Rexarc INTERNATIONAL, INC.

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Rexarc Acetylene Plant Case Study

Problem identification, solution development, and maintenance tips.

The following slides are from a recent acetylene plant audit completed by Rexarc technical personnel.

Problem Identified:

Hole has been drilled into high water alarm eliminating the alarm

Solution:

New restriction tee is needed

***Maintenance Tip:

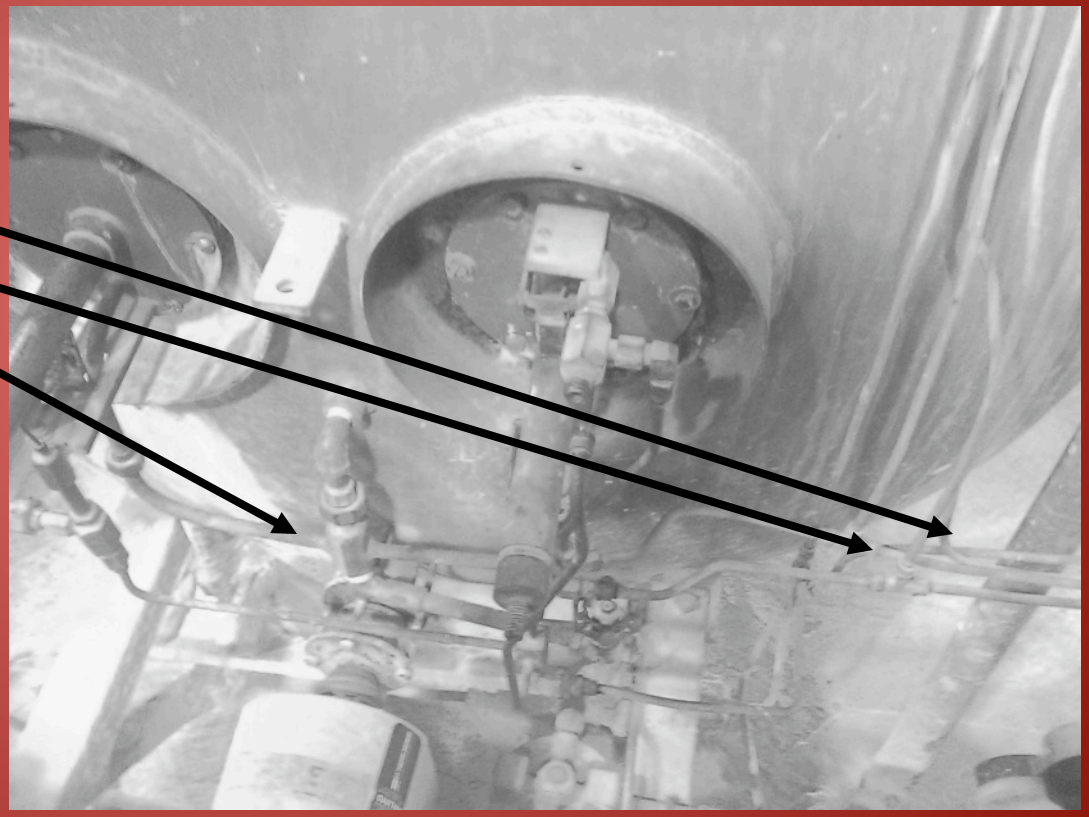
A major cause of the high level alarm on old plants is leaks in the aluminum tubing from corrosion or wear. Replacing all of the tubing from the generator controls to the motor control panel with stainless steel tubing will remedy this problem of leaks.

Problem Identified:

The air fitting connections have leaks and the restrictors have been drilled out to compensate for this problem

Solution:

Replace the aluminum tubing with ¼” (.250) stainless steel tubing. All leaks in this tubing must be stopped for the controls to operate correctly



Problem identified:

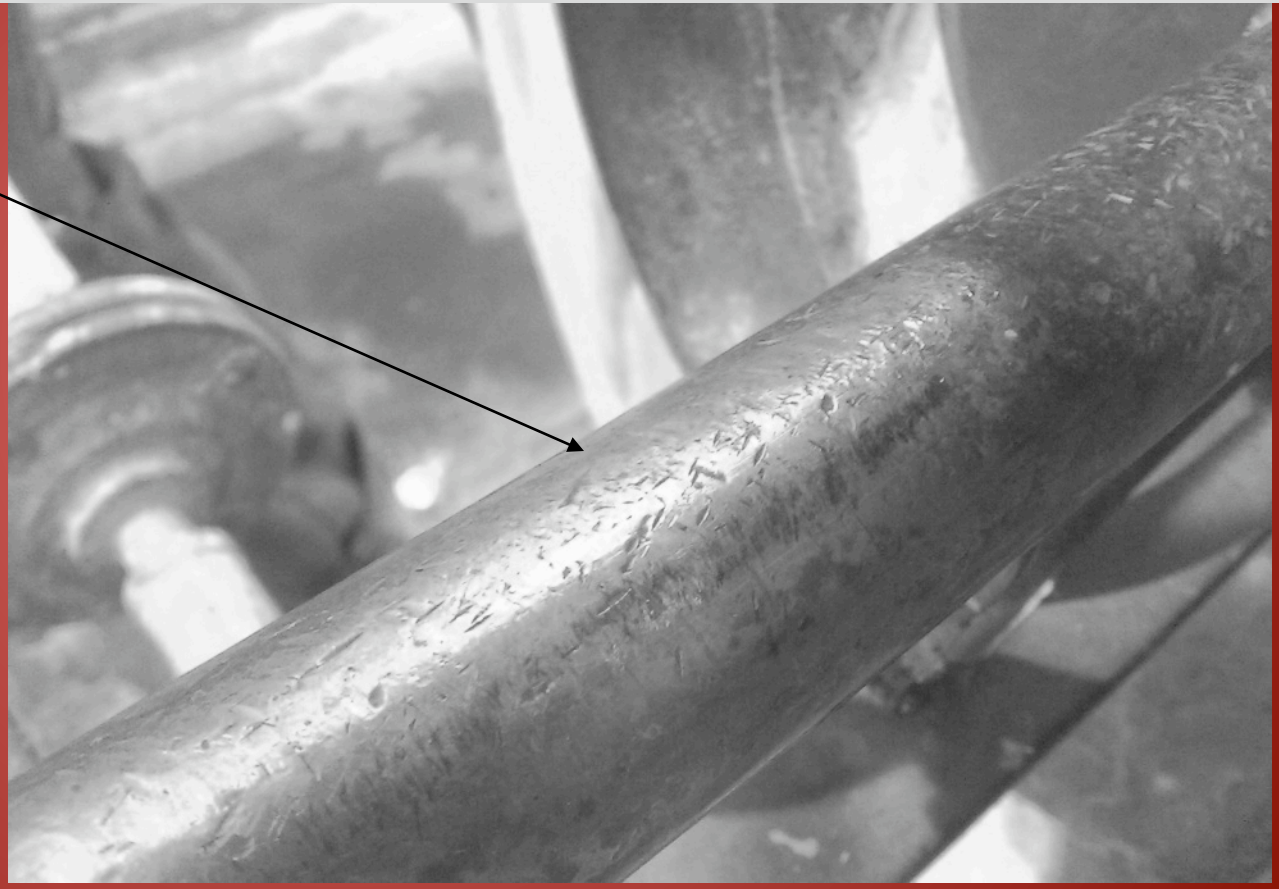
Control tube has been hit with a wrench multiple times to unstick movement

Solution:

Replace complete control tube as it has been made oval due to being hit, now it is frozen

***Maintenance Tip:

Only used approved replacement parts . Using non approved parts can reduce the life of the plant.

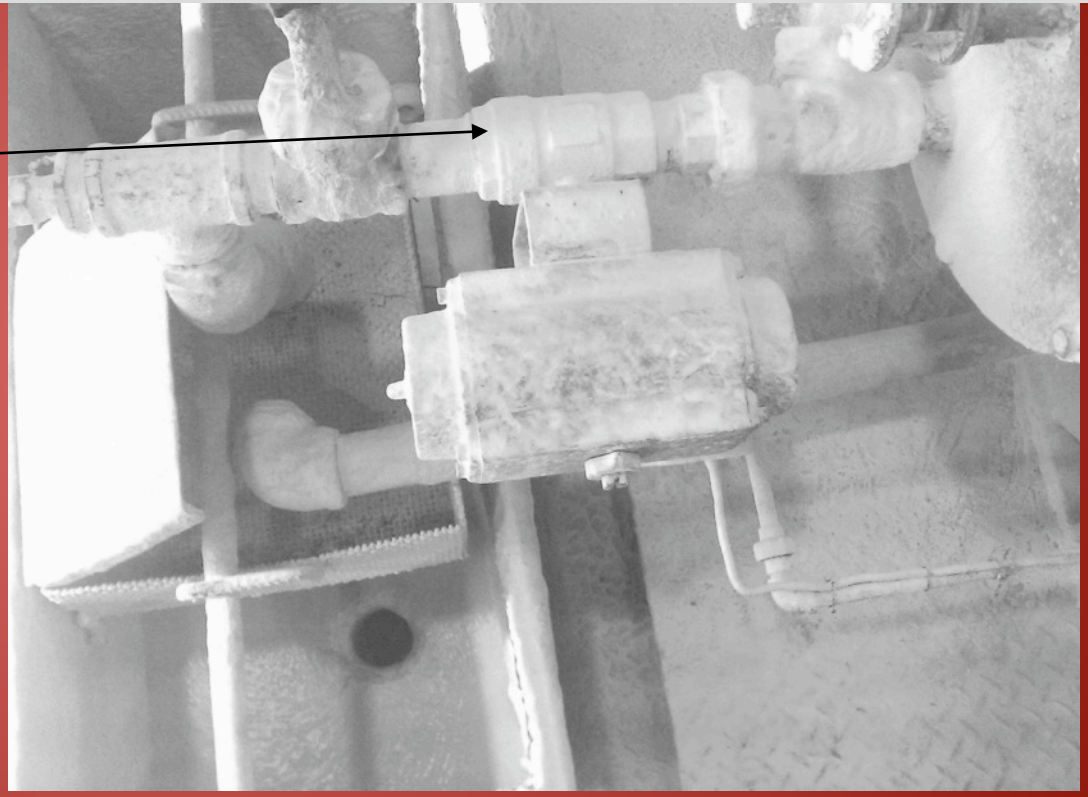


Problem Identified:

Generator drain valve has a leak

Solution:

Replace unit

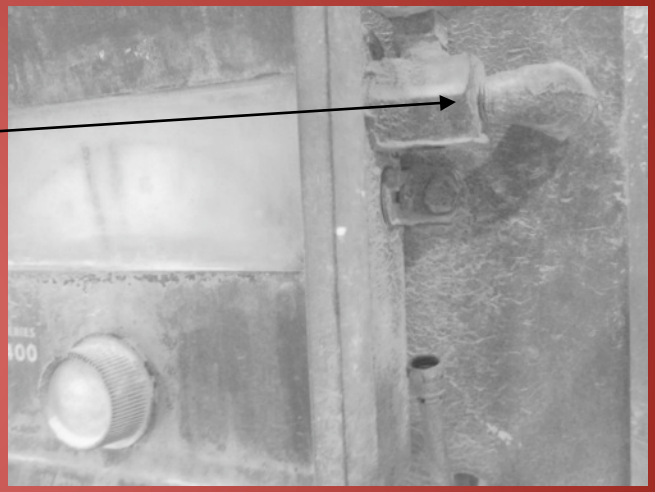


***Maintenance Tip:

Pilot valve should be replaced at the same time

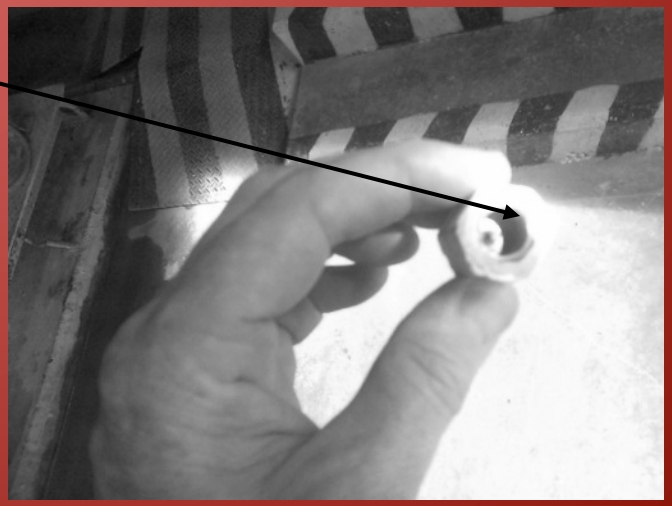
Problem Identified:

Water inlet instrument has been modified. Hole has been drilled in the snubber



Solution:

New G snubber is needed



***Maintenance Tip

With the hole in the snubber water is added at all times using more water than is needed and producing extra lime slurry.

Problem Identified:

High pressure drier cannot be opened

Solution:

Replacement of the set of driers is strongly recommended

***Safety Tip:

Without the addition of calcium chloride daily, water will enter the acetylene cylinders.

Problem Identified:

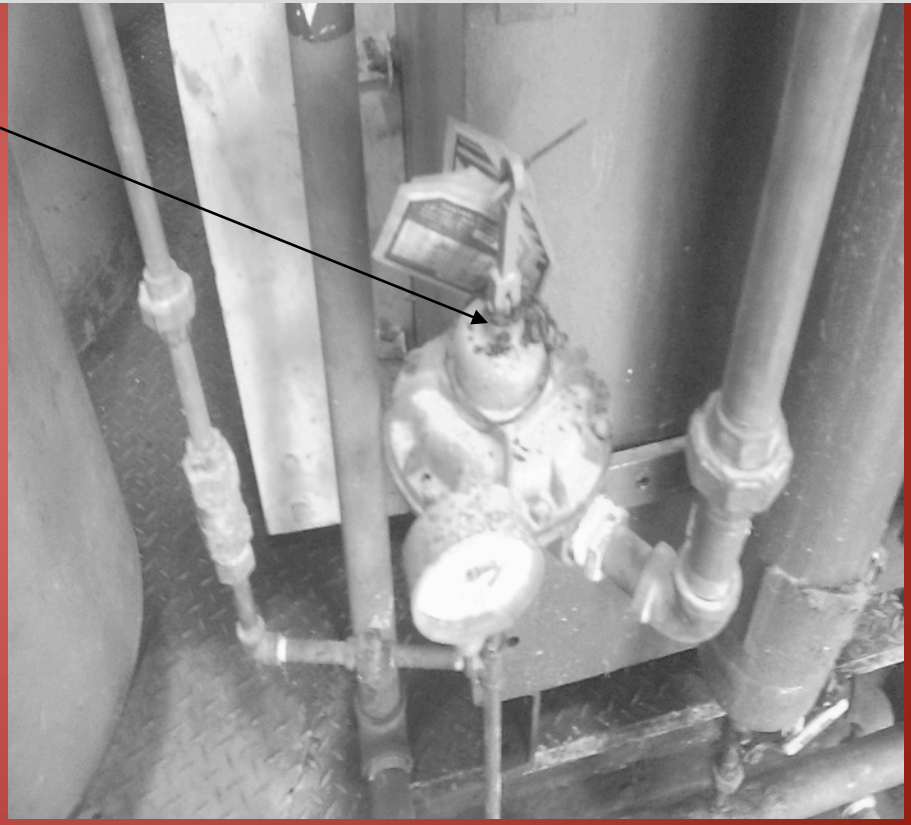
Vent piping from relief valves has been removed on the compressor

Solution:

Install vent piping

***Safety Tip

High pressure acetylene will be released into the generating room which could ignite from static electricity to start a fire.



Problem Identified:

Relief valve is corroded badly and does not work

Solution:

The relief valve must be replaced

***Safety Tip

This relief valve keeps high pressure acetylene from entering the room.

Problem Identified:

Handle is broken on the flashback relief valve

Solution:

Replace handle

***Maintenance Tip

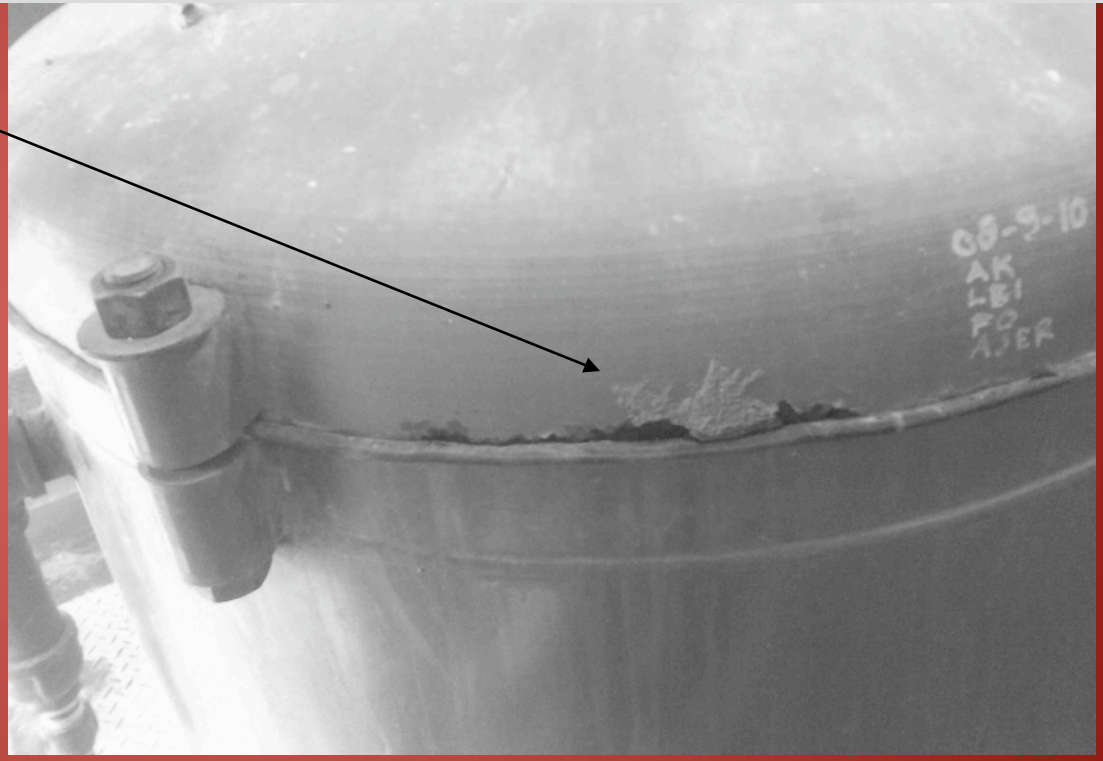
Handle can be removed and replaced without effecting the pressure setting of the relief valve.

Problem Identified:

Corrosion on purifier

Solution:

The corrosion needs to be removed and a anti–corrosion agent applied.



Problem Identified:

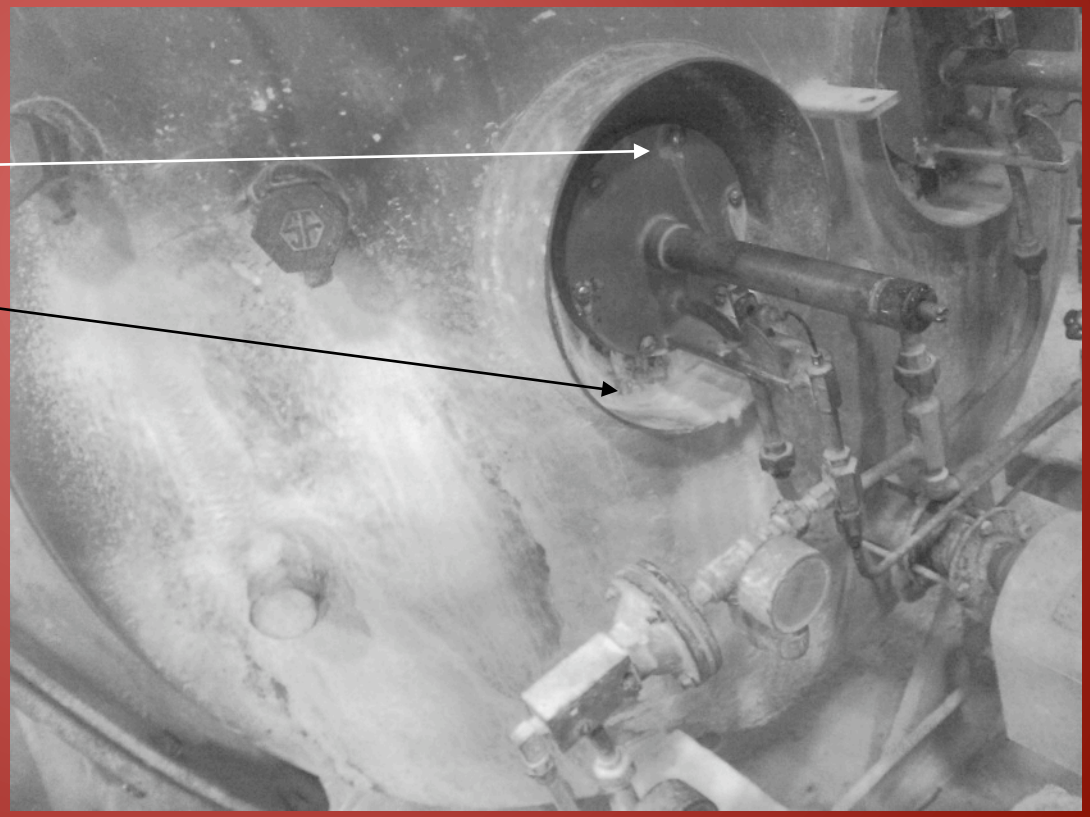
Corrosion at the base of the medium pressure drier

Solution:

The corrosion needs to be removed and a anti–corrosion primer and paint used to protect the metal from further corrosion.

Problems Identified:

1. Acetylene leaking from the top of the control.
2. Lime slurry leaking from between the control unit and the generator



Solution:

New diaphragm needed

***Maintenance Tip:

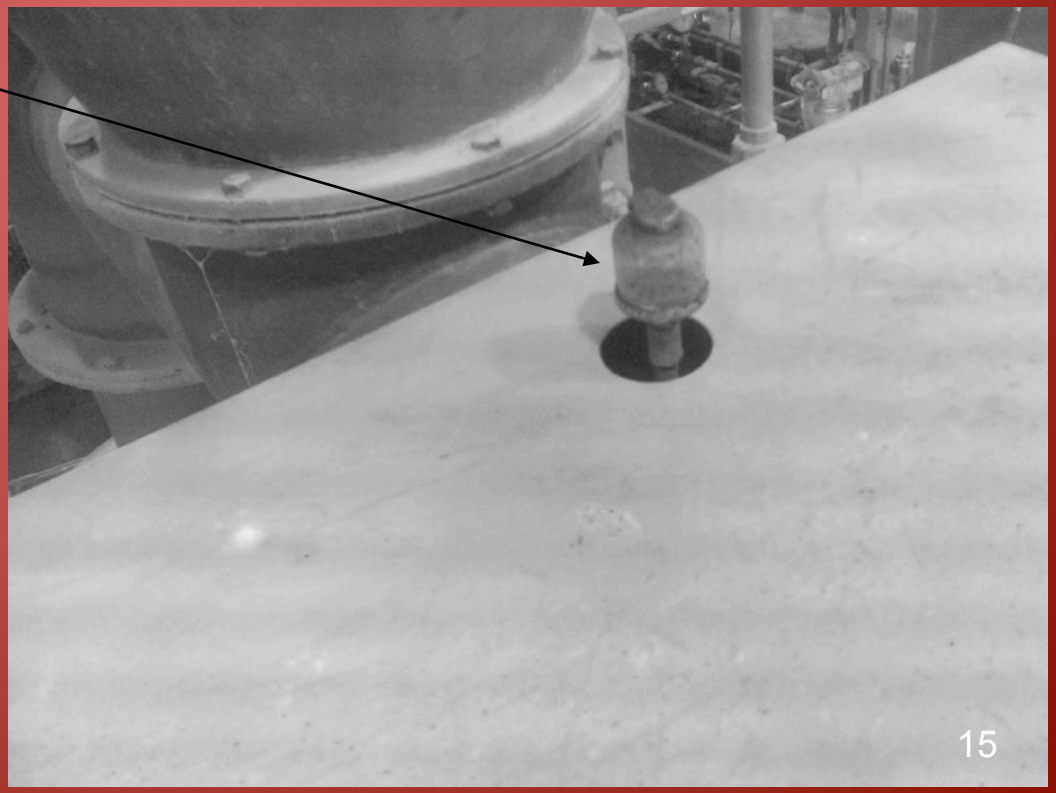
When replacing unit make sure diaphragm is in good condition. ***Use bolts, not screws***, to mount the control.

Problem Identification:

Empty oiler shows lack of proper maintenance

Solution:

Fill oiler with proper oil



***Maintenance Tip

Follow proper maintenance schedules listed in the plant operators manual for all lubricants.

Problem Identification:

Lime slurry leaking from the agitator shaft

Solution:

Keep agitator shafts lubricated

***Maintenance Tip:

Leaking lime slurry accelerates shaft wear causing premature failure. Change the packing and lubricate the shafts with grease several times daily.

Problem Identified:

There are no signs warning people that calcium carbide is stored in this area of the building

Solution:

Post signs stating that this is a calcium carbide storage area and no water is to be used in the area

Rexarc Acetylene Plants

Many Rexarc acetylene plants have been in operation for over 50 years. It is important to follow all procedural manuals and maintenance guidelines and utilize only approved replacement parts.

As a result of this audit Rexarc has assured the safe and efficient operation of this plant, thereby optimizing the investment of the plant owner.

To schedule an audit of your plant please don't hesitate to contact Rexarc at info@rexarc.com or call us at 1-937-839-4604