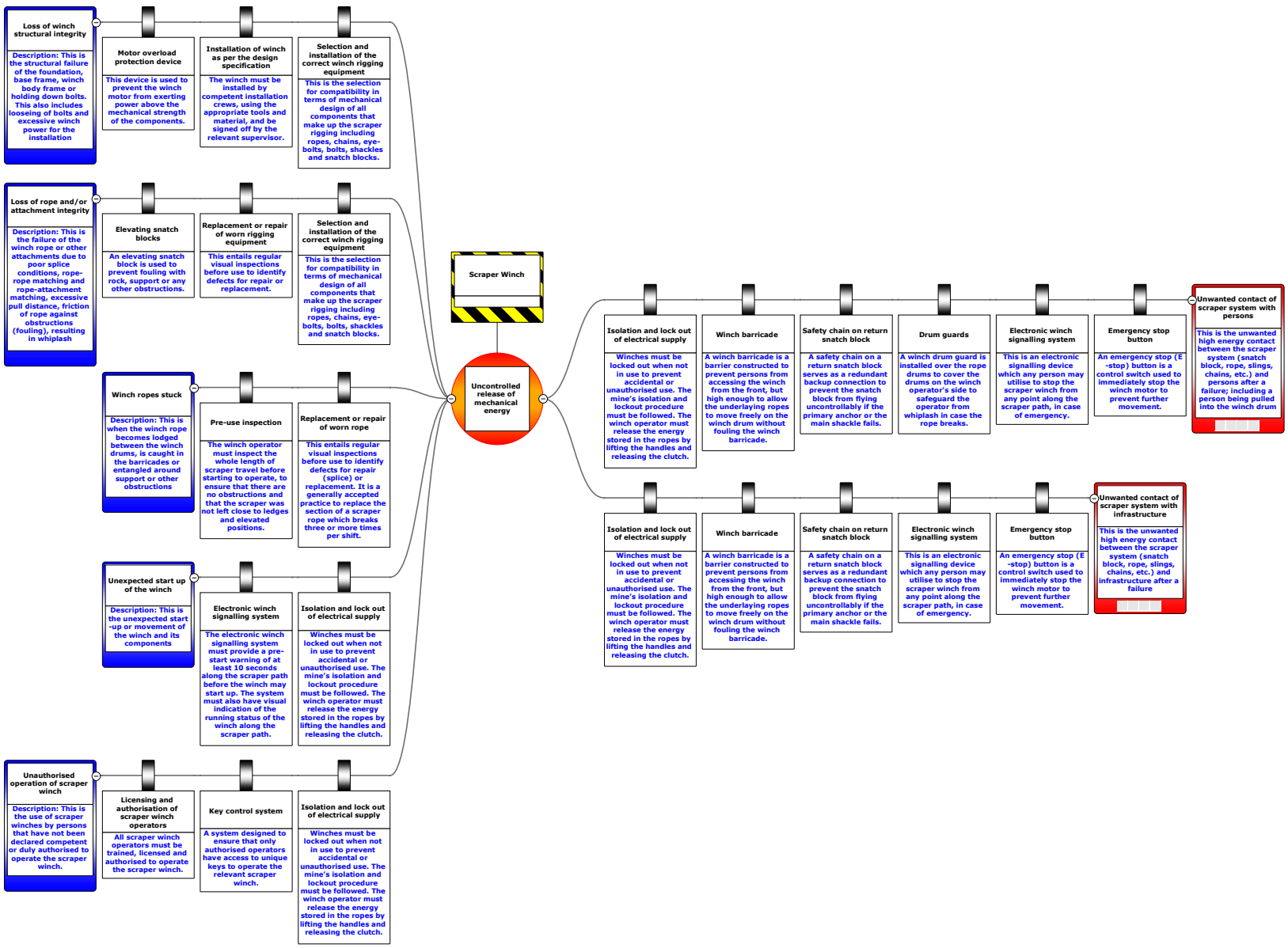
Loss of winch structural integrity
Description: This is the structural failure of the foundation, base frame, winch body frame or holding down bolts. This also includes looseing of bolts and excessive winch power for the installation
Motor overload protection device
This device is used to prevent the winch motor from exerting power above the mechanical strength of the components.
Installation of winch as per the design specification
The winch must be installed by competent installation crews, using the appropriate tools and material, and be signed off by the relevant supervisor.
Selection and installation of the correct winch rigging equipment
This is the selection for compatibility in terms of mechanical design of all components that make up the scraper rigging including ropes, chains, eye-bolts, bolts, shackles and snatch blocks.
Loss of rope and/or attachment integrity
Description: This is the failure of the winch rope or other attachments due to poor splice conditions, rope-rope matching and rope-attachment matching, excessive pull distance, friction of rope against obstructions (fouling), resulting in whiplash
Elevating snatch blocks
An elevating snatch block is used to prevent fouling with rock, support or any other obstructions.
Replacement or repair of worn rigging equipment
This entails regular visual inspections before use to identify defects for repair or replacement.
Selection and installation of the correct winch rigging equipment
This is the selection for compatibility in terms of mechanical design of all components that make up the scraper rigging including ropes, chains, eye-bolts, bolts, shackles and snatch blocks.
Winch ropes stuck
Description: This is when the winch rope becomes lodged between the winch drums, is caught in the barricades or entangled around support or other obstructions
Pre-use inspection
The winch operator must inspect the whole length of scraper travel before starting to operate, to ensure that there are no obstructions and that the scraper was not left close to ledges and elevated positions.
Replacement or repair of worn rope
This entails regular visual inspections before use to identify defects for repair (splice) or replacement. It is a generally accepted practice to replace the section of a scraper rope which breaks three or more times per shift.
Unexpected start up of the winch
Description: This is the unexpected start-up or movement of the winch and its components
Electronic winch signalling system
The electronic winch signalling system must provide a pre-start warning of at least 10 seconds along the scraper path before the winch may start up. The system must also have visual indication of the running status of the winch along the scraper path.
Isolation and lock out of electrical supply
Winches must be locked out when not in use to prevent accidental or unauthorised use. The mine's isolation and lockout procedure must be followed. The winch operator must release the energy stored in the ropes by lifting the handles and releasing the clutch.
Unauthorised operation of scraper winch
Description: This is the use of scraper winches by persons that have not been declared competent or duly authorised to operate the scraper winch.
Licensing and authorisation of scraper winch operators
All scraper winch operators must be trained, licensed and authorised to operate the scraper winch.
Key control system
A system designed to ensure that only authorised operators have access to unique keys to operate the relevant scraper winch.
Isolation and lock out of electrical supply
Winches must be locked out when not in use to prevent accidental or unauthorised use. The mine's isolation and lockout procedure must be followed. The winch operator must release the energy stored in the ropes by lifting the handles and releasing the clutch.
Scraper Winch
Uncontrolled release of mechanical energy
Isolation and lock out of electrical supply
Winches must be locked out when not in use to prevent accidental or unauthorised use. The mine's isolation and lockout procedure must be followed. The winch operator must release the energy stored in the ropes by lifting the handles and releasing the clutch.
Winch barricade
A winch barricade is a barrier constructed to prevent persons from accessing the winch from the front, but high enough to allow the underlaying ropes to move freely on the winch drum without fouling the winch barricade.
Safety chain on return snatch block
A safety chain on a return snatch block serves as a redundant backup connection to prevent the snatch block from flying uncontrollably if the primary anchor or the main shackle fails.
Drum guards
A winch drum guard is installed over the rope drums to cover the drums on the winch operator's side to safeguard the operator from whiplash in case the rope breaks.
Electronic winch signalling system
This is an electronic signalling device which any person may utilise to stop the scraper winch from any point along the scraper path, in case of emergency.
Emergency stop button
An emergency stop (E-stop) button is a control switch used to immediately stop the winch motor to prevent further movement.
Unwanted contact of scraper system with persons
This is the unwanted high energy contact between the scraper system (snatch block, rope, slings, chains, etc.) and persons after a failure; including a person being pulled into the winch drum
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Emergency stop button
An emergency stop (E-stop) button is a control switch used to immediately stop the winch motor to prevent further movement.
Unwanted contact of scraper system with infrastructure
This is the unwanted high energy contact between the scraper system (snatch block, rope, slings, chains, etc.) and infrastructure after a failure