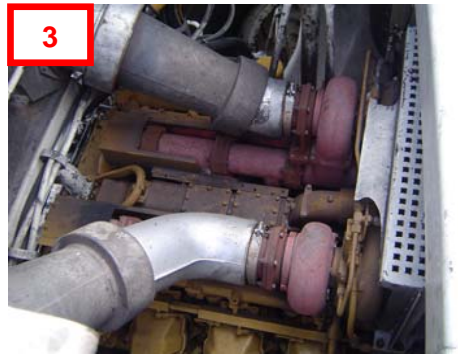


Risks to be mitigated



10. Guarding (V1.2 2008)	
Objective	The objective is to minimise risk related to exposure to moving machine parts or other energy sources to ALARP, including consideration in design for foreseeable human error.
General outcome	The intended design outcome should include the following: Equipment is designed to prevent fatalities, injuries and illnesses due to intentional or unintentional contact with moving machine parts or other energies from the operating position or from the ground or access-way or platform when the machine is in the stationary position and the engine running.
Risks to be mitigated	<ol style="list-style-type: none"> 1. Risk of entanglement in engine fans, pulleys, drive belts, gears, drive drums, rollers, and rotating shafts, including drill steels 2. Risk of entrapment, entanglement, amputation and/or crushing from moving arms, jaws, gates, doors, etc 3. Risk of scalding or burning from exposure to accessible hot surfaces 4. Risk of electrocution or burning from contact with electrical switches, wires or devices 5. Risk of injury or health impact from uncontrolled release of other damaging energy sources such as high pressure fluids, radiation, falling objects 6. Risk of injury or health impact due to guards that do not effectively prevent contact by any part of the body 7. Risk of injury or health impact due to weak, heavy, poorly secured, constructed guards to enable ease of removal 8. Risk of unauthorized removal of guards due to no appropriate fastener that requires a tool to remove it
Examples of industry attempts to mitigate risks	<ol style="list-style-type: none"> a. Guards designed and/or fitted as follows: <ul style="list-style-type: none"> ▪ on every fan ▪ in vicinity of any moving part that is readily accessible and may cause injury ▪ designed to facilitate easy removal and replacement. b. Guards that incorporate openings, which can only be opened with a 'tool' to allow tasks to be completed without removing the guard. c. Guards and protective sheaths to protect inadvertent contact with hot surfaces d. General area guarding with failsafe interlocks on gates, covers or doors where guarding of moving parts is not practicable during operation of the equipment e. Guarding to prevent contact with rotating components, hot surfaces and other damaging energies

Industry attempts to mitigate risks

