
INDICATORS

NO ELECTRICITY

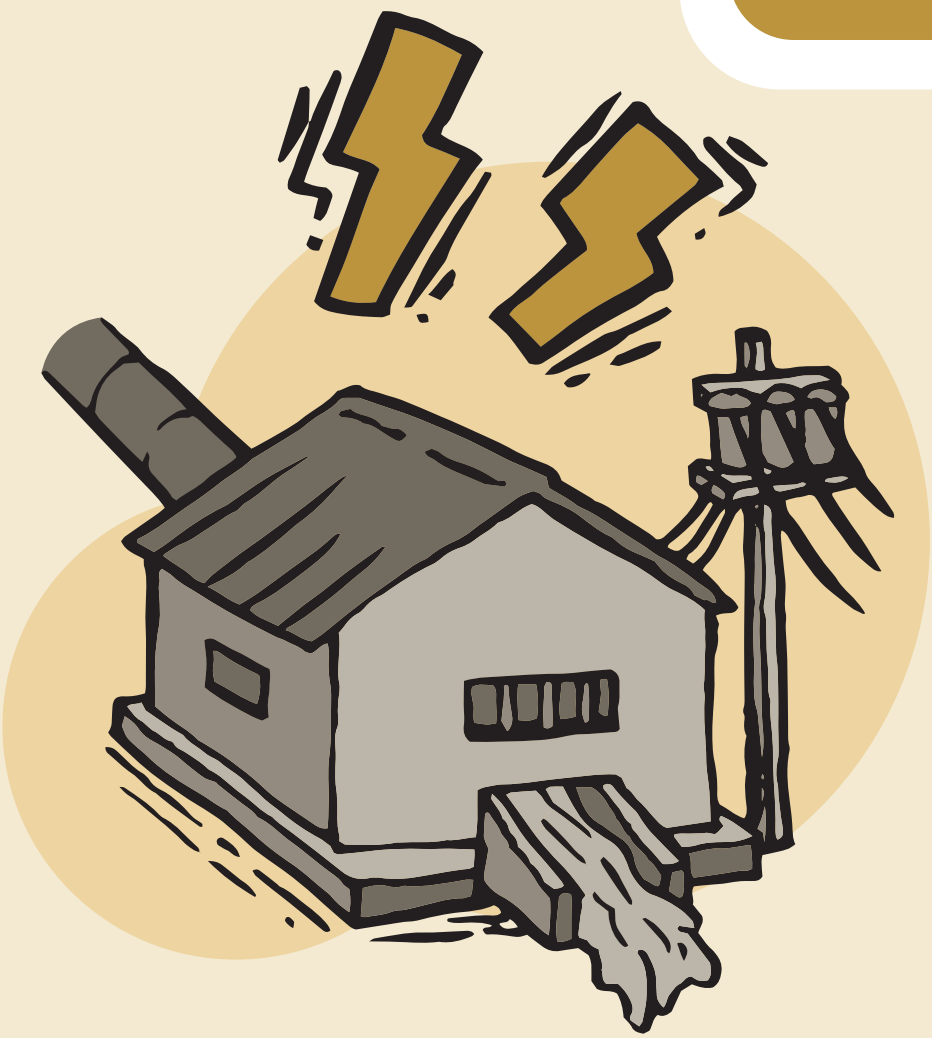
INDICATOR

LIGHT BULB FLICKERING

INDICATOR

LIGHT BULB DIMMING

INDICATOR



NOISE FROM POWERHOUSE

INDICATOR

BURNING SMELL

INDICATOR

THUNDER STORM

INDICATOR

TYPHOON

INDICATOR

DEAD RAT

INDICATOR

DEAD GEKCO

INDICATOR

NO VOLTAGE

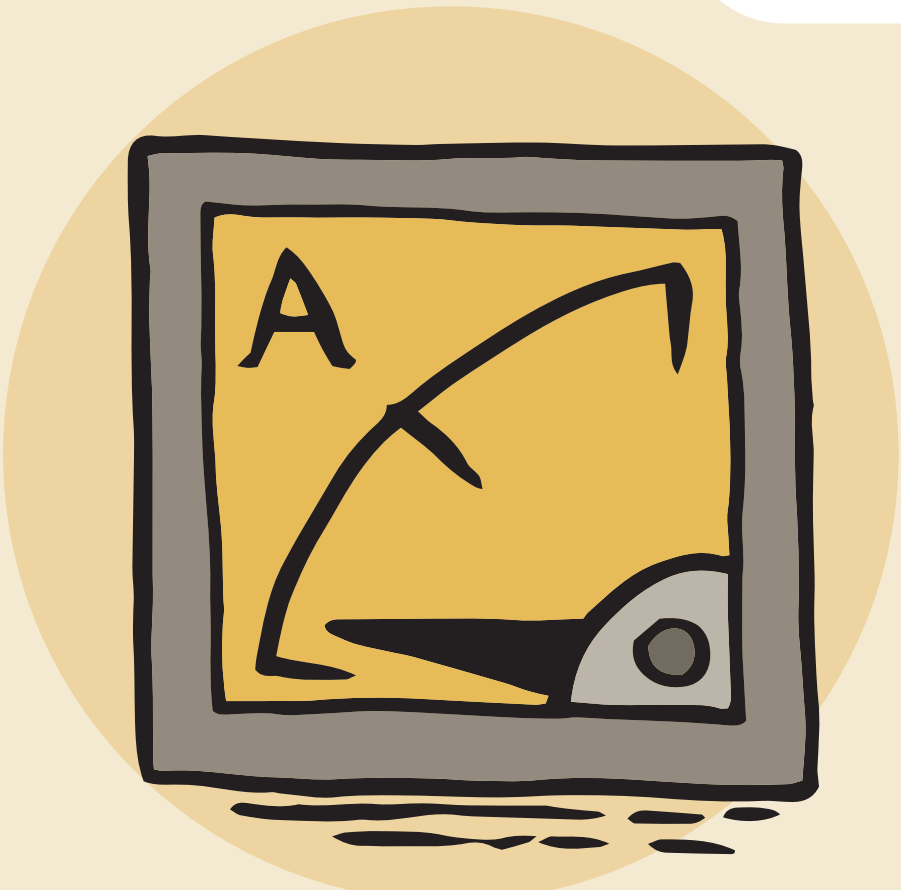
INDICATOR

UNDER VOLTAGE

INDICATOR

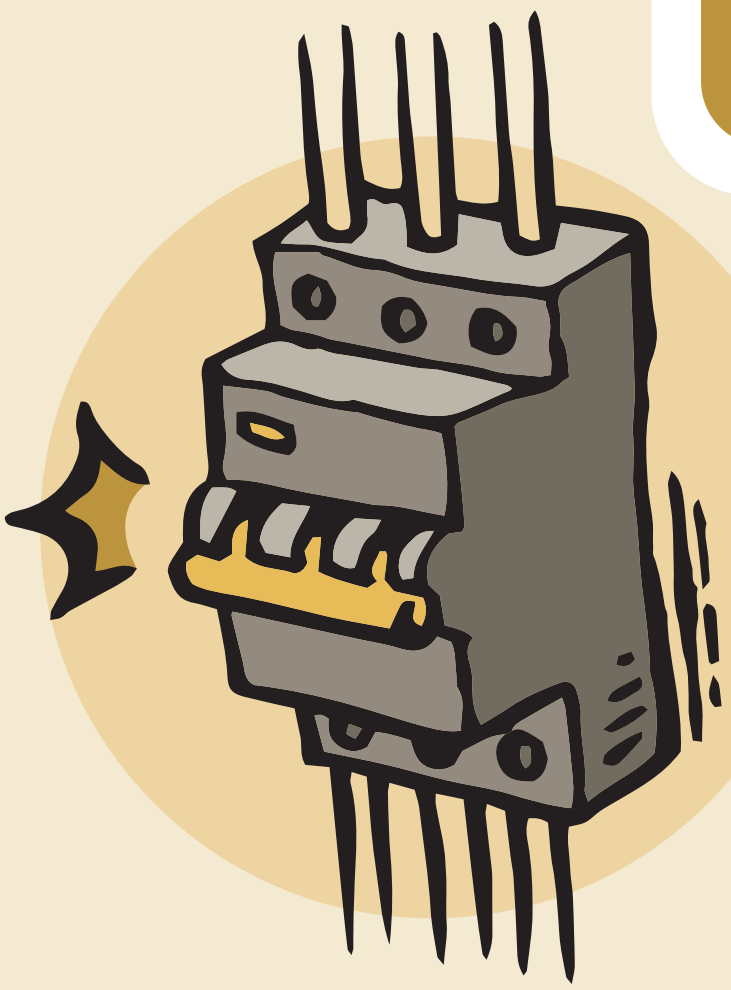
OVER VOLTAGE

INDICATOR



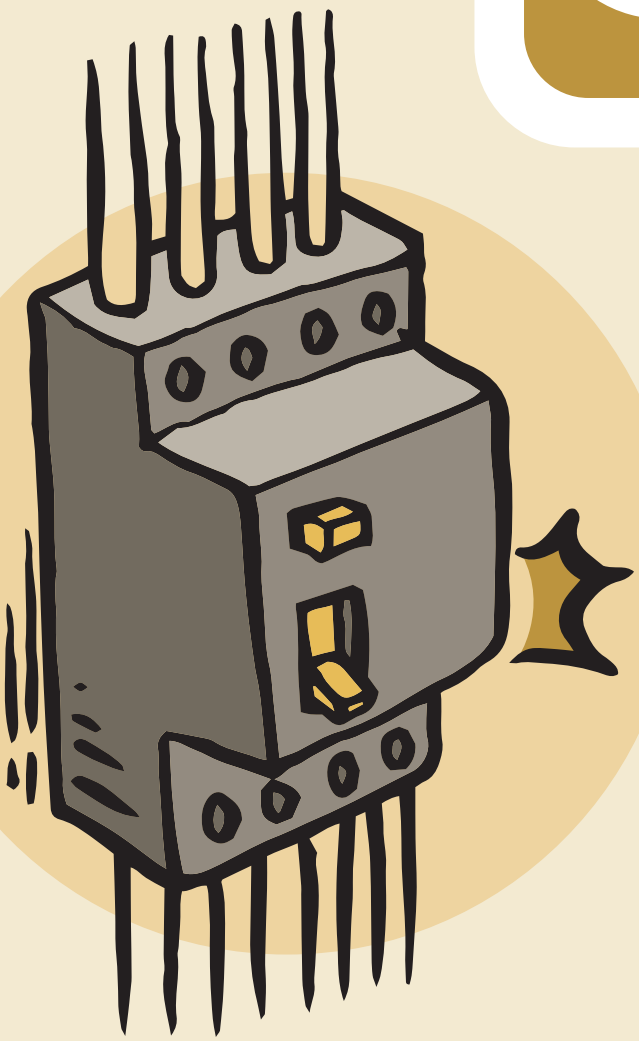
LOW CURRENT

INDICATOR



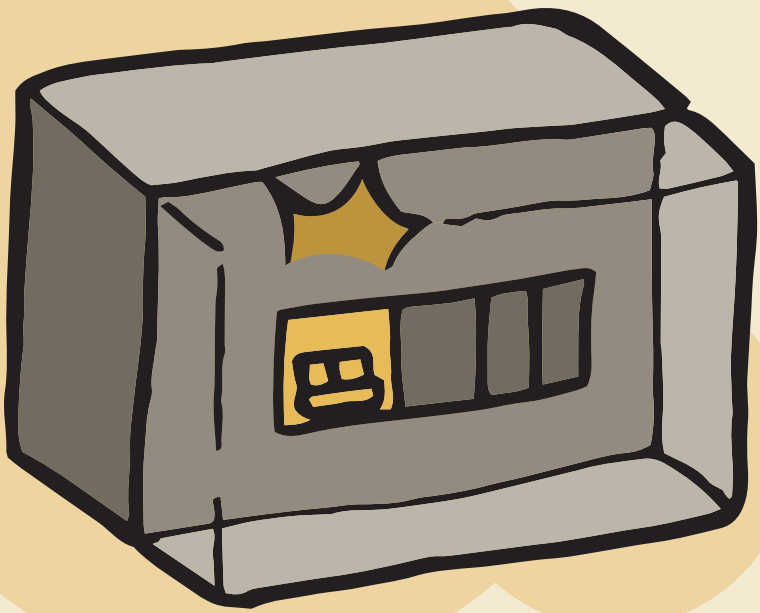
POWERHOUSE MAIN SWITCH TRIP

INDICATOR



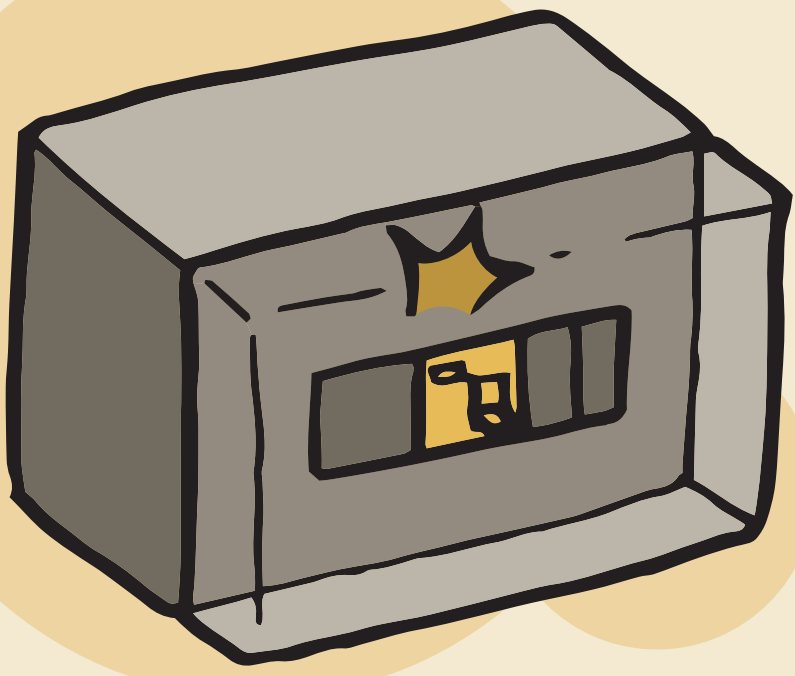
POWERHOUSE ELCB TRIP

INDICATOR



HOUSEHOLD MAIN SWITCH TRIP

INDICATOR



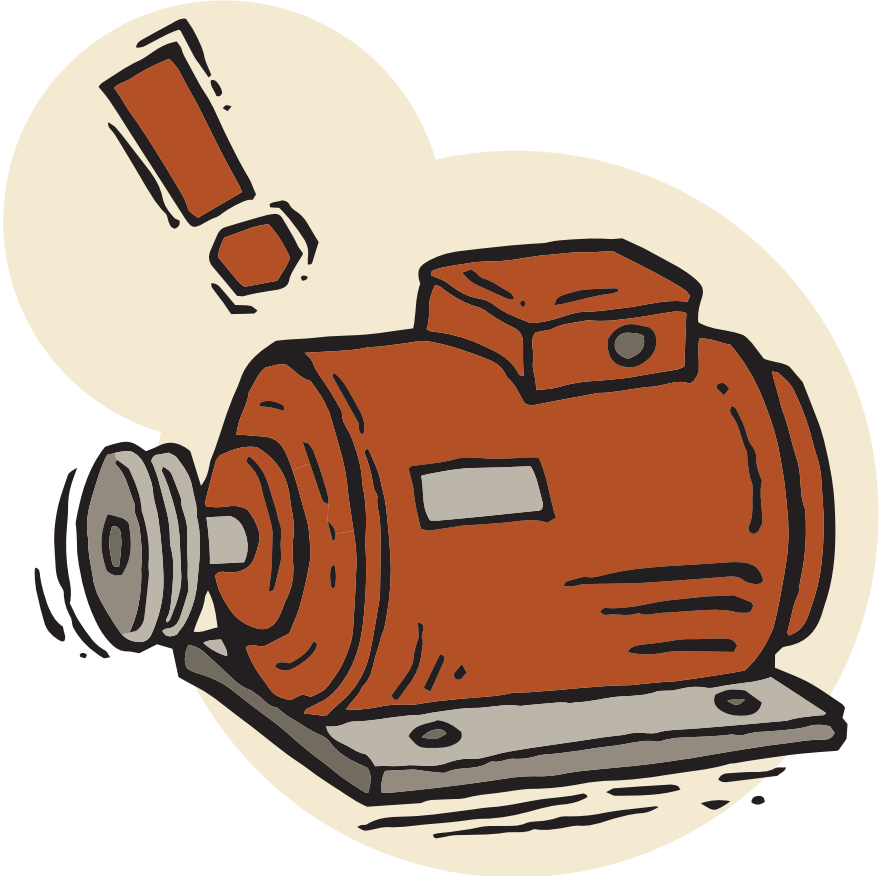
HOUSEHOLD ELCB TRIP

INDICATOR


PROBLEMS

FAULTY GENERATOR

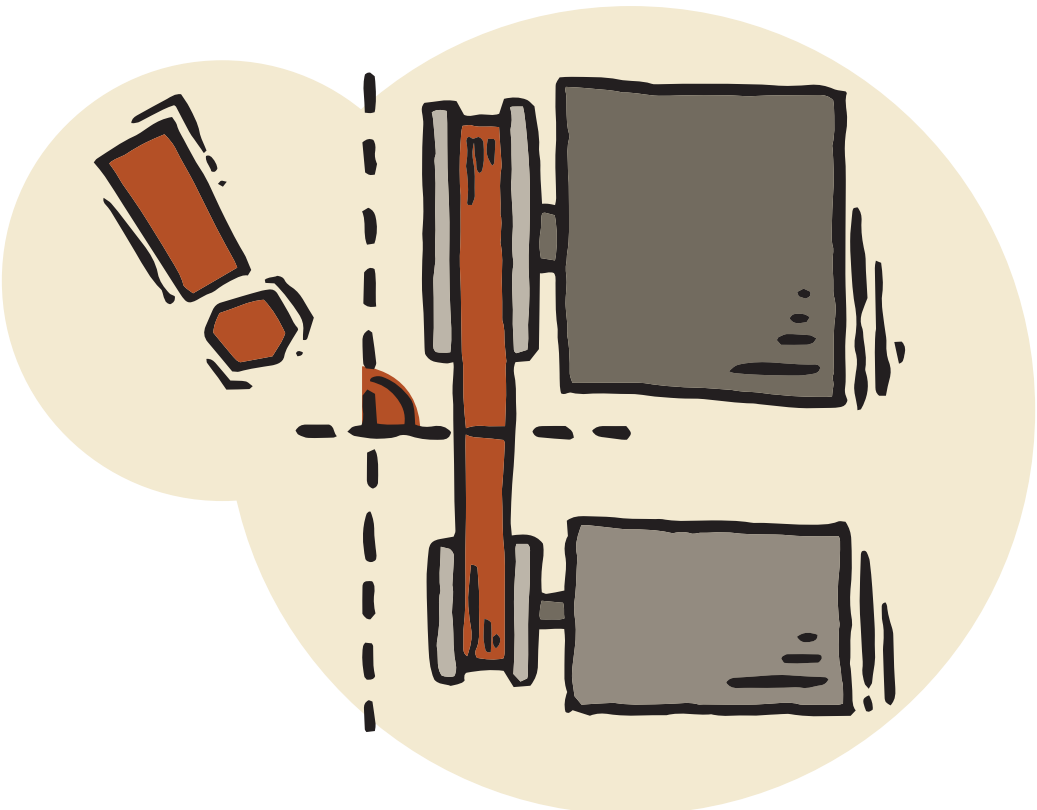
PROBLEMS



A faulty generator can cause issues like dimming or flickering lights, electrical accessories malfunctioning, strange noises (whining, grinding), or a burning rubber smell.

MISALIGNED DRIVE BELT

PROBLEMS



The belt's path is not in proper alignment with the pulleys it drives, leading to uneven wear, noise, and reduced performance.

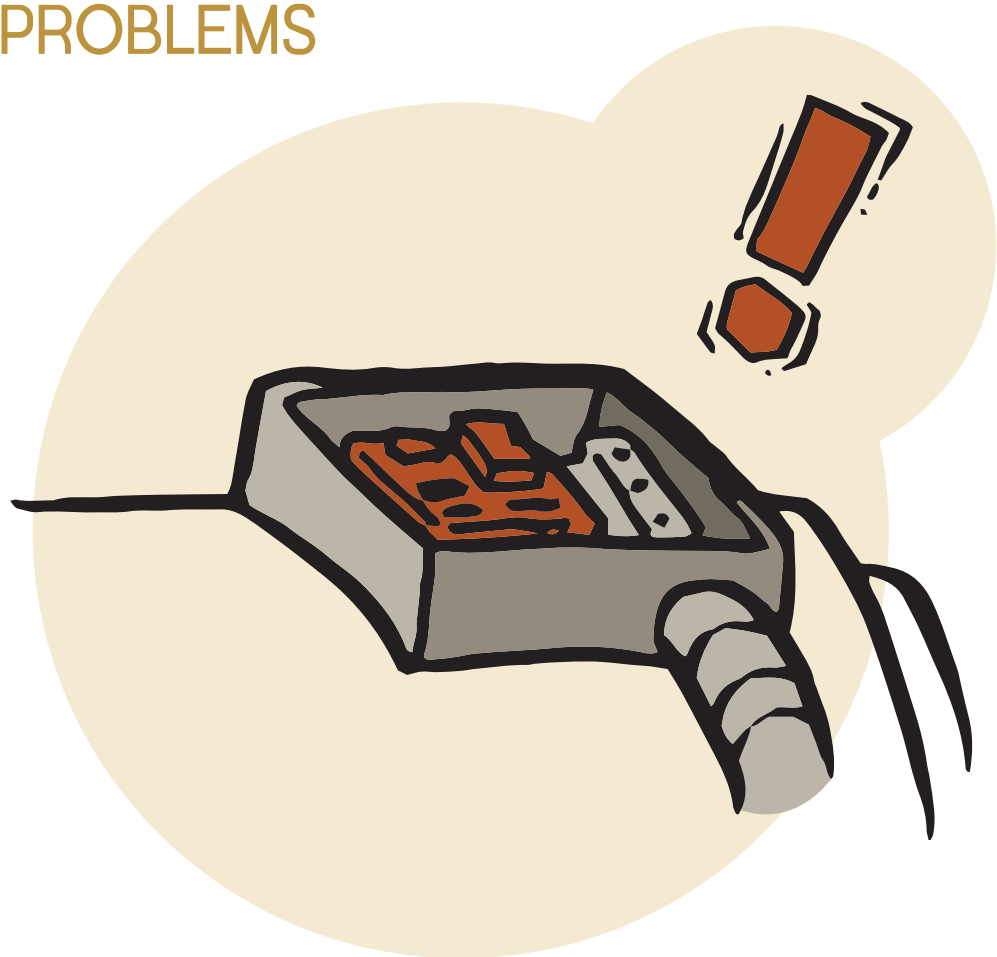
BROKEN DRIVE BELT

PROBLEMS

A damaged or severed serpentine or V-belt that stops essential MHP accessories from functioning.

AVR Malfunction

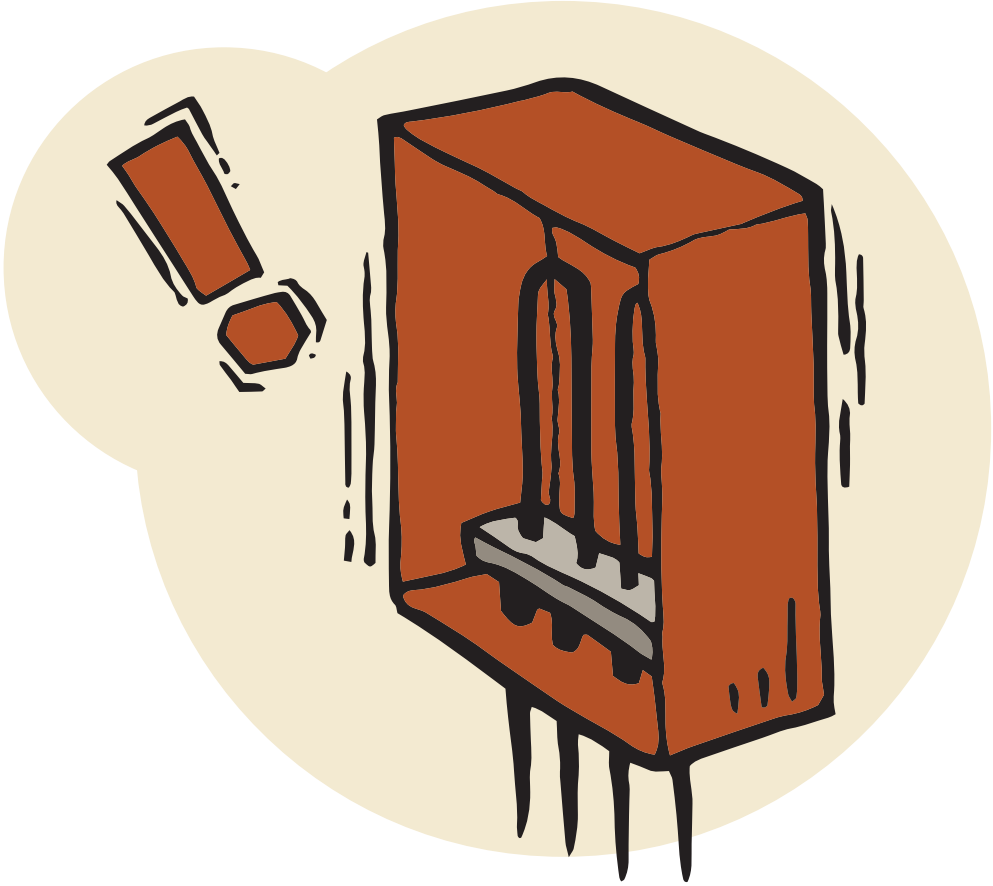
PROBLEMS



Automatic Voltage Regulator (AVR) of the generator is responsible for maintaining a stable output voltage from the generator has failed, leading to unstable or lost voltage.

FAULTY BALLAST

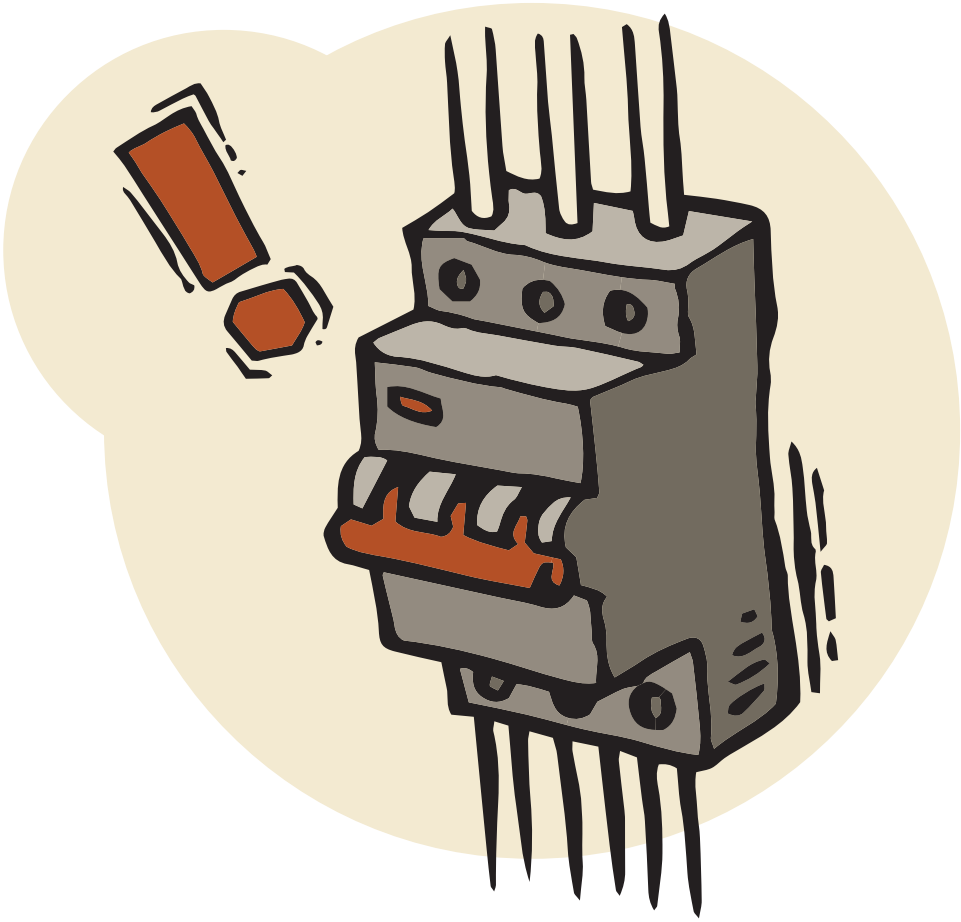
PROBLEMS



Failure of the ballast can cause voltage and frequency fluctuations in the MHP system, as it is no longer able to maintain a stable load on the generator.

FAULTY MAIN SWITCH

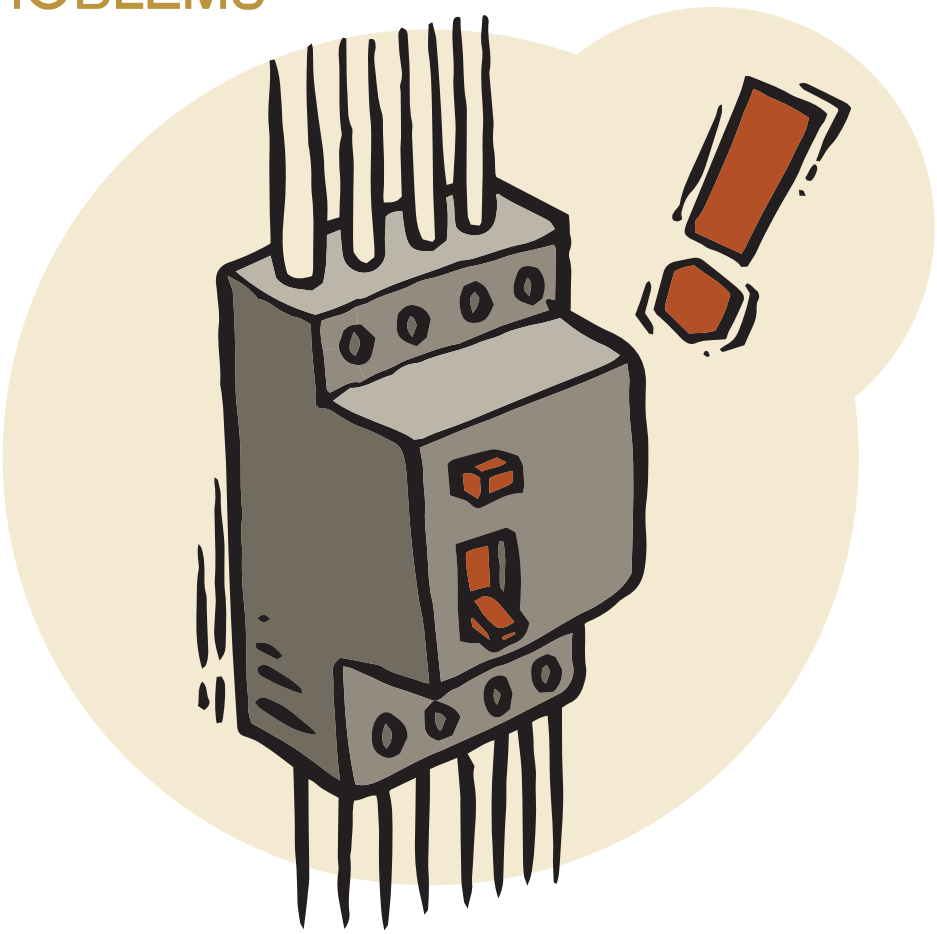
PROBLEMS



An electrical main switch or circuit breaker that is malfunctioning, damaged, or broken, often resulting in frequent tripping, power outages, overheating, or other electrical issues.

FAULTY ELCB

PROBLEMS



The ELCB failing to trip during an earth fault, or it could be a "nuisance trip" where it trips without an actual fault, often due to wear and tear, environmental factors, or an improperly installed system.

FAULTY ELC MAIN BOARD

PROBLEMS

The core of the power regulation system is broken, leaving the MHP system vulnerable to instability, equipment damage, and a complete failure of its purpose.

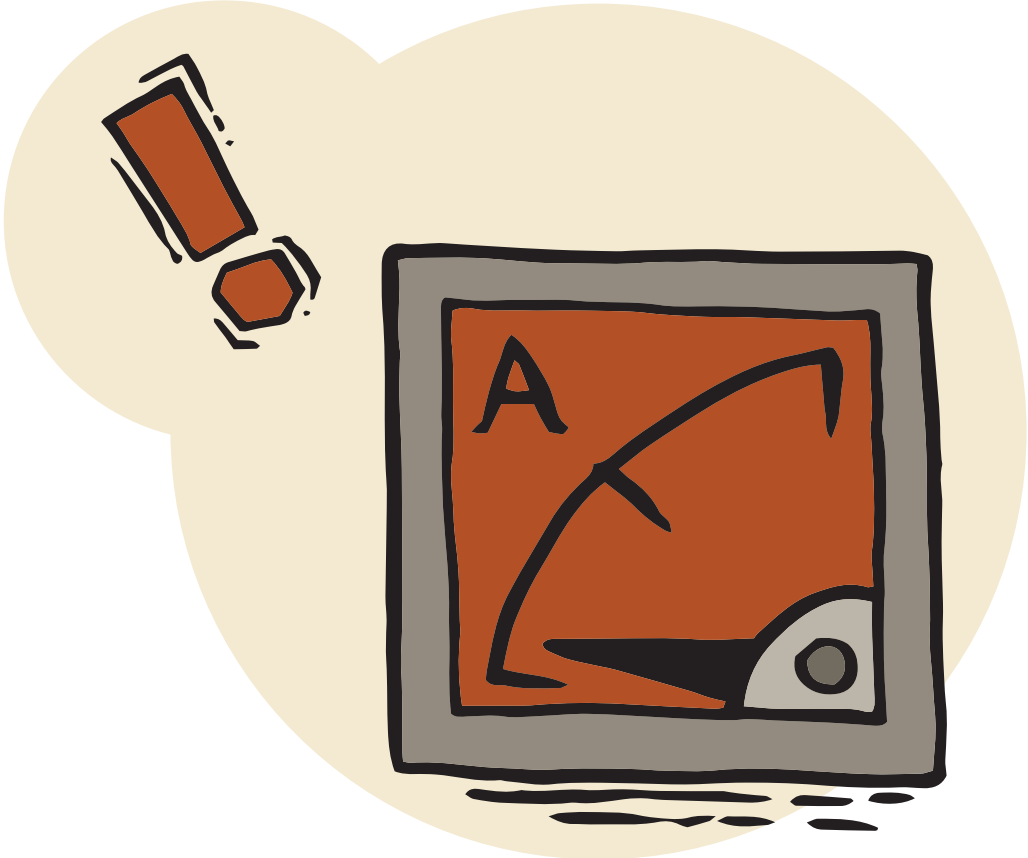
FAULTY VOLTMETER

PROBLEMS

A voltmeter that provides incorrect, inconsistent, or no readings due to issues like loose or damaged leads or internal component failure.

FAULTY AMMETER

PROBLEMS



The reading from the ammeter is either inaccurate, inconsistent, or zero, even when current is flowing.

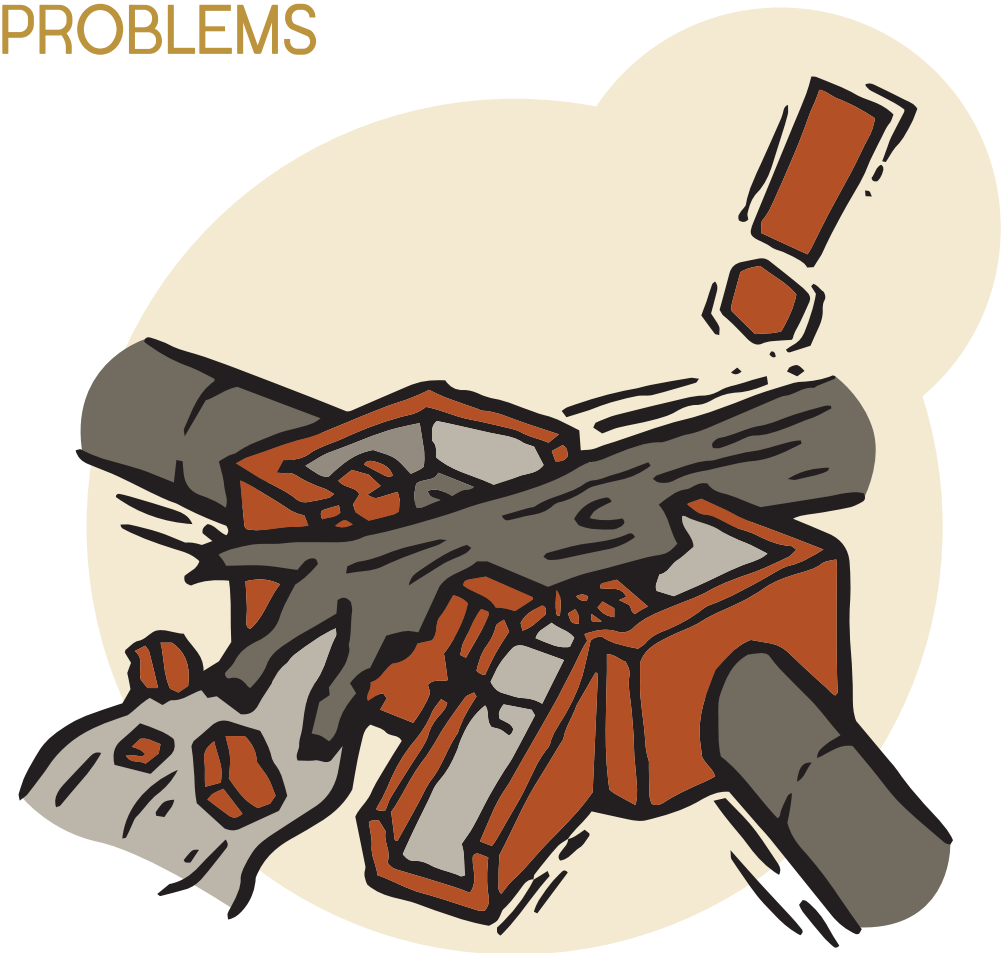
CLOGGED FOREBAY

PROBLEMS

The forebay is obstructed by an excessive accumulation of debris, such as leaves, sediment, sticks, and other waste. This blockage prevents the free flow of water into the penstock and turbine.

BROKEN FOREBAY

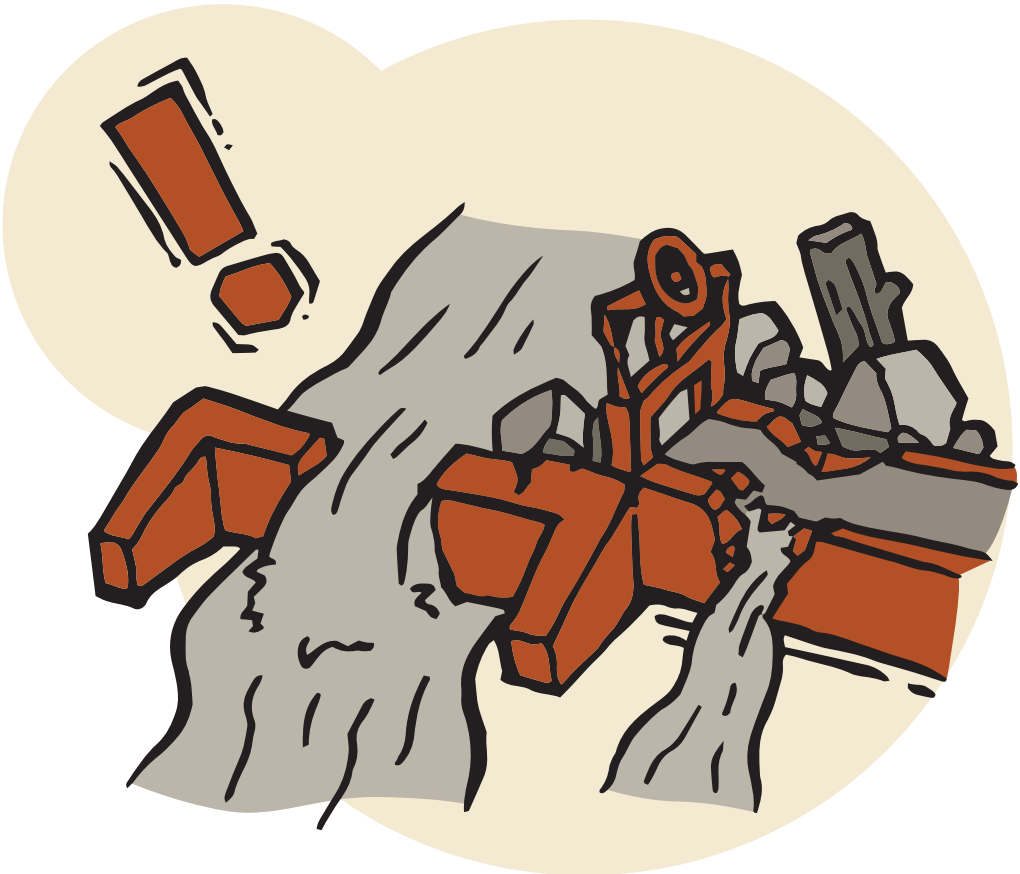
PROBLEMS



The forebay has suffered structural damage, causing water loss and reduced sediment settling in the MHP system.

BROKEN INTAKE

PROBLEMS



The intake has suffered structural damage, causing no water diversion or loss of flow in a MHP system.

CLOGGED INTAKE

PROBLEMS

The water entry point from the river or stream is blocked by debris, especially during or after heavy rainfall.

BURST PIPE

PROBLEMS

A pipe has cracked or split open, causing a leak or uncontrolled release of the water inside. Burst pipes can be caused by high water pressure, age and wear of the pipe, or even tree roots growing into the pipe.

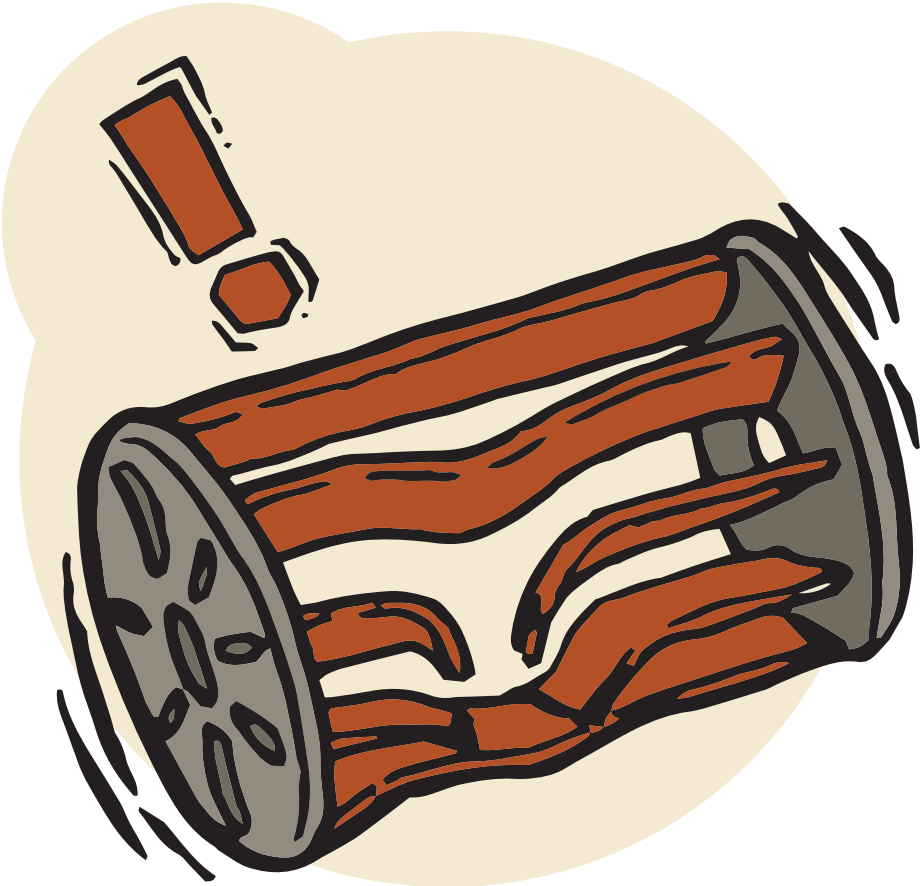
CLOGGED PIPE

PROBLEMS

There is a physical obstruction inside the penstock or any other water channel (like the headrace channel) that restricts the flow of water.

BROKEN TURBINE

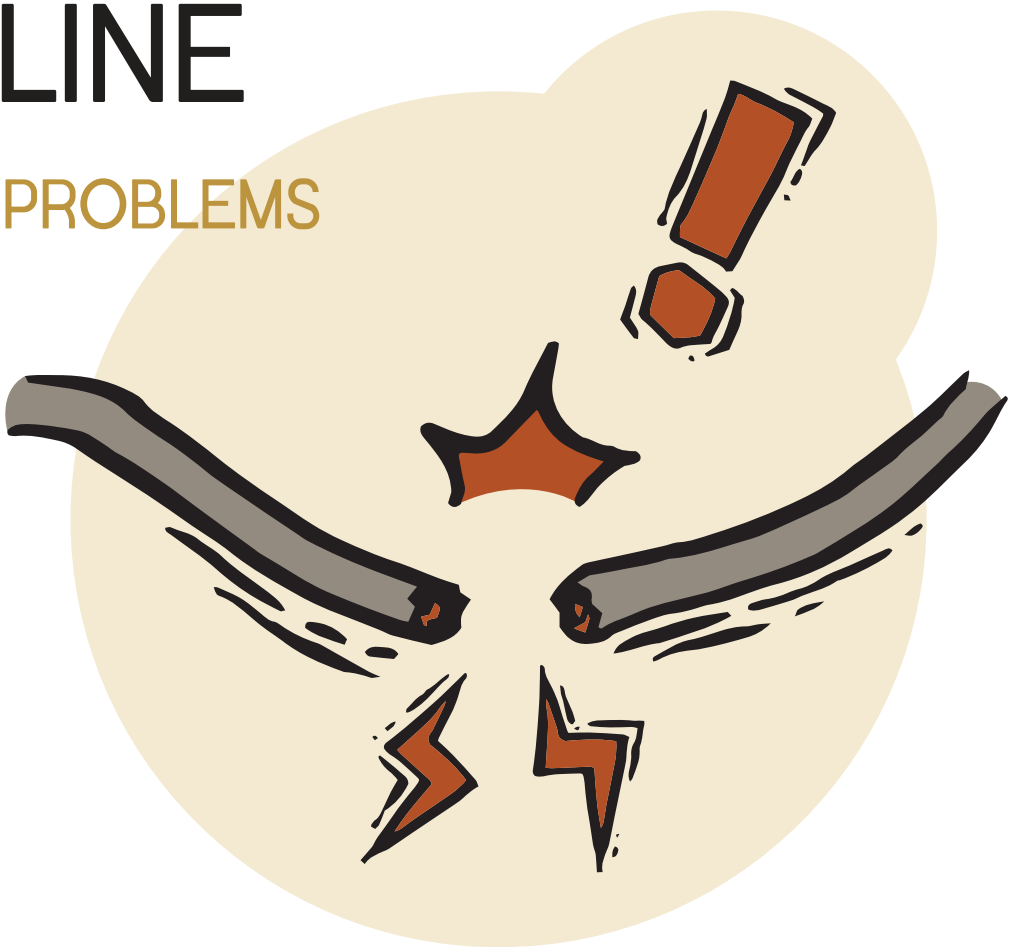
PROBLEMS



The turbine has suffered a mechanical failure and is no longer functioning correctly, resulting in a total loss of power generation and a need for significant repair.

BROKEN ELECTRICAL LINE

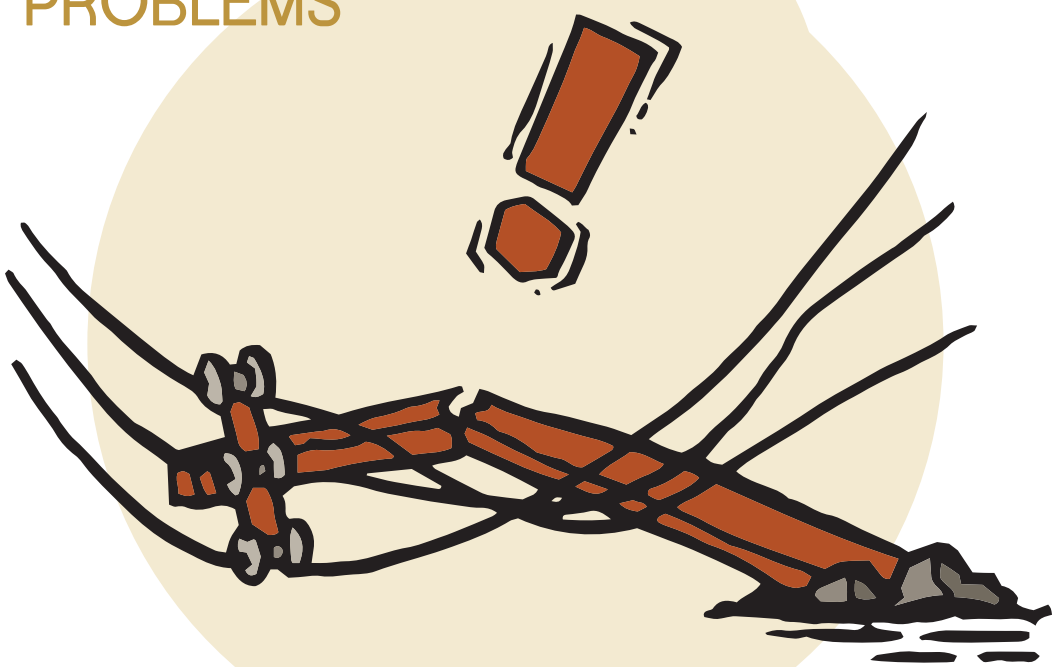
PROBLEMS



A power line or wire that has been severed or damaged, interrupting the flow of electricity. It's crucial to treat any damaged power line as energized and dangerous.

FALLEN ELECTRICAL POLE

PROBLEMS



The generated electricity cannot be delivered to the end-users due to the utility pole, which carries power lines, has collapsed and is no longer standing upright.

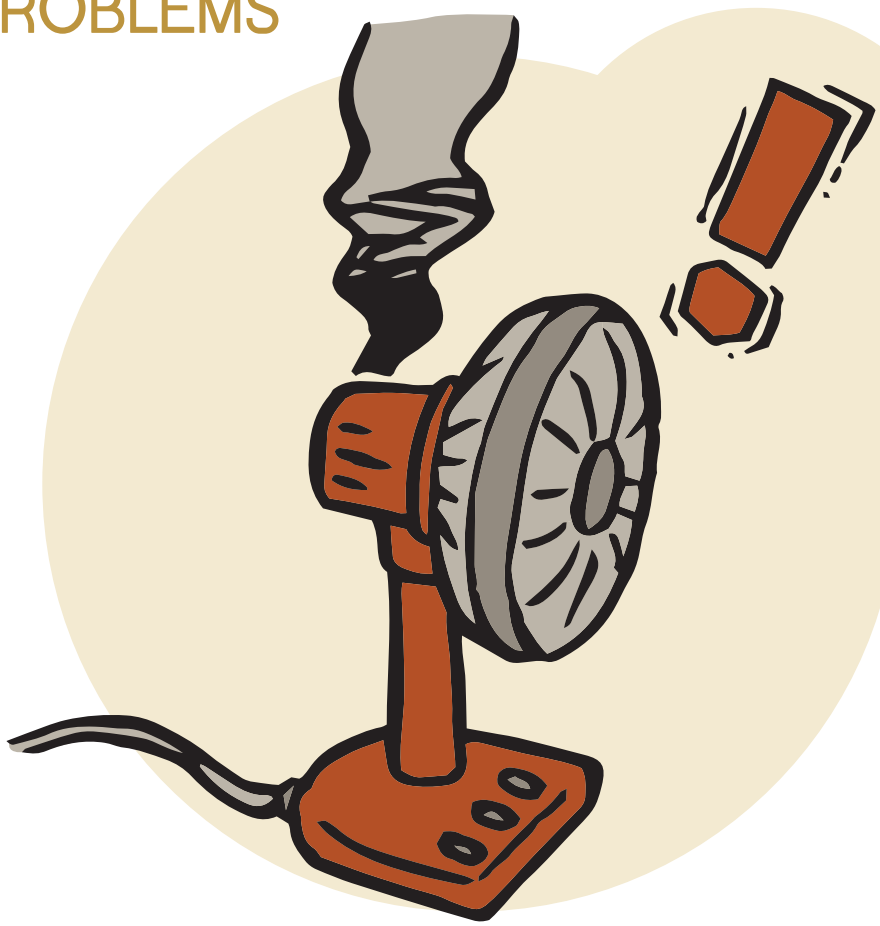
BROKEN BEARING

PROBLEMS

Bearings that support either the turbine or generator shaft can fail due to constant use, being overloaded, or a lack of proper lubrication.

FAULTY APPLIANCES

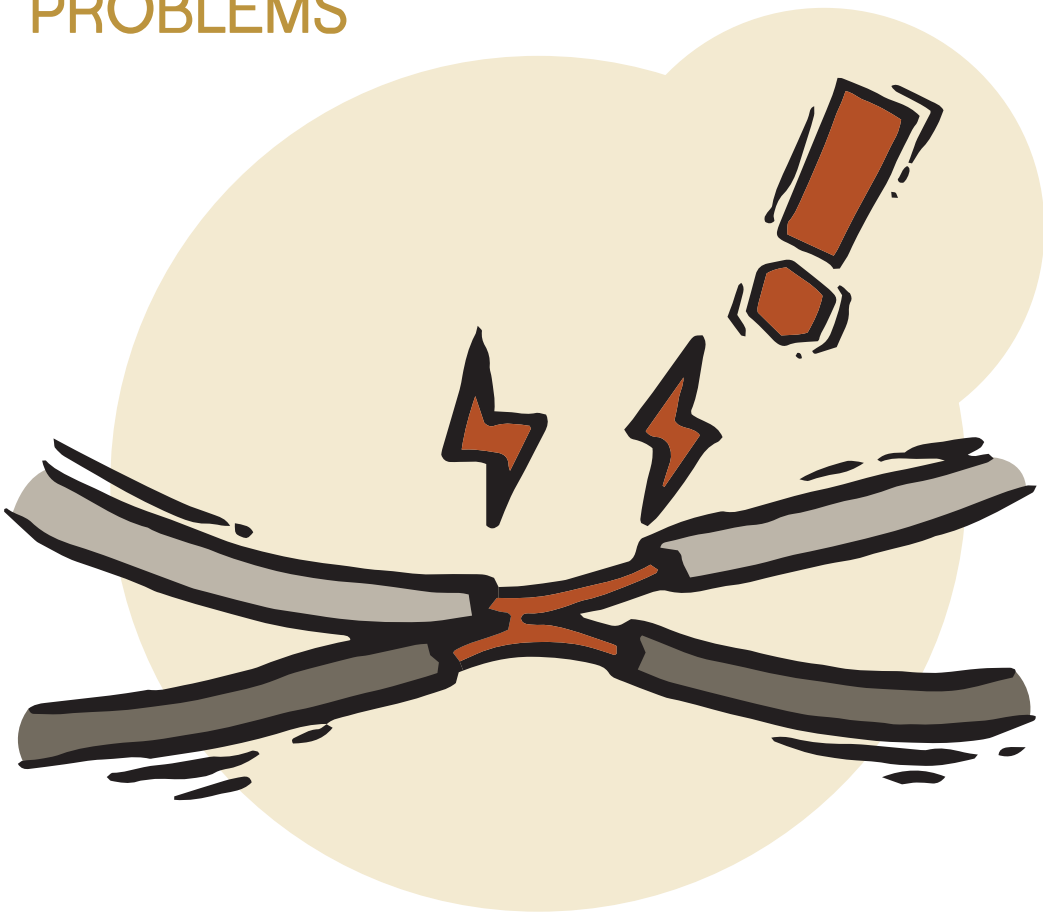
PROBLEMS



Electrical devices that are broken or not working correctly. This could be due to a mechanical failure, an electrical short, or a broken component.

SHORT CIRCUIT

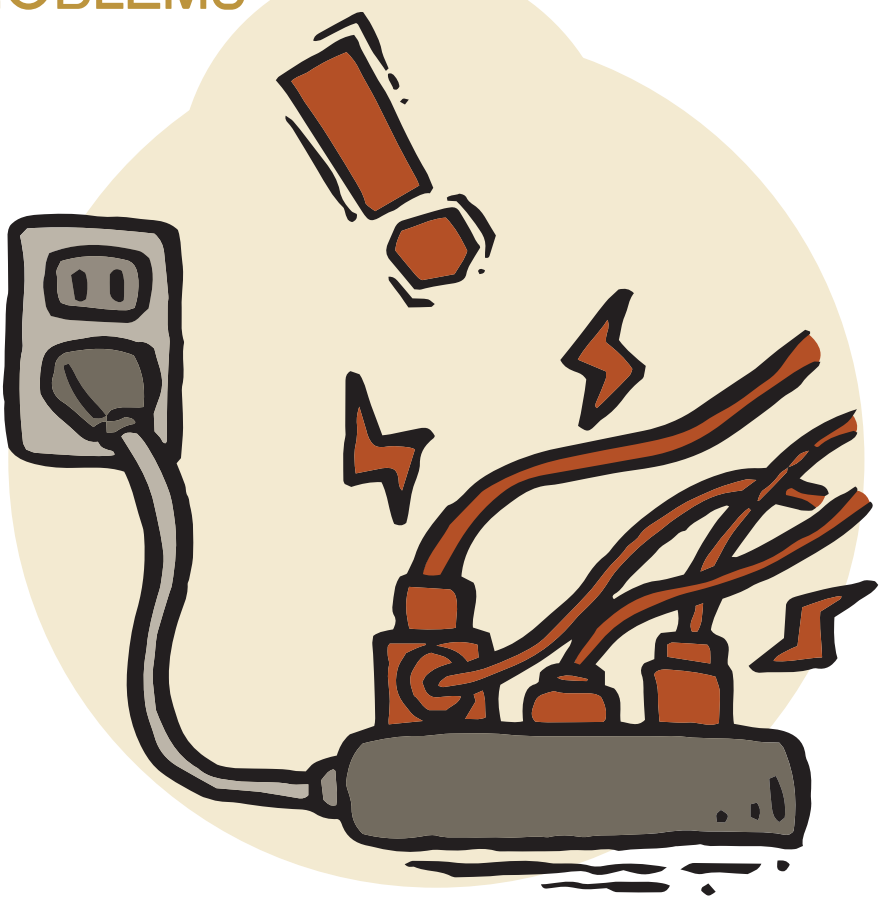
PROBLEMS



A faulty connection in an electrical circuit that allows current to travel along an unintended, low-resistance path, causing a sudden and very large surge of electric current.

CIRCUIT OVERLOAD

PROBLEMS



Too many appliances or devices are connected to a single electrical circuit, drawing more current than it can safely handle.

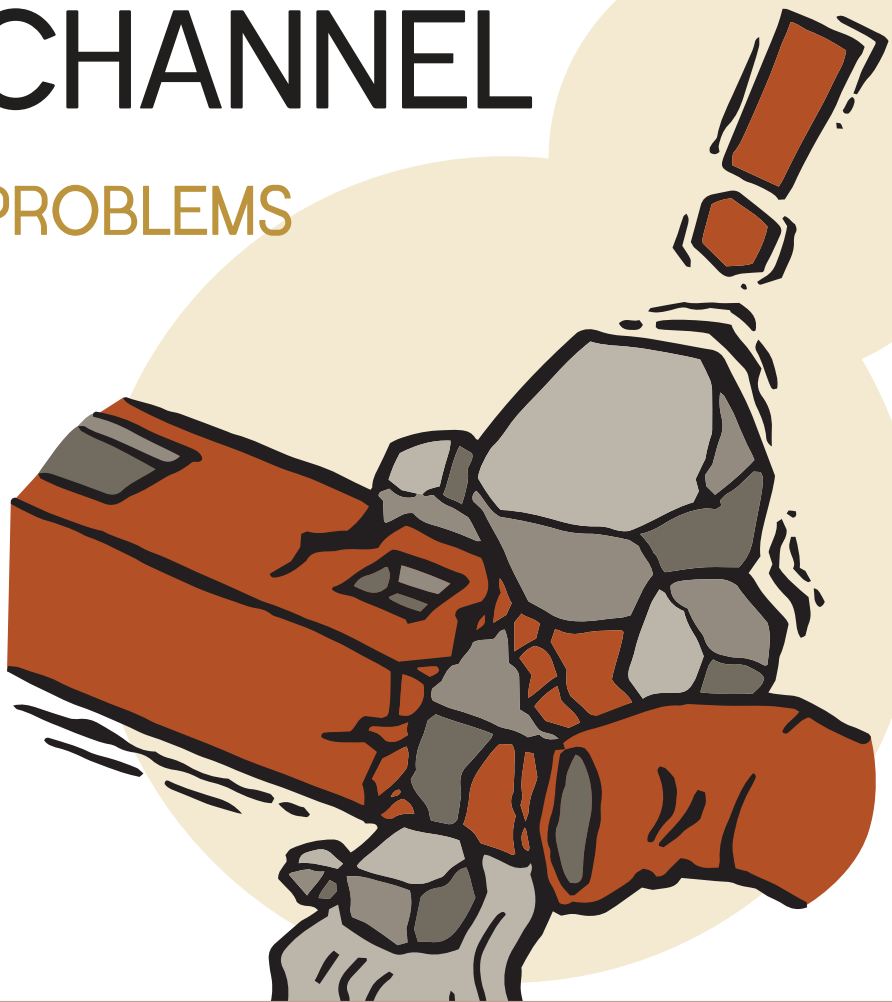
CLOGGED NOZZLE

PROBLEMS

The opening through which a jet of water is directed onto the turbine is partially or completely blocked.

BROKEN HEADRACE CHANNEL

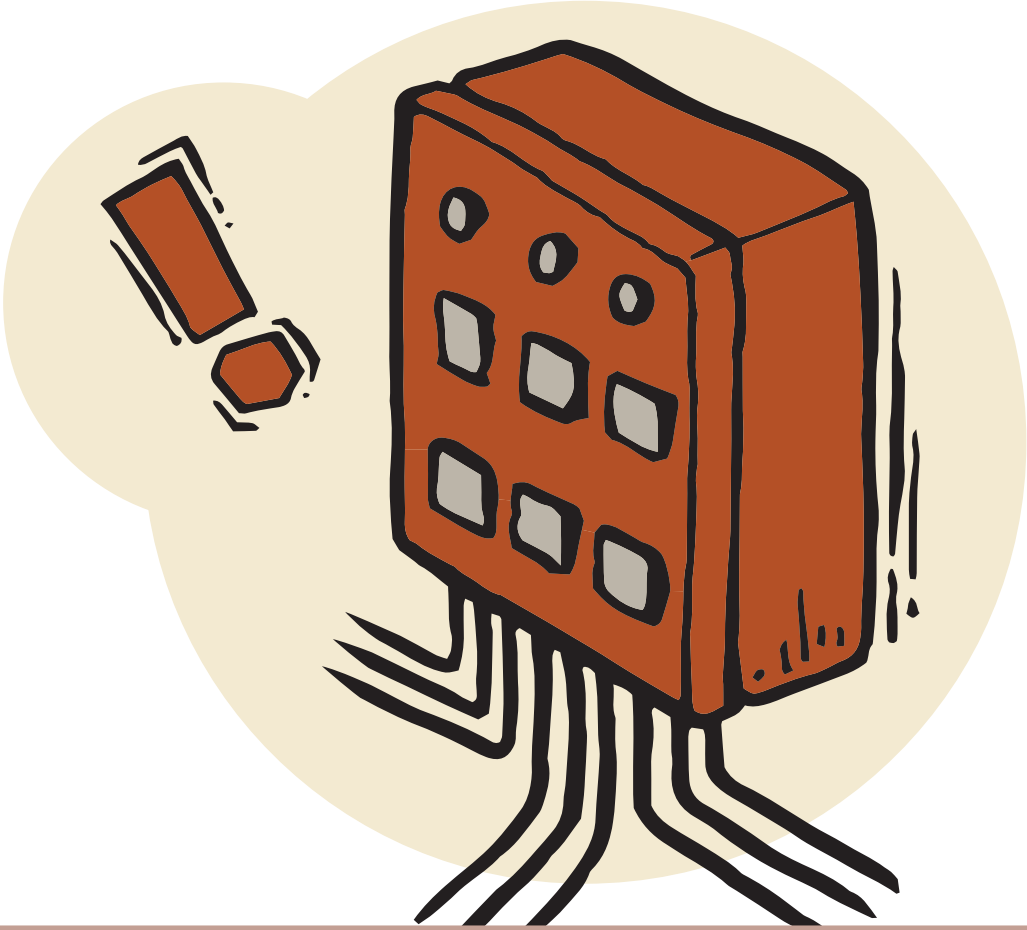
PROBLEMS



Physical failure or leak in the headrace channel which prevents it from properly containing and delivering water.

FAULTY ELC

PROBLEMS



A faulty electronic load controller (ELC) turns a reliable power source into an unpredictable and potentially dangerous one.

UPSTREAM LANSLIDE

PROBLEMS

A slope failure occurring in the upper part of a river or watershed, which can increased turbidity and damage to downstream ecosystems and infrastructure.

NO PROBLEM

ACTIONS

TURN ON SWITCH

ACTIONS

Activate or close a circuit to allow electricity to flow.

Powerhouse: Main switch, ELCB.
Household: Main switch, ELCB/RCD, Circuit Breaker

TURN OFF SWITCH

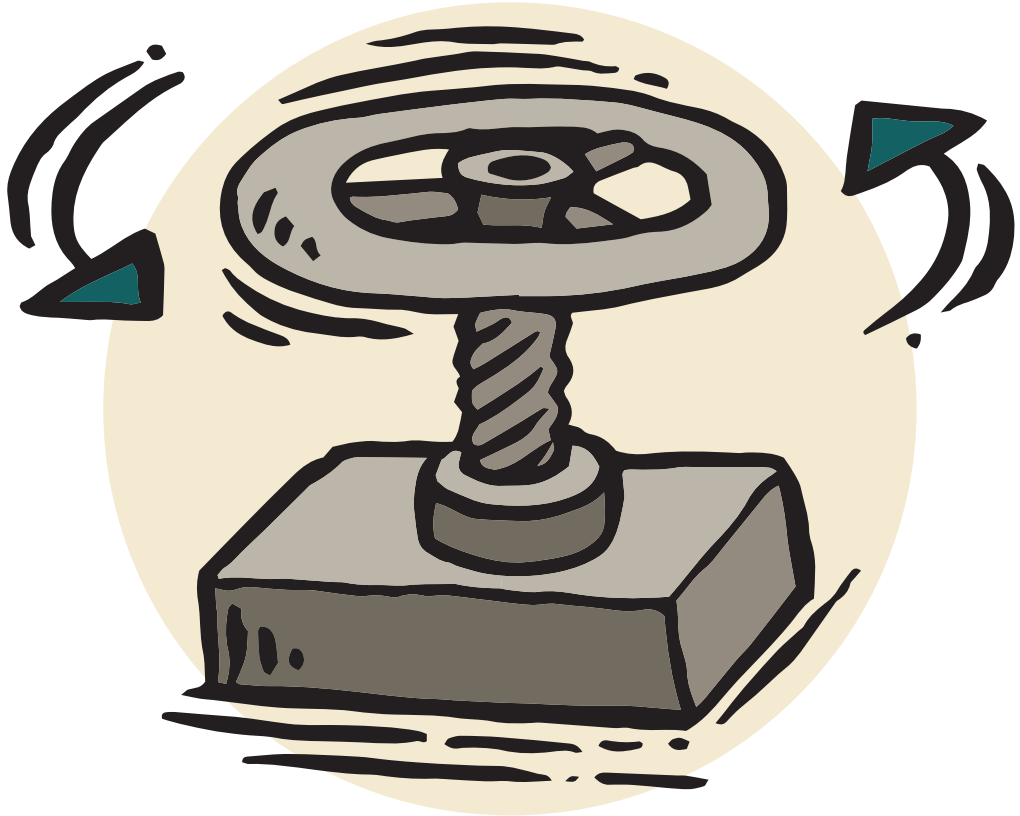
ACTIONS

Deactivate or break a circuit to stop the flow of electricity.

Powerhouse: Main switch, ELCB.
Household: Main switch, ELCB/RCD, Circuit Breaker

OPEN THE VALVE

ACTIONS

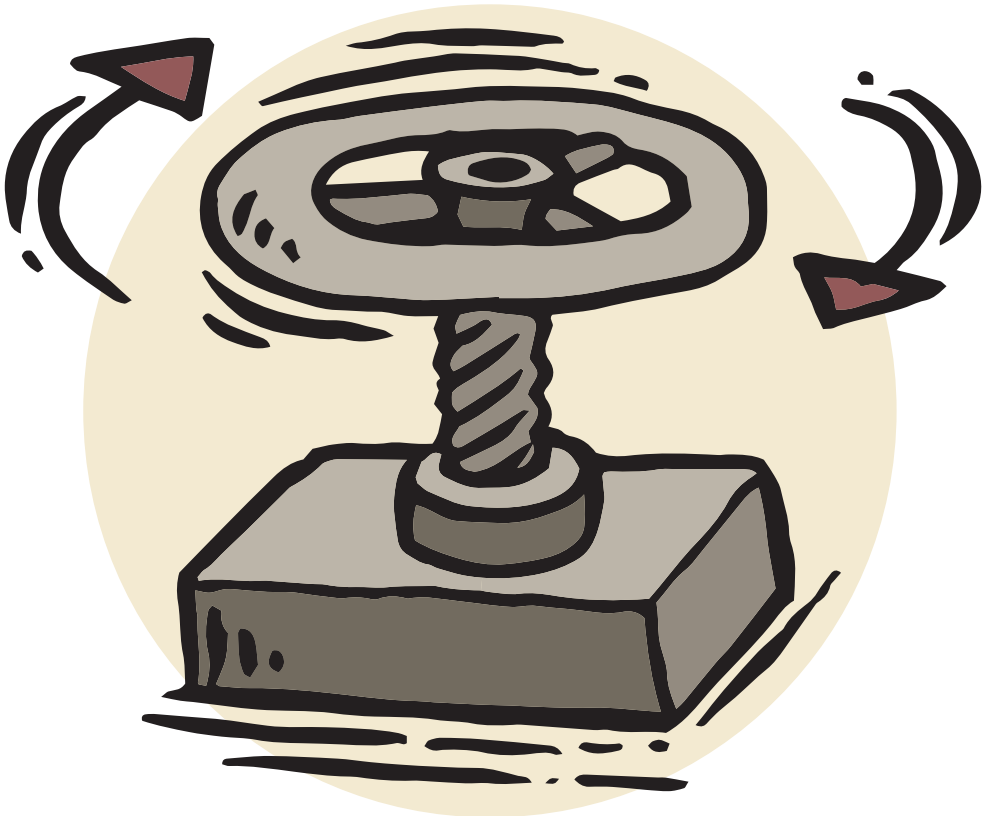


Turning on a valve to allow a fluid to flow through the system.

Sluice Gate Valve, Penstock Valve, Turbine Valve

CLOSE THE VALVE

ACTIONS



Turning off a valve prevents water from flowing through the system.

Sluice Gate Valve, Penstock Valve, Turbine Valve

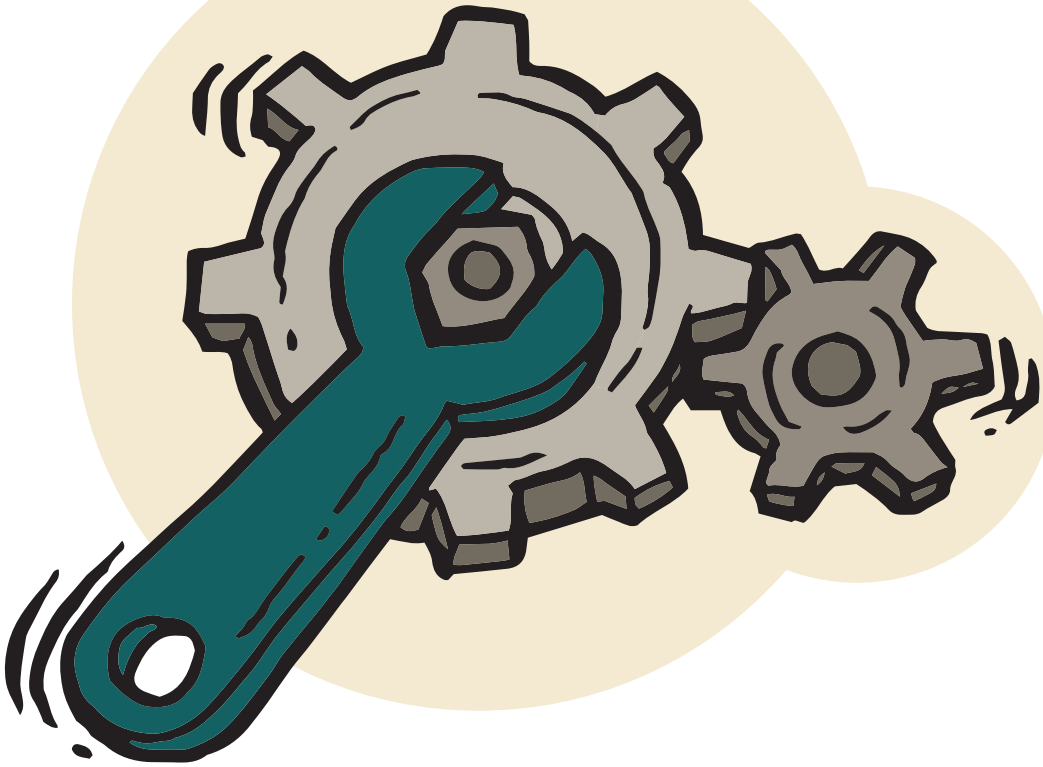
CLEANING

ACTIONS

A crucial part of routine maintenance to prevent blockages, reduce wear and tear, and ensure the system operates efficiently.

FIX OR REPLACE

ACTIONS



Repair or substitute components of a MHP system that are damaged, broken, or not working correctly.

GREASING

ACTIONS

Apply a lubricant or grease, to a machine part of MHP to reduce friction and wear.

CONTACT TECHNICIAN

ACTIONS

Get in touch with a skilled professional who is trained to troubleshoot, repair, and maintain the MHP system when a problem arises that the community members cannot solve on their own.

TREE PLANTING

ACTIONS

Planting trees on a slope after a landslide to stabilize the soil and prevent future erosion, which re-establish a strong, deep root system that binds the soil together, acting as a natural reinforcement.